Appendix J

Traffic Analysis Report

This page intentionally left blank



METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Pure Water Southern California

Traffic Analysis Report

Draft | Version 1.9



February 18, 2025 | Prepared by Iteris, Inc.



Project # 11690



DOCUMENT VERSION CONTROL

DOCUMENT NAME	SUBMITTAL DATE	VERSION NO.
	4/2/2024	



TABLE OF CONTENTS

1	INTRO	DDUCTION	1
	1.1	Purpose of the Report	1
	1.2	Project Background and Description	2
	1.3	Pure Water Area	3
2	CEQA	TRANSPORTATION ANALYSIS	6
	2.1	Conflict with Program, Plan, Ordinance, or Policy	6
	2.2	Hazards	8
	2.3	Emergency Access	9
	2.4	VMT	. 10
3	SUMI	MARY AND CONCLUSIONS	. 39
	3.1	Summary	. 39
	3.2	Conclusions	. 41
4	REFE	RENCES	. 43

List of Tables

Table 1-1: Reach Length and Jurisdiction5
Table 2-1: Estimated Reach Length and Construction Method (miles)
Table 2-2: Summary of Parking and Staging/Storage Area to Work Site Trip Distance Assumptions17
Table 2-3: Work Site or Staging/Storage Area to Scholl Canyon Landfill Trip Distance Assumptions18
Table 2-4: Summary of Trip Distance Assumptions 19
Table 2-5: Daily VMT for Backbone Pipeline Construction
Table 2-6: Total VMT for Backbone Pipeline Construction 22
Table 2-7: ADT and VMT for Backbone Conveyance System Pump Station Construction23
Table 2-8: Daily VMT for Backbone Conveyance System Construction 25
Table 2-9: Total VMT for Backbone Conveyance System Construction
Table 2-10: Backbone Conveyance System Construction VMT Comparison 26
Table 2-11: Assumed Arterial Work Zones for SCAG Model27
Table 2-12: Reach 1 – Transit Routes Recoded in SCAG Model
Table 2-13: VMT With and Without Road Closures by Buffer Area – SCAG RTP Model30
Table 2-14: ADT and VMT for Joint Treatment Site Construction
Table 2-15: Joint Treatment Site Construction VMT Comparison
Table 2-16: Metropolitan Phase One Emission Reduction Measure Co-Benefit and Reduction Summary35



Table 2-18: Joint Treatment Site Daily VMT per Employee with Commute Reduction Program	38
Table 3-1: Construction VMT Comparison Summary	41
Table 3-2: Potential Impacts by Facility	42

List of Figures

Figure 1-1: Backbone Alignment and Reaches
Figure 2-1: Typical Construction Method for Roadways (with typical dimensions)12
Figure 2-2: Example of Parking and Staging/Storage Area to Work Site Assumptions for Reach 1
Figure 2-3: Daily VMT by Reach
Figure 2-4: Total VMT throughout Reach Duration
Figure 2-5: Traffic Control Configuration #5 – Trenching through an Intersection
Figure 2-6: Buffer Areas (0, 1, 2, 3, 5, 7, 10, 15, 20, and 30 Miles) from the Backbone Alignment

Appendices

- Appendix A Programmatic Schedule for Pipeline Construction
- Appendix B Conveyance System Data Needs
- Appendix C Pipeline Construction VMT for Noise Calculation
- Appendix D Pipeline Construction VMT Calculation
- Appendix E Pump Station Data Needs
- Appendix F Pump Station ADT and VMT Calculations
- Appendix G Traffic Control Plans
- Appendix H AWP Facility Data Needs
- Appendix I AWP Facility Construction Schedule
- Appendix J AWP Facility ADT and VMT Calculations
- Appendix K AWP Facility Employee Requirements
- Appendix L City of Carson VMT Threshold Guidelines

Acronyms and Abbreviations

ADT	Average Daily Traffic
AHJ	Authority Having Jurisdiction
AWP Facility	Advanced Water Purification Facility
BMPs	Best Management Practices
САР	Climate Action Plan
САРСОА	California Air Pollution Control Officers Association
CEQA	California Environmental Quality Act
СМ	Construction Method
DPR	Direct Potable Reuse
EIR	Environmental Impact Report
GHG	Greenhouse Gas
HELIX	HELIX Environmental Planning
I-	Interstate
LACFCD	Los Angeles County Flood Control District
LADWP	Los Angeles Department of Water and Power
LOS	Level of Service
Metropolitan	The Metropolitan Water District of Southern California
MGD	Million Gallons per Day
MUTCD	Manual of Uniform Traffic Control Devices
OPR	Office of Planning and Research
PS	Pump Station
Pure Water	Pure Water Southern California
ROW	Right-of-way

RTP	Regional Transportation Plan
Sanitation Districts	Los Angeles County Sanitation Districts
SB	Senate Bill
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SFSGPS	Santa Fe Spreading Grounds Pump Station
SGVCOG	San Gabriel Valley Council of Governments
TAZ	Traffic Analysis Zone
TCBs	Temporary Concrete Barriers
ТСР	Traffic Control Plan
TMCs	Traffic Management Centers
ТМР	Traffic Management Plan
USACE	U.S. Army Corps of Engineers
VMT	Vehicle Miles Traveled
Warren Facility	A.K. Warren Water Resource Facility
WATCH	Work Area Traffic Control Handbook
WNPS	Whittier Narrows Pump Station
WTP	Water Treatment Plant
WTC	Workforce Training Center



1 INTRODUCTION

1.1 Purpose of the Report

Iteris has completed this traffic analysis report for The Metropolitan Water District of Southern California (Metropolitan) proposed Pure Water Southern California (Pure Water) program. Pure Water would be a partnership between Metropolitan and the Los Angeles County Sanitation Districts (Sanitation Districts) to develop and implement a regional recycled water program. This report addresses components of Pure Water that are being analyzed at the project level, which consist of the construction and operation of a new Advanced Water Purification (AWP) Facility and associated improvements at a Joint Treatment Site in the City of Carson, and the construction and operation of an approximately 39-mile backbone conveyance system from the AWP Facility to the existing San Gabriel Canyon Spreading Grounds in the City of Azusa (referred to as the Proposed Project for the purposes of this report). This report provides the traffic-related technical documentation necessary for the review of the Proposed Project under the California Environmental Quality Act (CEQA) by Metropolitan. As part of Pure Water, more specific or updated impact analysis would occur in the future for components that are being addressed in the Environmental Impact Report (EIR) at the program level. Those components are not addressed in this technical report.



1.2 Project Background and Description

Metropolitan is a public agency comprised of 26 member agencies serving 19 million people in the counties of Los Angeles, Orange, San Diego, Ventura, Riverside, and San Bernardino. Metropolitan imports water from the Colorado River via the Colorado River Aqueduct and from Northern California via the State Water Project to supplement local water supplies.

The Sanitation Districts' A.K. Warren Water Resource Facility (Warren Facility) in the City of Carson is one of eleven wastewater treatment plants in their system and is one of the largest wastewater treatment plants in the world. The Warren Facility provides primary and secondary treatment for approximately 260 million gallons per day (MGD) of wastewater, which currently is discharged into the Pacific Ocean.

Pure Water would utilize AWP processes to purify treated effluent from the Warren Facility in the City of Carson, and then pump the advanced purified water to select locations within Metropolitan's service area for beneficial reuse. The full implementation of the Pure Water system would include modifications to the existing Warren Facility, construction of a 150 MGD AWP Facility, pipelines, pump stations, groundwater recharge improvements, and various additional appurtenant facilities as required to convey purified water to the delivery points. In addition to the AWP Facility, a new Workforce Training Center (WTC) would be built north of AWP Facility across Sepulveda Boulevard. The modifications to the existing Warren Facility, new AWP Facility, and WTC comprise the Joint Treatment Site.

This new water supply would help reduce the region's dependence on imported water and would assist the region in addressing disruption to imported water supplies. This purified water would not only provide a more diversified water supply to Southern California, it also would enhance Metropolitan's operational resilience, reliability, and flexibility in the face of ongoing challenges, including long-term drought and climate change.

Iteris, Inc. (Iteris) developed this report for identification and analysis of potential impacts on the region's transportation system due to the development of the Proposed Project during both the construction phase and ultimate operational phase of the Project.

Construction activities for the Proposed Project include general traffic associated with construction vehicles including trucks transporting pipe sections and other equipment as well as hauling of excavated dirt and other materials. The other key impact on the transportation system would be the temporary effects on traffic due to short and/or longer-term road closures, detours, or temporary reduction of traffic lanes on surface streets, all of which could result in traffic delays and/or diversions during construction.

Per CEQA, assessment metrics for roadway capacity and vehicle delay measures, which previously were typically represented and measured by Level of Service (LOS), have been replaced by vehicle miles traveled (VMT), which estimates the total distance that is driven by vehicles. This shift in CEQA transportation metric promotes outcomes that reduce reliance on automobile travel, and thus aligns with state goals for reducing emissions, investing in multimodal transportation networks, and encouraging higher development density with in-fill developments. Therefore, for the purposes of this



analysis, Iteris did not conduct any traditional LOS or capacity impact analysis at roadway segments and/or at intersections which may be affected by construction traffic or diverted auto trips.

1.3 Pure Water Area

The proposed backbone alignment is approximately 39 miles long and consists of eight segments or reaches. The backbone alignment extends from the AWP Facility in the City of Carson, initially heading north on Main Street, then east along Sepulveda Boulevard, north along Alameda Street, then east along Del Amo Boulevard to the City of Lakewood. It then heads north on Paramount Boulevard, then east on South Street, north on Palo Verde Avenue, and roughly follows the San Gabriel River to the San Gabriel Canyon Spreading Grounds in the City of Azusa. Portions of the Proposed Project area also occur within the cities of Long Beach, Lakewood, Cerritos, Bellflower, Norwalk, Downey, Whittier, Santa Fe Springs, Pico Rivera, Industry, Baldwin Park, Irwindale, Duarte, and Azusa as well as unincorporated portions of Los Angeles County. The backbone alignment and reaches are illustrated in **Figure 1-1**.



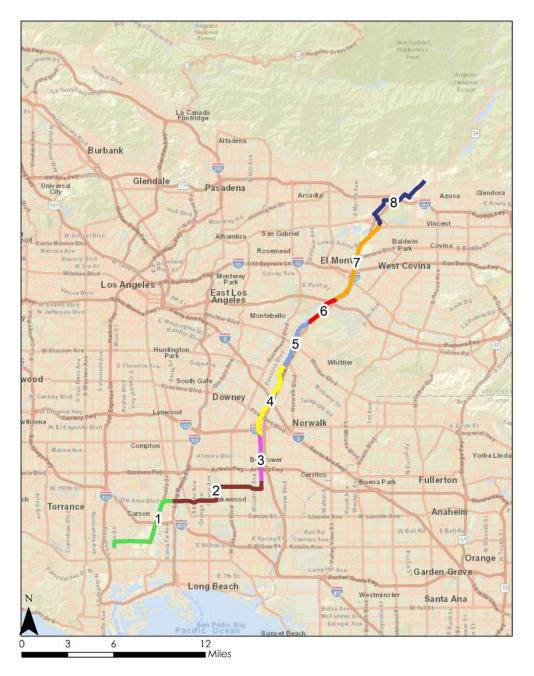


Figure 1-1: Backbone Alignment and Reaches

The length and jurisdiction for each reach are shown in **Table 1-1**.



Reach	Approximate Length (miles)	Jurisdictions
1	6.2	City of Carson, Unincorporated Los Angeles County
2	7.3	Cities of Carson, Long Beach, Lakewood, Unincorporated Los Angeles County
3	3.1	Cities of Bellflower, Cerritos, Norwalk
4	5.0	Cities of Norwalk, Santa Fe Springs, Downey, Pico Rivera, Unincorporated Los Angeles County
5	3.6	Cities of Pico Rivera, Whittier, Unincorporated Los Angeles County
6	2.6	Cities of Pico Rivera, Industry, Unincorporated Los Angeles County
7	6.0	Cities of Industry, Baldwin Park, Irwindale
8	5.5	Cities of Irwindale, Duarte, Azusa
Total	39.3	

Table 1-1: Reach Length and Jurisdiction



2 CEQA TRANSPORTATION ANALYSIS

CEQA transportation analysis is predicated upon the assessment of potential significant impacts based on the following four CEQA checklist criteria listed in Appendix G of the CEQA Guidelines, 2018 amendment:

- 1. Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
- 2. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- 3. Would the project result in inadequate emergency access?
- 4. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b) (VMT assessment)?

Assessment of in-street construction conditions and traffic management resulting from the Proposed Project falls under the first impact criterion related to consistency with ordinances and policies. The only components of the Proposed Project that would generate a notable number of long-term vehicle trips are the AWP Facility and WTC in the City of Carson. There would be a small number of trips associated with operations/maintenance of the pump stations and backbone pipeline, but those trips are anticipated to be minimal on a recurring daily basis. One staff person was assumed for conservative modeling purposes of analyzing long-term vehicle trips associated with operations/maintenance of the pump stations.

The Proposed Project's impacts related to transportation would be temporary for construction traffic and permanent for long-term operations. The Proposed Project's impacts on transportation due to construction traffic are discussed qualitatively for criteria one, two and three. Criteria four is addressed quantitatively by calculating the temporary construction VMT and long-term operations VMT, although construction VMT is for disclosure purposes only and does not have a significance threshold under CEQA.

2.1 Conflict with Program, Plan, Ordinance, or Policy

Construction and long-term operations traffic could have the potential to conflict with programs, plans, ordinances, or policies addressing circulation system.

2.1.1 Construction

Construction of the Proposed Project facilities could have the potential to conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities in each of the jurisdictions at the Joint Treatment Site and along the backbone alignment. Construction would require activities such as mobilization of substantial off-road equipment and materials, removal of substantial soil quantities to/from staging areas or offsite locations, and transportation of construction personnel.

These activities would add construction vehicle traffic to roadways around the Joint Treatment Site and



along the backbone alignment, which could add to existing roadway congestion in urban areas, cause intersection delays, or degrade conditions for bicycle, pedestrian, and transit circulation, such that they would conflict with applicable programs, plans, ordinances, or policies addressing the circulation system for those. The degraded conditions could include temporary removal of bike lanes and pedestrian sidewalks.

As a standard measure to prevent a potentially significant impact associated with conflict with a program, plan, ordinance, or policy addressing the circulation system, Metropolitan or the contractor(s) would prepare and implement a Traffic Control Plan (TCP) and/or a Traffic Management Plan (TMP) for each reach to manage traffic flow during construction, reduce potential interference with local emergency response plans, reduce potential traffic safety hazards, and ensure adequate access for emergency responders as required by the Authority Having Jurisdiction (AHJ). Development and implementation of this plan would be coordinated with local agencies with jurisdiction over affected roadways. Metropolitan would provide oversight of the construction contractor(s) to ensure that the plan would be implemented during construction. The plan would include the following measures as appropriate:

- Identify construction truck haul routes to limit conflicts between truck and automobile traffic. The identified routes would be designed to minimize impacts on vehicular, bicycle, and pedestrian traffic, circulation, and safety.
- Implement comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, installing warning and detour signs (as needed), drafting lane closure procedures, and placing traffic cones to guide drivers indicating potential road hazards or detours (as needed). Other potential traffic control measures include the provision of safe detour routes for pedestrians if sidewalks are to be closed and temporary changes to traffic signal phases and timings, if needed. Traffic control measures would be consistent with the California Manual of Uniform Traffic Control Devices (MUTCD) and the Work Area Traffic Control Handbook (WATCH).
- Coordinate construction activities to ensure that at least one lane of traffic in each direction remains open at all times, unless flaggers or temporary traffic controls are in place, to provide emergency traffic access.
- Evaluate the need to provide flaggers or temporary traffic control at access points to construction sites, backbone construction zones, and entries to staging areas.
- Notify affected adjacent property owners and public safety personnel regarding the timing of major deliveries, detours, and lane closures.
- Coordinate with local Police and Fire departments to ensure their awareness of construction activities and provide detour routes for emergency vehicles. Develop a process for responding to and tracking issues pertaining to construction activity impacts on traffic. Post 24-hour contact information for the traffic manager on all construction sites.

Implementing this standard operating procedure would ensure that temporary construction impacts related to a conflict with a program, plan, ordinance, or policy addressing the circulation system would be less than significant.



2.1.2 Operations

Long-term operation of the Proposed Project facilities includes the backbone conveyance system (including eight reaches and two pump stations) and Joint Treatment Site (including AWP Facility, Joint Treatment Site Pump Station, and WTC). The backbone conveyance system is not anticipated to generate substantial vehicular traffic on a daily basis. The two pump stations, Whittier Narrows Pump Station (WNPS) and Santa Fe Spreading Grounds Pump Station (SFSGPS), are anticipated to have only one member of staff producing up to four trips per day.

The AWP Facility and WTC are the main traffic-generating permanent facilities of the Proposed Project. The AWP Facility would have a total of 194 employees, with 54 of which being operations staff. Based on the shifts for operations staff, only half of them would be at the AWP Facility on any given day, so there would be a maximum of 167 employees at the AWP Facility on any given day. As such, it is anticipated that the AWP Facility would have approximately 167 employees, 10 visitors, and 30 chemical deliveries per day, and the WTC is anticipated to have 31 trainees per day. The long-term operation traffic generated by the AWP Facility and WTC would be minimal, compared with the average daily traffic (ADT) volumes for adjacent roadways of the AWP Facility and WTC.

The long-term operation of backbone conveyance system, AWP Facility, and WTC is not anticipated to conflict with programs, plans, ordinances, or policies addressing the circulation system; therefore, impacts would be less than significant.

2.2 Hazards

Construction and long-term operations traffic could potentially increase hazards due to a geometric design feature or incompatible uses.

2.2.1 Construction

Pipeline construction could affect transportation infrastructure such as roads, bridges, railroads, and trails.

Construction work may require temporary alterations to the horizontal and vertical alignments of these facilities. In addition, new off-road haul routes may be constructed between staging areas and construction sites, for example along the San Gabriel River. These constructed access roads would be temporary and will be restored to pre-project conditions upon the completion of construction. Slow-moving trucks that deliver materials and remove materials and debris would enter and exit public streets, which could create hazards to vehicles, pedestrians, and bicyclists.

Construction zones that include vehicles and materials could create road hazards. Trenching along roadway segments could potentially lead to damage to traffic signal fiber optic communication cables, which could inadvertently affect traffic operations and safety. Trenching along roadway segments could also potentially damage other non-transportation underground utilities. Construction could also result in damage to roads and sidewalks, potentially creating uneven surfaces.

Metropolitan would avoid significant impacts by coordinating with each applicable jurisdiction to identify potentially affected facilities and structures, best management practices (BMPs) to avoid



impacts, and the appropriate procedures to replace or repair a facility or structure should it become impacted.

If unanticipated damage to roads, sidewalks, trails, and/or medians occurs, the construction contractor would coordinate with Metropolitan and corresponding local jurisdiction to ensure that the damage is repaired in a timely manner in accordance with applicable agency standards. Roads and/or driveways disturbed by construction activities or construction vehicles should be properly restored to ensure long-term protection of road surfaces. Roadside drainage structures and road drainage features would be protected or restored by properly regrading and reconstructing roads to ensure proper drainage. The construction contractor would work with applicable agencies to document the preconstruction conditions of road features before construction begins and road conditions after the construction is complete.

Implementing these practices would ensure that temporary construction impacts related to traffic hazards would be less than significant.

2.2.2 Operations

Permanent long-term operation of the backbone conveyance system, AWP Facility, and WTC would not increase hazards due to geometric design feature or incompatible uses. As such, long-term operation impacts related to traffic hazards would be less than significant.

2.3 Emergency Access

Construction and long-term operations traffic could result in inadequate emergency access in each jurisdiction.

2.3.1 Construction

Traffic could be delayed, and lanes could be temporarily closed when construction material or vehicles are being moved on and off the sites of the proposed work zones, especially at high-volume intersections. Potential detours, lane closures, street closures, or intersection closures could all interfere with emergency access. Extended lane closures may be necessary depending on the construction method and construction schedule, which could potentially cause traffic congestion and interfere with emergency access.

Reduced travel lanes due to traffic incidents (unplanned roadway events that affect or impede the normal flow of traffic) is a major cause of congestion. The impacts of traffic incidents are compounded through a construction zone due to reduced lanes and narrower shoulder widths. As a result, an efficient incident management plan is imperative to construction area traffic management. Effective incident management would ensure that incidents in construction areas are cleared quickly and do not lead to substantial delays for the traveling public and emergency vehicles through work zones. The three key components of incident management are detection, response, and clearance.

Implementing a TCP and/or a TMP as required by the AHJ, as described above, would provide traffic control at the access points to construction sites and would facilitate management action that could allow site access for emergency vehicles. The TCP and/or TMP would identify procedures for informing



and coordinating with relevant Police and Fire departments of construction location and would identify potential detour routes. For local jurisdictions which operate Traffic Management Centers (TMCs), these TMCs would also be part of the coordination since they could help emergency access by identifying incidents and adjusting signal timing settings in real time. The TCP and/or TMP would also consider enabling emergency vehicles to travel behind temporary concrete barriers (TCBs) through the work area to access incidents located in a work zone.

As a result of implementing a TCP and/or TMP, the temporary construction impacts related to emergency access would be less than significant.

2.3.2 Operations

Permanent long-term operation of the backbone conveyance system, AWP Facility, and WTC would not result in inadequate emergency access since regular daily operation of the Proposed Project would not interfere with potential detours, lane closures, street closures, or intersection closures. As such, long-term operation impacts related to inadequate emergency access would be less than significant.

2.4 VMT

Construction and long-term operations traffic could be inconsistent with CEQA Guidelines Section 15064.3 subsections (b) (VMT). The Proposed Project has the potential to result in two types of VMT effects:

- 1. Temporary VMT changes due to construction traffic and reassignment of background traffic during construction, and
- 2. Long term VMT changes at new permanent facilities during regular operations.

Much of the construction traffic would be truck-related for the transportation of materials and equipment to the staging areas and work sites, and removing spoils to landfills or other areas. However, for the purposes of CEQA (CEQA Guidelines Section 15064.3 Subsection (a)), VMT refers to the amount and distance of "automobile" travel attributable to a project and "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. Heavy vehicles such as semi-trucks and large delivery trucks are excluded from the current transportation VMT assessment per the CEQA Guidelines due to Interstate commerce considerations including the long-distance nature of truck traffic traveling from the Ports of Long Beach, Los Angeles, and Oakland to other states. Therefore, heavy truck trips and heavy truck VMT related to construction are calculated for disclosure purposes only. VMT comparisons are based on VMT per employee.

2.4.1 Construction

CEQA VMT assessment is intended to focus on the long-term, permanent transportation impacts related to the generation of automobile trips and the opportunities for alternative modes of transportation (public transit, walking, bicycling) associated with a development project. Neither the State of California Governor's Office of Planning and Research (OPR) Technical Guidelines for Senate Bill (SB) 743 nor any jurisdiction within the Proposed Project area specify any requirements for construction VMT assessments.



Due to the temporary nature of project construction, VMT assessments typically do not account for construction activities. Construction VMT analysis is for disclosure purposes only and does not have a significance threshold.

The construction VMT analysis is divided into two components:

- Construction Traffic (predominantly construction heavy vehicles and construction worker auto trips to and from the construction site)
- Background Traffic diverted to alternative routes due to construction-related lane closures (predominantly auto traffic)

The draft programmatic project schedule provided in **Appendix A** indicates that the main pipeline construction schedule time frame is five to six years from mid 2027 to late 2032 including contingencies. There are two early start construction phases scheduled for 2026. To be conservative for the transportation analysis, a time period in year 2030 was selected when most reaches are planned to be under construction concurrently and could possibly create the largest potential for overall traffic disruption. Year 2030 traffic forecasts from the Southern California Association of Governments (SCAG's) Regional Transportation Plan (RTP) travel demand model were therefore used as the basis for the future year traffic volumes for the background traffic diversion analysis.

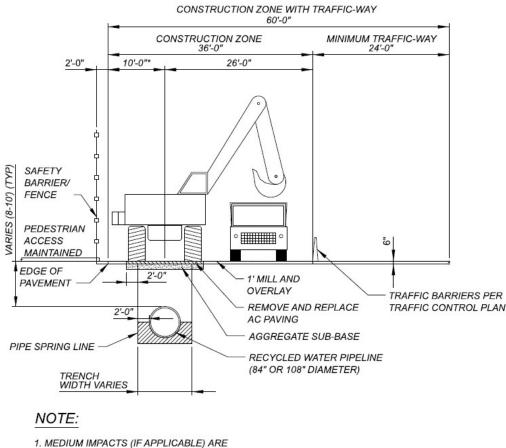
Backbone Conveyance System (includes both the backbone pipeline and two pump stations)

Each reach of the pipeline requires a unique set of construction methods (CMs) to build the pipeline given that section's location and characteristics. The following construction methods are used as described in the Conveyance System Data Needs Excel spreadsheets, which are provided in **Appendix B**.

• **Roadways CM** – This typical construction method is the primary method that affects traffic as it involves cut and cover trench digging construction along arterial roadways with construction zones on either side of the construction site, which reduces the width of the arterial by two lanes as shown in **Figure 2-1**.







COVERED IN COST ADDERS.

CONSTRUCTION METHOD 1 - ROADWAY

The arterials along the backbone alignment are typically four lanes wide (minimum), which would therefore be reduced to two lanes (one lane in each direction) due to construction activities. The construction zone for the work needs to be of sufficient length to both accommodate construction vehicles and materials and to provide sufficient distance for traffic to merge into the reduced number of lanes. When construction is performed at an intersection, the through movements of the cross street and the left-turning movements of both streets need to be temporarily restricted.

- SCE Easement CM This method would be used when digging a trench within Southern California Edison (SCE) easements, which are typically not on roadways and would not divert the traffic.
- LACFCD Easement CM This method is specific to segments within Los Angeles County Flood Control District (LACFCD) easements adjacent to the San Gabriel River and generally would not divert the traffic.



- **Pipe Jacking CM** This method would be used for tunneling relatively short distances. This CM may or may not involve lane closures depending on the location of tunnel access portals and availability of suitable off-street staging areas.
- **Microtunneling CM** A type of trenchless construction typically used for crossings not suitable for pipe jacking, such as those below the groundwater table. This CM may or may not involve lane closures depending on the location of tunnel access portals and availability of suitable off-street staging areas adjacent to the tunnel entrances.
- Shield Tunneling with Ribs and Lagging CM This method uses a shield with a digger arm or road header excavating at the face, and hydraulic jacks at the rear of the shield push off the previously installed support elements to propel the shield forward. This method would not require lane closures or result in traffic diversion since the construction would not be on a roadway.
- **Traditional Tunneling CM** This method would be used for long distances but requires an excavated diameter large enough for human-operated equipment to function. This method is typically used on long segments beyond the distance limits of pipe jacking and microtunneling, such as adjacent to the San Gabriel River in Reach 7 and would not require lane closures or result in traffic diversion since the construction is not on a roadway. However, access points to the adjacent roadway system would be required and a temporary off-street access road may be needed.

The impact on traffic varies between reaches due to variance in construction methodologies. For example, the three Tunneling CMs have a more limited impact on background traffic than Roadways CM since tunneling creates less disruption to the arterial roadways. **Table 2-1** shows the estimated length of each reach by construction method.

Reach #	Estimated Reach Length (from GIS)	Estimated Reach Length (from CM)	CM 1 Roadways	CM 2 SCE Easement	CM 3A LACFCD Easement (Adjacent to River)	CM 4A Pipe Jacking (7 foot)	CM 4B Micro tunneling	CM 4C Traditional Tunneling (7 foot)	CM 4D Pipe Jacking (9 foot)	CM 4E Shield Tunneling with Ribs and Lagging	CM 4F Traditional Tunneling (9 foot)
1	6.2	6.1	5.41	-	-	0.39	0.25	-	-	-	-
2	7.3	7.3	6.13	-	-	0.02	1.18	-	-	-	-
3	3.1	3.1	0.49	1.47	0.59	0.12	0.42	-	-	-	-
4	5.0	4.3	2.42	-	0.23	-	0.08	1.53	-	-	-
5	3.6	5.9	4.31	0.73	-	0.11	0.15	0.64	-	-	-
6	2.6	2.5	-	-	-	-	-	-	-	-	2.48
7	6.0	5.8	0.89	3.35	-	-	-	-	-	0.27	1.25
8	5.5	5.8	0.84	1.37	2.37	-	-	-	1.13	0.04	-
Total	39.3	40.8	20.49	6.91	3.20	0.64	2.08	2.17	1.13	0.31	3.73

Table 2-1: Estimated Reach Length a	and Construction Method (miles)
-------------------------------------	---------------------------------

Based on **Table 2-1**, estimated reach length calculated from the GIS files provided by Metropolitan (39.3 miles) is different from estimated reach length calculated from the CM worksheets (40.8 miles). While most reaches have minor differences between length of the shapefile in GIS and the length of all CMs



combined in that each, Reach 4 and Reach 5 have greater differences due to the possibility that Metropolitan may select a different, longer alignment. For purposes of this analysis, calculation of construction VMT for the backbone conveyance system based on the length of individual CM in each reach provides a conservative assessment of environmental impacts.

Construction trips and VMT were calculated herein for disclosure purposes only. They are also used for input to the air quality, GHG, and noise analyses as shown in **Appendix C**.

CONSTRUCTION TRIPS

Construction-related vehicle trips are estimated by summing the number of trips required for backbone conveyance system construction activities based on trip types, which include the following:

- 1. Light vehicle trips for construction workers commuting to and from the site;
- 2. Truck trips for construction equipment and materials moving to and from original source location to the staging areas and then to the work site; and
- 3. Haul truck trips to transport construction spoils to landfills.

The trip calculations were derived from information provided in the Conveyance System Data Needs spreadsheets in **Appendix B**. The key information from the spreadsheets is the length of pipeline segments, number of working days, number of workers needed per day, equipment requirements, and number of daily one-way haul truck trips due to material transportation for each construction method for each reach.

1. Light Vehicle Trips for Construction Worker Commute

Construction generates light vehicle trips due to construction workers commuting to and from the site. The workers are assumed to park at the staging/storage areas. The construction workers' commute is broken up into two parts: (1) private auto travel between their home and the parking location and (2) shuttle between parking location and work site.

The number of daily private auto round trips between the workers' homes and the parking lot is a function of the number of workers needed for each construction method. The daily private auto trips are multiplied by the total number of construction days to calculate the total private auto trips throughout the period of construction.

The number of daily shuttle trips between the parking location and the work site is provided in the Conveyance System Data Needs spreadsheets. The shuttle is assumed to seat 15 passengers. The daily shuttle trips are multiplied by the total number of construction days to calculate the total shuttle trips throughout construction.

2. Truck Trips for Construction Equipment and Materials

The Proposed Project would generate truck trips due to construction equipment and materials traveling to and from the staging/storage area and then to and from the work site. It is assumed that the required construction equipment moves between the staging/storage area and the work site each construction day. The Conveyance System Data Needs spreadsheets list the equipment required for each construction method.



The daily average equipment requirement is multiplied by two to calculate the number of one-way trips required. This calculation was performed for all construction methods. The daily number of construction equipment truck trips are multiplied by the total number of construction days to calculate the total construction equipment trips throughout construction.

3. Haul Truck Trips

The Proposed Project would generate haul truck trips due to material transportation to and from the work site. Each haul trip could fall in the following categories:

- Trips to move material between staging/storage area and work site
- Trips to move spoils between work site and staging area/landfill
- Trips to move construction building (pipe bedding, pipe, and paving) material from manufacturer to staging/storage area

The Conveyance System Data Needs spreadsheets document the volume of materials that need to be moved, which is used to estimate the number of vehicle loads required for each construction method. The vehicle load calculations include vehicle loads for backfill, spoils, including a 15 percent increase in volume due to material swelling.

Due to the limited work area at each construction site, it is anticipated that stockpiling of soil at the site would not be feasible in most areas. For purposes of this analysis, most excavated soil would be hauled offsite to a staging/storage area or landfill, and some would be hauled directly from the site to landfill. The spoil portion of the excavated material would be separated and hauled to disposal site(s) and the remaining soil would be hauled back to the construction site to be used to backfill the pipe trench. An estimated 40 percent of the total excavated material would be spoils or deemed unusable that would need to be hauled and disposed of at landfills. Of that 40 percent, it is estimated that 10 percent (hence 4 percent of total excavated material) would be deemed hazardous and require hauling and disposal at a hazardous waste landfill. Daily haul truck trips are multiplied by the total number of construction days to calculate the total haul truck trips throughout construction.

ESTIMATING CONSTRUCTION VMT

Construction VMT estimates are calculated by multiplying the estimated number of generated trips with estimated average trip distance (trip length) for each trip type.

Trip Distance Assumptions

1. Worker Commute from Home to Staging/Storage Area

The worker commute distance is assumed to be the average worker commute in the Southern California region in construction year 2030. This average distance traveled was derived from the SCAG RTP model and documented in SCAG's Connect SoCal 2020-2045 RTP/SCS. The year 2030 average commute trip distance in Los Angeles County is assumed to be 19.7 miles.

2. Parking to Work Site and Staging/Storage Area to Work Site

The exact locations of the parking and staging/storage area for the pipeline construction activities have



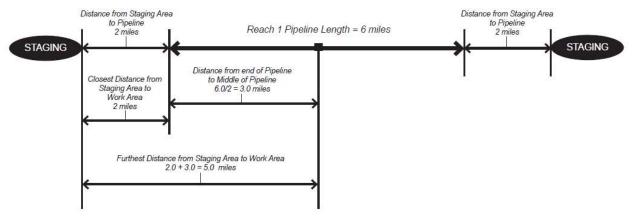
not yet been determined. The Conveyance System Data Needs spreadsheets imply that the parking and staging/storage areas would be the same locations and that each of the eight reaches would have its own set of parking and staging/storage areas. Thus, the trip distance assumptions for this trip category would vary by reach.

A staging/storage area is described in the Conveyance System Data Needs spreadsheets as an area of four acres and within five miles of the work site. Based on a review of aerial imagery of the backbone alignment, it appears that there would likely be several opportunities for locating staging areas within two miles of the work site, so the staging/storage locations were assumed to be two miles away from the end of a pipeline work site.

The distance used to estimate VMT was the average distance from the staging/storage location to the closest and furthest points of the work site. The trip distance assumption varies by reach based on the estimated pipeline length for that particular reach. A pictorial representation of the assumptions for Reach 1 is shown in **Figure 2-2**. The distance used to estimate VMT for Reach 1 is the average of the closest point (2 miles) and the furthest point (5 miles), 3.5 miles.



Figure 2-2: Example of Parking and Staging/Storage Area to Work Site Assumptions for Reach 1



A summary of the estimated distances from parking and staging/storage area to the work site for each reach is shown in **Table 2-2**.

Table	2-2:	Summary	of Par	king	and	Staging/Storage	Area	to	Work	Site
			Trip	Dista	ance	Assumptions				

REACH	TOTAL ESTIMATED PIPELINE SEGMENT LENGTH (MILES)	ONE WAY TRIP DISTANCE (MILES)
1	6.0	3.5
2	7.3	3.8
3	3.1	2.8
4	4.3	3.1
5	5.9	3.5
6	2.5	2.6
7	5.8	3.4
8	5.8	3.4

3. Construction Spoils from Work Site or Staging/Storage Area to Landfill

The contractor would be responsible for identifying an appropriate landfill for disposal of non-hazardous construction spoils; however, for the purposes of these calculations, Scholl Canyon Landfill in the City of Glendale is assumed to be the disposal location. The trip distance assumptions for trips to the landfill vary by reach and are summarized in **Table 2-3**.



Table 2-3: Work Site or Staging/Storage Area to Scholl Canyon LandfillTrip Distance Assumptions

REACH	ONE WAY TRIP DISTANCE (MILES)
1	32
2	32
3	29
4	25
5	26
6	26
7	20
8	20

The contractor would be responsible for identifying an appropriate landfill for disposal of hazardous construction spoils; however, for the purposes of these calculations, Kettleman Hills hazardous waste landfill in Central Valley is assumed to be the disposal location. This landfill is approximately 200 miles from the backbone alignment.

4. Construction Materials to Worksite or Staging/Storage Area from Supplier

The following assumptions were made for the hauling of specialized construction materials to the pipeline construction area:

- Pipe Bedding to Storage Area from Supplier is 30 miles
- Pipe to Storage Area from Supplier is 50 miles
- Paving Materials to Work Site from Supplier is 50 miles
- Pipe to Site from Storage Area is 5 miles

A summary of all trip distance assumptions is shown in Table 2-4:



	-
TRIP CATEGORY	ONE WAY TRIP DISTANCE (MILES)
Worker Commute	19.7
Parking to Work Site	Varies by reach ¹
Staging/Storage Area to Work Site	Varies by reach ¹
Work Site or Staging/Storage Area to Landfill	Varies by reach ²
Storage Site to Hazardous Waste Landfill	200
Pipe Bedding to Storage Site from Supplier	30
Pipe to Storage from Supplier	50
Importing Paving Materials to Site	50
Pipe to Site from Storage	5
Notes:	

Notes:

1. Refer to Table 2-2 for Parking and Staging/Storage Area to Work Site Trip Distance Assumptions.

2. Refer to Table 2-3 for Work Site or Staging/Storage Area to Scholl Canyon Landfill Trip Distance Assumptions.

BACKBONE PIPELINE CONSTRUCTION VMT

Table 2-5 shows the average daily construction-related VMT for the backbone pipeline. **Figure 2-3** illustrates the average daily construction-related VMT for autos and trucks by reach. Detailed calculations for the backbone pipeline are provided in **Appendix D**. Truck traffic represents roughly 69.0 percent of the average daily construction VMT.

Construction durations vary across the eight project reaches, ranging from 300 working days for Reach 8 to 1,280 working days for Reach 4. Consequently, the total VMT follows a different pattern over the construction period than the average daily VMT. **Table 2-6** shows the total backbone pipeline VMT for the entire construction period. **Figure 2-4** shows the total backbone pipeline VMT for the entire construction period and the length of each reach.

As shown in **Figure 2-4**, the total VMT of each reach throughout construction is roughly proportional to the length of the reach's pipeline segment. There is also a correlation between the daily VMT and the assumed construction progress (feet per day), which varies by construction method. More progressive construction leads to more workers, more equipment, and more hauling; therefore, increasing the daily VMT. Certain construction methods that could generate higher daily/total VMT than others have been observed:

• Overall, total VMT throughout reach duration is greater when the reach length is longer, but construction methods could also affect the total VMT throughout reach duration. Reach 2 is approximately 3 times the length of Reach 6, but total VMT for Reach 2 is approximately 4.4 times the total VMT for Reach 6. The main construction method for Reach 2 is Roadways CM, whereas Reach 6 utilizes Traditional Tunneling CM for the entire reach length.



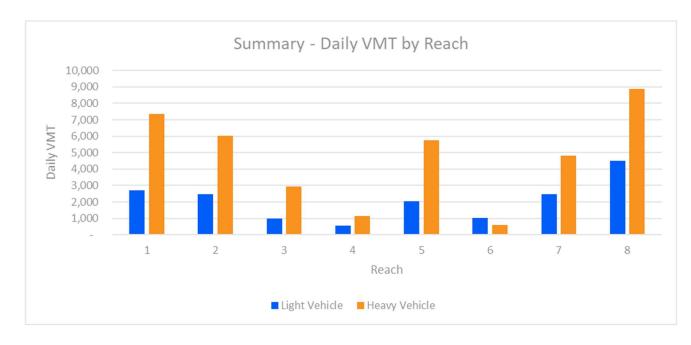
- Light Vehicle VMT: The construction methods with a higher number of workers per day would have a higher light vehicle daily VMT than others. The duration of the construction schedule for each construction method in each reach would also affect the total VMT.
- Heavy Vehicle VMT: Pipe Jacking CM, Microtunneling CM, Shield Tunneling with Ribs and Lagging CM, and Traditional Tunneling CM require fewer haul trucks than Roadways CM, SCE Easement CM, and LACFCD Easement CM. The volume of soil removed using Pipe Jacking CM, Microtunneling CM, Shield Tunneling with Ribs and Lagging CM, and Traditional Tunneling CM is much less than that is required for Roadways CM, SCE Easement CM, and LACFCD Easement CM. In addition, spoils from the three Tunneling CMs would not be needed for backfill and could be sent directly to a landfill, while most spoils from Roadways CM, SCE Easement CM, and LACFCD Easement CM have to travel to the staging area before being re-distributed either back to the construction site as backfill or transported to an appropriate landfill.



									-)	
			SUMMARY	DAILY VMT (AVERAGE DAILY	THROUGHOUT	THE CONSTRU	CTION SCHEDUL	.E)	
			Reach 2	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8	Total Per Day
Construction Worker and Non-Haul	Light Vehicle	2,714	2,463	992	573	2,035	1,027	2,490	4,510	16,805
Truck VMT Per Day	Heavy Vehicle	1,485	1,415	346	193	999	167	937	1,721	7,264
	Total	4,199	3,878	1,338	765	3,034	1,195	3,428	6,231	24,068
Haul Truck Trips VMT Per Day	Light Vehicle	-	-	-	-	-	-	-	-	-
	Heavy Vehicle	5,874	4,593	2,578	932	4,743	419	3,890	7,137	30,165
	Total	5,874	4,593	2,578	932	4,743	419	3,890	7,137	30,165
Total VMT Per Day	Light Vehicle	2,714	2,463	992	573	2,035	1,027	2,490	4,510	16,805
	Heavy Vehicle	7,359	6,008	2,923	1,125	5,742	586	4,827	8,859	37,428
	Total	10,073	8,471	3,916	1,698	7,777	1,613	7,317	13,368	54,233

Table 2-5: Daily VMT for Backbone Pipeline Construction

Figure 2-3: Daily VMT by Reach



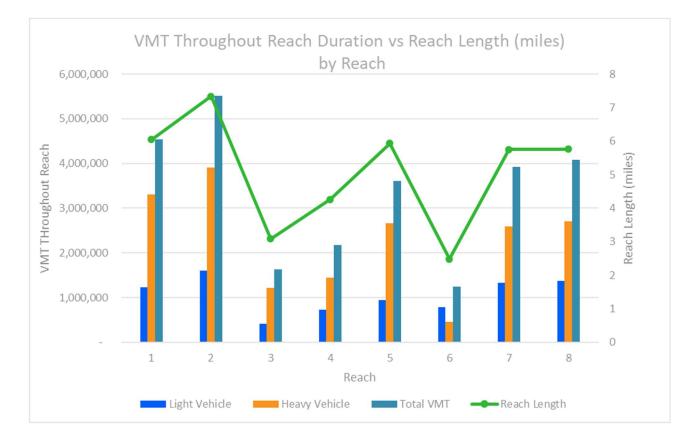
PURE WATER SOUTHERN CALIFORNIA FEBRUARY 2025 TRAFFIC ANALYSIS REPORT | DRAFT



	SUMMARY TOTAL VMT (THROUGHOUT THE CONSTRUCTION SCHEDULE)									
		Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8	Total Throughout Construction Schedule
Construction Worker and Non-Haul	Light Vehicle	1,221,442	1,601,082	411,868	732,956	942,628	790,085	1,335,661	1,370,389	8,406,110
Truck VMT Throughout Reach Duration	Heavy Vehicle	668,230	919,873	143,482	246,555	457,494	128,775	501,980	519,214	3,585,604
	Total	1,889,672	2,520,955	555,350	979,511	1,400,122	918,861	1,837,641	1,889,603	11,991,714
Haul Truck Trips VMT Throughout	Light Vehicle	-	-	-	-	-	-	-	-	-
Reach Duration	Heavy Vehicle	2,643,334	2,985,169	1,069,670	1,193,417	2,207,406	321,869	2,090,830	2,188,705	14,700,402
	Total	2,643,334	2,985,169	1,069,670	1,193,417	2,207,406	321,869	2,090,830	2,188,705	14,700,402
Total VMT Throughout	Light Vehicle	1,221,442	1,601,082	411,868	732,956	942,628	790,085	1,335,661	1,370,389	8,406,110
Reach Duration	Heavy Vehicle	3,311,564	3,905,043	1,213,153	1,439,972	2,664,900	450,645	2,592,810	2,707,919	18,286,006
	Total	4,533,006	5,506,124	1,625,020	2,172,928	3,607,528	1,240,730	3,928,471	4,078,308	26,692,116

Table 2-6: Total VMT for Backbone Pipeline Construction

Figure 2-4: Total VMT throughout Reach Duration



PURE WATER SOUTHERN CALIFORNIA FEBRUARY 2025 TRAFFIC ANALYSIS REPORT DRAFT



PUMP STATION CONSTRUCTION VMT

Construction VMT for the WNPS and the SFSGPS was calculated based on inputs provided in the pump station data needs matrix in **Appendix E**. The detailed ADT and VMT calculations are provided in **Appendix F**. The two pump stations combined generate around 4.3 million total VMT throughout the construction schedule as shown in **Table 2-7**.

Table 2-7: ADT and VMT for Backbone Conveyance System Pump StationConstruction

AD	T (Throughout the	Construction S	chedule)	
		WNPS	SFSGPS	Total
Construction Worker	Light Vehicle	80,600	80,600	161,200
and Non-Haul Truck	Heavy Vehicle	74	74	148
ADT	Total	80,674	80,674	161,348
	Light Vehicle	-	-	-
Haul Truck Trips ADT	Heavy Vehicle	16,518	16,228	32,746
	Total	16,518	16,228	32,746
	Light Vehicle	80,600	80,600	161,200
Total ADT	Heavy Vehicle	16,592	16,302	32,894
	Total	97,192	96,902	194,094

VI	/IT (Throughout the	Construction So	chedule)	
		WNPS	SFSGPS	Total
Construction Worker	Light Vehicle	1,584,511	1,584,511	3,169,022
and Non-Haul Truck	Heavy Vehicle	2,220	2,220	4,440
VMT	Total	1,586,731	1,586,731	3,173,462
	Light Vehicle	-	-	-
Haul Truck Trips VMT	Heavy Vehicle	576,268	569,410	1,145,678
	Total	576,268	569,410	1,145,678
	Light Vehicle	1,584,511	1,584,511	3,169,022
Total VMT	Heavy Vehicle	578,488	571,630	1,150,118
	Total	2,162,999	2,156,141	4,319,140

BACKBONE CONVEYANCE SYSTEM CONSTRUCTION VMT

Table 2-8 shows the average daily construction-related VMT for the backbone conveyance system and **Table 2-9** shows the total backbone conveyance system VMT for the entire construction period. Backbone conveyance system construction VMT includes construction-related VMT for the backbone pipeline, WNPS, and SFSGPS. The total construction VMT for the backbone conveyance system for the entire construction period is 31.0 million vehicle miles (62.7 percent truck traffic and 37.3 percent auto traffic) or 61,200 vehicle miles per day. For context, the daily VMT in the SCAG region is approximately 490 million miles per day and the daily VMT within a 1-mile buffer of the backbone alignment (without project) is approximately 18.9 million vehicle miles per day. Therefore, the daily construction VMT for the backbone conveyance system represents only 0.01 percent of daily VMT in the SCAG region, and 0.3 percent of the daily VMT within a 1-mile buffer of the backbone alignment (without project). As such,



the construction's contribution to overall VMT represents a small effect over the construction period. **Table 2-10** shows the backbone conveyance system construction VMT comparison.



				SUMMARY D	OAILY VMT (AVE	RAGE DAILY THI	ROUGHOUT THE	CONSTRUCTIO	N SCHEDULE)			
		Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8	WNPS	SFSGPS	Total Per Day
Light	nt Vehicle	2,714	2,463	992	573	2,035	1,027	2,490	4,510	2,556	2,556	21,917
Heav	vy Vehicle	1,485	1,415	346	193	999	167	937	1,721	4	4	7,272
Light	nt Vehicle	-	-	-	-	-	-	-	-	-	-	-
Heav	vy Vehicle	5,874	4,593	2,578	932	4,743	419	3,890	7,137	929	918	32,012
Light	nt Vehicle	2,714	2,463	992	573	2,035	1,027	2,490	4,510	2,556	2,556	21,917
Heav	vy Vehicle	7,359	6,008	2,923	1,125	5,742	586	4,827	8,859	933	922	39,283

Table 2-8: Daily VMT for Backbone Conveyance System Construction

Table 2-9: Total VMT for Backbone Conveyance System Construction

		SUMMARY TOTAL VMT (THROUGHOUT THE CONSTRUCTION SCHEDULE)										
		Reach 1	Reach 2	SUMM Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8	WNPS	SFSGPS	Total Throughout Construction Schedule
Construction Worker and Non-Haul	Light Vehicle	1,221,442	1,601,082	411,868	732,956	942,628	790,085	1,335,661	1,370,389	1,584,511	1,584,511	11,575,132
Truck VMT Throughout Reach Duration	Heavy Vehicle	668,230	919,873	143,482	246,555	457,494	128,775	501,980	519,214	2,220	2,220	3,590,044
	Total	1,889,672	2,520,955	555,350	979,511	1,400,122	918,861	1,837,641	1,889,603	1,586,731	1,586,731	15,165,176
Haul Truck Trips VMT Throughout	Light Vehicle	-	-	-	-	-	-	-	-	-	-	-
Reach Duration	Heavy Vehicle	2,643,334	2,985,169	1,069,670	1,193,417	2,207,406	321,869	2,090,830	2,188,705	576,268	569,410	15,846,080
	Total	2,643,334	2,985,169	1,069,670	1,193,417	2,207,406	321,869	2,090,830	2,188,705	576,268	569,410	15,846,080
Total VMT Throughout	Light Vehicle	1,221,442	1,601,082	411,868	732,956	942,628	790,085	1,335,661	1,370,389	1,584,511	1,584,511	11,575,132
Reach Duration	Heavy Vehicle	3,311,564	3,905,043	1,213,153	1,439,972	2,664,900	450,645	2,592,810	2,707,919	578,488	571,630	19,436,124
	Total	4,533,006	5,506,124	1,625,020	2,172,928	3,607,528	1,240,730	3,928,471	4,078,308	2,162,999	2,156,141	31,011,256

PURE WATER SOUTHERN CALIFORNIA | FEBRUARY 2025 TRAFFIC ANALYSIS REPORT | DRAFT

Iteris, Inc. | 25



Table 2-10: Backbone Conveyance System Construction VMT Comparison

Category	VMT	% of Daily VMT
SCAG Region Daily VMT [A]	489,645,973	0.01% [C]/[A]
Daily VMT within 1 mile buffer of Backbone Conveyance System [B]	18,879,234	0.32% [C]/[B]
Average Daily Construction VMT [C]	61,200	-

ESTIMATING REASSIGNED VMT

In addition to construction traffic, the other main effect of backbone pipeline construction is potential traffic diversion caused by road closures and lane reductions on the arterial roadways where Roadways CM is used. The SCAG RTP model was used to determine the change in VMT due to traffic diversion. This regional model can comprehensively estimate and assess the extent to which traffic could potentially be diverted and "reassigned" to alternative routes in the highway network as a direct result of reduced roadway capacity and reduced speeds during the construction period.

To evaluate a conservative scenario, it is assumed that peak construction occurs in year 2030 when all eight reaches could potentially be under construction simultaneously. However, the following reaches would not substantially impact traffic:

- Reach 6 would not use Roadways CM.
- Reach 4 has some Roadways CM assumed in the Conveyance System data needs assumptions but the GIS-based backbone alignment for this reach does not traverse any arterial highways where construction could potentially result in diverted traffic.
- Reach 8 also has a small amount of Roadways CM on Live Oak Lane in the City of Irwindale which is a minor local access street serving an industrial estate. Construction on this segment would not have any through traffic that could be diverted due to construction.

As a result, there would be a maximum of five reaches that could potentially cause traffic diversion on any one day. The overall approach for the analysis was as follows:

- Identify the busiest roadway segment along the geographic extents of each reach based on a review of volumes in the 2030 SCAG model. The selected segments are shown in **Table 2-11**.
- Code speed and capacity reductions into the SCAG travel demand model's highway network (reduce number of lanes, reduce lane capacity, and reduce speed to 25 miles per hour).
- Reductions are for a minimum of 1,200-foot "rolling work zone" (as noted in Traffic Control Configuration #2 in Appendix B of the Feasibility Level Design Level Report) shown in Appendix
 G. This is the longest of the three arterial traffic control configurations proposed in the preliminary traffic control assessment.
- Assume TCBs (K-rail) are installed at all construction zones so that the construction zone is in place 24 hours/day.



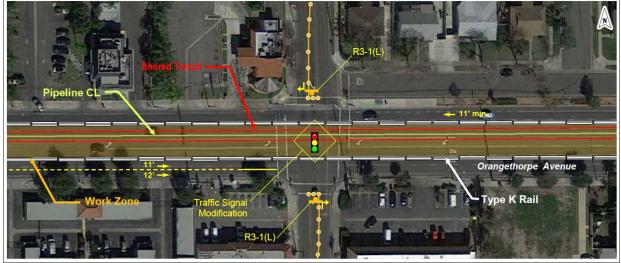
- When trenching goes through an intersection, the through and left turn movements would be restricted according to Traffic Control Configuration #5 shown in **Figure 2-5**.
- Run the 2030 SCAG model with the five reaches represented in the network.
- Calculate daily VMT for roadways within a range of geographic buffer areas of the backbone alignment with and without the work zones. VMT was calculated for light vehicles and light trucks, medium trucks, and heavy trucks separately.

Reach	Length (mile)	Road Name	From Road	To Road	City
1	0.26	E Sepulveda Boulevard	Panama Avenue	Avalon Boulevard	Carson
2	0.26	W Del Amo Boulevard	Pacific Avenue	Long Beach Boulevard	Long Beach
3	0.50	Palo Verde Avenue	Artesia Avenue	133 rd Street	Bellflower
5	0.25	San Gabriel River Parkway	Rose Hills Road	Springland Drive	Industry
7	0.25	Rivergrade Road	Live Oak Avenue	Commerce Drive	Baldwin Park

Table 2-11: Assumed Arterial Work Zones for SCAG Model



Figure 2-5: Traffic Control Configuration #5 – Trenching through an Intersection



Traffic Control Configuration #5 – Half Signalized Intersection Closure (Open Trench Construction)

To be conservative, it was assumed that all five reaches would be trenching through an intersection concurrently. The SCAG highway network was also updated to incorporate cross-street closures and turn restrictions. Any model centroid connectors at an intersection were relocated to mid-block segments to allow for this localized effect. Transit lines running through the intersection were also re-coded to divert their routes around the intersection under construction. For example, in Reach 1, eight transit lines in the model were re-coded to route around the work zone as shown in **Table 2-12**.

B	oute_ID Route_Name	TM_ID	[M_ID08 [TM Name]
	924 MT2461N	5131	5131 METRO LOCAL LINE 246
	994 CA C R	5251	5251 CARSON C
-	995 CA C1R	5252	5252 CARSON C
	1016 CA C2R	5274	5274 CARSON C
-	2302 MT246 N	5067	5067 METRO LOCAL LINE 246
	2330 MT246 S	5151	5151 METRO LOCAL LINE 246
-	2331 MT24615	5152	5152 METRO LOCAL LINE 246
-	3469 MX0031N	5001	5001 MAX 3

Table 2-12: Reach 1 - Transit Routes Recoded in SCAG Model

Table 2-13 shows the VMT results for automobiles as well as light, medium, and heavy trucks with and without the five road closures in a series of buffer areas from the backbone alignment. The buffer areas are: 0 mile (along the backbone alignment itself), 1 mile, 2 miles, 3 miles, 5 miles, 7 miles, 10 miles, 15 miles, 20 miles, 30 miles, and for the entire SCAG region. The buffer areas are shown graphically in **Figure 2-6**.

Table 2-13 shows a reduction in VMT along the backbone alignment itself of 11.8 percent for



automobiles, 7.8 percent for light trucks, and 7.2 percent for medium trucks as traffic diverts to other roads. Heavy trucks divert to other roads with a lower rate of approximately 1.7 percent VMT reduction along the backbone alignment itself. This is consistent with the typical truck behavior in the SCAG model and the heavy truck category is recognized as being less sensitive to time and more sensitive to distance than autos and light trucks.

At the 1-mile buffer, the net amount of automobile VMT reduction along the backbone alignment itself and automobile VMT increase in the remainder of the 1-mile buffer area almost offset each other so there is close to zero net change in automobile VMT. Beyond the 1-mile buffer from backbone alignment, the amount of additional automobile VMT shifting from backbone alignment increases slightly as the ripple effects of the reassignment spread out, with some automobile trips diverting to longer routes to avoid congestion up to a 15-mile buffer area from the backbone alignment. Beyond the 15-mile buffer, the change in automobile VMT due to construction diminishes.

Trucks and autos have different travel characteristics. Trucks are much less likely to divert to the broader buffer areas and the redistributed truck volume is very low. Beyond the 5-mile buffer, truck diversion is minimal and continues to decline further away from the backbone alignment.

Roadways CM, which is the primary construction method that causes traffic to redistribute, represents 20.5 miles (50.2 percent) out of 40.8 miles for the eight reaches, although only five of the eight reaches could potentially cause traffic diversion to occur. In practice, even if all five of these reaches were under construction concurrently, using the Roadways CM, on many days there would be no trenching through a major intersection at all and it is highly unlikely that more than two reaches would be trenching through an intersection at the same time. Therefore, the increase in temporary construction on a typical construction day can be expected to be minimal.

Even in the scenario when all five reaches are trenching through an intersection at the same time, which represents "peak of the peak" conditions, the maximum percentage change in VMT at the 15-mile buffer would be less than 0.41 percent of background traffic. The five concurrent closures would have a compounding effect, meaning that the cumulative effect of five closures is more than five times a single closure. Hence, if only one intersection was being trenched at a time, it would have less than 1/5 of the effect of five closures combined, so the maximum increase in VMT at the 15-mile buffer would be less than 0.08 percent (0.38 percent divided by five) of background traffic.



Difference With Dreject minus No Dreject Year 2030 Daily VMT – SCAG Baseline No Project Medium Mile Light Truck Heavy Auto Truck Total VMT VMT Buffer Truck VMT VMT 5,504,988 28,165,675 448,864,172 489,645,973 SCAG 7,111,139 4,197,895 3,345,365 14,212,369 292,716,396 314,472,026 2,991,839 2,400,841 10,012,679 210,267,654 225,673,012 2,170,287 1,764,762 7,209,657 155,635,186 166,779,892 107,554,157 115,917,837 1,550,904 1,268,725 5,544,051 4,495,889 80,186,634

61,411,043

39,573,824

28,322,593

17,215,118

414,807

Table 2-13: VMT With and Without Road Closures by Buffer Area – SCAG RTP Model

86,820,216

66,812,922

43,191,782

30,971,080

18,879,234

447,995

% Difference With

SCAG 30 20 15 10 7 5 3	Light Truck VMT	Medium Truck VMT	Heavy Truck VMT	Auto VMT	Total
SCAG	293	-171	515	1,233,777	1,234,413
30	-619	-15	-891	975,701	974,176
20 15	-1,460	26	-644	772,208	770,129
15	5 -501		-1,543	630,515	628,034
10	-674	-376	-748	400,370	398,572
30 20 15 10 7 5 3 2 1	-317	-114	652	282,267	282,487
	24	-70	371	209,091	209,416
3	-458	15	1,215	105,996	106,769
2	-585	87	1,292	56,789	57,583
1	-1,104	-140	1,858	9,601	10,215
0	-370	-290	-420	-48,822	-49,902

Medium

Truck

VMT

0.00%

0.00%

0.00%

-0.02%

-0.03%

-0.01%

-0.01%

0.00%

0.02%

-0.06%

-7.24%

Heavy Truck

VMT

0.00%

-0.01%

-0.01%

-0.02%

-0.01%

0.01%

0.01%

0.05%

0.07%

0.16%

-1.72%

-11.

With Project

30

20

15

10

7

5

3

2

1

0

[1]

1,173,625

913,269

601,831

434,066

272,038

4,764

964,068

752,735

492,674

353,507

217,735

4,007

3,735,874

2,523,453

1,860,914

1,174,344

24,417

With Pr	oject					Project vs No	Project
Mile Buffer	Light Truck VMT	Medium Truck VMT	Heavy Truck VMT	Auto VMT	Total	Mile Buffer	Light Truck VMT
SCAG	7,111,432	5,504,816	28,166,189	450,097,949	490,880,387	SCAG	0.00%
30	4,197,276	3,345,350	14,211,478	293,692,098	315,446,202	30	-0.01%
20	2,990,379	2,400,867	10,012,034	211,039,862	226,443,142	20	-0.05%
15	2,169,787	1,764,325	7,208,115	156,265,701	167,407,927	15	-0.02%
10	1,550,230	1,268,348	5,543,304	107,954,527	116,316,408	10	-0.04%
7	1,173,308	963,954	4,496,541	80,468,901	87,102,703	7	-0.03%
5	913,293	752,665	3,736,246	61,620,134	67,022,338	5	0.00%
3	601,374	492,690	2,524,668	39,679,820	43,298,551	3	-0.08%
2	433,482	353,594	1,862,206	28,379,382	31,028,663	2	-0.13%
1	270,933	217,595	1,176,201	17,224,719	18,889,449	1	-0.41%
0	4,394	3,717	23,996	365,985	398,093	0	-7.77%

Light Heavy Trucks – 8,500 lbs. to 14,000 lbs. gross vehicle weight (GVW), Medium Heavy – 14,001 to 33,000 lbs. GVW, Heavy-Heavy >33,000 lbs. GVW

Auto VMT	Total
0.27%	0.25%
0.33%	0.31%
0.37%	0.34%
0.41%	0.38%
0.37%	0.34%
0.35%	0.33%
0.34%	0.31%
0.27%	0.25%
0.20%	0.19%
0.06%	0.05%
-11.77%	-11.14%

Iteris, Inc. | 30



Figure 2-6: Buffer Areas (0, 1, 2, 3, 5, 7, 10, 15, 20, and 30 Miles) from the Backbone Alignment



Joint Treatment Site (includes one pump station)

The assumptions used to calculate construction VMT for the Joint Treatment Site in the City of Carson are provided in **Appendix H**. The methodology was similar to the backbone pipeline construction VMT calculation, although the Joint Treatment Site construction VMT calculation is simpler since staging is assumed to occur onsite. Onsite staging reduces the need to move equipment back and forth between the staging area and the site. Haulage of spoils is assumed to go directly to the same landfill sites as backbone pipeline construction (Scholl Canyon Landfill for general spoils and Kettleman Hills Landfill for hazardous waste). The Joint Treatment Site would be built in two phases, with the first phase over approximately six and a half years and the second phase over approximately four and a half years. The construction schedule for the Joint Treatment Site is provided in **Appendix I**. **Appendix J** shows the actual number of construction days, which excludes weekends, testing, startup, commissioning, and close out. There are 1,410 construction days in Phase 1 and 875 construction days in Phase 2. Construction VMT for the Joint Treatment Site Pump Station was calculated based on inputs provided in the pump station data needs matrix in **Appendix E**.

The total construction VMT throughout the construction period (including Joint Treatment Site Pump Station, Phase 1, and Phase 2) is approximately 9.4 million heavy vehicles VMT and 24.7 million automobile VMT for a total of 34.2 million VMT as shown in **Table 2-14**. Detailed calculations are provided in **Appendix J**. This is roughly 1.1 times the amount of VMT generated by the pipeline



construction. There are two primary reasons for this:

- The full plant build-out is assumed to take approximately 11 years of elapsed time with many more days of construction than a typical pipeline reach, which generally lasts only 3 to 5 years.
- Depending on the construction method, most reaches would typically employ no more than 100 workers per day while construction of the Joint Treatment Site improvements would on average employ around 250 to 300 workers per day for Phase 1, and around 150 to 200 workers per day for Phase 2.

	ADT (Througho	ut the Constru	iction Schedu	e)	
		Joint Treatment Site Pump Station	Phase 1	Phase 2	Total
Construction Worker	Light Vehicle	52,700	895,169	310,625	1,258,494
and Non-Haul	Heavy Vehicle	74	58	22	154
Truck ADT	Total	52,774	895,227	310,647	1,258,648
Haul Truck	Light Vehicle	-	-	-	-
	Heavy Vehicle	12,332	113,688	29,176	155,196
Trips ADT	Total	12,332	113,688	29,176	155,196
	Light Vehicle	52,700	895,169	310,625	1,258,494
Total ADT	Heavy Vehicle	12,406	113,746	29,198	155,350
	Total	65,106	1,008,915	339,823	1,413,844

Table 2-14: ADT and VMT for Joint Treatment Site Construction

Construction Worker	VMT (Througho	out the Constru	uction Schedul	e)	
		Joint Treatment Site Pump Station	Phase 1	Phase 2	Total
Construction Worker	Light Vehicle	1,036,027	17,598,073	6,106,561	24,740,661
and Non-Haul	Heavy Vehicle	2,220	1,740	660	4,620
Truck VMT	Total	1,038,247	17,599,813	6,107,221	24,745,281
Haul Truck	Light Vehicle	-	-	-	-
	Heavy Vehicle	491,396	6,992,052	1,926,904	9,410,352
Trips VMT	Total	491,396	6,992,052	1,926,904	9,410,352
	Light Vehicle	1,036,027	17,598,073	6,106,561	24,740,661
Total VMT	Heavy Vehicle	493,616	6,993,792	1,927,564	9,414,972
	Total	1,529,643	24,591,865	8,034,125	34,155,633



JOINT TREATMENT SITE CONSTRUCTION VMT

Joint Treatment Site construction VMT includes construction-related VMT for the Joint Treatment Site Pump Station, Phase 1, and Phase 2. The total construction VMT for the Joint Treatment Site for the entire construction period is 34.2 million vehicle miles (72.4 percent auto traffic and 27.6 percent truck traffic), or 14,950 vehicle miles per day on average. For context, the daily VMT in the SCAG region is approximately 490 million vehicle miles, and the daily VMT within a 1-mile buffer of the Joint Treatment Site (without project) is approximately 1.0 million vehicle miles per day. Therefore, the daily construction VMT for the Joint Treatment Site represents only 0.003 percent of daily VMT in the SCAG region, and approximately 1.5 percent of the daily VMT within a 1-mile buffer of the Joint Treatment Site (without project). As such, the construction's contribution to overall VMT represents a small effect over the 10-year construction period. **Table 2-15** shows the Joint Treatment Site construction VMT

Table 2-15: Joint Treatment Site Construction VMT Comparison

Category	VMT				
SCAG Region Daily VMT [A]	489,645,973	0.003% [C]/[A]			
Daily VMT within 1 mile buffer of Joint Treatment Site [B]	1,016,517	1.5% [C]/[B]			
Average Daily Construction VMT [C]	14,950	-			

In summary, construction traffic is temporary, and construction-related VMT represents only a small percentage of overall VMT generated in the area. As stated in the beginning of this section, construction VMT does not have a significance threshold and the analysis is included for disclosure purposes only.

2.4.2 Operations

Due to the nature of the backbone conveyance system, it is anticipated that only a limited number of staff would be on duty during normal operation of backbone pipeline and two pump stations. As such, the long-term operation of backbone conveyance system would be a low VMT generator. Meanwhile, operation of AWP Facility and WTC would generate VMT from AWP Facility workers, chemical deliveries, visitors, and WTC trainees. This section summarizes the long-term operation VMT for backbone conveyance system and Joint Treatment Site.

Backbone Conveyance System (includes both the backbone pipeline and two pump stations)

The backbone pipeline would be located underground. Once the backbone conveyance system is built, it is not anticipated to generate vehicular traffic on a daily basis during regular operation. In addition to the Joint Treatment Site Pump Station, there would be two additional pump stations along the backbone alignment. The WNPS would be located in the vicinity of Peck Road between the San Gabriel River, SR-60, and I-605, in either unincorporated Los Angeles County, the City of Industry, or the City of Pico Rivera. The SFSGPS would be located near the Santa Fe Spreading Grounds in one of the following cities: Azusa, Irwindale, Duarte, or Baldwin Park. For conservative modeling purposes, the analysis of



long-term vehicle trips associated with operations/maintenance of the pump stations, WNPS, and SFSGPS along the backbone alignment assumes some onsite staffing. Although these project components are expected to be primarily monitored and operated from a regional operational control center, with occasional patrolling of facilities for visual inspections and security purposes, one full-time staff person at each pump station was assumed in the VMT calculations to be conservative.

The San Gabriel Valley Council of Governments (SGVCOG) is a regional government planning agency that consists of 31 incorporated cities, unincorporated communities in Los Angeles County Supervisorial Districts 1, and 5, and three San Gabriel Valley Municipal Water Districts. Projects generating less than 110 net new daily vehicle trips could be screened out using the SGVCOG screening methodology for small projects. SGVCOG screening methodology applies to WNPS and SFSGPS separately due to their geographic location in different jurisdictions.

WNPS and SFSGPS are anticipated to only have one member of staff per day producing up to four trips per day as noted in **Appendix E**, so could be screened out as a small project in all of the potential jurisdictions. It is anticipated the long term VMT for WNPS and SFSGPS daily operations would be considered as less than significant and could be screened out from a detailed daily operations VMT analysis. Therefore, VMT due to operation of backbone conveyance system would be considered as less than significant.

Joint Treatment Site (includes one pump station)

The main traffic-generating permanent facilities for the Proposed Project would be the AWP Facility and WTC in the City of Carson. The AWP Facility is located on the west side of Main Street between Sepulveda Boulevard and Lomita Boulevard. The WTC is located on the west side of Main Street, north of Sepulveda Boulevard. It is anticipated that the AWP Facility would have approximately 194 employees, 10 visitors, and 30 chemical deliveries as shown in **Appendix K**. Of the 194 employees, 54 would be operations staff, who are anticipated to work half of the week in 12-hour shifts. As a result, only half of the operations staff (27 employees) would be onsite on any given day. Therefore, there would be no more than 167 employees at the AWP Facility on any given day. The WTC is anticipated to have 31 trainees per work day.

Metropolitan is committed to reducing emissions through measures that incentivize more sustainable commutes, as outlined in its Climate Action Plan (CAP) (May 2022). As shown in **Table 2-16**, which is based on Table 5-3 in the CAP, Metropolitan Phase One Emission Reduction Measure Co-Benefit and Reduction Summary to be implemented between 2020 and 2030 includes three measures directly addressing employee commuting applicable to the Proposed Project.



Table 2-16: Metropolitan Phase One Emission Reduction Measure Co-Benefit and Reduction Summary

Phase	#	Measure	Co-Benefits	Cumulative Emissions Reduction 2020–2030
Scope 3	3: Othe	r Indirect Emissions		
Strateg	gy 6 – Ir	ncentivize More Sustainable Commutes		
1	EC-1	Expand subsidized transit commute program to reduce employee commute miles.	Community Health Operational Resilience	Supportive
1	EC-2	Expand employee use of carbon- free and low carbon transportation by providing education programs on the benefits of commute options including public transportation, EV/ZEV options, and vanpools.	Community Health Operational Resilience	Supportive
1	EC-4	Continue to offer benefits to employees who use alternative modes of transportation (e.g., public transportation, bikes).	Community Health Operational Resilience	Supportive

Based on the application of VMT reduction effectiveness from the Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (California Air Pollution Control Officers Association - CAPCOA, 2021), the following assumptions were made for vehicle commute reductions for the Proposed Project:

- CAP Measure EC-1: Public Transportation Subsidy: T-9 Implement Subsidized or Discounted Transit Program (Page 95): 5.5% reduction in commute VMT
- CAP Measure EC-2: Vanpool: T-11 Provide Employer-Sponsored Vanpool (Page 104): 10.0% reduction, which is half of the program potential of 20.4% reduction in commute VMT
- CAP Measure EC-4: Alternative Transportation Benefits: T-5 Implement Commute Trip Reduction Program (Voluntary) (Page 83): 4.0% reduction in commute VMT

CEQA VMT Assessment

The permanent AWP Facility and WTC are located in the City of Carson. The City adopted thresholds of significance for purposes of analyzing transportation impacts under CEQA as shown in **Appendix L**. These thresholds include screening criteria by which a project could be presumed to have a less-than-significant impact. The six screening criteria are: project size, locally serving retail, project located in a low VMT area, transit proximity, affordable housing, and transportation facilities.

The "small project" screening criterion used in the City of Carson, measured by number of daily trips generated, is a net increase of 110 or fewer daily vehicle trips. This criterion is consistent with the OPR Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018).



Using a quantitative assessment of daily vehicle trips generated at the AWP Facility and WTC as shown in **Table 2-17**, the Proposed Project is expected to generate more than 110 new trips per day. After accounting for visitors and deliveries, daily occupancy of the site (less personal time off), Metropolitan's programs for commute reduction, and the resulting level of vehicle usage for commuting, the AWP and WTC are expected to generate 190 round trips per day, including 160 auto round trips (122 staff trips, 10 visitor trips, and 28 WTC trainee trips) and 30 delivery round trips.

Average Daily Trips	Daily Staff/Trips
AWP Facility	
AWP Facility Total Staff ¹	194 Staff
Less 50% of 54 operations Staff (on any given day) ²	(27 Staff)
AWP Facility Daily Staff	167 Staff
Vehicle Occupancy	1.1 Staff/Vehicle
Daily Staff Vehicle Round Trips without CAP Measures	152 Trips
CAP Measure Employee Commute-1: Public Transportation Subsidy (5.5%) ³	(9 Staff)
CAP Measure Employee Commute-2: Vanpool (10%)	(17 Staff)
CAP Measure Employee Commute-4: Alternative Transportation Benefits (4%)	(7 Staff)
Staff Commuting by Auto	134 Staff
Vehicle Occupancy	1.1 Staff/Vehicle
Daily Staff Vehicle Round Trips with CAP Measures	122 Trips
Daily Delivery Round Trips ⁴	30 Trips
Daily Visitor Round Trips	10 Trips
Daily Delivery and Visitor Vehicle Round Trips	40 Trips
Daily AWP Facility Round Trips	162 Trips
WTC	
Daily WTC Trainees	31 Trainees
Vehicle Occupancy	1.1 Trainees/Vehicle
Daily WTC Round Trips	28 Trips
Total	
Daily Vehicle Round Trips	190 Trips
Daily Vehicle One-Way Trips	380 Trips

Table 2-17: Joint Treatment Site Daily Trips

¹ Includes staff for the AWP Facility pump station.

² Half of the 54 operations staff are onsite on any given day.

³ Based on the American Community Survey 2021, US Census Bureau, approximately 5 percent of commuters use transit for commute trips in Los Angeles County. CAP measure reductions are applied to the AWP Facility 167 Daily Staff.

⁴ 30 delivery trucks per day are not included for VMT calculation purposes.

Therefore, the Proposed Project could not be screened out using the "small project" screening criterion. As such, the Proposed Project must be assessed using the City of Carson's VMT methodology, which compares a project's average VMT per employee with the average VMT per employee for the City of Carson and/or the SCAG region as shown in **Appendix L**. The VMT impact of the Proposed Project could be considered as less than significant if the project's average VMT per employee is at least 15 percent below the City's or regional average. For example, if the City's or regional average VMT per employee is 100, the project's average VMT per employee must be 85 or less in order to be considered as less than



significant.

The exisiting year (2018) VMT per employee was calculated for the City of Carson as a whole and for the SCAG model Traffic Analysis Zone (TAZ) 21327000, which is the SCAG model zone containing the AWP facility and WTC. VMT is calculated from the model by summing up the length of all trips either originating within a geographic area or ending in that geographic area. This is then divided by the number of employees within the TAZ to calculate the VMT for TAZ 21327000, which is 22.4 VMT per employee.

The average VMT per employee for the City of Carson was calculated to be 23.1 VMT per employee. CEQA analysis requires a project's VMT to be compared to an average for the surrounding area. The City of Carson's VMT Guidelines (approved in October 2022) considers the baseline VMT as the average VMT for the City of Carson represented by City of Carson as measured by VMT per capita. Therefore, the project's operation VMT per employee is compared against the City of Carson VMT per employee. The average VMT per employee in the TAZ containing the proposed AWP Facility and WTC was calculated to be 22.4 VMT per employee, approximately three percent below the Citywide average.

The SCAG travel demand model accounts for employee vacation time and commuting by public transit, but does not account for employees utilizing walking and bicycle commute options supported through the Metropolitan's emission reductions measures to incentivize more sustainable commutes.

Table 2-18 provides a VMT calculation that takes into account Metropolitan's programs for commute reduction and trip reduction from vehicle occupancy. Based on the number of trips for workers, trainees, and visitors per day, and VMT per employee, per trainee, and per visitor, the AWP Facility and WTC would be expected to generate 3,584 VMT per day. It should be noted that trucks are not included for the purpose of VMT calculations since these are excluded from VMT CEQA requirements under SB 743.

The amount of daily trips from employees would be expected to be 122 auto commute trips (167 worker trips minus CAP Measure reductions and trip reductions due to vehicle occupancy from **Table 2-17** or 45 worker trips). The amount of daily trips from trainees would be expected to be 28 auto commute trips (31 trainee trips minus trip reductions due to vehicle occupancy from **Table 2-17** or 3 trainee trips). Additionally, there are 10 auto trips by visitors daily. The VMT per auto commute trip is 22.4, which is based on the average VMT per employee in the TAZ containing the proposed AWP Facility and WTC. The total auto commute VMT is the product of VMT per auto commute and number of auto commute trips. Hence, 122 worker commute trips, 10 visitor trips, and 28 trainee commute trips would generate 3,584 VMT.

VMT per employee is calculated by adding vehicle miles traveled from all automobile trips then dividing by the total number of employees, regardless of their commute mode. When the 3,584 VMT is divided by the 167 daily onsite workers, 10 visitors, and 31 trainees, the automobile VMT per employee¹ value is 17.23, which is 25.4 percent below the average VMT per employee for the City of Carson. Based on the City of Carson project VMT threshold of at least 15 percent below the applicable baseline VMT rate, the long term VMT for Pure Water operations would have a less-than-significant impact under CEQA

¹ For purposes of this calculation, workers, visitors, and trainees are all characterized as employees.



Guidelines Section 15064.3 with Metropolitan's vehicle commute reduction program and trip reductions from vehicle occupancy.

Table 2-18: Joint Treatment Site Daily VMT per Employee with CommuteReduction Program

Category ¹	AWP Worker	AWP Visitor	WTC Trainee	Total						
Average Auto VMT per 22.4 employee (SCAG Model) 22.4 Before Commute Reduction Program and Vehicle Occupancy Trip Reduction										
Before Commute Reduction Program and Vehicle Occupancy Trip Reduction										
# of Employees	167	10	31	208						
Auto VMT	3,741	224	694	4,659						
After Commute Reduction Program and Vehicle Occupancy Trip Reduction										
# of Auto Trips 122 10 28										
Auto VMT	2,733	224	627	3,584						
Total Auto VMT [A]	·			3,584						
Total # of Employees ² [B]				208						
Average Automobile VMT per Emp	oloyee [A]/[B]			17.23						
City of Carson Average VMT per En	nployee			23.1						
VMT Threshold (15% below City Av	erage)			19.6						
Percent of Average Automobile VN	1T per Employee be	low City Averag	е	25.4%						
Significant Impact Based on City o	f Carson Guideline	s		No						

Note:

1. For VMT calculation purposes, delivery trucks are not included

2. For purposes of this calculation, workers, visitors, and trainees are all characterized as employees

As part of the Joint Treatment Site, staff for the Joint Treatment Site Pump Station is included in the staffing for the Joint Treatment Site as shown in **Table 2-17**. The daily operations VMT of the Joint Treatment Site including Joint Treatment Site Pump Station staff are included in **Table 2-18**.



3 SUMMARY AND CONCLUSIONS

3.1 Summary

3.1.1 Conflict with Program, Plan, Ordinance or Policy

- Potential construction impacts associated with consistency with programs, plans, ordinances, and policies would be below a level of significance through the preparation and implementation of a TCP and/or TMP as required by the AHJ.
- Permanent long-term operation of the Proposed Project facilities would not generate an amount of vehicle traffic that would result in conflict with programs, plans, ordinances, or policies addressing the circulation system; therefore, impacts would be less than significant.

3.1.2 Hazards

- Potential construction impacts associated with design hazards would be below a level of significance through the preparation and implementation of a TCP and/or TMP as required by the AHJ.
- Permanent long-term operation of the Proposed Project facilities would not increase hazards due to geometric design features or incompatible uses; therefore, long-term operation impacts related to traffic hazards would be less than significant.

3.1.3 Emergency Access

- Potential construction impacts associated with emergency access would be below a level of significance through the preparation and implementation of a TCP and/or TMP as required by the AHJ.
- Permanent long-term operation of the Proposed Project facilities would not result in inadequate emergency access since regular daily operation of the Proposed Project would not interfere with potential detours, lane closures, street closures, or intersection closures; therefore, long-term operation impacts related to inadequate emergency access would be less than significant.

3.1.4 VMT

Construction Traffic

- Backbone Conveyance System VMT- Backbone conveyance system construction VMT includes construction-related VMT for the backbone pipeline, WNPS, and SFSGPS. The total construction VMT for the backbone conveyance system for the entire construction period is 31.0 million vehicle miles (62.7 percent truck traffic and 37.3 percent auto traffic), or 61,200 vehicle miles per day. This daily construction VMT for the backbone conveyance system of 61,200 vehicle miles represents only 0.01 percent of daily VMT in the SCAG region, and 0.3 percent of the daily VMT within a 1-mile buffer of the backbone alignment (without project).
 - Backbone Pipeline The pipeline construction is forecasted to generate a relatively small VMT compared to the SCAG region and the amount of VMT within a 1-mile buffer of the pipeline.



- Backbone Pipeline construction redistributed traffic Even in a very conservative scenario with all reaches under construction concurrently and five reaches trenching through intersections using the Roadways CM at the same time, the effects as a percentage of overall traffic would be small. In reality, for the vast majority of backbone construction period, it is expected that the redistribution effects would be much lower than in this conservative scenario.
- Backbone Pump Stations The WNPS and SFSGPS along the backbone conveyance system would generate a total construction VMT of roughly 11 percent of the total construction VMT from the backbone conveyance system.
- Joint Treatment Site Total VMT– Joint Treatment Site construction VMT includes constructionrelated VMT for the Joint Treatment Site Pump Station, Phase 1, and Phase 2. The total construction VMT for the Joint Treatment Site for the entire construction period is 34.2 million vehicle miles (72.4 percent auto traffic and 27.6 percent truck traffic), or 14,950 vehicle miles per day on average. This daily construction VMT for the Joint Treatment Site of 14,950 vehicle miles represents only 0.003 percent of daily VMT in the SCAG region, and 1.5 percent of the daily VMT within a 1-mile buffer of the Joint Treatment Site (without project).
- The addition of Joint Treatment Site construction VMT therefore represents a small effect over the 10-year construction period. Total construction VMT for the Joint Treatment Site spread over 10 years of construction would represent less than seven percent of daily VMT in the SCAG region.
- **Overall Project** Total construction VMT for the entire project would represent less than 14 percent of one day's VMT (less than 4 hours of VMT) in the SCAG region.

Table 3-1 summarizes the construction VMT comparison for backbone conveyance system and JointTreatment Site.



Category	VMT	% of Daily VMT						
Backbone Convey	ance System							
SCAG Region Daily VMT [A]	489,645,973	0.01% [C]/[A]						
Daily VMT within 1 mile buffer of Backbone Conveyance System [B]	18,879,234	0.32% [C]/[B]						
Average Daily Construction VMT [C]	61,200	-						
Joint Treatment Site								
SCAG Region Daily VMT [A]	489,645,973	0.003% [E]/[A]						
Daily VMT within 1 mile buffer of Joint Treatment Site [D]	1,016,517	1.47% [E]/[D]						
Average Daily Construction VMT [E]	14,950	-						
Total								
SCAG Region Daily VMT [A]	489,645,973	0.016% [G]/[A]						
Daily VMT within 1 mile buffer of								
Backbone Conveyance System and Joint Treatment Site [F]	19,895,751	0.38% [G]/[F]						
Average Daily Construction VMT [G]	76,150	-						

Table 3-1: Construction VMT Comparison Summary

Permanent Facilities Operations

- Backbone Conveyance System After construction is completed, the backbone conveyance system is not anticipated to generate substantial vehicular traffic on a daily basis. WNPS and SFSGPS are typically expected to be staffed by a single employee, unless major non-routine maintenance is being performed. It is anticipated that VMT due to long-term operation of the backbone conveyance system would be less than significant.
- Joint Treatment Site VMT for daily operations of the Joint Treatment Site (including AWP Facility, Joint Treatment Site Pump Station, and WTC) could not be screened out under CEQA as a small project using City of Carson's screening criteria. However, by using analysis developed from the SCAG RTP model and applying VMT reduction rates from CAPCOA with corresponding Metropolitan CAP emission reduction measures, it could be concluded that the operational VMT associated with the Joint Treatment Site (including AWP Facility, Joint Treatment Site Pump Station, and WTC) would have a less-than-significant impact using City of Carson criteria.

3.2 Conclusions

Construction: Provided that Metropolitan implements a comprehensive TCP and/or TMP, as required by the AHJ, to effectively manage traffic during construction and coordinate with local jurisdictions, Caltrans, and other relevant stakeholders, then the construction of Pure Water would:

- Not conflict with a program, plan, ordinance, or policy addressing the circulation system;
- > Not increase hazards due to a geometric design feature;



- > Not result in inadequate emergency access; and
- > Not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).

Since there are no available criteria for significance thresholds for temporary construction VMT, this information is provided for informational purposes only and is not required under CEQA.

Therefore, the construction of Pure Water would have a less-than-significant impact on transportation under CEQA.

Permanent Facilities Operations: The daily operation of Pure Water would:

- Not conflict with a program, plan, ordinance, or policy addressing the circulation system;
- > Not increase hazards due to a geometric design feature;
- Not result in inadequate emergency access; and
- Not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).

With implementation of the three VMT-reducing policies outlined in **Table 2-16** (or Table 5-3 of Metropolitan's Climate Action Plan), the VMT impact of Pure Water's permanent facilities would be less than significant.

Therefore, the operation of Pure Water would have a less-than-significant impact on transportation under CEQA.

Table 3-2 summarizes the potential impacts by facility:

	Permanent Fa	cilities Operations	Constructio	on Activities
Potential Impact	Backbone Conveyance System	Joint Treatment Site	Backbone Conveyance System	Joint Treatment Site
1 - Consistency with Programs, Plans, Ordinances, and Policies	Less-than- significant impact	Less-than- significant impact	Less-than- significant impact	Less-than- significant impact
2 - Design Hazards	Less-than- significant impact	Less-than- significant impact	Less-than- significant impact	Less-than- significant impact
3 - Emergency Access	Less-than- significant impact	Less-than- significant impact	Less-than- significant impact	Less-than- significant impact
4 - VMT	Less-than- significant impact	Less-than- significant impact	N/A	N/A

Table 3-2: Potential Impacts by Facility



4 **REFERENCES**

Association of Environmental Professionals (AEP). 2024. 2024 California Environmental Quality Act (CEQA) Statute & Guidelines. Available at:

https://www.califaep.org/docs/2024_CEQA_Statute_and_Guidelines_Handbook.pdf.

California Air Pollution Control Officers Association (CAPCOA). 2021. Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity. Available at:

https://www.caleemod.com/documents/handbook/full_handbook.pdf.

California Department of Transportation (Caltrans). 2024. CA Manual on Uniform Traffic Control Devices. Available at:

https://dot.ca.gov/programs/safety-programs/camutcd.

California Governor's Office of Planning and Research (OPR). 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA:

https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf.

Carson, City of. 2022. City of Carson VMT Baselines and Thresholds of Significance. Available at:

https://ci.carson.ca.us/content/files/pdfs/planning/sr/2022-10-11/ITEM7A/Exb1.pdf.

Metropolitan Water District of Southern California. 2020. Backbone Conveyance System Feasibility Level Design Report. Available at:

https://www.mwdh2o.com/media/16997/final_rrwp_feasibility-level-design-report_volume-1reduced.pdf.

Metropolitan Water District of Southern California. 2022. Climate Action Plan. Available at:

https://www.mwdh2o.com/media/12469/final-cap.pdf.

Public Works Standards, Inc. 2019. Work Area Traffic Control Handbook. Available at:

https://www.watchbook.org/

San Gabriel Valley Council of Governments. 2023. Regional Vehicle Miles Travelled Analysis Tool. Available at:

https://www.sgvcog.org/vmt-analysis-tool.

Southern California Association of Governments. 2011. Trip-Based Model. Available at:

https://scag.ca.gov/trip-based-model.

Southern California Association of Governments. 2020. Connect SoCal 2020. Available at:

https://scag.ca.gov/read-plan-adopted-final-connect-socal-2020.



iteris

1700 Carnegie Avenue, Suite 100 Santa Ana, CA 92705

iteris.com

© 2025 Iteris, Inc. All rights reserved.

Moving smarter, together.



Pure Water Southern California

Traffic Analysis Report – Technical Appendices

Draft | Version 1.9



February 18, 2025 | Prepared by Iteris, Inc.



Project # 11690



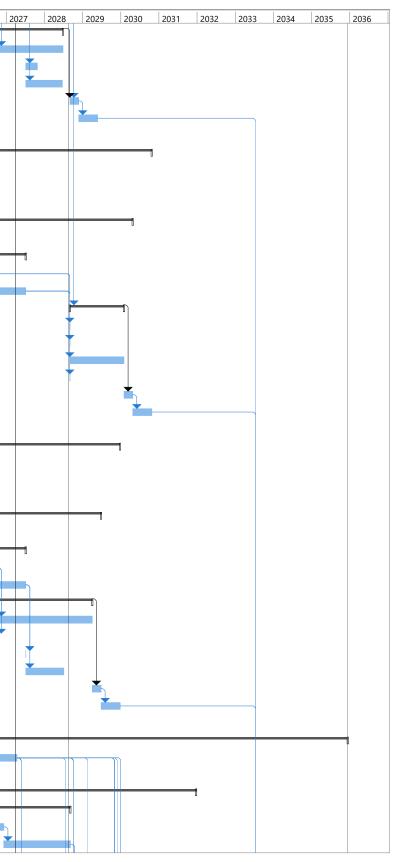
APPENDIX A – PROGRAMMATIC SCHEDULE FOR PIPELINE CONSTRUCTION

PURE WATER SOUTHERN CALIFORNIA - PROGRAMMATIC CONVEYANCE SYSTEM SCHEDULE

				Fri	9/1/23																
ד	ask Name	Duration	Start	Finish	Predecessors	2020	2021	2022	2023 202	24 2025	2026	2027	2028	2029	2030	2031	2032	2033	2034 2	035	203
2	ENVIRONMENTAL PLANNING PHASE	1811 days?	Mon 11/1/21	Mon 10/9/28			0														
3	PEIR Development, Review Process, and Certification	1031 days?	Mon 11/1/21	Tue 10/14/25			0														
ļ	Engineering provides CEQA quantities to Environmental Team (EPS)	140 days?	Mon 11/1/21	Fri 5/13/22																	
5	EPS Prepares NOP & initiates desktop research, surveys, tech studies, etc.	60 days	Mon 5/16/22	Fri 8/5/22	4			–													
	NOP, Scoping Meetings, Public Review Period	90 days	Mon 8/8/22	Fri 12/9/22	5			1													
,	Draft PEIR development	275 days	Mon 12/12/22	Fri 12/29/23	6																
	Final PEIR development	184 days	Mon 1/1/24	Thu 9/12/24	7																
	Program Scope Change: Upsize Backbone Pipeline to 9 Ft for potential future flows	0 days	Wed 8/2/23	Wed 8/2/23					8/2												
	Additional Engineering Evaluations to Confirm Alignment for Upsize to 9 Ft	200 days	Thu 8/3/23	Wed 5/8/24	9					л П											
	Update CEQA Quantities for Upsize to 9 Ft	53 days	Thu 8/3/23	Mon 10/16/23	10SS																
	EPS Revises environmental documentation for Upsize to 9 Ft	520 days	Tue 10/17/23	Mon 10/13/25	11																
	Board Action to Authorize CEQA Certification of Program	0 days	Tue 10/14/25	Tue 10/14/25	12,8						10/	14									
									r												
	Conceptual Design Report	233 days	Mon 1/1/24	Wed 11/20/24																	
	Prepare Initial Draft Conceptual Design Report	93 days	Mon 1/1/24	Wed 5/8/24	10FF					Ų											
	Metropolitan Review	20 days	Thu 5/9/24	Wed 6/5/24	16					₭											
	Prepare Draft Final Conceptual Design Report	80 days	Thu 6/6/24	Wed 9/25/24	17																
	Metropolitan Review	20 days	Thu 9/26/24	Wed 10/23/24	18					K											
	Prepare Final Conceptual Design Report	20 days	Thu 10/24/24	Wed 11/20/24	19						<u></u>										
	Sectionalizing and Large Valve MFE Pre-Procurement			Mon 10/9/28					r				-								
	Request for Qualifications	42 days	Mon 8/7/23	Tue 10/3/23					ь												
	Metropolitan Review and Selection	30 days	Wed 10/4/23	Tue 11/14/23	22																
	Request for Proposals	100 days	Tue 10/14/25	Mon 3/2/26	23,13																
	Metropolitan Review and Selection	100 days	Tue 3/3/26	Mon 7/20/26	24																
	Equipment Fabrication and Delivery	520 days	Tue 10/13/26	Mon 10/9/28	25FS+3 mons,13							+									
	MISCELLANEOUS PROGRAM MILESTONES (METROPOLITAN BOARD ACTIONS/FUNDING/ AGREEMENTS, ETC.)	720 days	Tue 5/30/23	Mon 3/2/26																	
	Receive \$80M State Funding for R1 and R2 Preliminary Design	0 days	Tue 5/30/23	Tue 5/30/23					5/30												
	Receive Additional Funding to proceed with R1 and R2 Final Design	0 days	Wed 5/1/24	Wed 5/1/24					•	_5/1											
	Receive Additional Funding to proceed with Phase 1 Design for all subsequent reaches	0 days	Fri 11/1/24	Fri 11/1/24								\vdash									
											10/	1 1 1									
	Agreement with SGVMWD for use & assessment of Azusa Pipeline	0 days	Tue 10/14/25	Tue 10/14/25	13FF						10/	14									
	Azusa Pipeline Condition Assessment	100 days	Tue 10/14/25	Mon 3/2/26	33							\vdash									
	DESIGN AND CONSTRUCTION PHASE	3272 days	Tue 5/30/23	Wed 12/12/35					r+	┢┼┼┼											
	PHASE 1 - PIPELINE REACHES 1 & 2	1932 days	Tue 5/30/23	Wed 10/23/30					0+						1						
	2028 Olympics - AVOID CONSTRUCTION DURING THIS PERIOD	65 days	Thu 6/1/28	Wed 8/30/28																	
									0	┢┼┼┼				1							
	Preliminary and Final Design, Permitting	544 days	Tue 5/30/23	Fri 6/27/25					r+	╏┼┼╢╌┼╖											
	Preliminary Design and Initial Permitting (11 mos)	265 days	Tue 5/30/23	Mon 6/3/24	29				-												
	Final Design and Permitting (12 mos)	280 days	Mon 6/3/24	Fri 6/27/25	30,41				•	╋╪╤╪╤╪	41										
	Construction	812 days	Tue 10/14/25	Wed 11/22/28	13,32																
	Bid & Award thru NTP (6 mos)	125 days	Tue 10/14/25	Mon 4/6/26	44																
	Mobilize, Submittals, Material Procurement, Site & Portal Prep	325 days	Tue 4/7/26	Mon 7/5/27	48																
	Pipeline Material Procurement (6 mos)	130 days	Tue 4/7/26	Mon 10/5/26																	
	TBM & Trenchless/Tunneling Material Procurement & Site/Portal Prep (15 mos)	325 days	Tue 4/7/26	Mon 7/5/27																	

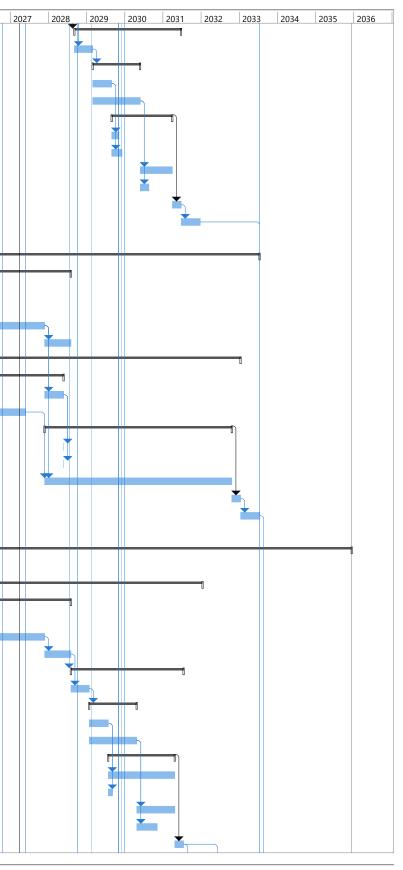
PURE WATER SOUTHERN CALIFORNIA - PROGRAMMATIC CONVEYANCE SYSTEM SCHEDULE

D	Task Name	Duration	Start	Finish	Predecessors	2020	2021	2022	2023	2024	2025	5 21	026	
52	Installation	450 days	Tue 10/6/26	Mon 6/26/28										-
53	Open Trench - City Streets (26,800 LF)	450 days	Tue 10/6/26	Mon 6/26/28	50									í
54	Major Trenchless/Tunneling (1 @ 810 LF)	80 days	Tue 7/6/27	Mon 10/25/27	51									
55	Minor Trenchless (11 @ 2,536 LF total)	250 days	Tue 7/6/27	Mon 6/19/28	51									
56	Commissioning & Final Site Restoration (12 weeks)	60 days	Thu 8/31/28	Wed 11/22/28	52,38									
57	Construction Completion with Construction Contingency (6 mos)	130 days	Thu 11/23/28	Wed 5/23/29	56									
58														
59	REACH 2A - LA RIVER TUNNEL CROSSING	1932 days	Tue 5/30/23	Wed 10/23/30					┏┿┾╸		+++			-
60	Preliminary and Final Design, Permitting	590 days	Tue 5/30/23	Mon 9/1/25					┏┿┝╸		+++	-		
61	Preliminary Design and Initial Permitting (15 mos)	330 days	Tue 5/30/23	Mon 9/2/24	29									
62	Final Design & Permitting (12 mos)	260 days	Tue 9/3/24	Mon 9/1/25	61,30						4			
63	Construction	1182 days	Tue 10/14/25	Wed 4/24/30	13								++	-
64	Bid & Award (6 mos)	125 days	Tue 10/14/25	Mon 4/6/26	62								4	
65	Mobilize, Submittals, Material Procurement, Site & Portal Prep	325 days	Tue 4/7/26	Mon 7/5/27	64							1	* ++	-
66	Pipeline Material Procurement (6 mos)	130 days	Tue 4/7/26	Mon 10/5/26									-	_
67	TBM & Trenchless/Tunneling Material Procurement (15 mos)	325 days	Tue 4/7/26	Mon 7/5/27										
68	Installation	370 days	Thu 8/31/28	Wed 1/30/30	38									
69	Open Trench - Street (nil)	1 day	Thu 8/31/28	Thu 8/31/28	66									
70	Open Trench - Easement (nil)	1 day	Thu 8/31/28	Thu 8/31/28	66									
71	Major Trenchless/Tunneling (2 @ 3,689 LF total)	370 days	Thu 8/31/28	Wed 1/30/30	67									
72	Minor Trenchless (nil)	1 day	Thu 8/31/28	Thu 8/31/28	67									
73	Commissioning & Final Site Restoration (12 weeks)	60 days	Thu 1/31/30	Wed 4/24/30	68									
74	Construction Completion with Construction Contingency (6 mos)	130 days	Thu 4/25/30	Wed 10/23/30	73									
75														
76	REACH 2B - CITIES OF LONG BEACH & LAKEWOOD	1715 days	Tue 5/30/23	Mon 12/24/29					┏┿╼		+		++++	-
77	Preliminary and Final Design, Permitting	590 days	Tue 5/30/23	Mon 9/1/25					┏┿╼			-1		
78	Preliminary Design and Initial Permitting (15 mos)	330 days	Tue 5/30/23	Mon 9/2/24	29				-					
79	Final Design & Permitting (12 mos)	260 days	Tue 9/3/24	Mon 9/1/25	78,30					*	4			
80	Construction	965 days	Tue 10/14/25	Mon 6/25/29	13,32								++++	-
81	Bid & Award (6 mos)	125 days	Tue 10/14/25	Mon 4/6/26	79								h	
82	Mobilize, Submittals, Material Procurement, Site & Portal Prep	325 days	Tue 4/7/26	Mon 7/5/27	81							i	* ++	-
83	Pipeline Material Procurement (6 mos)	130 days	Tue 4/7/26	Mon 10/5/26										
84	TBM & Trenchless/Tunneling Material Procurement (15 mos)	325 days	Tue 4/7/26	Mon 7/5/27										
85	Installation	650 days	Tue 10/6/26	Mon 4/2/29									C C	-
86	Open Trench - Street (32,433 LF)	650 days	Tue 10/6/26	Mon 4/2/29	83									ľ
87	Open Trench - Easement (nil)	1 day	Tue 10/6/26	Tue 10/6/26	83									1
88	Major Trenchless/Tunneling (nil)	1 day	Tue 7/6/27	Tue 7/6/27	84									
89	Minor Trenchless (12 @ 2,611 LF total)	260 days	Tue 7/6/27	Mon 7/3/28	84									
90	Commissioning & Final Site Restoration (12 weeks)	60 days	Tue 4/3/29	Mon 6/25/29	85									
91	Construction Completion with Construction Contingency (6 mos)	130 days	Tue 6/26/29	Mon 12/24/29	90									
92														
93	PHASE 1 - REMAINING BACKBONE REACHES	2885 days	Thu 11/21/24	Wed 12/12/35								┿┿┿	++++	-
94	SUPPLEMENTAL CEQA PROCESS (18 mos)	390 days	Tue 10/14/25	Mon 4/12/27	13									
95														
96	REACH 3 - CITIES OF CERRITOS & BELLFLOWER	1645 days	Tue 9/2/25	Mon 12/22/31								┢┿┿╋	++++	-
	Preliminary and Final Design, Permitting	785 days	Tue 9/2/25	Mon 9/4/28								┢┼┿┿	┿╋┿	_
97	r remininary and r mai besign, r ennitting	705 auys	140 3/ 2/ 23											
97 98	Preliminary Design & Initial Permitting (15 mos)	330 days	Tue 9/2/25		20,31,62,79,44							₩.		Ь



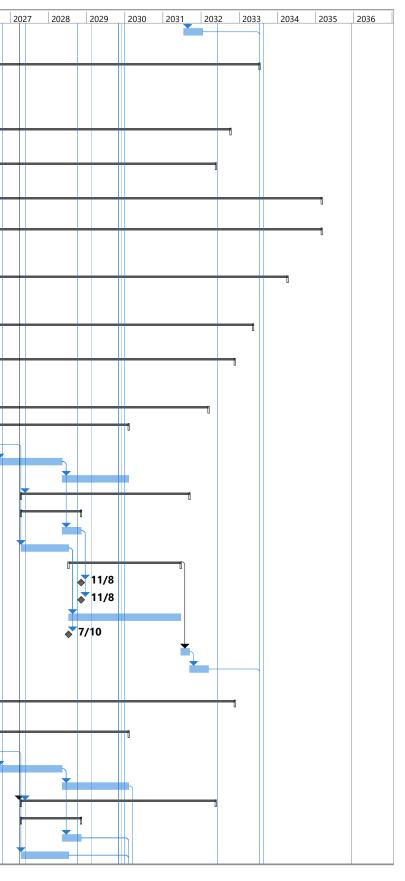
PURE WATER SOUTHERN CALIFORNIA - PROGRAMMATIC CONVEYANCE SYSTEM SCHEDULE

ID Tas	l. Nama	Dur ti	Chant		9/1/23	0055						
100	k Name Construction	Duration 730 days	Start Tue 9/5/28	Finish Mon 6/23/31	Predecessors 13	2020 2	2021 202	22 2023	2024	2025	2026	
101	Bid & Award (6 mos)	125 days	Tue 9/5/28	Mon 2/26/29	99							
102	Mobilize, Submittals, Material Procurement, Site & Portal Prep	325 days	Tue 2/27/29	Mon 5/27/30	101							
103	Pipeline Material Procurement (6 mos)	130 days	Tue 2/27/29	Mon 8/27/29								
104	TBM & Trenchless/Tunneling Material Procurement (15 mos)	325 days	Tue 2/27/29	Mon 5/27/30								
105	Installation	415 days	Tue 8/28/29	Mon 3/31/31								
106	Open Trench - Street (2590 LF)	50 days	Tue 8/28/29	Mon 11/5/29	103							
107	Open Trench - Easement (12075 LF)	70 days	Tue 8/28/29	Mon 12/3/29	103							
108	Major Trenchless/Tunneling (1 @ 2220 LF total)	220 days	Tue 5/28/30	Mon 3/31/31	104							
109	Minor Trenchless (2 @ 626 LF total)	60 days	Tue 5/28/30	Mon 8/19/30	104							
110	Commissioning & Final Site Restoration (12 weeks)	60 days	Tue 4/1/31	Mon 6/23/31	105							
111	Construction Completion with Construction Contingency (6 mos)	130 days	Tue 6/24/31	Mon 12/22/31	110							
112												
113	REACH 4 - SAN GABRIEL RIVER TUNNEL (WITH ALTERNATIVE DELIVERY)	2255 days	Thu 11/21/24	Wed 7/13/33						0	++++++	+
114	Preliminary and Final Design, Permitting	965 days	Thu 11/21/24	Wed 8/2/28	20,31					*	+++-+	-
115	Geotechnical Prep Work (Field Plan, Exploration, Permitting)	130 days	Thu 11/21/24	Wed 5/21/25								
116	Preliminary Design & Initial Permitting (15 mos)	330 days	Thu 11/21/24	Wed 2/25/26								
117	Final Design & Permitting (21 mos)	455 days	Thu 2/26/26	Wed 11/24/27	116							
118	Additional Permitting Contingency - USACE/LACFCD (9 mos)	180 days	Thu 11/25/27	Wed 8/2/28	117							
119	Construction	1795 days	Thu 2/26/26		32,13							-
120	Mobilize, Submittals, Material Procurement, Site & Portal Prep	585 days	Thu 2/26/26	Wed 5/24/28								-
121	Pipeline Material Procurement (6 mos)	130 days	Thu 11/25/27	Wed 5/24/28	117							
122	TBM & Trenchless/Tunneling Material Procurement (15 mos)	325 days	Thu 2/26/26	Wed 5/26/27	116							
123	Installation	1280 days	Thu 11/25/27	Wed 10/20/32								
124	Open Trench - Street (nil)	1 day	Thu 5/25/28	Thu 5/25/28	121							
125	Open Trench - Easement (nil)	1 day	Thu 5/25/28	Thu 5/25/28	121							
126	Major Trenchless/Tunneling (1 @ 25,627 LF total) (assumes 2 headings)	1280 days	Thu 11/25/27	Wed 10/20/32								
127	Commissioning & Final Site Restoration (12 weeks)	60 days	Thu 10/21/32	Wed 1/12/33	123							
128	Construction Completion with Construction Contingency (6 mos)	130 days	Thu 1/13/33	Wed 7/13/33	127							
129		2007 1	=			_						
130 146	REACH 4 - SAN GABRIEL RIVER TUNNEL (WITH DESIGN-BID-BUILD DELIVERY- NOT USED)	2885 days	Thu 11/21/24	wed 12/12/35						đ		
140	REACH 5 - CITY OF PICO RIVERA	1865 days	Thu 11/21/24	Wod 1/1//22								
147	Preliminary and Final Design, Permitting		111u 11/21/24							U		
1/18			Thu 11/21/24	Wad 0/2/20								
148		965 days	Thu 11/21/24	Wed 2/25/26	20.21							
149	Preliminary Design & Initial Permitting (15 mos)	330 days	Thu 11/21/24	Wed 2/25/26	20,31							
149 150	Preliminary Design & Initial Permitting (15 mos) Final Design & Permitting (21 mos)	330 days 455 days	Thu 11/21/24 Thu 2/26/26	Wed 2/25/26 Wed 11/24/27	149							
149 150 151	Preliminary Design & Initial Permitting (15 mos) Final Design & Permitting (21 mos) Additional Permitting Contingency - USACE/LACFCD (9 mos)	330 days 455 days 180 days	Thu 11/21/24 Thu 2/26/26 Thu 11/25/27	Wed 2/25/26 Wed 11/24/27 Wed 8/2/28	149 150							
149 150 151 152	Preliminary Design & Initial Permitting (15 mos) Final Design & Permitting (21 mos) Additional Permitting Contingency - USACE/LACFCD (9 mos) Construction	330 days 455 days 180 days 770 days	Thu 11/21/24 Thu 2/26/26 Thu 11/25/27 Thu 8/3/28	Wed 2/25/26 Wed 11/24/27 Wed 8/2/28 Wed 7/16/31	149 150 94							
149 150 151 152 153	Preliminary Design & Initial Permitting (15 mos) Final Design & Permitting (21 mos) Additional Permitting Contingency - USACE/LACFCD (9 mos) Construction Bid & Award (6 mos)	330 days 455 days 180 days 770 days 125 days	Thu 11/21/24 Thu 2/26/26 Thu 11/25/27 Thu 8/3/28 Thu 8/3/28	Wed 2/25/26 Wed 11/24/27 Wed 8/2/28 Wed 7/16/31 Wed 1/24/29	149 150 94 151							
149 150 151 152 153 154	Preliminary Design & Initial Permitting (15 mos) Final Design & Permitting (21 mos) Additional Permitting Contingency - USACE/LACFCD (9 mos) Construction Bid & Award (6 mos) Mobilize, Submittals, Material Procurement, Site & Portal Prep	330 days 455 days 180 days 770 days 125 days 325 days	Thu 11/21/24 Thu 2/26/26 Thu 11/25/27 Thu 8/3/28 Thu 8/3/28 Thu 1/25/29	Wed 2/25/26 Wed 11/24/27 Wed 8/2/28 Wed 7/16/31 Wed 1/24/29 Wed 4/24/30	149 150 94							
149 150 151 152 153 154 155	Preliminary Design & Initial Permitting (15 mos) Final Design & Permitting (21 mos) Additional Permitting Contingency - USACE/LACFCD (9 mos) Construction Bid & Award (6 mos) Mobilize, Submittals, Material Procurement, Site & Portal Prep Pipeline Material Procurement (6 mos)	330 days 455 days 180 days 770 days 125 days 325 days 130 days	Thu 11/21/24 Thu 2/26/26 Thu 11/25/27 Thu 8/3/28 Thu 8/3/28 Thu 1/25/29 Thu 1/25/29	Wed 2/25/26 Wed 11/24/27 Wed 8/2/28 Wed 7/16/31 Wed 1/24/29 Wed 4/24/30 Wed 7/25/29	149 150 94 151							
149 150 151 152 153 154 155 156	Preliminary Design & Initial Permitting (15 mos) Final Design & Permitting (21 mos) Additional Permitting Contingency - USACE/LACFCD (9 mos) Construction Bid & Award (6 mos) Mobilize, Submittals, Material Procurement, Site & Portal Prep Pipeline Material Procurement (6 mos) TBM & Trenchless/Tunneling Material Procurement (15 mos)	330 days 455 days 180 days 770 days 125 days 325 days 130 days 325 days	Thu 11/21/24 Thu 2/26/26 Thu 11/25/27 Thu 8/3/28 Thu 8/3/28 Thu 1/25/29 Thu 1/25/29 Thu 1/25/29	Wed 2/25/26 Wed 11/24/27 Wed 8/2/28 Wed 7/16/31 Wed 1/24/29 Wed 4/24/30 Wed 7/25/29 Wed 4/24/30	149 150 94 151							
149 150 151 152 153 154 155 156 157	Preliminary Design & Initial Permitting (15 mos) Final Design & Permitting (21 mos) Additional Permitting Contingency - USACE/LACFCD (9 mos) Construction Bid & Award (6 mos) Mobilize, Submittals, Material Procurement, Site & Portal Prep Pipeline Material Procurement (6 mos) TBM & Trenchless/Tunneling Material Procurement (15 mos) Installation	330 days 455 days 180 days 770 days 125 days 325 days 130 days 455 days	Thu 11/21/24 Thu 2/26/26 Thu 11/25/27 Thu 8/3/28 Thu 8/3/28 Thu 1/25/29 Thu 1/25/29 Thu 1/25/29 Thu 1/25/29 Thu 1/25/29 Thu 1/25/29	Wed 2/25/26 Wed 11/24/27 Wed 8/2/28 Wed 7/16/31 Wed 1/24/29 Wed 4/24/30 Wed 4/24/30 Wed 4/23/31	149 150 94 151 153							
149 150 151 152 153 154 155 156 157 158	Preliminary Design & Initial Permitting (15 mos) Final Design & Permitting (21 mos) Additional Permitting Contingency - USACE/LACFCD (9 mos) Construction Bid & Award (6 mos) Mobilize, Submittals, Material Procurement, Site & Portal Prep Pipeline Material Procurement (6 mos) TBM & Trenchless/Tunneling Material Procurement (15 mos) Installation Open Trench - Street (22,731 LF)	330 days 455 days 180 days 770 days 125 days 325 days 130 days 325 days 455 days 430 days 454 days	Thu 11/21/24 Thu 2/26/26 Thu 11/25/27 Thu 8/3/28 Thu 8/3/28 Thu 1/25/29 Thu 1/25/29 Thu 1/25/29 Thu 1/25/29 Thu 7/26/29 Thu 7/26/29	Wed 2/25/26 Wed 11/24/27 Wed 8/2/28 Wed 7/16/31 Wed 1/24/29 Wed 4/24/30 Wed 7/25/29 Wed 4/24/30 Wed 4/23/31 Tue 4/22/31	149 150 94 151 153 155							
149 150 151 152 153 154 155 156 157 158 159	Preliminary Design & Initial Permitting (15 mos) Final Design & Permitting (21 mos) Additional Permitting Contingency - USACE/LACFCD (9 mos) Construction Bid & Award (6 mos) Mobilize, Submittals, Material Procurement, Site & Portal Prep Pipeline Material Procurement (6 mos) TBM & Trenchless/Tunneling Material Procurement (15 mos) Installation Open Trench - Street (22,731 LF) Open Trench - Easement (3,828 LF)	330 days 455 days 180 days 770 days 125 days 325 days 130 days 325 days 455 days 325 days 325 days 325 days 325 days 325 days 325 days 30 days	Thu 11/21/24 Thu 2/26/26 Thu 11/25/27 Thu 8/3/28 Thu 8/3/28 Thu 1/25/29 Thu 7/26/29 Thu 7/26/29	Wed 2/25/26 Wed 11/24/27 Wed 8/2/28 Wed 1/24/29 Wed 1/24/29 Wed 4/24/30 Wed 4/24/30 Wed 4/24/30 Wed 4/23/31 Tue 4/22/31 Wed 9/5/29	149 150 94 151 153 155 155							
149 150 151 152 153 154 155 156 157 158	Preliminary Design & Initial Permitting (15 mos) Final Design & Permitting (21 mos) Additional Permitting Contingency - USACE/LACFCD (9 mos) Construction Bid & Award (6 mos) Mobilize, Submittals, Material Procurement, Site & Portal Prep Pipeline Material Procurement (6 mos) TBM & Trenchless/Tunneling Material Procurement (15 mos) Installation Open Trench - Street (22,731 LF)	330 days 455 days 180 days 770 days 125 days 325 days 130 days 325 days 455 days 430 days 454 days	Thu 11/21/24 Thu 2/26/26 Thu 11/25/27 Thu 8/3/28 Thu 8/3/28 Thu 1/25/29 Thu 1/25/29 Thu 1/25/29 Thu 1/25/29 Thu 7/26/29 Thu 7/26/29	Wed 2/25/26 Wed 11/24/27 Wed 8/2/28 Wed 7/16/31 Wed 1/24/29 Wed 4/24/30 Wed 7/25/29 Wed 4/24/30 Wed 4/23/31 Tue 4/22/31	149 150 94 151 153 155							



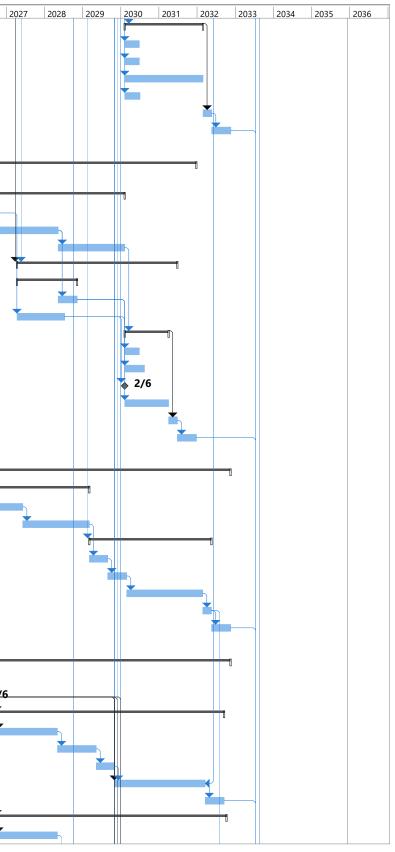
PURE WATER SOUTHERN CALIFORNIA - PROGRAMMATIC CONVEYANCE SYSTEM SCHEDULE

)	Task Name	Duration	Start	Finish	Predecessors	2020 20
63		130 days	Thu 7/17/31	Wed 1/14/32	162	2020 20
64						
165	ALTERNATIVE CITY STREET ALIGNMENT - LAKEWOOD/ROSEMEAD BLVD IN LIEU OF LONG	2255 days	Thu 11/21/24	Wed 7/13/33		
	TUNNEL AT SAN GABRIEL RIVER (NOT USED)					
183						
201		2025		5 - 4 0 / 0 / 0 0		_
02	REACH 6 - CITIES OF WHITTIER & EL MONTE (NOT USED)	2025 days	Mon 1/6/25	Fri 10/8/32		
219 220		102E dave	Man 1/6/25	Er: E /31 /33		
237	REACH 7 - CITIES OF IRWINDALE, DUARTE, AZUSA (NOT USED)	1925 uays	Mon 1/6/25	Fri 5/21/32		
238	REVISED SCHEDULE FOR UPSIZED PIPELINE TO 9FT TO ACCOMMODATE FUTURE FLOWS (NOT USED)	2820 dave	Thu 5/9/24	Wed 2/28/35		
250	REVISED SCHEDOLE FOR OFSIZED FIFELINE TO SET TO ACCOMMODATE FOTORE FLOWS (NOT OSED)	2020 uays	111u 3/ 3/ 24	Weu 2/20/33		
239	REACH 6 - WHITTIER NARROWS LONG TUNNEL (UPSIZED TO 9 FT DIAMETER PIPELINE) (NOT USED)	2648 days	Mon 1/6/25	Wed 2/28/35		
256						
257	REACH 7 - CITIES OF EL MONTE, BALDWIN PARK, IRWINDALE (UPSIZED TO 9 FT DIAMETER PIPELINE)	2415 days	Mon 1/6/25	Fri 4/7/34		
274	(NOT USED)					
74 75	REACH 8 - CITIES OF DUARTE, AZUSA (UPSIZED TO 9 FT DIAMETER PIPELINE) (NOT USED)	2180 days	Mon 1/6/25	Fri 5/13/33		
92	REACH 8 - CITIES OF DOARTE, AZOSA (OFSIZED TO STIT DIAMETER FIFELINE) (NOT OSED)	2100 uays	1011 1/0/25	111 3/ 13/ 33		
293	REVISED SCHEDULE FOR UPSIZED PIPELINE TO 9FT TO ACCOMMODATE FUTURE FLOWS	1965 days	Thu 5/8/25	Wed 11/17/32		
	(ALTERNATIVE DELIVERY OPTION)					
294						
295	REACH 6 - WHITTIER NARROWS LONG TUNNEL (UPSIZED TO 9 FT DIAMETER PIPELINE)	1786 days	Thu 5/8/25	Thu 3/11/32		
296	Preliminary and Final Design, Permitting	1240 days	Thu 5/8/25	Wed 2/6/30		
297	Preliminary Design & Initial Permitting (15 mos)	330 days	Thu 5/8/25	Wed 8/12/26	20FS+120 days,31	
298	Final Design & Permitting (21 mos)	455 days	Thu 8/13/26	Wed 5/10/28	297	
299	Additional Permitting Contingency - USACE/LACFCD (21 mos)	455 days	Thu 5/11/28	Wed 2/6/30	298	
800		1153 days	Tue 4/13/27	Thu 9/11/31	94	
01		412 days	Tue 4/13/27	Wed 11/8/28		
02		130 days	Thu 5/11/28	Wed 11/8/28	298	
803		325 days	Tue 4/13/27	Mon 7/10/28	297	
304		768 days	Mon 7/10/28			
805			Wed 11/8/28			
306		0 days	Wed 11/8/28	Wed 11/8/28	302	
307		768 days	Tue 7/11/28	Thu 6/19/31	303	
308		0 days	Mon 7/10/28	Mon 7/10/28	303	
309		60 days	Fri 6/20/31	Thu 9/11/31	304	
310	Construction Completion with Construction Contingency (6 mos)	130 days	Fri 9/12/31	Thu 3/11/32	309	
311 312	REACH 7 - CITIES OF EL MONTE, BALDWIN PARK, IRWINDALE (UPSIZED TO 9 FT DIAMETER	1965 days	Thu 5/8/25	Wed 11/17/32		
512	PIPELINE - ALT DELIVERY OPTION)	1905 uays	1110 5/ 8/ 25	wed 11/1//32		
313		1240 days	Thu 5/8/25	Wed 2/6/30		
314		330 days	Thu 5/8/25	Wed 8/12/26	20FS+120 days,31	
315	Final Design & Permitting (21 mos)	455 days	Thu 8/13/26	Wed 5/10/28	314	
316	Additional Permitting Contingency - USACE/LACFCD (21 mos)	455 days	Thu 5/11/28	Wed 2/6/30	315	
317	Construction	1332 days	Tue 4/13/27	Wed 5/19/32	94,32	
318	Mobilize, Submittals, Material Procurement, Site & Portal Prep	412 days	Tue 4/13/27	Wed 11/8/28		
319	Pipeline Material Procurement (6 mos)	130 days	Thu 5/11/28	Wed 11/8/28	315	
320	TBM & Trenchless/Tunneling Material Procurement (15 mos)	325 days	Tue 4/13/27	Mon 7/10/28	314	



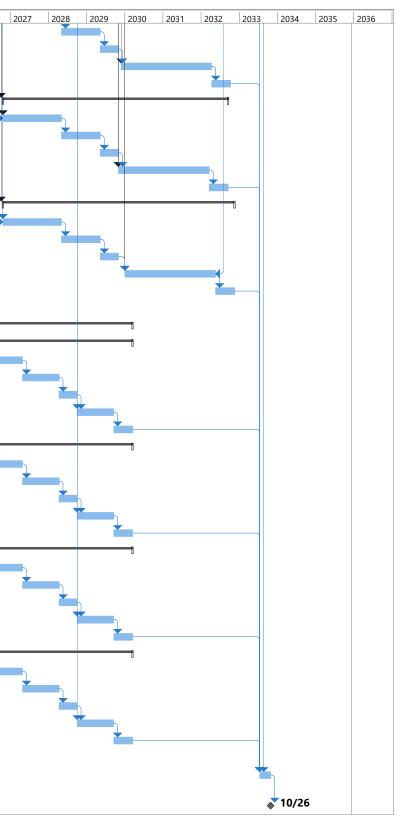
PURE WATER SOUTHERN CALIFORNIA - PROGRAMMATIC CONVEYANCE SYSTEM SCHEDULE

				Fri	9/1/23								
) ⁻ 321	Task Name	Duration	Start	Finish	Predecessors	2020	2021	2022	2023	2024	2025	2026	2
321	Installation	535 days	Thu 2/7/30	Wed 2/25/32	316	-							
323	Open Trench - Street (4,740 LF)	100 days	Thu 2/7/30	Wed 6/26/30 Wed 6/26/30	319								
324	Open Trench - Easement (17,710 LF)	100 days	Thu 2/7/30 Thu 2/7/30	Wed 8/26/30 Wed 2/25/32	319 320								
325	Major Trenchless/Tunneling (6,959 LF total, 2 segments)	535 days	Thu 2/7/30	Tue 7/2/30	320	_							
326	Minor Trenchless (1,044 LF total, 6 segments)	104 days	Thu 2/7/30										
	Commissioning & Final Site Restoration (12 weeks)	60 days		Wed 5/19/32	321	_							
327 328	Construction Completion with Construction Contingency (6 mos)	130 days	Thu 5/20/32	Wed 11/17/32	320	_							
329	REACH 8 - CITIES OF IRWINDALE, DUARTE, AZUSA (UPSIZED TO 9 FT DIAMETER PIPELINE - ALT DELIVERY OPTION)	1730 days	Thu 5/8/25	Wed 12/24/31		-					-		
330	Preliminary and Final Design, Permitting	1240 days	Thu 5/8/25	Wed 2/6/30									—
331	Preliminary Design & Initial Permitting (15 mos)	330 days	Thu 5/8/25	Wed 8/12/26	20FS+120 days,31						+		-
332	Final Design & Permitting (21 mos)	455 days	Thu 8/13/26	Wed 5/10/28	331								<u> </u>
333	Additional Permitting Contingency - USACE/LACFCD (21 mos)	455 days	Thu 5/11/28	Wed 2/6/30	332								
334	Construction	1097 days	Tue 4/13/27	Wed 6/25/31	94,32	-							
335	Mobilize, Submittals, Material Procurement, Site & Portal Prep	412 days	Tue 4/13/27	Wed 11/8/28									
336	Pipeline Material Procurement (6 mos)	130 days	Thu 5/11/28	Wed 11/8/28	332	-							
337	TBM & Trenchless/Tunneling Material Procurement (15 mos)	325 days	Tue 4/13/27	Mon 7/10/28	331	-							
338	Installation	300 days	Wed 2/6/30	Wed 4/2/31	333	-							
339	Open Trench - Street (4,707 LF)	100 days	Thu 2/7/30	Wed 6/26/30	336	-							
340	Open Trench - Easement (24,287 LF)	135 days	Thu 2/7/30	Wed 8/14/30	336	-							
341	Major Trenchless/Tunneling (nil)	0 days	Wed 2/6/30	Wed 2/6/30	337	-							
342	Minor Trenchless (6,029 LF total, 8 segments, assume 2 headings)	300 days	Thu 2/7/30	Wed 4/2/31	337								
343	Commissioning & Final Site Restoration (12 weeks)	60 days	Thu 4/3/31	Wed 6/25/31	338	-							
344	Construction Completion with Construction Contingency (6 mos)	130 days	Thu 6/26/31	Wed 12/24/31	343								
345						-							
346	AZUSA PIPELINE MODIFICATIONS	1750 days	Tue 3/3/26	Mon 11/15/32		-							
347	Preliminary and Final Design, Permitting	785 days	Tue 3/3/26	Mon 3/5/29									
348	Preliminary Design & Initial Permitting (15 mos)	330 days	Tue 3/3/26	Mon 6/7/27	20,31,33,34	-							-
349	Final Design & Permitting (21 mos)	455 days	Tue 6/8/27	Mon 3/5/29	348								
350	Construction	835 days	Tue 3/6/29	Mon 5/17/32	94	-							
351	Bid & Award (6 mos)	125 days	Tue 3/6/29	Mon 8/27/29	349								
352	Mobilize, Submittals, Material Procurement, Site Prep (6 mos)	, 130 days	Tue 8/28/29	Mon 2/25/30	351	-							
353	Construction	, 520 days	Tue 2/26/30	Mon 2/23/32		-							
354	Commissioning & Final Site Restoration (12 weeks)	, 60 days	Tue 2/24/32	Mon 5/17/32	353								
355	Construction Completion with Construction Contingency (6 mos)	, 130 days	Tue 5/18/32	Mon 11/15/32	354	-							
356		,				-							
357	BACKBONE PUMP STATIONS	2223 days	Thu 5/9/24	Mon 11/15/32		-							—
358	Initiate discussions for land acquisition	520 days	Thu 5/9/24	Wed 5/6/26	31FF,13FF+6 mons,10								
359	Land Acquisition Purchase Agreement	0 days	Wed 5/6/26	Wed 5/6/26	358FF								5 / 6
360	Whittier Narrows Pump Station (Reach 5)	1540 days	Thu 10/22/26	Wed 9/15/32	359FS+6 mons								╋—
361	Preliminary Design	400 days	Thu 10/22/26	Wed 5/3/28	20,31								*
362	Final Design	265 days	Thu 5/4/28	Wed 5/9/29	361	-							
363	Bid & Award	, 125 days	Thu 5/10/29	Wed 10/31/29									
364	Construction	620 days	Thu 11/1/29	Wed 3/17/32	363,359,94,162FF	-							
365	Construction Completion with Construction Contingency (6 mos)	130 days	Thu 3/18/32	Wed 9/15/32	364								
366	Santa Fe Spreading Grounds Pump Station - A (Reach 7)	1557 days			359FS+6 mons	-							╋—
367	Preliminary Design	400 days	Thu 10/22/26	Wed 5/3/28	20,31	-							↓



PURE WATER SOUTHERN CALIFORNIA - PROGRAMMATIC CONVEYANCE SYSTEM SCHEDULE

				Fris	9/1/23						
	ask Name	Duration	Start	Finish	Predecessors	2020	2021	2022	2023	2024	2025
68	Final Design	265 days	Thu 5/4/28	Wed 5/9/29	367	_					
59 10	Bid & Award	125 days	Thu 5/10/29		368	_					
70	Construction	620 days		Fri 4/9/32	369,359,94,217FF	_					
71	Construction Completion with Construction Contingency (6 mos)	130 days	Mon 4/12/32	Fri 10/8/32	370	_					
72	San Gabriel Canyon Spreading Grounds Pump Station (Reach 7 / Azusa Pipeline)	1540 days	Thu 10/22/26	Wed 9/15/32	359FS+6 mons	_					
73	Preliminary Design	400 days	Thu 10/22/26	Wed 5/3/28	20,31,348SS	_					
74	Final Design	265 days	Thu 5/4/28	Wed 5/9/29	373	_					
75	Bid & Award	125 days	Thu 5/10/29	Wed 10/31/29	374	_					
76	Construction	620 days	Thu 11/1/29	Wed 3/17/32	375,359,94,235FF	_					
77	Construction Completion with Construction Contingency (6 mos)	130 days	Thu 3/18/32		376						
78	Big Dalton Pump Station (Azusa Pipeline)	1583 days	Thu 10/22/26	Mon 11/15/32	359FS+6 mons						
79	Preliminary Design	400 days	Thu 10/22/26	Wed 5/3/28	20,31,33,34,348SS						
30	Final Design	265 days	Thu 5/4/28	Wed 5/9/29	379						
31	Bid & Award	125 days	Thu 5/10/29	Wed 10/31/29	380						
82	Construction	620 days	Tue 1/1/30	Mon 5/17/32	381,359,354FF,94						
33	Construction Completion with Construction Contingency (6 mos)	130 days	Tue 5/18/32	Mon 11/15/32	382						
34											
35	RECHARGE/DELIVERY FACILITIES	1154 days	Tue 10/14/25	Fri 3/15/30							
86	San Gabriel Coastal Spreading Grounds/Rio Hondo (Reaches 4 &5)	1154 days	Tue 10/14/25	Fri 3/15/30							
57	Preliminary Design	400 days	Tue 10/14/25	Mon 4/26/27	20,31,32						
8	Final Design	250 days	Tue 4/27/27	Mon 4/10/28	387						
9	Bid& Award	124 days	Tue 4/11/28	Fri 9/29/28	388						
0	Construction	250 days	Mon 10/2/28	Fri 9/14/29	389,94						
)1	Construction Completion with Construction Contingency (6 mos)	130 days	Mon 9/17/29	Fri 3/15/30	390						
92	Santa Fe Spreading Grounds (Reach 7)	1154 days	Tue 10/14/25	Fri 3/15/30							
93	Preliminary Design	400 days	Tue 10/14/25	Mon 4/26/27	20,31,32						
94	Final Design	250 days	Tue 4/27/27	Mon 4/10/28	393						
95	Bid& Award	124 days	Tue 4/11/28	Fri 9/29/28	394						
96	Construction	250 days	Mon 10/2/28	Fri 9/14/29	395,94						
97	Construction Completion with Construction Contingency (6 mos)	130 days	Mon 9/17/29	Fri 3/15/30	396						
98	United Rock Pit Conversion to Recharge Basin (Reach 7)	1154 days	Tue 10/14/25	Fri 3/15/30							
99	Preliminary Design	400 days	Tue 10/14/25	Mon 4/26/27	20,31,32						
00	Final Design	250 days	Tue 4/27/27	Mon 4/10/28	399						
)1	Bid& Award	124 days	Tue 4/11/28	Fri 9/29/28	400						
02	Construction	250 days	Mon 10/2/28	Fri 9/14/29	401,94						
03	Construction Completion with Construction Contingency (6 mos)	130 days	Mon 9/17/29	Fri 3/15/30	402						
04	San Gabriel Canyon Spreading Grounds (Reach 7)	1154 days	Tue 10/14/25	Fri 3/15/30							
)5	Preliminary Design	400 days	Tue 10/14/25	Mon 4/26/27	20,31,32						
)6	Final Design	250 days	Tue 4/27/27	Mon 4/10/28	405						
)7	Bid& Award	124 days	Tue 4/11/28	Fri 9/29/28	406						
08	Construction	, 250 days	Mon 10/2/28	Fri 9/14/29	407,94						
09	Construction Completion with Construction Contingency (6 mos)	130 days	Mon 9/17/29	Fri 3/15/30	408	1					
10						-					
11	OVERALL SYSTEM START-UP AND COMMISSIONING (3 MOS) - Upsized to 9 ft for future flows	75 days	Thu 7/14/33	Wed 10/26/33	57,74,91,111,128,163,3	15					
			, ,	.,,	, ,						





APPENDIX B – CONVEYANCE SYSTEM DATA NEEDS

Reach 1, Preferred Alignment CEQA Responses, MWD RRWP (7 feet Diameter Pipeline)					
Reach 1, Preferred Alignment CEQA Responses, MWD RRWP (7 feet Diameter Pipeline) CM-1 Roadways construction government and the second s		CM-4A Pipe Jacking		CM-48 Microtunneling	
		SHEET PILING AUGER		DISCHARGE PUMP T	
		JACKING PIT			
				THRUST BLOCK LAUNCHING PIT CUTTING HEAD RECEIVING PIT JACKING PIPE	
APC DWG LAC - APC CL BARTA PARA CE APC OR NOT BARTAN PARA CE APC OR NOT BARANTAGE		CONSTRUCTION METHOD 4A - JACK & BORE			
NOTE: • Instruction of the second se				CONSTRUCTION METHOD 4B - MICRO-TUNNELING (SLURRY FACE TBM W/ PIPE JACKING) NTS	
Pipe Segments of This Construction Type Pipe Segment No. Pipe Nos. (pd) Segment Nos. Pipe Nos. (pd) Segment Nos. (pd) Segment Nos. Pipe Nos. (pd) Segment Nos. (pd) S	Length (ft)	Pipe Segments of This Construction Type Plan Nos. (pdf) Segment No	Length (ft)	Pipe Segments of This Construction Type Plan Nos. (pdf) Segment No.	Length (ft)
Plan Nos. (pdf) Segment No. 1 1 1 3	520 3,194	Plan Nos. (pdf)	162 111	Plan Nos. (pdf) Segment No. 3,4 10 4 12 4 14	Length (ft) 123 492 54
1.2 5 2 7 2.3 9 11	2,454 571 4,963	2 6 2 8 5,6 18 6,6 20	810 265 324		
3,4 11 4 13 4 15	725 156 2,166	6 20 6 20 8 22 Total	324 306 68 2,045	_	
5,6 17 6 19 6,7,8 21	2,885 2,520 7,168	14 shafis	<u> </u>	8 shafts	
6,7,8 21 8 23 Total	7,168 1,251 28,574				
		Estimated Number of Construction Workers Per Dav		Estimated Number of Construction Workers Per Day	
atimated Number of Construction Workers Per Day <u>jedine Construction</u> softwork Schedule (working days) softwork Schedule (working days)	450	Construction Schedule (working days)	450	Construction Schedule (working days)	450
Daily Crew Production (FT per day) Estimated Number of Pipeline Crews Per Day Wumber of Pipeline Crews	450 30 2.12 3	Feet of Tunnel Construction needed per day Estimated Number of Tunnel Crews Per Day (based on 10 feet per day per crew)	4.54 0.45	Feet of Tunnel Construction needed per day Estimated Number of Tunnel Crews Per Day (based on 20 feet per day per crew)	2.90 0.14
Pipeline Construction Crews Workers per crew Boring Crews	3 1 7 0.2	Estimated Number of Pipeline Crews Per Day (based on 40 feet per day per crews) Estimated Number of Shaft Crews Per Day	0.11	Estimated Number of Pipeline Crews Per Day (based on 40 feet per day per crew) Estimated Number of Shaft Crews Per Day	0.07
Shoring Crews Workers per Crew Saw Cut Crew Workers per crew	0.2 3 0.05 3	(based on 90 days per shaft) Estimated Number of Paving Crews Per Day	2.8 0.10 7	(based on 90 days per shaft) Estimated Number of Paving Crews Per Day	0.10
Markers per crew Demolition Crew Workers per crew	3 0.05 3	Workers per Tunnel Crew Workers per Pipeline Crew Workers per Shaft Crew	7 16 8 2	Workers per Tunnel Crew Workers per Shaft Crew Workers per Shaft Crew	15 16 8
wing Crew orkers per crew illing Relocation Crew	3 0.2 5 0.1	Workers per Paving crew Total Workers per Day (Average Throughout Construction Schedule)	8 3 27.70	Workers per Paving crew Total Workers per Day (Average Throughout Construction Schedule)	8 3 16.43
tility Relocation Crew Jorkers per crew Rific Control	0.1 6 0.15	Note: The installation of Fiber Optic cabling is estimated to be within these provided production rates.		Note: The installation of Fiber Optic cabling is estimated to be within these provided production rates.	
na Size Ital Workers per Day (Average Throughout Pipeline Construction) Ital Workers per Day (Average Throughout Construction Schedule)	4 30.30 21.38	-			
ber Optic Duct Bank	21.38				
nstruction Schedule (working days) ally Crew Production (FT per day) timated Number of Combined Fiber Optic Crews Per Day umber of Combined Fiber Optic (Frees	450 200 0.32]			
umber of Combined Fiber Optic Crews enching, Backfill, Conduit, Formwork Crew Orkers per crew	1 1 4	-			
oncrete Crew Vorkers per Crew	4 0.75 4 0.2	_			
lectrician Crew Norkers per crew Aving Crew	0.2 4 0.1 5	_			
Workers per crew Total Workers per Day (Average Throughout Fiber Optic Construction) Total Workers per Day (Average Throughout Construction Schedule)	5 8.30 2.64	-			
Estimated Number of One-Way Construction Worker Vehicle Trips Per Day Pipeline Construction		Estimated Number of One-Way Construction Worker Vehicle Trips Per Day		Estimated Number of One-Way Construction Worker Vehicle Trips Per Day	
Total Workers per Day (Average Throughout Construction Schedule) One-Way Trips per Day (50 miles)	21.38 42.76 2	Total Workers per Day (Average Throughout Construction Schedule) One-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Site (One way - 5 miles)*	27.70 55.40 2	Total Workers per Day (Average Throughout Construction Schedule) One-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Site (One way - 5 miles)*	16.43 32.86 4
Shuttle to Move Workers from Park to Site (One way - 5 miles) Total One Way Trips per Day of Worker Wehlice (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle	2 44.8	Shuttle to Move Workers from Park to Site (One way - 5 miles)* Total One Way Triops ero Bay of Worker Care, Alexange Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle.	2 57.4	Shuttle to Move Workers from Park to Site (One way - 5 miles)* Total One Way Trips per Day of Worker Care (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle.	
Fiber Optic Ductbank Total Workers per Day (Average Throughout Construction Schedule)	2.64				
One-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Site (One way - 5 miles) Total One Way Trips per Day of Worker Vehicles (Average Throughout Construction Schedule)	5.27 2 7.3				
 Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle Pipeline Construction 					
Pipeline Construction Total Workers per Day (Maximum During Construction Schedule) One-Way Trips per Day (So miles) Shuttle to Move Workers from Prark to Site (One way - 5 miles)*	78.00 156.00 8	Total Workers per Day (Maximum During Construction Schedule) One-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Site (One way - 5 miles)*	47.00 94.00 2	Total Workers per Day (Maximum Throughout Construction Schedule) One-Way Trips per Day (S0 miles) Shuttle to Move Workers Form Park to Site (One way - 5 miles)*	50.00 100.00 6
Total One Way Trips per Day of Worker Cars (Maximum During Construction Schedule) * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle	8 164.0	Total One Way Trips per Day of Worker Cars (Maximum During Construction Schedule) * Assumes maximum of 15 workers per shuttle.	2 96.0	Total One Way Trips per Day of Worker Cars (Maximum Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle.	6 106.0
Note: Hauling Vehicles included in Items below. Fiber Optic Duct Bank		Note: Hauling Vehicles included in Rems below.		Note: Hauling Vehicles included in Rems below.	
Total Workers per Day (Maximum During Construction Schedule) One-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Site (One way - 5 miles)*	17.00 34.00 2				
Total One Way Trips per Day of Worker Cars (Maximum During Construction Schedule) * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle	2 36.0				
Note: Hauling Vehicles included in Items below. Construction Worker Vehicle Parking Location(s)		Construction Worker Vehicle Parking Location(s)		Construction Worker Vehicle Parking Location(s)	
Pipeline Construction Total Workers per Day (Average Throughout Construction Schedule) Assume 30% Staff can park Nearby the Construction Location	21.38	Total Workers per Day (Average Throughout Construction Schedule) Assume 30% of Staff can park Nearby the Construction Location	27.70	Total Workers per Day (Average Throughout Construction Schedule) Assume 30% of Staff can park Nearby the Construction Location	16.43
Remaining 70% Need an Establ. Parking Loc'ns Total Workers per Day (Maximum During Construction Schedule)	15.0 78.00	Remaining 70% Need an Establ. Parking Loc'ns Total Workers per Day (Maximum During Construction Schedule)	19.4 47.00	Remaining 70% Need an Establ. Parking Loc'ns Total Workers per Day (Maximum During Construction Schedule)	11.5 50.00
Total Workers per Day (Maximum During Construction Schedule) Assume 30% of Staff can park Nearly the Construction Location Remaining 70% Need an Establ. Parking Loc'ns	78.00 54.6	Total Workers per Day (Maximum During Construction Schedule) Assume 3906 / Staff can park Nearby the Construction Location Remaining 70% Need an Establ. Parking Loc'ns	47.00 32.9	Total Workers per Day (Maximum During Construction Schedule) Assume 30% of Staff can park Nearby the Construction Location Remaining 70% Need an Establ. Parking Loc'ns	50.00 35.0
Fiber Optic Duct Bank Total Workers per Day (Average Throughout Construction Schedule)	2.64	Keening		······································	
Total Workers per Day (Werage Throughout Construction Schedule) Assume 30% of Staff can park Nearly the Construction Location Remaining 70% Need an Establ. Parking Loc'ns	2.64 1.8				
Total Workers per Day (Maximum During Construction Schedule) Assume 30% of Staff can park Nearby the Construction Location Remaining 70% Need an Estable Arokine Loc'ns	17.00				
Remaining 70% Need an Establ. Parking Loc'ns Will There be Weekend or Nightime Construction? Will we Likely Comply with Noise Ordinance or Will We Request Variance? No nonstruction work is obsamed for weekends: There may be nightitime work dictated by narricular needs along It	11.9	Will There be Weekend or Nighttime Construction? Will we Likely Comply with Noise Ordinance or Will We Request V Some ritikal crossings may penuity weekend or nighttime work to permit. Where waives are feasible Saturday		Will There be Weekend or Nighttime Construction? Will we Likely Comply with Noise Ordinance or Will We Request Variat Some critical crossings may moutine weekend or nighttime work ho permit Where wavers are fastible. Saturday da	
No construction work is planned for weekends. There may be nighttime work dictated by particular needs along th community and business impacts. For example in some locations nighttime work would have less impact to busine will periodically queeks variances to extend work beyond normal noise ordinance hours.		Some critical crossings may require weekend or nighttime work by permit. Where waivers are feasible, Saturday		Some critical crossings may require weekend or nighttime work by permit. Where waivers are feasible, Saturday da	
Construction Staging Area and Storage Location(s) We currently anticipate two staging/storage locations per contract package. We currently anticipate 8 contract pa there will be a total of 16 staging and storage areas. Typically a staging/storage area will be on average 4 acres an		Construction Staging Area and Storage Location(s) Construction staging located at each shaft site (each end of crossing). Launching staging area will be 6,300 sqft and the receiving staging 3,800 sq-ft		Construction Staging Area and Storage Location(s) Construction staging located at each shaft site (each end of crossing). Launching staging area will be 6,300 sqft and the receiving staging 3,800 sq-ft	
there will be a total of 15 staging and storage areas. Typically a staging/storage area will be on average 4 acres and miles from the site.	ıd is assumeu 😡 💷	Launching staging area will be 6,300 sq-ft and the receiving staging 3,800 sq-ft Additional material and equipment storage available at 4 acre pipeline staging area.		Launching staging area will be 6,300 sq-ft and the receiving staging 3,800 sq-ft Additional material and equipment storage available at 4 acre pipeline staging area.	
Locations/Procedures for Storing/Transporting Spoils	lies be:	Locations/Procedures for Storing/Transporting Spoils		Locations/Procedures for Storing/Transporting Spoils	
Due to the limited work area at each construction site we anticipate that stockpiling of soils at the site will not be will likely be hauled offsite to a stockpile at the staging/storage area. The spoil portion of the excavate will be sep- site(s) and the remaining soil will be hauled back to the construction site to be used to refill the pipe trench. We e	eparated and hauled to disposal e estimate that 40% of the total	al Excavated spoils will be temporarily stockpiled at the launch shaft sites or loaded directly into dump trucks and h	auled offsite daily for disposal.	Excavated spoils will be temporarily stockpiled at the launch shaft sites or loaded directly into dump trucks and hau	led offsite daily for disposal.
accuyou mo mo ana accu and a second more accurate a second more accurate and a second more accurate and a second accurate and a second accurate accurate and a second accurate	t an average one way distance of	t			
323/doub webte islamme u. on canada					
and the addressed in weekshi Town of Toucks		dias fa = off-build/disposit_msteriall: Type of		the to a -diskut/discost materials. Type of Tr	
Number of Daily One-Way Haul Truck Trips Due to Material Transportation (e.g. off haul/disposal, material); Type of Trucks Pipeline Construction Volumo of Eccavate (CF) per Pt of Trench (16' W x 19' D) (includes paving debris)	304.0	Number of Daily One-Way Haul Truck Trips Due to Material Transportation (e.g. off-haul/disposal, material); Type of T Length (ft)	2,045	Number of Daily One-Way Haul Truck Trips Due to Material Transportation (e.g. off-haul/disposal, material); Type of Truc Length (ft)	1,303
Volume of Excavate (CY) per Ft of Trench (16' W x 19' D) (includes paving debris) Volume Excavate (CY) per FT Including Swell of 15%	304.0 11.26 12.95 10.0	Excavation Diameter (ft) Tunnel Volume (in-situ) (cu-yds)*	9 5,541	Length (IT) Excavation Diameter (It) Tunnel Volume (in-stul) (cu-yds)* Shaft Volume (cu-yds)*	9 3,531
Capacity per Dump Truck (Cr) Number of Haul Trucks per FT of Trench Estimated Length of Trench per Gay Per Crew (ft)	1.29 30.0	Shaft Volume (cu-yds)* Total Volume of Shafts and Tunnel (cu-yds)* Total Number of Truck Trips for Soll Removal	6,398 11,939 1,194	Total Volume of Shafts and Tunnel (cu-yds)* Total Number of Truck Trips for Soil Removal	3,656 7,187 719
Number of Haul Trucks per Crew per Daily Production Total One-Way Haul Trips from Site to Staging/Storage and return	38.8 77.7	Total Number of Truck Trips for Piping and Casing Total Number of Truck Trips for Shaft Construction	164 5,040	Total Number of Truck Trips for Piping and Casing Total Number of Truck Trips for Shaft Construction	104 2,880
Estimated Pipe Bedding Soil Import to Site (Cf) from Storage Per Foot of Pipeline (475 H x 15 W minus (D-371.472.752.92)(4) Est. Pipe Bedding Soil Import to Site (Cr) Per Ft of Pipeline	55.37 2.05	Disturbed Pavement (sq.ft) Paving Replacement Import (18" thick) (cu-ft) Paving Replacement Import (18" thick) (cu-yds)	4,935 7,403 274	Disturbed Pavement (sq.ft) Paving Replacement Import (18" thick) (cu-ft) Paving Replacement Import (18" thick) (cu-yds)	2,820 4,230 157
Early by durating sour material to safe (c) / c) if (c) y dynamic (c) per Bedding Soil import (c) per Finduding Swell of 15% Capacity per Dump Truck (C) Number of Haul Trucks per FT of Trench	2.36 10.0 0.24	Total Numeer of Truck Trips On Replacing Paving Total Truck Trips During Construction	27 6,425	Total Nucleo of Truck Trips During Construction	16 3,719
Estimated Length of Trench per Day Per Crew (ft) Number of Pipe Bedding Import Trucks per Day	30 7.1	Number of Truck Trip per day on Average	6,425 14.28	Number of Truck Trip per day on Average	3,719 8.26
Total One-Way Haul Trips of Pipe Bedding Import to Site Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier	14.1 14.1	*Assumes a 1.15 bulking factor 10 CY loads in 12 CY dump trucks		*Assumes a 1.15 bulking factor 10 CY loads in 12 CY dump trucks	
Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return) (68.1% of Excavate Trips from Site to Storage) No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back	52.9 22.3				
(31.9%*90% of Excavate Trips from Site to Storage) No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back	22.3				l
(31-95° UDS of Excavate Trips from Site to Storage) No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way) (Assumes 20 ft of "DIA Dipe per trip)	1.5				I
No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) (Assumes 20 ft of 7' DIA pipe per trip)	1.5				l
No. of One way Trips to Site importing Paving Materials (50 miles ea way) Assumes 3" thick above 20' wide at trench plus 40' full overlay for half the full road wide)	1.1 187.8				l
Daily One-Way Haul Trips per Crew During the Pipeline Construction Daily One-Way Haul Trips During the Pipeline Construction (Three Crews) Daily Average One-Way Haul Trips Throughout Construction Schedule	187.8 563.3 397.4				l
Uainy Average One-Way Haul Irips I Inroughout Construction schedule 10 Wheel Dump Trucks for Soils Transport; 18 Wheel Flatbed Trucks for Hauling Pipe	•				l
					l
					l
Fiber Optic Duct Bank Volume of Excavate (ZF) per Rt of Trench (2' W x 5' D) to be Excavated (incl. paving debris)	10.0				ſ
Volume of Excavate (CF) per Ft of Trench to be Stockpiled and Reused in the Trench Volume of Excavate (CF) per Ft of Trench (2' W x 3' D) to be Removed (incl. paving debris)	4.0 6.0				
Volume of Excavate (CF) per Ft of Trench to be Removed incl. 15% Swell (incl. paving debris) Volume of Excavate (CY) per Ft of Trench to be Removed incl. 15% Swell (incl. paving debris)	6.9 0.26 1.00				
Volume of Imported Soil (CF) per FT of Trench (2' W x 0.5')	0.04 10.0 200				
Volume of Imported Soil (CF) per FT of Trench (2' W x 0.5') Volume of Imported Soil (C7) per FT of Trench (2' W x 0.5') Capacity per Dump Truck (CY) Trench Length per Day (FT)	8.89				
Volume of Imported Soil (C) per FT of Trench (2 W x 0.5) Volume of Imported Soil (C) per FT of Trench (2 W x 0.5) Capacity per Dump Truck (C) Trench Length per Duy (FT) One-Way Spoils Haul Trigfs from Site to Storage Site and return One-Way Spoils Haul Trigfs from Site goas Site to Landfill 50 miles (90% of Eur. Mat'l) and return	16.0 1.8				
Volume of Imported Soil (C) per FT of Trench (2 W x 0.5) Volume of Imported Soil (C) per FT of Trench (2 W x 0.5) Capacity per Dung Torck (CY) Trench Length per Day (FT) One-Way Spoils Haul Trips from Storage Site to Storage Site and return One-Way Spoils Haul Trips from Storage Site to Autofili 30 miles (30% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Storage Site to Autofili 30 miles (10% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Storage Site and return One-Way spoils Haul Trips from Storage Site and return	1.8 1.5 1.5				
Volume of Imported Soil (C) per FT of Trench (2 W x 0.5) Volume of Imported Soil (C) per FT of Trench (2 W x 0.5) Capacity per Dump Truck (CY) Trench Length per Dump Truck (CY) One-Way Spoils Haul Trigis from Site of Storage Site and return One-Way Spoils Haul Trigis from Site oper Site to Landill So miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trigis from Site oper Site to Landill 200 miles (D% of Exc. Mat'l) and return One-Way Spoils Haul Trigis from Site oper Site to Landill 200 miles (D% of Exc. Mat'l) and return One-Way imported Soil Trigis from Site to Site and return One-Way imported Soil Trigis from Site (D I Site and return One-Way (D) Control Installed & For Out (D) (Site Site A control List in durtbank) Length of 6 ⁺ Conduit Installed For Osite Suppler to Storage Site (SD miles ea. way) and return	1.8 1.5 1.5 800 5,600 0.3				
Volume of Imported Soil (C) per FT of Trench (2 W x 0.5) Capacity per Dump Truck (CY) Trench. Tength per Dump Truck (CY) Trench. Tength per Dump Truck (CY) Tone-Way Spoils Haul Trips from Sterage Site to Landfill 50 miles (50% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (50% of Exc. Mat'l) and return One-Way Imported Soil Trips from Storage Site to Landfill 50 miles (50% of Exc. Mat'l) and return One-Way Imported Soil Trips from Storage Site to Landfill 50 miles (10% of Exc. Mat'l) and return One-Way Imported Soil Trips from Storage Site to Landfill 60 miles (10% of Exc. Mat'l) and return Dee Way Imported Soil Trips from Storage Site to Site and return Length of C Conduit Installed per Day (LP) [assumes 4 conduits in ductbank] Length of C Conduit ther Chold Haut Truck	1.8 1.5 800 5,600 0.3 0.3 3.0				
Volume of Imported Soil (C) per FT of Trench (2 W x 0.5) Capacity per Dump Truck (CY) Trench Length per Dump Truck (CY) Trench Length per Dump Truck (CY) Trench Length per Dump Truck (CY) Tone-Way Spoils Haul Trigs from Sites to Storage Site and return One-Way Spoils Haul Trigs from Sites to Landfill Soil Miles (D% of Euc. Mat'l) and return One-Way Spoils Haul Trigs from Sites to Storage Site and return One-Way Spoils Haul Trigs from Sites to Site and return One-Way Spoils Haul Trigs from Sites to Site and return One-Way Imported Soil Trigs from Ottogae Site to Site and return One-Way Imported Soil Trigs from Storage Site Site and return One-Way Dialy Haul Trigs of Pipe from Storage Site to Site and return One-Way Dialy Haul Trigs of Pipe from Storage Site to Site and return Volume of Concrete (CY) per Dy of Out Bank Installation Concrete Truck Capacity (CY)	1.8 1.5 800 0.3 3.0 22.0 8.0 5.5				
Volume of Imported Soil (C) per FT of Trench (2 W x 0.5) Volume of Imported Soil (C) per FT of Trench (2 W x 0.5) Capacity per Dump Truck (CY) Trench Length per Dump Truck (CY) One-Way Spoils Haul Trigis from Site of Storage Site and return One-Way Spoils Haul Trigis from Site of Storage Site and return One-Way Spoils Haul Trigis from Site of Storage Site and return One-Way Spoils Haul Trigis from Site of Storage Site and return One-Way Spoils Haul Trigis from Site of Storage Site and return One-Way Imported Soil Trigis from Office Josupas 4 conducts in durchank) Length of 6' Conduit Installed per Day (I) [Saturns 4 conducts in durchank) Length of 6' Conduit Installed per Day (I) [Saturns 4 conducts in durchank) Length of 6' Conduit Pice Organic Storage Site Is Site and return One-Way Daily Haul Trigis of Pig from Storage Site Is Is and return One-Way Daily Haul Trigis of Pig from Storage Site Is Is and return One-Way Daily Haul Trigis of Pig from Storage Site Is Is Site and return One-Way Daily Haul Trigis of Pig from Storage Site Is Site and return One-Way Daily Haul Trigis of Pig from Storage Site Is Site Is and return One-Way Daily Haul Trigis of Pig from Storage Site Is Is Site and return One-Way Daily Haul Trigis of Pig from Storage Site Is Site Is and return One-Way Daily Haul Trigis of Pig from Storage Site Is Site Is and return One-Way Daily Haul Trigis of Pig from Storage Site Is Site Is and return One Way Trigis Is Site Insporting Paral Matchials (Somilea en way) and return (Assume 3' thick Above Z' wide at trench) Total Average Daily One-Way Truck Trigis During the Fiber Optic Duct Bank Construction	1.8 1.5 1.5 800 5,600 0.3 3.0 22.0 8.0 5.5 0.4 36.1				
Volume of Imported Soil (C) per FT of Trench (2 W x 0.5) Capacity per Dump Truck (CY) Trench. Length per Dump Truck (CY) Trench. Length per Dump Truck (CY) Dene Way Spolis Haul Trips from Strenge Site to Landfill So miles (50% of Exc. Mat'l) and return One-Way Spolis Haul Trips from Storage Site to Landfill So miles (50% of Exc. Mat'l) and return One-Way Imported Soil Trips from Storage Site to Landfill So miles (50% of Exc. Mat'l) and return One-Way Imported Soil Trips from Storage Site and return One-Way Imported Soil Trips from Storage Site and return Length of C Conduit Installed per Day (LF) (susume 4 conduits in ductank) Length of C Conduit Installed per Day (LF) (susume 4 conduits in ductank) Under Concrete (CF) per CJ of Duct Bank Installation Volume of Concrete (CF) per CJ of Duct Bank Installation Dene Way Imported Site Instigned Trips per Day and return One-Way Daily Haut Trips of The Group and Return Storage Site (S) Bank Installation Dene Way (Concrete Trick Trips per Day and Return (Assume 3') thick above Z' uide at trenc()) Total Average Daily One-Way Tuck Trips During the Filter Optic Duck Bank Construction Total Average Daily One-Way Tuck Trips During the Filter Optic Duck Bank Construction Total Average Daily One-Way Tuck Trips During the Filter Optic Duck Bank Construction Total Average Daily One-Way Tuck Trips During the Filter Optic Duck Bank Construction Total Average Daily One-Way Tuck Trips During the Filter Optic Duck Bank Construction Schedule	1.8 1.5 800 5.600 0.3 3.0 22.0 8.0 5.5 0.4				
Volume of Imported Soil (CT) per FT of Trench (2 W x 0.5) Volume of Imported Soil (CT) per FT of Trench (2 W x 0.5) Capacity per Dump Truck (CT) Trench Length per Dump Truck (CT) One-Way Spoils Naul Trips from Storage Site to Landfill 3D onlies (DK's of Exc. Mart') and return One-Way Spoils Naul Trips from Storage Site Lo Landfill 3D onlies (DK's of Exc. Mart') and return One-Way Spoils Naul Trips from Storage Site Lo Landfill 3D onlies (DK's of Exc. Mart') and return One-Way Spoils Soil Soil Trips from Storage Site Landfill 3D onlies (DK's of Exc. Mart') & return One-Way Imported Soil Trips from Storage Site Landfill 3D onlies (DK's Of Exc. Mart') Return of C-conduit Issail per Son (Storage Site Landfill 2D onlies (LK's Mart) Length of S' Conduit Issail per Son (Storage Site Is Site and return One-Way Daily Naul Trips of Deje from Storage Site Is Site and return One-Way Daily Naul Trips of Deje from Storage Site Is Site and return One-Way Daily Naul Trips of Deje from Storage Site Is Site Issoil end return One-Way Daily Naul Trips of Deje from Storage Site Is Site Issoil end return One-Way Daily Naul Trips of Deje from Storage Site Is Site Issoil end return One-Way Oally Naul Trips of Deje from Storage Site Issoil end return One-Way Oally Naul Trips of Deje from Storage Site Issoil end return One-Way Oally Naul Trips of Deje from Storage Site Issoil end return Once Way Oally Naul Trips of Deja from Attantial (Stormer Site (Storage Site (Stormer Turck Storage Site (Stormer Site Site Integritter) Once Way Trips Site Istorage Truck Trips David networn (Assumer 3' Thick above 2' wide Atternich)	1.8 1.5 1.5 800 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0	Disposal Location for Construction Debris It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles It is way trip of 50 miles It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles It is estimated that construction debris miles and the second		Disposal Location for Construction Debris It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles. twiew of any Material Imported/Expansite, Including Demolition Watar Leghabit/Concrete, Sola, Hazardous Solis, Starry, Steel/Metaldj (Concrete, Spring Sameria, Stee), are Matrial/Sandford, et al.	

Volume of Excavate per Day Exported from the Site to Storage per day (CY)	1165.3	Total Volume of Shafts and Tunnel (cu-yds) 11,939	·	Total Volume of Shafts and Tunnel (cu-yds) 7,187
Volume of Excavate per Day Returned to the Site from Storage per day (CY)	793.6	Paving Replacement Import (18" thick) (cu-yds) 274 Total Exported Material (cu-yds) 12,213		Paving Replacement Import (18" thick) (cu-yds) 157 Total Exported Material (cu-yds) 7,344
Volume of Spoils from Storage to Landfill (non-hazardous) (CY)	334.6	11,939		7,187
Volume of Spoils from Storage to Landfill (Hazardous) (CY)	37.2			
Volume of Imported Pipe Bedding to Storage from Supplier per day (CY)	212.2			
Volume of Imported Pipe Bedding from Storage to the Site per day (CY)	212.2			
Volume of Pipe Hauled to Storage by the Supplier per day (CY)	137.5			
Volume of Pipe Hauled to the Site from Storage per day (CY)	137.5			
Volume of Paving Material Imported to the Site per day (CY)	28.7			
Note: Values are per day during Pipeline Construction and do not represent an average over the construction schedule.		_		
Fiber Optic Duct Bank				
Volume of Excavate/Spoils per Day Exported from the Site to Storage per day (CY) (incl. 15% swell)	51.1			
Volume of Excavate/Spoils per Day Returned to the Site from Storage per day (CY)	0.0			
Volume of Spoils from Storage to Landfill (non-hazardous) (CY)	46.0			
Volume of Spoils from Storage to Landfill (Hazardous) (CY)	5.1			
Volume of Imported Soil to Storage from Supplier per day (CY)	7.4			
Volume of Imported Soil from Storage to the Site per day (CY)	7.4			
Length of 6" Conduit Hauled to the Storage by the Supplier per day (CY)	800			
Length of 6" Conduit Hauled to the Site from Storage per day (CY)	800			
Volume of Concrete Hauled to the Site from Supplier per day (CY)	22.0			
Volume of Paving Material Imported to the Site per day (CY)	3.7			
Note: Values occur during the construction of the fiber optic ductbank that is a portion of the overall Construction Schedule	for the Reach.			
Special Access Routes in the Riverbed or for Oversized Materials or Equipment This does not apply to this construction method.		Special Access Routes in the Riverbed or for Oversized Materials or Equipment Not applicable.		Special Access Routes in the Riverbed or for Oversized Materials or Equipment Not applicable.
Measures to Address Dewatering/Treatment/Proper Disposal of Groundwater		Measures to Address Dewatering/Treatment/Proper Disposal of Groundwater		Measures to Address Dewatering/Treatment/Proper Disposal of Groundwater
Geotechnical and hydrogeologic investigations will be performed during detailed design to determine groundwater d	epth, construction	Geotechnical and hydrogeologic investigations will be performed during detailed design to determine groundwater depth, construction	in dewatering	Geotechnical and hydrogeologic investigations will be performed during detailed design to determine groundwater depth, construction dewatering
dewatering requirements, and groundwater quality along the pipeline route. The contractor will likely provide local t a local sewer system per an agreement established with the local authority. Dewatering and treatment requirements	eatment and discharge to	requirements, and groundwater quality along the pipeline route. The contractor will likely provide local treatment and discharge to a loc	local sewer system	requirements, and groundwater quality along the pipeline route. The contractor will likely provide local treatment and discharge to a local sewer system per an agreement established with the local authority. Dewatering and treatment requirements will be determined including discharge
including discharge locations for treated dewatering flow. It is anticipated that dewatering will be accomplished main	ly through dewatering	per an agreement established with the local authority. Dewatering and treatment requirements will be determined including discharge treated dewatering flow. It is anticipated that dewatering will be accomplished mainly through dewatering pumps located in the pipe tre		locations for treated dewatering flow. It is anticipated that dewatering will be accomplished mainly through dewatering pumps located in the pipe
pumps located in the pipe trench during construction and in some cases may require wellpoint dewatering methods. obtained for all dewatered discharge locations.	Permitting will be	construction and in some cases may require wellpoint dewatering methods. Permitting will be obtained for all dewatered discharge loca		trench during construction and in some cases may require wellpoint dewatering methods. Permitting will be obtained for all dewatered discharge locations.
Temporary Lighting		Temporary Lighting		Temporary Lighting
There may be nighttime work dictated by particular needs along the alignment to address community and business in temporary lighting will be provided by the Contractor.	npacts. In these cases	Temporary lighting requirements: One 0.1 KW light inside tunnel per 25 feet.		Temporary lighting requirements: One 0.1 KW light inside tunnel per 25 feet.
		Two 10 KW post lights per shaft site.		Two 10 KW post lights per shaft site.
Water Supply (Hydrants? Water Trucks?)		Water Supply (Hydrants? Water Trucks?)		Water Supply (Hydrants? Water Trucks?)
Water for construction will likely to obtained from local hydrants per an agreement with the local authority.		Water for construction will likely to obtained from local hydrants per an agreement with the local authority.		Water for construction will likely to obtained from local hydrants per an agreement with the local authority.
Temporary or Permanent Right-of-Way/Easements		Temporary or Permanent Right-of-Way/Easements		Temporary or Permanent Right-of-Way/Easements
It appears the pipeline is within the MWD service area for this construction method does not deviate into private pro	perty where a permanent	For pipelines located in city streets no additional right of way needs are anticipated. For pipelines located within rivers or within SCE or p	r private property	For pipelines located in city streets no additional right of way needs are anticipated. For pipelines located within rivers or within SCE or private
easement would be required. It is not anticipated that temporary construction easements will be needed.		subsurface easements will be required.		property subsurface easements will be required.
Demolition?		Demolition?		Demolition?
Paving will be demolished to a width of 16 feet along the pipeline and will extend 2 ft to either side of the 12' wide tr		There may be some limited demolition needed in some locations where shafts are constructed including trees, concrete walkways, etc. A	c. All demolition will	There may be some limited demolition needed in some locations where shafts are constructed including trees, concrete walkways, etc. All
additioanl hardscape, curbs, gutters, sidewalks and concrete medians will need to be demolished during the construct will be replaced to existing conditions.	cion. All demolished items	be reconstructed/replaced in kind.		demolition will be reconstructed/replaced in kind.
Access Pits/Locations and Spacing		Access Pits/Locations and Spacing		Access Pits/Locations and Spacing
	full pipelint	Shafts will be located at each end of each crossing.		Shafts will be located at each end of each crossing.
The pipeline construction for this type CM-1 will be a continual excavation of a trench that provides access along the Specific access pits are not needed for this type of construction.	run pipeline route.			
Traffic Control Requirements		Traffic Control Requirements		Traffic Control Requirements
Traffic control will be required throughout virtually all pipeline reaches for this construction method CM-1. A Constru	ction Zone with traffic	There will be traffic control needed for the construction of many of the access pits on either side of the tunnel.		There will be traffic control needed for the construction of many of the access pits on either side of the tunnel.
way will be used by taking out of service one side of the street as a will be used by taking out of service one side of the	e street as a Construction	,		· · · · · · · · · · · · · · · · · · ·
Zone and maintaining a Traffic Way on the other side of the street.				
Generator Requirements Large Generator Set 45kw for Night Lighting		Generator Requirements Included in equipment list - see tab "Equipment - CM-4A through CM-4F"		Generator Requirements Included in equipment list - see tab "Equipment - CM-4A through CM-4F"
Standby Large Generator Set 45kw for Night Lighting				
Large Generator Set 75kw for Dewatering Pumps and Ventilation Fans Standby Large Generator Set 75kw for Dewatering Pumps and Ventilation Fans				
(All included in equipment list - see tab "Equipment - CM-1, CM-2, CM-3A) Ventilation Requirements		Ventilation Requirements		Ventilation Requirements
Pipe welding will require ventilation - Utility Blower Fan 520W 2,295 CFM High Velocity Ventilator with Duct Hose		100 HP Ventilation fan for each tunnel		100 HP Ventilation fan for each tunnel
Shoring installation (sheeting) as needed will require ventilation during welding - Utility Blower Fan 520W 2,295 CFM High Velocity Ventilator with Duct Hose		40 HP Ventilation fan per shaft Assume 24-hr day, 90% usage of the ventilation fan during 24-hr day		40 HP Ventilation fan per shaft Assume 24-hr day, 90% usage of the ventilation fan during 24-hr day
(All included in equipment list - see tab "Equipment - CM-1, CM-2, CM-3A) Equipment Usage		Equipment Usage		Equipment Usage
See attached worksheet "Equipment - CM-1, CM-2, CM-3A"		See attached worksheet "Equipment - CM-4A through CM-4F"		See attached worksheet "Equipment - CM-4A through CM-4F"
CM-1 Roadways (Cut & Cover) - Excavation/Trenching				
Pipeline Construction Typical Trench dimensions are: 16 ft wide X 19 ft deep				
Total Length (ft) 28,574 Total Excavation (cu-ft) 8,686,5	15			
Total Excavation (cu-yds) 321,72				
(This does not include swelling of the soil once removed.)				
Fiber Optic Duct Bank Typical Trench dimensions are: 2 ft wide X 5 ft deep				
Total Length (ft) 28,574				
Total Excavation (cu-ft) 285,74 Total Excavation (cu-yds) 10,583				
(This does not include swelling of the soil once removed.)				
CM-1 Roadways - Pavement/Concrete Replacement or Rehabilitation				
	ı			
Pipeline Construction Trench Width Pavement (sq-ft) 571,48				
Pipeline Construction Trench Width Pavement (sq-ft) 571,48 (20 feet wide through length of pipeline) 571,48				
Pipeline Construction 7 Trendy With Payement (sqft) 571,48 (2D feet wide through length of pipeline) 63,498 Trendy With Payement (sqfd) 63,498 Finished Cast on Holf of Roadways (sq.+fs) 1,142,5				
Pjedine Construction 571.48 Trench Width Pawement (sq.41) 571.48 (20 feet wide through ineght of pipeline) 63,498 Trench Width Pawement (sq.45) 63,498				
Pjepine Construction Pipine Construction Trend: Width Pavemerk (sq.+t] 571.48 (20 feet wide through length of pipeline) 571.48 Trend: Width Pavemerk (sq.+tg) 63.498 Finished Coat on half of Roadways (sq.+tg) 1,142.5 (40 feet wide through length of pipeline - covering half of fuil roadway) 1,142.5 Fiber Optic Ductbank Fiber Optic Ductbank	62			
Pipeline Construction Pipeline Construction Trench Widh Pawement (cq-ft) 571,48 (20 feet wide through length of pipeline) 571,48 Trench Widh Pawement (cq-ft) 63,498 Finished Coat on half of Roadways (cq-ycts) 1,142,5 (40 feet wide through length of pipeline) 57,148 Fiber Optic Doubhent 7 Trench Widh Pawement (cq-ft) 57,148 (20 feet wide through length of pipeline) 57,148	62			
Pipeline Construction Pipeline Construction Trench Widh Pawemer (cq-ft) 571,48 (20 feet wide through length of pipeline) 531,48 Trench Widh Pawemer (cq-qc) 63,498 Finished Coat on half of Roadwarys (cq-qcs) 1,142,5 (40 feet wide through length of pipeline - covering half of full roadwary) 1 Fiber Optic Ducthank Trench Widh Pawemer (cq-ft) Trench Widh Pawemer (cq-ft) 57,148	62			
Pikeline Construction Pikeline Construction Trench Widh Pawemer (sc,+t) 571,48 (20 feet wide through length of pikeline) 571,48 Trench Widh Pawemer (sc,+t) 63,498 Finished Coat on half of Roadways (sc, yck) 1,142,5 (20 feet wide through length of pipeline - covering half of full roadway) 1 Elber Coalit Ducthank Trench Widh Pawement (sc,+t) 12 feet wide through length of pipeline) 57,148 12 feet wide through length of pipeline) 6,350 Trench Widh Pawement (sc,+t) 6,350 CM-1 Boodways (GL & Cover) - Temporary Median Removal 57,148	62			
Pipeline Construction Pipeline Construction Trench Widh Pawement (sc, +t) 571,48 (20 feet wide through length of pipeline) 571,48 Trench Widh Pawement (sc, +t) 63,498 Finished Coat on half of Roadways (sc, +ts) 1,142,5 (40 feet wide through length of pipeline) 57,148 Trench Widh Pawement (sc, +ts) 57,148 (20 feet wide through length of pipeline) 57,148 Trench Width Pawement (sc, +ts) 6,350	62			
Piekline Construction Piekline Construction Trench Widh Pawemer (sq.*ft) 571,48 (20 feet wide through length of pipeline) 63,498 Trench Widh Pawemer (sq.*ft) 63,498 Finished Coat on half of Roadway: (sq.*ft) 1,142,5 (20 feet wide through length of pipeline) 7,148 Tench Widh Pawemer (sq.*ft) 5,7,488 I Tench Widh Pawemer (sq.*ft) 5,7,488 (2 feet wide through length of pipeline) 5,7,488 Trench Widh Pawemer (sq.*ft) 6,3500 Ch-18 Roadways (Gut & Cover) - Temporary Median Removal Cover	62			
Pikeline Construction Pikeline Construction Trench Widh Pawemer (sc,+t) 571,48 (20 feet wide through length of pikeline) 571,48 Trench Widh Pawemer (sc,+t) 63,498 Finished Coat on half of Roadways (sc, yck) 1,142,5 (20 feet wide through length of pipeline - covering half of full roadway) 1 Elber Coalit Ducthank Trench Widh Pawement (sc,+t) 12 feet wide through length of pipeline) 57,148 12 feet wide through length of pipeline) 6,350 Trench Widh Pawement (sc,+t) 6,350 CM-1 Boodways (GL & Cover) - Temporary Median Removal 57,148	62			
Pipeline Construction Figure Construction Trench Widh Prevents (sqrt) 571,48 (20 feet wide through length of pipeline) 63,498 Frank-dic Coat on half of Roadways (sqrds) 63,498 (20 feet wide through length of pipeline) 63,498 Trench Widh Prevenent (sqrds) 1,142,5 (20 feet wide through length of pipeline) 7,148 Through Widh Prevenent (sqrd) 57,148 (2) feet wide through length of pipeline) 57,148 (2) feet wide through length of pipeline) 6,350 Tench Widh Prevenent (sqrds) 6,350 (2) feet wide through length of pipeline) 6,350	62			

Reach 2, Preferred Alignment CEQA Responses, MWD RRWP (7 feet Diameter Pipeline)					
Construction of the second sec		CM-A Pipe Judding		CM-48 Microtunneling SLURRY FEED PUMP DISCHARGE DISCHARGE LINES DISCHARGE LINES THRUST BLOOK LAUNCHING PT JACKING FRAME JACKING FRAME	
INDIVANES		CONSTRUCTION METHOD 4A - JACK & BORE		CONSTRUCTION METHOD 4B - MICRO-TUNNELING (SLURRY FACE TBM W/ PIPE JACKING)	
CONSTRUCTION METHOD 1 - ROLDHWY PIPE Segments of This Construction Type Pipe Segment No. Pipe Nos. (pdf) Segment No. Pipe Seg	Length (ft)	Pipe Segments of This Construction Type Plan Nos. (pdf) Segment No.	Length (ft)	NTS Pipe Segments of This Construction Type Pinn Nos. (pdf)	Length (ft)
9 25 9,10 27 10 29	1,010 3,209 448	9 26 Total	Length (ft) 106 106	8,9 24 10 28 10 30	2,754 275 267
10,11,12 31 12 33 12 35 12 37	5,104 722 1,192 608	(2 shafts		11, 12 32 12 34 12 36 12 38	346 128 83 109
12, 13 39 13 41 13, 14, 15 43 15 45	3,915 2,386 4,948 1,678			13 40 13 42 15 44 15,16 46	109 363 934 374
15, 16, 17 47 16, 17 49 16, 17 51 Total	2,266 1,426 3,478 32,390			26,17 48 16,17 50 26 shafts	361 132 6,237
······	32,350	-		28 shans	
Estimated Number of Construction Workers Per Day Pipeline Construction	650	Estimated Number of Construction Workers Per Day Construction Schedule (working days) Construction Schedule (working days)	650	Estimated Number of Construction Workers Per Day Estimated Number of Construction Schedule (working days) Construction Schedule (working days) Construction Schedule (working days)	650
Daily Crew Production (FT per day) Estimated Number of Pipeline Crews Per Day Number of Pipeline Crews Pipeline Construction Crews	30 1.66 2 1	Feet of Tunnel Construction needed per day Estimated Number of Tunnel Crews Per Day (based on 10 feet per day per crew) Estimated Number of Pipeline Crews Per Day	0.16 0.02 0.00	Feet of Tunnel Construction needed per day Estimated Number of Tunnel Crews Per Day (based on 20 feet per day per crew) Estimated Number of Pipeline Crews Per Day	9.59 0.48 0.24
Workers per crew Shoring Crews Workers per crew Saw Cut Crew Saw Cut Crew	7 0.2 3 0.05	(based on AD feet per day per crew) Estimated Number of Shaft (crews Per Day (based on 90 days per shaft) Estimated Number of Paving Crews Per Day	0.28	(based on 40 feet per day per crew) Estimated Number of Shaft Crews Per Day (based on 90 days per shaft) Estimated Number of Paving Crews Per Day	4
Workers per crew Demolition Crew Workers per crew Paving Crew	3 0.05 3 0.2	Workers per Tunnel Crew Workers per Bipline Crew Workers per Shaft Crew Workers per Shaft Crew	7 16 8 3	Workers per Tunnel Crew Workers per Pipeline Crew Workers per Shaft Crew Workers per Paving crew	15 16 8 3
raving uten v Workers per crew Utility Relocation Crew Workers per crew Traffic Control	0.2 5 0.1 6 0.15	Total Workers per Taying Utew Total Workers per Day (Average Throughout Construction Schedule) Note: The installation of Fiber Optic cabling is estimated to be within these provided production rates.	2.69	Total Workers per Day (Average Throughout Construction Schedule) Note: The installation of Fiber Optic cabling is estimated to be within these provided production rates.	40.13
rranc Control Crew Size Total Workers per Day (Average Throughout Pipeline Construction) Total Workers per Day (Average Throughout Construction Schedule)	0.15 4 20.20 16.78	-			
Fiber Optic Duct Bank Construction Schedule (working days) Daily Crew Production (FT per day) Extended to where of Combined Educe Optic Comer Bar Days	650 200	-			
Estimated Number of Combined Fiber Optic Crews Per Day Number of Combined Fiber Optic Crews Trenching, Backfill, Conduit, Formwork Crew Workers per crew	0.25	_			
Concrete Crew Workers per Crew Electrician Crew Workers per crew	0.75 4 0.2 4				
Paving Crew Workers per crew Total Workers per Day (Average Throughout Fiber Optic Construction) Total Workers per Day (Average Throughout Construction Schedule)	0.1 5 8.30 2.07	-			
Estimated Number of One-Way Construction Worker Vehicle Trips Per Day Pipeline Construction Total Workers Poly (Iverage Throughout Construction Schedule)	16.78	Estimated Number of One-Way Construction Worker Vehicle Trips Per Day Total Workers per Day (Average Throughout Construction Schedule)	2.69	Estimated Number of One-Way Construction Worker Vehicle Trips Per Day Total Workers per Day (Average Throughout Construction Schedule)	40.13
One-Way Trips per Day (50 miles) Shuttle to More Workers from Park to Site (One way - 5 miles) Total One Way Trips per Day of Worker Vehicles (Average Throughout Construction Schedule) * Assume: maximum of 15 workers per shuttle and 70% of workers need shuttle	33.55 2 35.6	One-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Site (One way - 5 miles)* Total One Way Trips per Day of Worker Care, (Average Throughout Construction Schedule) * Assumes maximum of 35 workers per shuttle	5.39 2 7.4	One-Way Trips per Day (S0 miles) Shuttle to Move Workers from Park to Site (One way - 5 miles)* Total One Way Trips per Day of Worker Cars (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle.	80.27 4 84.3
- Assumes maximum or 15 workers per shuttle and 70% or workers need shuttle - - - - - - - - - - - - -	2.07 4.14	* ASSILITES INDUITUIT OF 12 YOU INCLESSOR AND		* ASSUMES INSAMUM OF SAMONES AND	
Une-Way (rips per Uay (50 miles) Shuttle to Move Morkers from Park to Ste (One way - 5 miles) Total One Way Trips per Day of Worker Vehicles (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle	4.14 2 6.1				
Pipeline Construction Total Workers per Day (Maximum During Construction Schedule) One-Way Trips per Day (So miles) Shuttle to Move Norkers from Park to Ste (One way - 5 miles)*	52.00 104.00	Total Workers per Day (Maximum During Construction Schedule) One-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Ste (One way - 5 miles)*	16.00 32.00 2	Total Workers per Day (Maximum Throughout Construction Schedule) One-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Stte (One way - 5 miles)*	66.00 132.00
Snuttle to Move Workers from Park to Ste (One way - 5 miles)" Total One Way Trips per Day of Worker Cars (Maximum During Construction Schedule) * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle <u>Note</u> : Hauling Vehicles included in Items below.	6 110.0	Smitte to Move Workers from Park to Site (Ine way - 5 miles)* Total One Way Trips per Day of Worker Cars (Maximum During Construction Schedule) * Assumes maximum of 15 workers per shuttle. <u>Note:</u> Hauling Vehicles included in Items below.	2 34.0	Smuttle to Move Workers from Park to Site (One way - 5 miles)* Total One Way Trips per Day of Worker Cars (Maximum Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle. <u>Note:</u> Hauling Vehicles included in Items below.	6 138.0
Fiber Optic Duct Bank Total Workers per Day (Maximum During Construction Schedule) One-Way Trips per Day (Somiles) Construction Schedule (Source Schedule)	17.00 34.00				
Shuttle to Move Workers from Park to Site (One way - 5 miles)* Total Dne Way Trips per Day of Worker Cars (Musaimum During Construction Schedule) * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle <u>Note</u> : Hauling Vehicles included in Items below.	2 36.0				
Construction Worker Vehicle Parking Location(s) Pipeline Construction Total Workers per Day (Average Throughout Construction Schedule)	16.78	Construction Worker Vehicle Parking Location(s) Total Workers per Day (Average Throughout Construction Schedule)	2.69	Construction Worker Vehicle Parking Location(s) Total Workers per Day (Average Throughout Construction Schedule)	40.13
Assume 30% of Staff can park Nearby the Construction Location Remaining 70% Need an Establ. Parking Loc'ns Total Workers per Day (Maximum During Construction Schedule)	11.7 52.00	Assume 30% of Staff can park Nearby the Construction Location Remaining 70% Need an Estable.Parking LoCras Total Workers per Day (Maximum During Construction Schedule)	1.9 16.00	Assume 30% of Staff can park Nearby the Construction Location Remaining 70% Need an Establ. Parking Loc'ns Total Workers per Day (Maximum During Construction Schedule)	28.1 66.00
Total workes per Day (Maamum During Consolutions schedule) Assume 30% of Saff can park Reventy the Construction Location Remaining 70% Need an Establ. Parking Loc'ns Fiber Optic Duct Bank	36.4	Total workes per Jay (Waximum During Curisotucion Schedule) Asume 30% Calif an park Newly the Construction Location Remaining 70% Need an Establ. Parking Loc'ns	11.2	Total workers per Jary (maximum during Construction Scineoule) Assume 38% Ostaff can park heavity the Construction Location Remaining 70% Need an Establ. Parking Loc'ns	46.2
Fiber Optic Duct Bank Total Workers per Day (Average Throughout Construction Schedule) Assume 30% of Staff can park Nearby the Construction Location Remaining 70% Need an Establ. Parking Loc'ns	2.07 1.4				
Total Workers per Day (Maximum During Construction Schedule) Assume 30% of Staff can park Nearby the Construction Location Remaining 70% Need an Establ. Parking Loc'ns	17.00 11.9				
Will There be Weekend or Nightline Construction? Will we Likely Comply with Noise Ordinance or Will We Request Variance? No construction work is planned for weekends. There may be nightline work dicitated by particular meeds along the community and business impacts: For example in some locations nightline work would have less impact to business	e alignment to address sses. We expect Contractors	Will There be Weekend or Nightime Construction? Will we Likely Comply with Noise Ordinance or Will We Request Variance Some critical crossings may require weekend or nighttime work by permit. Where waivers are feasible, Saturday day wo	rk may be needed.	Will There be Weekend or Nighttime Construction? Will we Likely Comply with Noise Ordinance or Will We Request V: Some critical crossings may require weekend or nighttime work by permit. Where waivers are feasible, Saturday	riance? Jay work may be needed.
will periodically request variances to extend work beyond normal noise ordinance hours.					
Construction Staging Area and Storage Location(s) We currently anticipate two staging/storage locations per contract package. We currently anticipate 8 contract pack there will be a total of 16 staging and storage areas. Typically a staging/storage area will be on average 4 acres and is miles from the site.	kages for the pipeline so . is assumed to be within 5	Construction Staging Area and Storage Location(s) Construction staging located at each shaft stel each end of crossing). Launching staging area will be 3,00 soft and the receiving staging 3,800 soft Additional material and equipment storage available at 4 acre pipeline staging area.		Construction Staging Area and Storage Location(s) Construction staging located at each shaft site (each end of crossing). Launching staging rare will be 6,30 sq.f and the receiving staging 3,800 sq.ft Additional material and equipment storage available at 4 acre pipeline staging area.	
Locations/Procedures for Storing/Transporting Spoils		Locations/Procedures for Storing/Transporting Spoils		Locations/Procedures for Storing/Transporting Spoils	
Due to the limited work area at each construction site we are limiting of soils at the site will not be po- will likely be hauled offsite to a stockpile at the staging/storage area. The sopil portion of the excavate will be separa site(s) and the remaining soil will be hauled back to the construction site to be used to refill the pipe trend. We estil excavated material will be spoins of deemed unusable that will need to be hauled and disposed of at landfils at an a	arated and hauled to disposal stimate that 40% of the total average one way distance of	Excavated spoils will be temporarily stockpiled at the launch shaft sites or loaded directly into dump trucks and hauled of	ffsite daily for disposal.	Excavated spoils will be temporarily stockpiled at the launch shaft sites or loaded directly into dump trucks and h	uled offsite daily for disposal.
Expanse unacted and the second s					
Number of Daily One-Way Haul Truck Trips Due to Material Transportation (e.g. off-haul/disposal, material); Type of Trucks		Number of Daily One-Way Haul Truck Trips Due to Material Transportation (e.g. off-hau//disposal, material); Type of Trucks		Number of Daily One-Way Haul Truck Trips Due to Material Transportation (e.g. off-haul/disposal, material); Type of T	nute
Pipeline Construction Volume of Excavate (CF) per Rt of Trench (15' W x 19' D) (includes paving debris) Volume Caravate (CY) per Rt of Trench (16' W x 19' D) (includes paving debris) Volume Excavate (CY) per TI including Swell of 15%	304.0 11.26 12.95	Length (ft) Excavation Diameter (ft) Tunnel Volume (in-situ) (cu-yds)*	106 9 287	Length (ft) Excavation Diameter (ft) Tunnel Volume (in-situ) (cu-yds)*	6,237 9 16,899
Capacity per Dump Trucks per FT of Trench Number of Haul Trucks per FT of Trench Estimated Length of Trench per Day Per Crew (ft)	10.0 1.29 30.0	Shaft Volume (cu-yds)* Total Volume of Shafts and Tunnel (cu-yds)* Total Number of Truck Trips for Soll Removal	914 1,201 120	Shaft Volume (cu-yds)* Total Volume of Shafts and Tunnel (cu-yds)* Total Number of Truck Trips for Soil Removal	11,882 28,781 2,878
Number of Haul Trucks per Crew per Daily Production Total One-Way Haul Trips from Site to Staging/Storage and return Estimated Pipe Bedding Soil Import to Site (CF) from Storage Per Foot of Pipeline (475 'H x 15' V minus (05'31.41'7.25'2)/4)	38.8 77.7 55.37	Total Number of Truck Trips for Piping and Casing Total Number of Truck Trips for Shafe Construction Disturbed Pavement (sq.ft) Paving Replacement (thory f1) Paving Replacement (thory f1)	8 720 705 1,058	Total Number of Truck Trips for Piping and Casing Total Number of Truck Trips for Shaft Construction Disturbed Pavement (sq.ft) Paving Replacement Import (13 th thck) (cu-ft)	499 4,680 9,165 13,748
Est. Pipe Bedding Soil Import to Site (CY) Per Ft of Pipeline Pipe Bedding Soil Import (CY) per FT including Swell of 15% Capacity per Dump Truck (CY)	2.05 2.36 10.0	Paving Replacement Import [13 UitAs] (UV-1) Paving Replacement Import [13 UitAs] (UV-1) Total Number of Truck Trips for Replacing Paving	39 4	Paving Replacement Import (13" thick) (cu-yds) Total Number of Truck Trips for Replacing Paving	509 51
Number of Haul Trucks per FT of Trench Estimated Length of Trench per Day Per Crew (ft) Number of Pipe Bedding Import Trucks per Day Total One-Way Haul Trips of Pipe Bedding Import to Site	0.24 30 7.1 14.1	Total Truck Trips During Construction Number of Truck Tripper day on Average *Assumes a 1.15 builting factor	853 1.31	Total Truck Trips During Construction Number of Truck Trip per day on Average *Assumes a 1.15 builking factor	8,108 12.47
l deal one-way haai i n'ho or vipe decelaing import to site Also Number of Hall Trips of Pipe Bedding to Storage Site from Supplier Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return) (63.1% of Excavated Trips from Site to Storage)	14.1 14.1 52.9	*Assumes a L13 dawing lector 10 Cr loads in 12 CY dump trucks		*Assumes a 1-15 during lector 10 CY loads in 12 CY dump trucks	
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back (31.5% 90% of Excavate Trips from Site to Storage) No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back (31.5% *10% of Excavate Trips from Site to Storage)	22.3				
(Assume 20 May Daily Haul Track of Pipe From Supplier to Storage (50 miles ea. way) (Assume 20 ft of 7 DA pipe per trip) No. of One-Way Daily Haul Track of Pipe From Storage to Site (5 miles ea way)	1.5				
No. of one-Way Daily Haul Trips of Pipe From Suppler to Storage (50 miles ea. way) (Saume 20 for 170 JAppe per trip) No. of one-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) (Saume 20 for 170 JAppe per trip) No. of one way Trips to Site Importing Paving Materials (50 miles ea way) (Saume 21 for 16 JAppe per trip) No. of one way Trips to Site Importing Paving Materials (50 miles ea way) (Saume 21 for the bace 21 wide at trip that one Just 26 ful lowerly for half the ful road wide)	1.1				
No. of One-Way Daily Haul Trigs of Pipe From Suppler to Storage (50 miles ea. way) (Assames 20 for 70 Apic per trip) No. of One-Way Daily Haul Trigs of Pipe From Storage to Sile (5 miles ea way) (Assames 20 for 70 Apic per trip) No. of One way Trips to Sile Importing Paving Materials (50 miles ea way) (Assames 37 for 41 Abu Per 20 Hault Trip) No. Way Haul Trips per Crew During the Pipeline Construction Daily One-Way Haul Trips Der Crew During the Pipeline Construction Daily Average One-Way Haul Trips Throughout Construction Schedule					
No. of one-Way baily Heal Trips of Pipe From Suppler to Storage (50 miles ea. way) (Sasumes 20 for 27 Da Apie per trip) No. of one-Way baily Heal Trips of Pipe From Storage to Site (5 miles ea way) (Sasumes 20 for 27 Da Apie per trip) No. of one way Trips to Site Importing Panjeng Materials (50 miles ea way) (Sasumes 21 Meal trips bails (France 1990) Daily One-Way Heal Trips per Cere During the Pipeline Construction Daily One-Way Heal Trips During the Pipeline Construction Schedule 10 Wheel Dump Trucks for Solis Transport Daily Conserved Trips During the Pipeline Construction Schedule 10 Wheel Dump Trucks for Solis Transport Daily Conserved Trips During the Pipeline Construction Schedule 10 Wheel Dump Trucks for Solis Transport Daily Conserved Trips During Trips During the Pipeline Construction Schedule 10 Wheel Dump Trucks for Solis Transport Daily Conserved Trips During Trips During the Pipeline Construction Schedule 10 Wheel Dump Trucks for Solis Transport Daily Conserved Trips During the Pipeline Construction Schedule 10 Wheel Dump Trucks for Solis Transport Daily Conserved Trips During the Pipeline Construction Schedule 10 Wheel Dump Trucks for Solis Transport Daily Conserved Trips During the Pipeline Construction Schedule 10 Wheel Dump Trucks for Solis Transport Daily Conserved Trucks for Hauling Pipe Daily Conserved Trips During the Pipeline Construction Schedule 10 Wheel Dump Trucks for Solis Transport Daily Conserved Trips During the Pipeline Construction Schedule 10 Wheel Charles Trucks for Hauling Pipe Daily Conserved Trips During the Pipeline Construction Schedule 10 Wheel Charles Trucks for Hauling Pipe Daily Conserved Trips During the Pipeline Construction Schedule 10 Wheel Charles Trucks for Hauling Pipe Daily Conserved Trips During the Pipeline Construction Schedule 10 Wheel Charles Trucks for Hauling Pipe Daily Conserved Trips During the Pipeline Construction Schedule 10 Wheel Charles Trucks for Hauling Pipe 10 Wheel Charles Trucks for Hauling Pipe 10 Wheel	1.1 187.8 375.6				
No. of ne-Way baily Heul Trigo of Pipe From Suppler to Storage (50 miles ea. way) No. of one-Way baily Heul Trigo of Pipe From Storage to Site (5 miles ea way) Summers 20 for 20 hap peer trig) No. of one-Way baily Heul Trigo of Pipe From Storage to Site (5 miles ea way) Jakumes 20 for 20 hap peer trig) No. of one way Trigo to Site Importing Paving Materials (50 miles ea way) Jaily One-Way Haul Trigo boning the Pipeline Construction (Two Crews) Daily One-Way Haul Trigo boning the Pipeline Construction (Two Crews) Daily Aneway One-Way Haul Trigo Trigoto Site Transport: Site Yorket Dump Trucks for Sols Transport: Site Wheel Dump Trucks for Sols Transport: Site Construction (Crew Crews) Daily One-dump Trigot Site Transport: Site Construction (Crew Crews) Daily Construction (Crew Crews) Daily Construction (Crew Crews) Daily Anerage Construction (Crew Crews) Daily Construction (Crew Site Transport: Site Wheel Flatbed Trucks for Hauling Pipe Wolame of Excurved (Crew Ft of Trench) (2' W x 5' D) to be Excavated (incl. paving debrin) Volume of Excurved (Crew Ft of Trench) (2' W x 5' D) to be Excavated (Incl. paving debrin) Volume of Excurved (Crew Ft of Trench) (2' W x 5' D) to be Excavated (Incl. paving debrin)	1.1 187.8 375.6 311.9 10.0 4.0 6.0				
No. of one-Way baily Heal Trips of Pipe From Suppler to Storage (S0 miles e.a. way) Absume 20 for 170 Appoper trip) No. of one-Way baily Heal Trips of Pipe From Storage to Site (S miles ea way) Absume 20 for 170 Appoper trip) No. of new wy Trips to Site Importing Paving Materials (S0 miles ea way) Absume 20 for 170 Appoper trip) No. of new wy Trips to Site Importing Paving Materials (S0 miles ea way) Absume 27 Wei at Evan by Los Off Unicevel yor half the full road wide) Daily One-Way Heal Trips per Core During the Pipeline Construction Daily One-Way Heal Trips During the Pipeline Construction Schedule Daily One-Way Heal Trips During the Pipeline Construction Schedule Daily One-Way Heal Trips During the Pipeline Construction Schedule Daily One-Way Heal Trips During the Pipeline Construction Schedule Daily One-Way Heal Trips During the Pipeline Construction Schedule Daily One-Way Heal Trips During the Pipeline Construction Schedule Daily One-Way Heal Trips During the Pipeline Construction Schedule Daily One-Way Heal Trips During the Pipeline Construction Schedule Daily One-Way Heal Trips During the Pipe Trips (The Way SD) to be Excavated (incl. paving debris) Volume of Scavatel (C) per PT of Trench (2 W x SD) to be the Storage to the St Swell (Incl. paving debris) Volume of Scavatel (C) per PT of Trench (2 W x 0.5D) <td< td=""><td>1.1 187.8 375.6 311.9 4.0 6.0 6.0 6.9 0.26 1.00 0.04</td><td></td><td></td><td></td><td></td></td<>	1.1 187.8 375.6 311.9 4.0 6.0 6.0 6.9 0.26 1.00 0.04				
bo. dore-Way Daily Heal Trigs of Pipe From Suppler to Storage (50 miles ea. way) lacanues 20 for 70 Ap Expert (17) Wo. dore-Way Daily Heal Trigs of Pipe From Storage to Stat (5 miles ea way) lacanues 20 for 70 Ap Exper (17) Wo. dore way Trigs to Site Importing Paving Materials (50 miles ea way) lacanues 20 for 70 Ap Exper (17) Wo. dore way Trigs to Site Importing Paving Materials (50 miles ea way) lacanues 20 for 70 Ap Exper (17) Daily One Way Heal Trips port (per Papine Construction (Two Crews) Daily One Way Heal Trips bors (Ber Transport (Two Crews) Daily One Way Heal Trips Daring Her Pipeline Construction (Two Crews) Daily One Way Heal Trips Daring Her Pipeline Construction (Two Crews) Daily One Way Heal Trips Daring Her Pipeline Construction Daily One Way Heal Trips Daring Her Pipeline Construction Daily One Way Heal Trips Daring Her Pipeline Construction The Construction Daring Daring Her Pipeline Construction The Construction The Construction The Construction The Construction The Construction Daring Daring Her Pipeline Construction Daring Daring Her Pipeline Construction Statu Statu The Construction The Construction Daring Daring Her Pipeline Daring Daring Her Pipeline Construction Daring Daring Her Pipeline Daring Daring Her	1.1 187.8 375.6 311.9 10.0 4.0 6.0 6.0 0.25 1.0 0.25 1.0 0.4 0.0 200 8.89				
No. One-Way Daily Heal Trigs of Pipe From Suppler to Storage (50 miles ea. way) No. One-Way Daily Heal Trigs of Pipe From Storage to State (5 miles ea way) Advances 20 for 27 Da Apie per trig) No. One way Trips to Site Importing Paving Materials (50 miles ea way) Advances 20 for 27 Da Apie per trig) No. One way Trips to Site Importing Paving Materials (50 miles ea way) Advances 20 for 20 Apie per trig) Daily One Way Heal Trips porting the Pipeline Construction (Fao Coreus) Daily One Way Heal Trips porting the Pipeline Construction Schedule Daily One Way Heal Trips brigge fragment the Pipeline Construction Schedule Daily One Way Heal Trips porting the Pipeline Construction Schedule Daily One Way Heal Trips Trongshout Construction Schedule Daily Chart State Material Trips Dring the Pipeline Construction Schedule Viame of Eccavet (C) per f1 of Trench (2 W x 5 10) to be Escaveted (incl. paving debris) Viame of Escavet (C) per f1 of Trench (2 W x 5 10) to be Escaveted (incl. paving debris) Viame of Escavet (C) per f1 of Trench (2 W x 5 10) to be Escaveted (incl. paving debris) Viame of Escavet (C) per f1 of Trench (2 W x 5 10) to be Escaveted (incl. paving debris) Viame of Escavet (C) per f1 of Trench (2 W x 5 10) to be Escaveted (incl. paving debris) Viame of Escavet (C) per f1 of Trench (2 W x 3 5) Capacity per traps Trench (2 W x 3 5)	1.1 187.8 375.6 311.9 10.0 4.0 6.0 6.9 0.26 1.00 0.040 100 0.040 100 0.040 100 0.05 1.00 1.8 1.5				
Ide Conce-Way baily feat Trigs of Pipe From Suppler to Storage (50 miles a: way) Assume 20 for 70 Ap Appe per trig) Hour One-Way baily feat Trigs of Pipe From Storage to Site (5 miles ae way) Assume 20 for 70 Ap Appe per trig) Hour One way Trigs to Site Importing Paving Materials (50 miles ae way) Assume 27 for 40 Appe per trig) Hour One way Trigs to Site Importing Paving Materials (50 miles ae way) Assume 27 for 40 Appe per trig) Hour One way Trigs to Site Importing Paving Materials (50 miles ae way) Assume 37 the Appe per trig) Dialy One-Way Haul Trigs During the Pipeline Construction Daily One-Way Haul Trigs During the Pipe Trom Storage Storage Storage Storage Trigge Storage Storage Trigge Storage Trigge Storage Storage Storage Storage Trigge Storage Trigge Storage Storage Storage Storage Trigge Storage Trigge Storage Storage Storage Storage Trigge Stora	1.1 187.8 375.6 311.9 10.0 4.0 6.0 6.9 0.26 1.00 0.04 10.0 200 8.89 16.0 1.0 1.0 200 8.89 16.0 1.5 8.00 5.600 0.3 0.3				
No. One-Way baily Heal Trigs of Pipe From Suppler to Storage (50 miles ea. way) Absumes 20 for 70 Ap Ope per trig) No. One-Way baily Heal Trigs of Pipe From Storage to State (5 miles ea way) Absumes 20 for 70 Ap Ope per trig) No. One way Trigs to Ste Importing Paving Materials (50 miles ea way) Absumes 20 for 70 Ap Ope per trig) Daily One-Way Heal Trigs or Dige Pering Materials (50 miles ea way) Absumes 27 the Abso 27 wide at term objus 45 full oready for half the full read wide): Daily One-Way Heal Trigs During the Pipeline Construction (Two Corens) Daily One-Way Heal Trigs During the Pipeline Construction Creatores Daily One-Way Heal Trigs Drong the Pipeline Construction Schedule Stormer 20 more trigger Coren During the Pipeline Construction Schedule Daily One-Way Heal Trigs Drong the Pipeline Construction Function (Two Corens) Daily One-Way Heal Trigs Trong bound Construction Schedule Volume of Scavate (C) per to 1 forech (2 W x 5 1) to be Excavated (Incl. paving debris) Volume of Scavate (C) per to 1 forech (2 W x 5 1) to be Encoved (Incl. paving debris) Volume of Scavate (C) per to 1 forech (2 W x 5 1) to be Encoved (Incl. paving debris) Volume of Scavate (C) per to 1 forech (2 W x 5 1) to be Encoved (Incl. paving debris) Volume of Scavate (C) per to 1 forech (2 W x 5 1) to be Scavated (Incl. paving debris) Volume of Scavate (C) per to 1 fore	1.1 187.8 375.6 311.9 10.0 4.0 6.0 6.0 6.0 0.26 1.00 0.04 10.0 200 8.89 16.0 1.8 1.5 1.5 8.00 0.3 3.0 3.0 2.20 8.0 5.5				
No. One-Way baily heat Trigs of Pipe From Surget (5) Miles ea. way) Nature: 20 for 70 Ap Expecting) No. One-Way baily heat Trigs of Pipe From Storage to Stat (5 miles ea way) Nature: 20 for 70 Ap Expecting) No. One way Trips to Site Importing Paving Materials (50 miles ea way) Nature: 20 for 70 Ap Expecting) Daily One-Way Heat Trips or Cree During the Pipeline Construction (Fwo Creeks) Daily One-Way Heat Trips Drong the Pipeline Construction For Coreso) Daily One-Way Heat Trips Drong the Pipeline Construction For Coreso) Daily One-Way Heat Trips Drong the Pipeline Construction For Coreso) Daily One-Way Heat Trips Drong the Pipeline Construction For Coreso) Daily One-Way Heat Trips Trongshout Construction For Coreso) Daily One-Way Heat Trips Drong the Pipeline Construction For Coreso) Daily One-Way Heat Trips Drong the Pipeline Construction For Coreso) Daily One-Way Heat Trips Drong the Pipeline Construction For Coreso) Daily One-Way Heat Trips Drong the Pipeline Construction For Coreso) Daily One-Way Heat Trips Drong the Pipeline Construction For Coreso (Pipeline Construction For Coreso) Daily One-Way Heat Trips Drong the Pipeline Construction For Coreso (Pipeline) Volume of Construct (C) per FT of Trench (Pi Y 9: 5) Di to the Encored Inci, 1: 5: 5: well ((inci, paving debris) Volume of Encorabet Soli ((C) per FT of Trench (Pi Y 9: 5) Di to the En	1.1 187.8 375.6 311.9 10.0 4.0 6.0 0.25 0.25 0.25 0.25 0.00 0.00 0.00 0.				

Volume of any Material Imported/Exported, including Demolition Waste (Asphait/Concrete, Solis, Hazardous Solis, Slurry, Steel/Metals) and	d Clean Construction Material:	Volume of any Material Imported/Exported, Including Demolition Waste (Asphalt/Concrete, Solis, Hazardous Solis, Slurry, Steel/	letals) and Clean Construction Materials (Concrete,	Volume of any Material Imported/Exported, Including Demolition Waste (Asphalt/Concrete, Solis,Hazardous Solis, Slurry, Ste	el/Metals) and Clean Construction Materials
(Concrete, Pipeline Segments, Rebar, Base Material/Sand/Gravel, etc) Pipeline Construction		Pipeline Segments, Rebar, Base Material/Sand/Gravel, etc)		(Concrete, Pipeline Segments, Rebar, Base Material/Sand/Gravel, etc)	
Volume of Excavate per Day Exported from the Site to Storage per day (CY)	776.9	Total Volume of Shafts and Tunnel (cu-yds)	1,201	Total Volume of Shafts and Tunnel (cu-yds)	28,781
Volume of Excavate per Day Returned to the Site from Storage per day (CY)	529.1	Paving Replacement Import (18" thick) (cu-yds) Total Exported Material (cu-yds)	39 1,240	Paving Replacement Import (18" thick) (cu-yds) Total Exported Material (cu-yds)	509 29,290
Volume of Spoils from Storage to Landfill (non-hazardous) (CY)	223.0		1,201		28,781
Volume of Spoils from Storage to Landfill (Hazardous) (CY)	24.8				
Volume of Imported Pipe Bedding to Storage from Supplier per day (CY)	141.5				
Volume of Imported Pipe Bedding from Storage to the Site per day (CY)	141.5				
Volume of Pipe Hauled to Storage by the Supplier per day (CY)	91.7				
Volume of Pipe Hauled to the Site from Storage per day (CY)	91.7				
Volume of Paving Material Imported to the Site per day (CY)	19.1				
Note: Values are per day during Pipeline Construction and do not represent an average over the construction schedule.					
Fiber Optic Duct Bank					
Volume of Excavate/Spoils per Day Exported from the Site to Storage per day (CY) (incl. 15% swell)	51.1				
Volume of Excavate/Spoils per Day Returned to the Site from Storage per day (CY) Volume of Spoils from Storage to Landfill (non-hazardous) (CY)	0.0 46.0				
Volume of Spoils from Storage to Landrill (Hazardous) (CY)	5.1				
Volume of Imported Soil to Storage from Supplier per day (CY)	7.4				
Volume of Imported Soil from Storage to the Site per day (CY)	7.4				
Length of 6" Conduit Hauled to the Storage by the Supplier per day (CY)	800				
Length of 6" Conduit Hauled to the Storage by the Supplier per day (CY)	800				
Volume of Concrete Hauled to the Site from Supplier per day (CY)	22.0				
Volume of Paving Material Imported to the Site per day (CY)	3.7				
Note: Values occur during the construction of the fiber optic ductbank that is a portion of the overall Construction Schedule for					
Special Access Routes in the Riverbed or for Oversized Materials or Equipment This does not apply to this construction method.		Special Access Routes in the Riverbed or for Oversized Materials or Equipment Not applicable.		Special Access Routes in the Riverbed or for Oversized Materials or Equipment Not applicable.	
Measures to Address Dewatering/Treatment/Proper Disposal of Groundwater		Measures to Address Dewatering/Treatment/Proper Disposal of Groundwater		Measures to Address Dewatering/Treatment/Proper Disposal of Groundwater	
Geotechnical and hydrogeologic investigations will be performed during detailed design to determine groundwater de dewatering requirements, and groundwater quality along the pipeline route. The contractor will likely provide local tre a local sever system per an agreement established with the local autontry. Dewatering and treatment requirements including discharge locations for treated dewatering flow. It is uncipated that dewatering will be accomplicated purps located in the pipe trench during construction and in some cases may require wellpoint dewatering methods. P obtained for all dewatered discharge locations.	atment and discharge to vill be determined v through dewatering	Geotechnical and hydrogeologic investigations will be performed during detailed design to determine ground requirements, and groundwater quality along the pipeline route. The contractor will likely provide local treat per an agreement established with the local autority. Dewatering and treatment requirements will be determine reated dewatering [Bow. It is anticiped that dewatering in the accomplished mainly through dewatering pu construction and in some cases may require wellpoint dewatering methods. Permitting will be obtained for al	ent and discharge to a local sewer system ined including discharge locations for nps located in the pipe trench during	Geotechnical and hydrogeologic investigations will be performed during detailed design to determine grou requirements, and groundwater quality along the pipeline route. The contractor will likely provide local tre system per an agreement established with the local authority. Dewatering and treatment requirements locations for treated dewatering likel dewatering will be dewatering will be accomplished mainly throug trench during construction and in some cases may require wellpoint dewatering methods. Permitting will locations.	atment and discharge to a local sewer I be determined including discharge h dewatering pumps located in the pipe
Temporary Lighting There may be nighttime work dictated by particular needs along the alignment to address community and business imp	pacts. In these cases	Temporary Lighting Temporary lighting requirements:		Temporary Lighting Temporary lighting requirements:	
temporary lighting will be provided by the Contractor.		One 0.1 KW light inside tunnel per 25 feet. Two 10 KW post lights per shaft site.		One 0.1 KW light inside tunnel per 25 feet. Two 10 KW post lights per shaft site.	
Water Supply (Hydrants? Water Trucks?) Water for construction will likely to obtained from local hydrants per an agreement with the local authority.		Water Supply (Hydrants? Water Trucks?) Water for construction will likely to obtained from local hydrants per an agreement with the local authority.		Water Supply (Hydrants? Water Trucks?) Water for construction will likely to obtained from local hydrants per an agreement with the local authorit	
Temporary or Permanent Right-of-Way/Easements		Valen for construction will merel to dualine information moral hydranis per an agreement with the local authomy. Temporary or Permanent Right-of-Way/Easements		Temporary or Permanent Right-of-Way/Easements	
It appears the pipeline is within the MWD service area for this construction method does not deviate into private prop	erty where a permanent	For pipelines located in city streets no additional right of way needs are anticipated. For pipelines located with subsurface assemnts will be required.	in rivers or within SCE or private property	For pipelines located in city streets no additional right of way needs are anticipated. For pipelines located o	within rivers or within SCE or private
easement would be required. It is not anticipated that temporary construction easements will be needed. Demolition?		Subsurface easements will be required. Demolition?		property subsurface easements will be required. Demolition?	
Paving will be demolished to a width of 16 feet along the pipeline and will extend 2 ft to either side of the 12 wide tree additionan hardrage, curks, gutters, sidewalks and concrete medians will need to be demolished during the constructi will be replaced to existing conditions.		There may be some limited demolition needed in some locations where shafts are constructed including trees be reconstructed/replaced in kind.	concrete walkways, etc. All demolition will	There may be some limited demolition needed in some locations where shafts are constructed including tr demolition will be reconstructed/replaced in kind.	ees, concrete walkways, etc. All
Access Pits/Locations and Spacing		Access Pits/Locations and Spacing Shafts will be located at each end of each crossing.		Access Pits/Locations and Spacing Shafts will be located at each end of each crossing.	
The pipeline construction for this type CM-1 will be a continual excavation of a trench that provides access along the full Specific access pits are not needed for this type of construction.	ull pipeline route.	· · · · · · · · · · · · · · · · · · ·			
Traffic Control Requirements		Traffic Control Requirements		Traffic Control Requirements	
Traffic control will be required throughout virtually all pipeline reaches for this construction method CM-1. A Construct way will be used by taking out of service one side of the street as a will be used by taking out of service one side of the Zone and maintaining a Traffic Way on the other side of the street.	tion Zone with traffic street as a Construction	There will be traffic control needed for the construction of many of the access pits on either side of the tunne		There will be traffic control needed for the construction of many of the access pits on either side of the tur	nel.
Generator Requirements		Generator Requirements		Generator Requirements	
Large Generator Set 45 wr for Night Lighting Standby Large Generator 5et 45 sho for Night Lighting Large Generator Set 75 wr for Dewatering Pumps and Ventilation Fans Standby Large Generator 5et 75 show for Dewatering Pumps and Ventilation Fans		Included in equipment list - see tab "Equipment - CM-4A through CM-4F"		Included in equipment list - see tab "Equipment - CM-4A through CM-4F"	
(All included in equipment list - see tab "Equipment - CM-1, CM-2, CM-3A) Ventilation Requirements		Ventilation Requirements		Ventilation Requirements	
Pipe welding will require ventilation - Utility Blower Fan 520W 2,295 CFM High Velocity Ventilator with Duct Hose Shoring installation (sheeting) as needed will require ventilation during welding - Utility Blower Fan 520W 2,295 CFM		100 HP Ventilation fan for each tunnel 40 HP Ventilation fan per shaft		100 HP Ventilation fan for each tunnel 40 HP Ventilation fan per shaft	
High Velocity Ventilator with Duct Hose (All included in equipment list - see tab "Equipment - CM-1, CM-2, CM-3A)		Assume 24-hr day, 90% usage of the ventilation fan during 24-hr day		Assume 24-hr day, 90% usage of the ventilation fan during 24-hr day	
Equipment Usage See attached worksheet "Equipment - CM-1, CM-2, CM-3A"		Equipment Usage See attached worksheet "Equipment - CM-4A through CM-4F"		Equipment Usage See attached worksheet "Equipment - CM-4A through CM-4F"	
CM-1 Roadways (Cut & Cover) - Excavation/Trenching Pipeline Construction					
Typical Trench dimensions are: 16 ft wide X 19 ft deep 32,2300 Total Length (1) 9,246,61 Total Excavation (cu-tft) 9,846,61 Total Excavation (cu-tft) 364,689 (This does not incide swelling of the soil once removed.) 364,689					
Fiber Optic Ductbank Trench Width Pavement (sq.ft) 64,780 (2 feet wide through length of pipeline)					
Trench Width Pavement (sq-yds) 7,198 CM 1 Bondwaw, Davagenet (Cancele Benlacoment or Behabilitation					
CM-1 Roadways - Pavement/Concrete Replacement or Rehabilitation Pipeline Construction Trench Width Pavement (s.r.ft) 647,804					
Lifenci, workin valement (q-qt) 64,204 CD feet wide finangia length of lopeline) 71,978 Trench Width Pavement (q-qds) 72,978 Finished coat on half of Roadways (sq-qds) 1,295,60 (40 feet wide through length of pipeline - covering half of full roadway) 420,400					
Fiber Optic Ductbank 64,780 Trench Width Pavement (sq.41) 64,780 (2 feet wide through length of pipeline) 71 Trench Width Pavement (sq.4s) 7,198					
Trench Width Pavement (sq-γαs) 7,198 CM-1 Roadways (Cut & Cover) - Temporary Median Removal					
CM-1 Noisewaya (Lut & Cover) - temporary Median Kemoval Median Locations: None this Contract					
L		1			

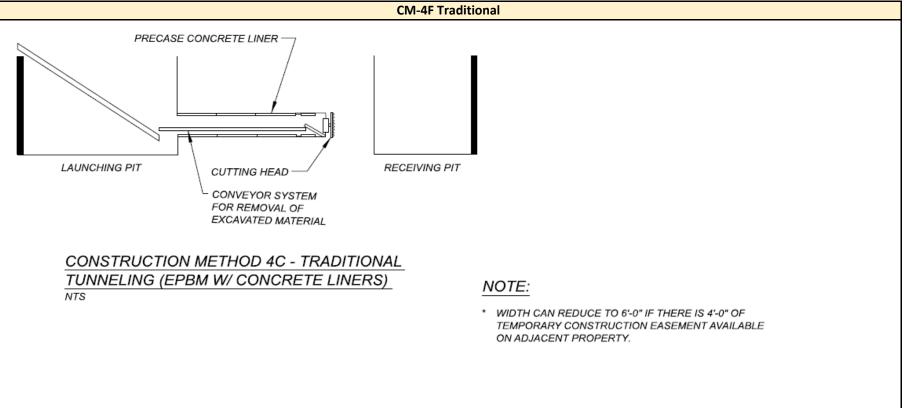
Reach 3, Preferred Aligoneet CEQA Response, MIND RWP /7 Ret Disorder Figdino) CMA 3 Readways								
	C642 SC Exament		CM-3A LUFCD Casement (Adjacent to River)		CM-4A Pipe Indiag		CM-4B Microtuneting	
				TREASE REAL BOOMS MOVED IN ANTICARE SPECIAL INFORMATION	BORRING MACHINE PIPE CASING			
			ADDRESS DESCRIPTION D		CUTTING HEAD			WING PLT
ADDE			14809		CONSTRUCTION METHOD 4A - JACK & BORE		CONSTRUCTION METHOD 4B - MICRO-TUNNELING (SLURRY FACE TBM W/ PIPE JACKING) MR	3
Pipe Segments of This Contruction Type Physe Segments of This Contruction Type Plan No. (aft) Segment No. Life J.2 J.2 J.2 J.3 J.3	Par Neuronal Accessors Pape Segment of This Construction Type Plan Neur, Day 20 70, 21 56 54 54 56 56	Length (ft) 4,980 2,750	Pipe Segments of This Construction Type Plan Nos. (pdf) Segment No. 10, 20 54 Telef	Length (ft) 3,120	Pipe Segments of This Construction Type Plan Nex, (pdf) Segment No. 1 30 55 31 57	Length (Ft) 293 233	Pipe Segments of This Construction Type Plan Nex. (pdf) 18, 10 50 Total	Length [ft] 2,330 2,230
	Tot	nal 7,729			4 stuffs	636	2 shafta	
Estimated Number of Construction Workers Per Day Paraline Construction Construction Schedule youring days Aug/ Communication Structure (Paral)	Estimated Number of Construction Workers Per Day Establish Construction Examine Construction Construction Schedule (working days)	415	Satimated Number of Construction Workers Per Day Bastline Construction Construction Schedule (societing days)	415	Entirested Number of Construction Workers Fer Day Construction Schedule (working days)	415	Estimated Number of Construction Workers Fer Day Construction Schedule (working days)	415
Extincted Number of Pipeline Crews Per Day 0.21 Number of Pipeline Crews 1 Papeline Construction Crews 1 Section Crews 1 Section Crews 0 Section Crews 0.2	Fee of Fipeline Contraction park any mediad Galaxies and Market of Replain Cons Parc Day Wanther of Pipeline Crass Parc Day Replain Construction Crass Wolkens par craw Detroiter Const.	100 0.19 1 9 0.2	Feet of Poeline Contraction per day needed Listimated Kurben of Poeline Creas Per Day Number of Poeline Creas Poeline Contraction Creas Working per creas	100 0.08 1 9 0.2	Fast of Thrond Construction needed per day Constraints Maxime of Thrond Orean Per Oxy David on 10 hert per drug per or wal. Constraints Maxime of Popolino Orean Per Oxy David on 10 hert per drug per orean David on 10 hert per drug per orean David on 10 hert per drug per orean	0.15 0.04 0.87	Even of Turonet Construction neuroda par day Granuss di wavel de Turoni Construction ne for day Distances di wavel constructions for Day Estimutes di wavel est par carego di Estimutes di wavel est par carego di Estimutes di wavel estimates di David Conso For Day Distances di Numero el David Conso For Day Estimates di Numero el David Conso For Day	0.27 0.13 0.43
Workers par Crew 3 Saw Cal Crew 605 Workers par crew 3 Paintg Crew 62	Working per Colors Utility and Colors Working per Colors Colors Working per Colors Colors Working per Colors	1 0.05 6 0.15 1	Working spr Crew Utility Relaciation Crew Working spr crew Working spr Crew Working spr Crew San Protocolistic Crew	2 0.05 6 0.15 1	Baund on 50 days per shaft) Estimated Number of Paring Crean Per Day Workers per France Crean Workers per Facht Crean Workers per Shaft Crean	0.10 7 16 8	Secondard insolution of anits Chemic Per Very David on SO Stype per doubl Softmande Number of Priving Creve Per Day Workrey per Typeline Creve Workrey per Typeline Creve Workrey per Typeline Creve	0.10 15 16 8
Waters per crew 5 Uctility Relaction Crew 0.1 Waters per crew 6 Traffic Control 0.15	Size Restantion Crew Warken per crew Temparary Gravel Roadway Crew Crew Size Total Worken per Day (Average Throughout Pipeline Construction)	0.15 3 0.1 4 10.9 2.03	Size Restantion Crew Workers gen creaw Temparany Gravel Roadway Crew Crew Size Teal Workers per Day (Niverage Throughout Pipeline Construction)	0.15 3 0.1 4 10.9 0.82	Working or Pulling one Total Workens per Day (Average Throughout Construction Schedule) Note: The Installation of Fiber Optic cabing is estimated to be within these provided production rates.	3 8.50	Workers per Paving crw Total Workers per Day (Average Throughout Construction Schedule) Note: The installation of Fiber Optic cabling is estimated to be within these provided production rates.	3.92
Cran Sign and Arrange Stranger Throughout Pipeline Construction) 10.20 Total Workers per Day (Average Throughout Pipeline Construction) 2.00 Total Workers per Day (Average Throughout Construction Schedule) 2.00 Rev Optic Dat Back Construction Schedule Investment Array Schedule Array	Fiber Optic Dard Bank Fiber Optic Dard Bank Fiber Optic Dard Bank		tech werear per cay young i trecipeur controcteo scenario Filer Opti Duti Bank					
Type Optic Soci Laka 413 Contractions for Mediade Jenning days) 413 Daily Core Productions (17 or etta) 203 Extinnate Mediane de Contrions (The Optic Corea Per Day 620 Theories, packfl, Conduit, Formanic Core 1 Theories, packfl, Conduit, Formanic Core 4	Pare Optic Deat Bank Constructions Extends (reventing dirps) Extended Norman 2 (Section	415 220 0.03 1 1 4	Ther Orgin Scota lank Constructions Endendue (serving days) Don't Crew Netaction (7 F per day) Con't Crew Net Constant (1 per constant) Con't Crew Net Constant (1 per constant) Constant) Constant (1 per constant) Constant (1 per constant) Constant (1 per constant) Constant (1 per constant) Constant (1 per constant) Constant) Constant	415 220 0.03 1 4				
Cathries Unit U.75 Working per Chair 4 Exerction Chair 62 Working per Chair 4 Paring Chair 61 Working per senses 7	Condress Lew Working and Crew Electrician Crew Working and crew Paring Crew	4 02 4 0	Lancing Link Working or Caw Paling Caw Working Or Wo	02 4 02	-			
Working par crow 5 Transi Workers per Day (Average Throughout Filter Optic Construction) 8.30 Total Workers per Day (Average Throughout Construction Schedule) 6.35 Extinated Number of Day Way Constructions Worker Whiche Trigs for Day Extinated Number of Day Way Constructions	Working per crew Tradit Working per Charge Presuphout Faller Optic Construction Total Workers per Day (Average Throughout Construction Schedule) Estimated Number of Dev Way Construction Worker Vehicle Trap Per Day Pediata Construction	7.80 0.24	Workam par crew Total Workers per Day (Average Throughout Faler Optic Construction) Total Workers per Day (Average Throughout Construction Schedule) Extensed Number of Daw Way Construction Worker Vehicle Trips Per Day Partiels Construction	7,80 0.27	Estimated Number of Don-Way Construction Worker Vehicle Trigs Per Day		Celimated Number of One-Way Construction Worker Vehicle Trips Per Day	
Particle Construction 1210 Table Worksim proceedings 2.10 One-Way Top part bry (Drinke) 2.20 Journies to Malew Warksim tom Park to Site (Done way - 5 miles) 2.30 Table One-Way Top part bry (Winker Worksim) 2.31 Table One-Way Top part bry (Winker Worksim) 2.31 * Austres matematic and Site Site (Done way - 5 miles) 2.31	Bedies Contraction Tradi Wildering en Ellay (Average Throughout Construction Schedule) One Way Traja per Gay (20 miller) Statistics houk Wolkers from Park to Sile (Dee way - 5 miller) Tradi One Way Traja per Objet Wolker Vahicle (Average Throughout Construction Schedule) * Auuret en antamum of 15 workers per hattist and 20 de worken need shuttin	2.03 4.07 2 6.1	Total Wankins yee Kary (Average Droughout Contention Schedule) Con-Way Topige year by Glo mile) Deattis to Move Worken from Parts 15 Re (Dre wr Finite) Paral Can Way Topige Dre ge Worker Warkel (Swange Throughout Construction Schedule) * Assumes macimum of 15 worken per shartle and 20% of worken need shuttle	0.82 1.64 0 1.6	Total Workers per Day (Average Throughout Construction Schedule) Com-Way: Tops per Day (Komles) Souths to Move Workers from Park to Site (One way - 5 milles)* Total One Way: Tops per Carg of Worker Care (Average Throughout Construction Schedule) * Assumes maximum of LS workers per thutin	8.90 17.80 2 19.8	Total Western per Day (Verrage Throughout Construction Schedule) One-Way (Fage Pools (56 million) Southe to Move Winders from Park to Sin (One way - 5 miles)* Total Gee Way Trips per Day of Worker Can (Verrage Throughout Construction Schedule) * Assumers maintum of 15 worker per Justice	9.92 19.84 4 23.8
Base State Shandhadi 23.5 Disk Walking ang Ding Juget Anger Throughout Construction Schedule 2.35 Disk Walking ang Ding Juget Anger Throughout Construction Schedule 5.35 Duration State Walking Walking Anger Throughout Construction Schedule 0 Test Construction Throw State Schedule 0 Automation Schedule 0.35 Automation Schedule 0.35	In an Oxfo Database Takas Researces of big Heuroge Throughost Construction Schedule Con-Way Tops per Stry (CO min) Status to Make Stream Face A set State (Sche ang Smith) State State Stream Face A set State State State Stream * Automation of State State State State State State State * Reside Constraints of State State State State State State State * Reside Constraints	0.24 0.47 0 0.5	Tigen Charlos Company Transploy Company Company Transploy Company Company	0.27 0.53 0				
Biodiler Construction 26.00 Total Workshop per Day (Maimum During Construction Schedule 26.00 One Way Trips per Day (20 milled) 52.00 Charliest An Main Wahren Theory Total Workshop (20 milled) 52.00	Total Workers per Day (Maximum During Construction Schedule One-Way Trips per Day (20 miles) Chethan Man Markers from Dark to Tim Darkson, E-miles 3	18.00 36.00 2	Nacilies Contruction Total Workings per Day (Baudmum During Construction Schedule One-Wiry Trips per Day (50 miles) Charlistes Hange Managemen Replace Film Departure. Emiliant	12.00 24.00 2	Total Workers per Day (Maximum During Construction Schedule One-Way Trips per Day (20 miles) Studies to Mow Workers from Park to Sche (Dne way- Smilles)*	16.00 12.00 2 34.0	Total Workers per Day (Maximum Throughout Construction Schedule One-Way Totas per Day (Schmine) Shuttis to Mare Workers from Park to Site (One way - 5 miles)*	16.00 32.00 6
* Ansures maximum of 15 workers per buttle and 20% of workers need shuttle <u>Notes</u> Houling Whiteles located in items below.	* Assumes maximum of 15 workers per shattle and 20% of workers need shuttle <u>Notes</u> Hauding Whiteles included in items below.	38.0	Total One Way Trips per Day of Worker Cars (Maximum Throughout Construction Schedule) * Aurunes manimum of 15 workers per shattle and 20% of workers need shuttle Nota: Hauling Vehicles included in items below.	26.0	Shurat to Noole Vectorian time hance Sale (Link way similar) ²⁴ Total (Link With Sale per Sale Val Western Burner Burner Construction Schedule) ⁴⁴ Assumes maximum of 15 workers per shurifik. <u>Nome</u> Haufing Vehicles included in terms below.	34.0	Total Cire Way Trips per Day of Worker Can (Maximum Thoughost Construction Schedule) * Assume maximum of 15 workers per shuttle. <u>Note:</u> Hauling Vehicles included in them below.	28.0
Total Weshinskap & Ang (Makimum Koring Construction Schudul) 17.00 Own Wry Tops gar (wyl) (Kin Ining) 16.00 Own Wry Tops gar (wyl) (Kin Ining) 20 Datatis to blow Writern tom Park to Dist (You wur - Smith)" 2 Tatal Gow Wry Yong gar (Walssen Workg Construction Schudul) 36.00 * Aussen maniferum of El working per thatEl and 2% of outsers need huttle face, insulty (Walssen Workg Construction Schudul) 36.00 * Aussen maniferum of El working per thatEl and 2% of outsers need huttle face, insulty (Walssen Konde (Lange Huttle)) 36.00	tata Weskeyapa Guy Mashum Dung Carbrounds Schodula) Done Wy, Toga per Corg (D mini) Statist to Mane Workers from Parts EXE ((D we wy - Tmile)* Trada Car Wy Toga per Day of Warker Can (Mashum Dunig Construction Schedula) * Aurune mainmum d1 Swarkers per battist and 200 of workers med shuttle <u>Mases</u> I walker (Worker Karden Tem Balan).	12.00 34.00 2 26.0	Total	12.00 24.00 2 26.0				
Construction Worker Vehicle Parking Location(s) Paoline construction Total Workers per Day (Average Throughout Construction Schedule) 2.10	<u>bote</u> : Healing Vehicles included in term below. Construction Weeke Vehicles Parking Location(d) Total Weeker, Data (Jensen Parking Location(d) Total Weeker, Data (Jensen, Parking Location(d) Assume 2016; of Earl Construction Schedule) Assume 2016; of Earl Construction Location Remaining 2016; Meeken An Statuk, Parking Location	2.03	<u>Netre</u> Liveling Weblicks included in Stems below. <u>Constructions Western Weblick Performs Location</u> <u>Constructions Western Weblicks Performs</u> (Total Western perform) (Provide State as park Networks the Construction Schedule) Assume 2025 of State as park Networks the Construction Schedule) Assume 2025 of State as park Networks the Construction Schedule)	0.82	Construction Worker Vehicle Parking Lacotion(s) Tool Worken per Day (Average Thoughout Construction Schedule) Assume 324: Gatter a park Nearly the Construction Location	8.90	Construction Workers per Day (Average Trocoghout Construction Schedule) Aurone 2007 (2018 and park Inseas) the Construction Schedule)	9.92
Assure 30% of 15df are park heavy the Construction Location Farmaling 20% issues at Intal Annie (art con- tantiantic park heaving construction Schedule) 26.00 Assure 30% of 15df are park heavy the Construction Location Farmaling 20% issues at Intal Annie (art con-	Austral 4/th of staff calls plan having the Control Telecontrol Control Resoluting of Staff calls plan having Locat Total Workers per Day (Maximum During Control Control Austra 20% of Staff can park Needy the Control Control Control Resoluting Of Staff can park Needy the Control Control Control Resoluting Of Need an Calls Location	1.4 18.00 12.6	Allunde alles de zum das pär kenkernig frei Colonization Lacabons Remaining 200 million das Tabala Arinning Lacina Total Wanteres per Day (Maximum During Centruction Schwädue) Ausume 2016 di Staff das pärt Neurity Hie Construction Schwädue) Remaining 200 million das Tabala Arinning Lacina	0.6 12.00 8.4	Assume 320 of Staff can park Neutry the Contraction Loadson Bornahing 25X Neutral and Linda. Parking Loadson Total/Workers per Day (Mauhrum During Construction Schedule) Assume 322 of Staff can park Neutry the Contraction Loadson Bornahing 25X Neutral Ballad. Parking Locks	62 16.00 11.2	Assume 2016 of Staff can pusk Nearby the Construction Location Remaining 2016 Need on Staff L-Proving Lacks Total Workers per Day (Maximum During Construction Schedule) Assume 2016 of Staff can pusk Nearby the Construction Location Remaining 2016 Need on Staff L-Proving Lacks	6.9 16.00 11.2
serianang oros need as instel. Versional Let ne 11 I I Ther Confection at an instel version of the Instel of the I	Hermaning, one week an initiate - Prevent Lot ni <u>Elser Paric Dart Bank</u> Todi Working et Day (Average Throughout Construction Schedule) Aware 200 of Staff cap Junk Neuropy the Construction Isolation Resembling 'ON Need an Staff Low/Reg Lot Con	0.31	Anamang Jon Nee on Hasin Faring Loc na <u>Tan Hockers per Day</u> (Average Throughout Construction Schedule) Assume 20% of Salf cas park Nearby the Construction Schedule Remaining 20% of Nearb on Estable Assumption (a Contin Construction Schedule)	6.27 6.2				
Total Workers per Day (Maximum During Construction Schedule) 17.00 Assume 20% of Saff can park Nearby the Construction Location Resensing 70% Need as Etable: Nearby Leta Construction Location 11.9	Total Workers per Day (Maximum Daring Construction Schedule) Assume 20% of Staff can park Nearby the Construction Location Remaining 70% Need an Establ. Parking Loc'ns	12.00 8.4	Total Workers per Day (Maximum During Construction Schedule) Assume 20% of Staff can park Nearby the Construction Location Remaining 70% Need on Establ. Parking Loc'ns	12.00 8.4	WP There by Mandador Makeling- downwardshall and the	3	MIT There he likely and as printerior descent and as a second sec	Research Malor
With these two-level or high-two Construction III are table (Construction and Construction out) and the alignment to address the state of the alignment to address the ad	Will There be Weeked or Mightine Construction Will we Likely Compute with Weike Ordenasce or WILL We be Too community and business impacts. For example is stema is called using up with the weik would have less impacts or will genicate any end ordenasce of the stema in the stema in the stema is a stema of the stema of the stema will genicate any end ordenasce of the stema of the stema will genicate any end ordenasce of the stema of the stem		With them be treatened or hightenes connuction VMM we liably Comply with have dedinates or MVM We beg to contractions with ightened for waveless. There may be optications are dedined by particular reads, and business impacts. For example is some locations nighttime work would have less impact to businesses. request variances to extend work beyond normal noise ordinance hours.		WE from the Weekend or Keptrine Constantial? Hill we Likely Congly with Naise Ordinance or WE We Anquest Variance Conne critical cossings may require weekend or rightstree work by permit. Where wakens are feedble, Saturday day wor	k may be needed.	Will there is therefore of higherine Construction3 Will are Likely Comply with Noise Ordinance or Will two to Some critical crossings may require weekend or higherine work by permit. Where waivers are feasible, Sa	Saharday day work may be needed.
Construction Daping: Area and Storage location(s) We connectly articipate two category/arounds locations per contract peckage. We connectly articipate 8 contract packages for the pipelin will be tracked of 54 maying and storage areas. Typically a staging/storage area will be on average4 acres and a sourced to be within 5 the stor.	Construction Staging Area and Storage Location(s) athere We currently anticipant has traping/location per contract package. We currently anticipate it co in from there will be a tatket of the darging and storage areas. Typically a staging/storage areas will be an average 4 mills there the dar.	ontract packages for the pipeline so I acres and is assumed to be within S	Construction Staging Area and Starage Location(A) We currently attricipate two sugring/storage locations per contract package. We currently anticipate if come will be attract of Life staging and storage mean. Typically a staging/storage mean will be on average 4 acres and the site.	act packages for the pipeline so there d is assumed to be within 5 miles from	Construction Studies Annue and Storage Lacation(c) Construction studyes basis and action that has (auch end of crossing). Launching studies area will be (200 sqcR and die nerosity), studies (200 sqc ft Additional instealing and studies (200 sqcR and die nerosity), studies (200 sqc ft).		Construction Staging Area and Storage Location(s) Construction staging boards at each shaft the (such end of crossing). Launching staging area will be \$200 kg/t and the receiving staging 3,000 kg/t Additional material and equipment targer available at 4 are polyhole nating area.	
or non- Electrical Precisions for Stanlay/Dangering Spats Due to be instantiation of sever and in constructions is as an excitigated that stochastic of sub as the site will not be possible. At excesses Due to be based with the stochastic of the several endowed by the several endowed and the several endowed on function of the several endowed and the function of the several endowed and the several endowed on function of the several endowed and the several e	Lection//hocetures for Society/Transporting Spoils	(I not be possible. All excavated soil	ue exe. Location, Possedores for Starlight/Tangaching Spalls Does to the Initial work area it and, construction and are a stratighter that itsolating of usin at the site will liable to hald with the starlight the starlight the strategistress stars. The coll position of the accesses will be	ot be possible. All excavated soil will	nacessan man an an experience, saving manager in two pyremi saging ann. Location, Procedures for Storing/Tanapaoring Spoils Escuvated goals will be tempopariyi stocipiled at the luxuch shaft sites or loaded directly into dump tracks and haufed of	ffsite daily for disposal	Pococia in name any equiprem suckey exacer as a set popular range of the set	cks and hasled officite daily for discernal
(and) build of this is a display in the stagged tracger was the space of posicion of the seconds well be expressed and a start of the space of the start of t	many an energy or means unset to a stocpute it the tablinghightings area. The spoil particle of the accusted will be shale back to be shared to reflex the state will be shared back to be sured to reflex to be used to reflex the table statement will be spoils and energy and the shared back and disposed to the distance of Disnet. It is the means that table table shared and table table shared and the disposed at a human back to be used to reflex the disposed at a human back table table. The disposed at a human back table t	we separated and hauled to pipe trench. We estimate that 40% of at landfills at an average one way cardous and require hauling and	likely be having office to a stochable of the stagged stockage area. The upol portions of the excernts will be a and the remaining of will be haved back but the constructions the the scards to will be post- material will be upolic or derenerative structures that will need to be haved and the grant post- and structures that the other than will need to be haved and the grant of the structure that will be upolic or derenerative structures that will need to be haved and the grant of the structure data to the other that will need to be thaved and dispussed of at landfills at an aver- alian estimate one way distance of 150 miles.	,				
Theodesian of the first stand that they have to bottom of transportations (e.g. of the of disposed, material). Type of the base	Renater of daily than Yang Haul Track Tays Dar to Motorial Temperatures (e.g. of taxy/disperse), motorialy, Tays of Tracks		Number of Daily One-Way Haul Truck Trips Due to Material Transportation (e.g. of Anal/Alepood, material) Try	ae of Trucks	Namber of Dahy Clew Way Kaul Truck Trips Dae to Material Transportstice (e.g., of Asalykityseus, material), Type of Trucks		Number of Dally Che-Way Haul Truck Trips Due to Manufal Transportation (e.g. of Haul/Eduposi, material)); Type of Trucks
Partice Construction 204.0 Volume of Excess(c)(2) per fit of Them) (12 W x 12 W (2) (obtains paring debrin) 204.0 Volume of Excess(c)(2) per fit of Them) (12 W x 12 W (2) (obtains paring debrin) 11.24 Volume of Excess(c)(2) per fit of Them) (12 W x 12 W (2) (obtains paring debrin) 12.35 Capacity per Damp Truck (15) 126 Marther of Volum (14 Law per fit of Them). 129	Pacial as Construction Values of Excessis (CT) per R of Threnh. (US W x 197 0) (includes paving debrin) Values of Excessis (CT) per R of Threnh. (UK W x 197 0) (includes paving debrin) Values Excessis (CT) per R of Locating Savel of 15% Capacity per Damp Truck (CT) Revender of Inda Trucks per R of Threnh.	304.0 11.26 12.95 10.0 1.29	Baseline Construction Volume of Excession (C) ppr Pc of Trevels (LiF W x 107 00 (Includes pawing debrit) Volume of Excession (C) ppr Pc of Trevels (LiF W x 107 00 (Includes pawing debrit) Volume Scawards (P) ppr PC from (Ling Exp of 15% Capacity par Except (P) pr PC from (Ling Exp of 15% Mamber of Hall Streks per F1 of Trevels	204.0 11.26 12.95 10.0 1.29	Length (ft) Excavation lander (ft) Xanati Valame (lo-shall (lo-ysh)* Sahti Valame (lo-shall and Zanati (lo-ysh)* Takti Valame (lander) and Zanati (lo-ysh)*	626 9 1,697 1,628 3,525	Langth (H) Gicaraution Diameter (H) Turonsi Volume (in-stat) (co-yds)* Shaft Volume (cu-yds)* Total Volume (cu-yds)*	2,220 9 6,006 914 6,533
	Estimated Length of Trench per Day Per Crew (ft)	1.29 100.0 129.5 259.0	Estimated Length of Trench per Day Per Crew (h)	1.29 200.0 129.5 259.0		353		6,930 693 178 720
Nature of and instance for ourse this functions 18.1 Addition less and for the and big alternation of a state of function 12.1 Addition less and for the and big alternation of a state of function 12.0 ADV in a less and big alternation of a state of function 12.0 ADV in a less and big alternation of a state of function 12.0 Advanced and the advan	Number of Hard Tracks per Core per Cally Production Trada Core-Ways and Taylo has Date Calls Cally Quarks and evident Community Pays Andrody Call Institution Table (CT) How To Carl of Paysine Call Provide Call Institution Call (CT) For Inf Paysine Exer, Pays Andrody Call Institution Call (CT) For Inf Paysine Pays Resting Call Institution Call (CT) (CT) (CT) (CT) (CT) (CT) (CT) (CT) (CT) (CT) (CT) (CT) (CT) (CT)	55.37 2.05 2.36 30.0	Number of Haul Ducksyne (Ynwy er Nally Production Cardinaeth yn yw han yn han Daw Sangellyn Dynag and mawn Cardinaeth yn yw han yn han San Sangellyn (Yn ym Argennaeth Cardinaeth yn ym han ym ym Cardinaeth ym	55.37 2.05 2.36 10.0	Since Answer of Track Tope for Soll Internation Topics Answer of Track Tope for Soll International Topics Answer of Track Tope for Soll International Educated Parameters (Ley H) Private Regulacement Integer (LET Mold) (s-mb) Private Regulacement Integer (LET Mold) (s-mb) Mold Number of Track Topic for Regulary Reging Mold Number of Track Topic for Reging Number Reging Mold Number of Track Topic for Reging Number Reging Mold Number of Track Topic for Reging Number Reging Mold Number Reginal Number Reging Mold Number Reginal Number Regina Numbe	1,440 1,410 2,115 78 8	Tand Hunder of Tankin Tipo (E. Soli Bernord Tandi Hunder of Tankin Tipo (E. Soli Bernord Tandi Hunder of Tankin Tipo (E. Soli Tankin) Bistubed Parameter (eq. 4) Parving Replanament trapos ((E. Taha) (ep. 4) Parving Replanament trapos ((E. Taha) (ep. 4) Tanah Hunder of Taha) (Ein für Henglingen) Tanah Hunder of Taha) (Ein für Henglingen)	705 1,058 39 4
Number of their Tricksper Tell Streach 0.24 Externate classifier Streach and track processing 0.20 Number of Polys Meding tengort Tricksper Core (Tricksper C	Pope Redding Scal Import (17) per FT Including Swell of 10% Capacity per Zhang Truck (197) Number of Hall Trucks per FT of Thench Exclamated Length of Threndy per Vay PM Crow (10) Number of Pope Redding Import Trucks per Day Tod Dia Comery Nau Trips of Pope Redding Imports State	0.24 100 23.6 47.2	Number of Haul Turkss per FT of Hannes. Statisticate Lange for the Haul Haul Haul Haul Haul Haul Haul Haul	0.24 100 23.6 47.2 47.2	Tatal Truck Trip During Construction Number of Truck Trip per day on Awrage *Awumes a 115 building factor	1,850 4.46	Total Truck Trips During Construction Number of Truck Trip per day on Average *Answers a L15 balking factor 20 CY total in 2C of darm Drucks	1,595 3.54
(31.9%*92% of Excepte Trips from Site to Storage)	And number of neurit rips for typs andding to stocing a site num support Number of Dion-May Daily Trips Insting Excernated Soll from Storage back to the Site (and return) (68.1% of Excernite Trips from Site to Storage) No. of One-Way Spols Daily Trips from Storage Site to Landfill (58 miles) and back (20 06 Wing) of Excernation from Site to Korana)	47.2 176.4 74.3	No. of One-Way Spolls Daily Trips from Storage Site to Landfill (50 miles) and back (31 9%*90% of Excession Trips from Site to Storage)	176.4 74.3	10 CY laads in 12 CY dump trucks		10 CY loads in 11 CY dump trucks	
No. of Dow Way Spain Duily Tray for them Storage Tate to Visco. Wante Land III (200 miles) and back 2.5 (11.91% 12/04 of Excerning Tates Tates to Excerning (20 miles as way) 1.5 (Autom 2.01 keV 70 keV pix miles) (Autom 2.01 keV 70 keV pix miles) As of Dow Way Davie Multi Tates of Pixe Form Storage to Site (E miles as way) 1.5	In a close Way Species Spectra (Tray to most Sourcego Dira Inia Na, Wanta Landill (200 miles), and back (LLD PCULSA Closent Tray from too The Userge) (The Source Tray from too Spectra Dira Sourcego Dira Mara Mara Mara Mara Mara Mara Mara M	8.3 5.0 5.0	No. of One-Way Spolis Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back (21.59) ¹² /2016 of Dacator Trips from Site to Storage Site to Haz. Waste Landfill (200 miles) and back No. of One-Way Daily Hailan Trips of Hope From Supplier to Storage (50 miles en. way) (Automes 20 ft of 7 DAI) pape of Hop Term Storage to Storage (50 miles en. way)	8.3 5.0 5.0				
(Automete 2011 of 7 OA Jope per trip) No. of Oesen year (Tota to She Ingrandig Materials (50 miles ea way) (Automete 3" thick about 20 will set transch plus 47 All overlay for half the All road wide) Daily Gen-Wayn Mait Trips or Cere Danig the Playeties Construction. 107.8	(Assumes 20 ft of 7° EVA pipe per trip) No. of One way Trips to Site Importing Paving Materials (20 miles as way) Daily One-Way Haul Trips per Crew During the Pipeline Construction	0.0 622.3	(Mailania Carta σ ² - Ock poing art thig) No. at Ock we'go (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mailania) (Mail	0.0 622.3				
Duily Average One Way keel Prips Throughout Construction Schedule 38.1 20 Wheel Duran Tanks for Sola Tananana 18 Wheel Partiest Tanks Prings	Daily Average One-Way Haul Trips Throughout Construction Schedule	116.0	Daily Average Con-Way Haul Trips Throughout Construction Schedule	46.8				
Bar Crick Dat Bast Home Concerning Home Co	Encrostic fact land Values of Locards (27) per R of Terrots ($P \le x \le 0$) to be Lacavated (incl. paving debris) Values of Locards (17) per R of Terrots ($t = be Cacitated and Reveal on the TerrotsValues of Locards (17) per R of Throng (P \le x \le 0) are homoved (pick paving debris)Values of Locards (17) per R of Throng (t = b \ cacitated (b \ cac$	10.0 4.0 6.9	Encrose Data Data Bank Volume of Dacavite (C) per Pc of Trench (2' W x 5' D) to be Dacavited (incl. paving debris) Volume of Dacavite (C) per Pc of Trench (2' W x 2' D) to be Rencoved (in the Trench Volume of Dacavite (C) per Pc of Trench (2' W x 2' D) to be Rencoved (incl. paving debris) Volume of Dacavite (C) per Pc of Trench to be Rencoved (in CS SS Soull (Oct. paving debris)	10.0 4.0 6.0 6.9				
Volume of Imported (C) (per r1 of Innet to Set Methode And L Das Setti (poid, paving alloring) C. Allo Volume of Imported (C) (per r1 of Innet) (P W a SS) L00 Volume of Imported Set (C) (per r1 of Innet) (P W a SS) CD4 Capacity per Lange (P To Tal Setti (P W a SS) CD4 Capacity per Lange (P To Tal Setti (P W a SS) CD4 Capacity per Lange (P To Tal Setti (P To Tal Seti (P To Tal Seti (P To Tal	Volume of kaziwate (r. 17) per t of interCh to de Alemonde dec. L'In Suee (ride: paving deleni) Volume of Imperied Sol (C) per FT of Trench (PL VI. SC.5) Volume of Imperied Sol (C) per FT of Trench (PL VI. SC.5) Capacity per tamp Truck (PL Capacity per tamp Truck (PL Trench Length per tamp (FT) Dow-Way Spelin kau T (Spe tam Site to Storage Site and networ	1.00 0.04 10.0 220	Values of Discussing (Cf) part of Terech to be Alexanoval incl. 1255 Swell (incl. pawing debrin) Values of Imported Sol (CF) part of Therech (2 W & A.S.) Capacity part Davago Texels (Cf) Capacity part Davago Texels (Cf) Trench Length part Dava (Cf) Dow-Way Spich Mai Tipis (from Else Starges Site and extram	0.25 1.00 0.04 10.0 220 9.78				
One-Way Spoils load Trips from Storage Site to Loadfill Of miles (BKs of Suc. Mart) and mins SLD One-Way Spoils load Trips from Storage Site to Loadfill Of miles (BKs of Suc. Mart) and miles (SLD Suc. Mart) and SLD Suc. Storage Site Site Site Site Site Site Site Sit	On-Way specie has in this issue and an output of a start reason. On-Way Specie has in Tayle from Riscoge Size to Load BT Brailes (BNK of Dac. MatT) and return On-Way Specie has in Tayle from Riscoge Size to Load BT 200 miles (DNK of Dace. MatT) & return On-Way inported Size Tayles into Office to Sozge Size and return On-Way imported Size Tayles into Office to Sozge Size and return On-Way imported Size Tayles from Sozge Size Size and return Uses the OF Constit Installe of Dar Wir (Si Sozem 2) and Conduct in dectated)	0.26 1.00 0.04 120 9.78 12.6 1.6 1.6 1.6 1.6 880 5,000 0.3	Universe gapes have been also been also a categoria and a frame and a second Com-Way Space have been from from from one and the second	17.5 2.0 1.6 000				
Unity The Control per Control Time Transmitter Units and Analysis 1.00 Own Way Delyhold in Theor of Time Transmitter Units and International Control Time Transmitter Conternation Control Time Transmitter Control Time Tra	target) of 2 - Concision seture pairs and p (2) - Joint setures the second in second in Concision seture pairs and p (2) - Joint setures the seture setures and the seture Concision setures and the seture setures and the seture setures Concision setures (2) and p = (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values of Concortes ((2)) per (2) - for all lands: Values (2) - for a	5,600 0.3 0.3 2.0 2.4.2	Using of Clouds per Contain the Data Context of Clouds per Contain the Data Context per Data (the Data of the Data Context per Data) (the Data of the Annual Contains to Strange Data Context per Data) (the Data of the Annual Contains the Data Context per Data (the Data of the Annual Contains the Data Volume of Concrete (CV) per of Data Bank Installations Concretes Tubs (Capatra) (CT)	5,600 0.3 0.3 3.0 24.2				
Convert Inst. Capacy (2) 60 Own-Way Construct Tex (Tay par Or pard intern 6.2 Own-Way Construct Tex (Tay par Or pard intern 6.4 Munnar 7: Tex Lisch Teyper Day Tex (Martinal) (20 mer se way) and intern 6.4 Munnar 7: Tex Lisch Teyper Day Tex (Martinal) (20 mer se way) and intern 6.4 Tatal Anonge Day One Way Tex (Tay Text) and construction 16.1 Tatal Anonge Day One Way Tex (Tay Text) and construction Schodarie 1.1	Concrete Track Capacity (Cr) One-Way Concrete Track Tripper Day and return One way Trippis S file Insporting Parking Materials (S9 million as way) and return (Inter Applicable) Total Average Daily One-Way Track Tripp Daring the Taker Optic Local Back Construction Total Average Daily One-Way Track Tripp Total Park Capacity Constructions Total Average Daily One-Way Track Tripp Total Park Capacity Constructions Total Average Daily One-Way Track Tripp Total Park Capacity Constructions Total Average Daily One-Way Track Tripp Total Park Capacity Constructions Total Average Daily One-Way Track Tripp Total Park Capacity Constructions Total Average Daily One-Way Track Tripp Total Park Capacity Constructions Total Average Daily One-Way Track Tripp Total Park Capacity Constructions Total Average Daily Constructions	80 60 00 383 12	Concent Tools Capacity (C) One-Way Concents Test AT Fags per Voya and intern One-way Tripis to Sile Importing Parking Materials (ED miles ea way) and return (Not Applicable) Total Anorage Daily One-Way Tosk Tripis Quintig the Fater Optic Dack Electroscolan Total Anorage Daily One-Way Tosk Tripis Quintig the Fater Optic Dack Electroscolan Total Anorage Daily One-Way Tosk Tripis Quintig the Fater Optic Dack Electroscolan Total Anorage Daily One-Way Tosk Tripis Quintig the Fater Optic Dack Electroscolan Total Anorage Daily One-Way Tosk Tripis Quintig the Fater Optic Dack Electroscolandes Data Anorage Daily One-Way Tosk Tripis Quintig the Fater Optic Dack Electroscolandes Data Anorage Daily One-Way Tosk Tripis Quintig the Fater Optic Dack Electroscolandes Data Anorage Daily One-Way Tosk Tripis Quintig the Fater Optic Dack Electroscolandes Data Anorage Daily One-Way Tosk Tripis Quintig the Fater Optic Dack Electroscolandes Data Anorage Daily One-Way Tripis Tripis Quintig the Fater Optic Dack Electroscolandes Data Anorage Daily One-Way Tripis Tripis Quintig the Fater Optic Dack Electroscolandes Data Anorage Daily One-Way Tripis Tripis Quintig the Fater Optic Dack Electroscolandes Data Anorage Daily Optic Way Tripis Tripis Quintig the Fater Optic Dack Electroscolandes Data Anorage Daily Optic Way Tripis Tripis Quintig the Fater Optic Dack Electroscolandes Data Anorage Daily Optic Way Tripis Tripis Quintig the Fater Optic Dack Electroscolandes Data Anorage Daily Optic Way Tripis Tripis Quintig the Fater Optic Data Anorage Data A	8.0 6.0 0.0 29.3 1.3				
Bispeal Lacition for Construction Debris It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles.	Disposal Location for Construction Debris It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of S		Dispasal Location for Construction Debris It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 s		Disposal Lacuities for Construction Debris R is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles.		Disposal Location for Construction Debris It is estimated that construction debris will be haved and disposed of in a landfill with a one way trip of S	S0 miles.
Volume of a Unitarian Standard Sta	taking of any Money Langest (Typeshol, Typeshol, Ty	Intel (Metals) and Clean Construction 1254.8 881.8	Volume of any states in logarity (played), building the section Water (played) Council, state) sectors (state)	(Merial) and Dean Construction Materials 1294.8 881.8	Wilson daru, Manzin Ingoland, Hangkanda, Huching Damikatur Manto Japahali (Sancasta, Salak Sance, Sance), Beng Manto, and Chi Pagelanta Ingelance, Kasaka, Insen Kasaka Salakaka Kasaka, Alaka Salakaka, Salakaka, Salakaka, Salakaka, Salaka Total Volume of Shafts and Turnel (cu-ydu) Pakata Bajabacenneti Import ((T Hick)) (cu-ydu) Total (Saport Mantaria (cu-ydu)	aan Construction Materials (Conso 3,525 78 3,623	Volume of any National Ingential Systemic Including Committee Nation (Special Committee Nation (Special Committee National	forei) Metuiki and Clean Condituction Midentals 6, 930 39
Volume af Spoils frem Starage to Landfill (ince-hazardeou) (XY) 11.1.5 Volume af Spoils frem Starage to Landfill (incandou) (XY) 12.4	Volume of Spoils from Storage to Landfill (non-hazardous) (CY) Volume of Spoils from Storage to Landfill (Hazardous) (CY)	271.7 41.3	Volume of Spolis from Storage to Landfill (non-hazardous) (CY) Volume of Spolis from Storage to Landfill (Hazardous) (CY)	371.7 41.3	unter enforceux surgeaux (ins.lant)	3,603 3,525	Long reference (realized)	6,969 6,933
Volume all imported Pipe Bedding to Storage from Supplier per day (CV) 78.7 Volume all imported Pipe Bedding from Storage to the Site per day (CV) 78.7 Volume of Pipe Nacied to Storage by the Supplier per day (CV) 65.8	Volume of Imported Pipe Bedding to Storage hone Supplier per day (CY) Volume of Imported Pipe Bedding hone Storage to the Sile per day (CY) Volume of Pipe Hawled to Storage by the Supplier per day (CY)	225.8 225.8 152.8	Volume of Imported Pipe Bedding to Storage from Supplier per day (CY) Volume of Imported Pipe Bedding from Storage to the Site per day (CY) Volume of Pipe Hauled to Storage by the Supplier per day (CY)	235.8 235.8 152.8				
Volume of Pipe Hauled to the Site from Storage per day (Cf) 45.8 Volume of Pauling Material Imported to the Site per day (Cf) 9.6	Volume of Pipe Hauled to the Site from Storage per day (CV) Volume of Piwing Material Imported to the Site per day (CV)	152.8 21.9	Vestate of right inducts to include on the start program (in or 1)-1) Vestares of the started to the field inconcept and only (CO) Vestares of Pavleg Material imported to the Star per day (CO) These Vestares and the started program (Conception and do not represent as sering) over the construction of the Conception of the started program (Conception and do not exercise on the Construction Scholards for Figure Conception).	152.8 21.9 hedule.				
Now: Waves an oper day solely Replice Construction and do not represent an average over the construction schedule. Filter Clark: Doubland Volume of Concrete/Spoils oper Cary Suported from the Ele to Scorage per day (VT) (Incl. LSS well) 51.1 Volume of Concrete/Spoils oper Cary Suported from the Ele to Scorage per day (VT) (Incl. LSS well) 51.1	Note: Values are per dry drying Popeline Construction and do not represent an overage over the constructions Electric Dark Dark Bank Violanne of Escuvate/Spelin per Day Experted from the Site to Storage per day (C1) [incl. 15% nevel] Violanne of Escuvate/Spelin per Day Network to the Site from Storage per day (C1)	n schedule. 56.2 0.0	Note: "Walks are per day of Papeline Construction and are not averaged over the Construction Schedule for <u>Elser Oastis Dast Bank</u> Volume of Cacazata/Spoils per Day Exported from the Site to Storage per day (C1) [incl. Sits vew1] Volume of Cacazata/Spoils per Day Reported from the Site to Storage per day (C1)	te Reach. 56.2 0.0				
Velume of Spoils from Starage to Landfill (soch-hazardoun) (KY) 46.0 Velume of Spoils from Starage to Landfill (Hazardous) (KY) 5.1	Volume of Spoils from Storage to Landfill (non-hazardous) (CY) Volume of Spoils from Storage to Landfill (Hizzardous) (CY)	50.6 5.6	Volume of Spolit from Storage to Landfill (non-hazardous) (CY) Volume of Spolit from Storage to Landfill (Nazardous) (CY)	600 50.6 5.6				
Volume af Imported Sail to Starage from Supplier par day (Cf) 7.4 Volume of Imported Sail from Storage to the Site par day (Cf) 7.4 Length of C' Conduit Hauled to the Storage by the Supplier par day (Cf) 803	Valume of Imported Sail to Storage from Supplier per day (CY) Valume of Imported Sail from Storage to the Sile per day (CY) Length of G [*] Conduit Hauled to the Storage by the Supplier per day (CY)	8.1 8.1 880	Valame of Imported Soil to Storage from Supplier per day (CY) Valame of Imported Soil from Storage to the Site per day (CS) Length of 6° Conduit Huuled to the Sitesage by the Supplier per day (CY)	8.1 8.1 880				
Length of C' Conduit Hauled to the Silo from Storage per day (CY) 800 Volume of Economic Hauled to the Silo from Scopgler per day (CY) 22.0 Volume of Parlog Material Imported to the Silo per day (CY) 2.7	Length ef G [*] Conduit Hauled to the Site from Storage per day (C1) Values of Concrete Hauled to the Site from Supplier per day (C1) Values of Paving Material Insported to the Site per day (C1)	880 24.2 0.0	Length of 4° Conduit Haurled to the Site from Storage per day (C1) Volume of Concrete Haurled to the Site from Supplier per day (C1) Volume of Paulog Material Imported to the Site per day (C1)	880 24.2 0.0				
Volume of Parking Material Importants to the Dim part day [C1] 2.3 Note: Values occur during the control on the Take aprice distants that is a particle of the overall Construction Schedule for the Resch. - Special Access Routes In the Newsched or for Overance Materials or Equipment — This does not apply to this constructions method.	Values of Pavlog Matshall Imported to the Site per day (XV) Note: Values accur during the contruction of the Bar optic authorith that is a portion of the overall Construct Special Access Bacetar line Roburted on for Overside Materials are Egylagement This does not apply to this incursion method.		Volume of Paving Material Imported to the Sike per day (CV) Note: Waw occur during the construction of the Sike optic ducttank that is a portion of the overal Construction Special Access Rostes in the November of the Oversided Materials or Kpubpenent Temporary routing until with the needed to allow heavy which access particularly during wet weather:		Special Access Koutes in the Novebad or for Oversized Materials or Equipment Not applicable.		Special Access Review in the Riverbed or for Oversland Materials or Equipment Not applicable.	
Massuret to Address Devoting Prostment/Proger Disposal of Groundeaster Gestechnical and hydroestaki: investigations will be performed during detailed devine detailed devine to determine encondeaster decth, combuction	Messaves to Address Dewatering Prestment/Proper Disposal of Groundwater Messaves to Address Dewatering Prestment/Proper Disposal of Groundwater watering	oundwater Awards	Measures to Address Dewatering/Treatment/Proper Disposal of Groundwater Gestechnical and hydrogenologic investigations will be performed during detailed devian to determine expan	dwater devite	Measures to Address Dewatering/Tootment/Proper Disposit of Groundwater		Measures to Address Dewatering/Treatment/Proper Steporal of Groundwater Gestechnical and hydroer-olacic investignations will be performed during detailed design to determine are	roundwater Anath, annumer
Generativitical and hydrogenergic investigations will be proferred during detailed during the datameter topic constraints of experiments, and generative standing long appendix tests. The constraint and all appendix tests are detailed with the local automatic planar detailed with th	varies destentional and hydrogenigal; investigations will be partimed darking of partialed darking to determine age destating requirements, and genorationation granting band be placifier concer. The constant will labla particle particle and the place of the place including electropic place of the place including electropic place of the place	www.er depth, construction rovide local treatment and discharge requirements will be determined uplished mainly through dewatering ing methods. Permitting will be	Greaterical and hybrogenoise, investigations will be performed during detailed during to determine gapsare requirements, and groundware quarking how the plansific more than the constant will have provide load the system per as agreement established with the local substring. Developing and treatment requirements will boostoms to treateriad developing flows. It is anticizant that advecting will be accompleted manifer how there is a system of the system of the second substring will be accompleted manifer how there is a system of the second substring in the second substring methods. Permitting will be locations.		Geotechcial and hydrogeologic investigations will be performed during detailed deright to determine groundwater dept requirement, and groundwater quality along the pipeline reach. The contractor will linkly provide local instances and alo an agreement tablical with the icid al industria. Devandering all tractarest requirements will be determined including devantering from it, a saticipated that devantering will be accomplished mainly through devantering paralle to zero zero are require velopiced devantering reaction. Personnelli and all devantering during during the to zero zero are require velopiced devantering reaction. Personnelli and all devantering during during the contract of the satisfication of the satisfiest of t	h, construction dewastering locharge to a local sewer syste g discharge locations for treats pipe trench during constructions.	Gestechnical and hydrogeologic investigations will be performed during detailed designs to determine per per per per per per per per per per per	
locations. Temporary Lipting There may be rightfore work distants by particular needs along the alignment to address community and business impacts, in these or temporary lighting will be provided by the Contractor.	obtained for all deviatered discharge locations. Temporary Lighting Them may be digitaries work dictated by particular needs along the alignment to address community and temporary lighting will be provided by the Contractor.	ed business impacts. In these cases	Isostoon. Tengerary Lighting There may be indicated by particular needs along the alignment to address community and b Lighting will be provided by the Contractor.	usiness impacts. In these cases tempor	Temporary Lighting n Temporary Tighting requirements: Due II V Kill Marchen hand an or 25 fast		Incations.	
Wear Sophy Nytenato Wear Trock/f	Weare Sough (Hydraets) Water Toucks). Weare Sough (Hydraets) Water Toucks). Wear the construction will liair to obtained from water trucks due to the lock of available hedraets in th	here areas.	where Supply (hydroxet) water Trucksh) Were recognite (hydroxet) water Trucksh) Were for contruction will likely to obtained from load hydroxets one an any enseme with the load authority.		Two 10 KW post lights per shaft site. Wester Sopply (Hydrates)? Wester Tracko)? Wester Sopply (Hydrates)? Wester Tracko)?		Two 22 KW poet lights per shaft size. Where Foodpay (Indexnot?) Waves Track?) Where for constructions will likely to datawed from local hydraets per an anevenent with the local author	rby.
Water for construction will likely to obtained from local hydraets per an agreement with the local authority. Temporary or Permanent Right-of-Way/Easements	Temporary or Permanent Right of Way/Easements	o need temporary construction	Water for contruction will likely to obtained from local hydrants per an agreement with the local authority. Temperary or Permanent Right al Very/Caseneete The pipeline within the UACO assument will experient obtaining a permanent essenerst. Contractory will also along the piper use since their constructions activities will extend beyond the lists of the permanent ass	need temporary construction easemen	Were for construction will likely to obtained from local hydrants per an appearant with the local authority. Temporary or Permanent Right of Ways/Casements or Sur pipelines located in city streets no additional right of way needs are anticipated. For pipelines located within rivers or ubsurvice assuments will be required.	rwithin SCE or private propert	Water for construction will likely to detailed from local hydraets per an agreement with the local authors Temporary or Permanent Right-of-Way/Essement gr for pipelines located in city streets no additional right of way needs are anticipated. For pipelines located property subsection is experient to regulated.	d within rivers or within SCE or private
It appears the pipeline is within the MNID service area for this construction method does not deviate into private property where a per essement would be required. It is not anticipated that herecommunication method does not deviate into private property where a per	The pipeline within the SCE easement will require obtaining a permanent easement. Contractors will also easements along the piping route sizes their construction and intervention of and		Demolition?	uding grassland, gravel, concrete paving	ubsurface essencets will be required. Denotition? There may be some limited densition needed in some locations where shafts are constructed including trees, concrete	walkways, etc. All demolition	property usburface easements will be reguland.	g trees, concrete walkways, etc. All demolition
It appends the patients which he Matthewards and the training of the patient appends and the patient paperty where a per assessment would be required. It is not participated that improve processing construction essentials will be readed. Executional Execution	Mer De jubite witch the SC essense will require datable a permanent essense. Contractan will be essense jubite physic require location activities will network beyond the links of the jubite Brenations ² Sensetimos ² Mark Contract the sense of the sensetime of the senset	including grassland, gravel, concrete	Surface features will be demolished during construction and will be replaced back to existing conditions incl etc.		reconstructed/replaced in kind.			
Section Texture of the interface of the section of the section of the section of the triangeneous section of the triangeneous section of the	Servisited Servisited Servisited Servise Instance will be denotified during continuction and will be replaced back to selecting conditions is printing, etc. Access Phylocolities and Spacing		etc. Access Phts/Lacutions and Spacing		recontructed/replaced in kind. Access HityLacations and Spacing Study will be located at each and of each crossing.		Access PlayLocations and Spacing Stuffs will be located at each and of each crossing.	
Section 2010 Research 20 Annulated as within 21 best darphic payload and all section 21 bits values data of the 12 with section. Is called a statisticated based on the section 2010 and 2010 and 2010 and 2010 and 2010 and 2010 and 201	Annumber	ss along the full pipeline route.	etc. Kome MityLacetions and Spacing Kome MityLacetions and Spacing By given construction for this type CLA will be a continual excavation of a tranch that provides accuss a come pits are not available for this type of conservations. Traffic Control Requirements	long the full pipeline nute. Specific	Shafts will be located at each end of each crossing. Traffic Control Requirements		Stafts will be located at each and of each crossing. Traffic Centrol Requirements	tunnel.
Executed and another the weble of the barrier to paper or had much 1 bits allowed of the 12 web translet, as sums for any source of another the second of the second or the second or the second of the second of the 12 weble translet of densities and second or the second of the second of the second or the second of the sec	Annutation A	ss along the full pipeline route.	er. Neues PRA-conservation and Againing Regularity conservation for the high pay Cold Acid Res contribution accounts of a high pay cold account term and the rest asserved for the high of conservations. Define Conservations and the high pay of conservations. The exception of the CAL 26 a scalability and take plane rest scalary assay here exailing streets. Mill more leaders of the CAL 26 a scalability and take plane rest scalary assay here exailing streets. Mill and the CAL 26 a scalability and take plane rest scalary assay here exailing streets. Mill the rest scalability of the CAL 26 a scalability and take plane rest scalary assay here exailing streets. Mill the rest scalability of the CAL 26 a scalability and take plane rest scalary assay here exailing streets. Mill the rest scalability of the CAL 26 a scalability of the rest scalability assay here exailing streets. Mill the rest scalability of the rest scalability of the rest scalability assay here exailing streets. Mill the rest scalability of the rest scalability of the rest scalability assay here exailing streets. Mill the rest scalability of the rest scalability of the rest scalability assay here exailing streets. Mill the rest scalability of the rest scalability of the rest scalability assay here exailing streets. Mill the rest scalability of the rest scala	long the full pipeline route. Specific	Really will be loaded at each and of each aroung. Furth Control Registrements There will be traffic control mediad for the construction of many of the access pilo on either role of the surrex.		Softy will be located at such red of each results. Toth: Control Registeration There will be traffic control revealed for the construction of many of the access pills on either risks of the t	turnel.
Executed and another the weble of the barrier to paper or had much 1 bits allowed of the 12 web translet, as sums for any source of another the second of the second or the second or the second of the second of the 12 weble translet of densities and second or the second of the second of the second or the second of the sec	Examined	nss along the full pipeline route.	er: New TextContent of tables Text TextContent of tables TextContent of the second of the second and and and and the problem second textContent of the second of the second of the second of the second of the second TextContent of the second of the second of the second of the second of the second TextContent of the second of the sec	nimal traffic control may be required in	Both of the locat of an An of of and resure Safety Good An Angements There achies unlike south could be the constraints of any of the soung Alux achies also of the tores. Facebook to apply and the south Stageporters. Of Additionaly, O.S.W.		Such all for located in our hand of each monog highly control logarithms. There all to tradit control resolution of dama of the saces plus on other sole of the ty- se of the saces plus on other sole of the saces plus on other sole of the ty- constant insplantment.	tend.
Evaluation E	Annahol A	nss along the full pipeline route.	er	nimal traffic control may be required in	Each will be load or as how of an only many Each Each Physicians Name with a reflect control under the scanning of the scann, pilon wither also of the turner. Control or Experiment Control on Experiment Contro		Sub, with located at out out of advancess Setting out of the set	Lond.
Excellent	Annumber	nss along the full pipeline route.	er. A real PLANE of the PLANE AND	nimal traffic control may be required in	Both of the locat of an An of of and resure Safety Good An Angements There achies unlike south could be the constraints of any of the soung Alux achies also of the tores. Facebook to apply and the south Stageporters. Of Additionaly, O.S.W.		Such all for located in our hand of each monog highly control logarithms. There all to tradit control resolution of dama of the saces plus on other sole of the ty- se of the saces plus on other sole of the saces plus on other sole of the ty- constant insplantment.	
Evaluation E	Annihold Annihold Annihold Anique Aniq	nss along the full pipeline route.	ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex	nimal traffic control may be required in	Both via locat and an of all non- Extric locate departments New edites units could reached for the council of any of the scene, pix or other alls of the tores. Second the supported in the spectra of the scene of the scene, pix or other alls of the tores. Second the support of the scene of the scene of the scene of the scene. Second the support of the scene of the scene of the scene of the scene. Second the support of the scene of the scene of the scene of the scene. Second the support of the scene of the scene of the form of the form of the scene of the sc		Starting with located at out with of each money here a bit in the counter at out with of each money here at bit in the counter each of the sector during of the same pills on other each of the ty- demonstrate plaquement. Included an experiment list, sector for "graphenet" CM-eff. Hereart Networks and plaquements. Networks and plaquements.	
Evaluation E	Annihold Annihold Annihold Anique Aniq	Note that the full pipeline result.	ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex	International State Control only be required in International State Sta	Both via locat and an of all non- Extric locate departments New edites units could reached for the council of any of the scene, pix or other alls of the tores. Second the supported in the spectra of the scene of the scene, pix or other alls of the tores. Second the support of the scene of the scene of the scene of the scene. Second the support of the scene of the scene of the scene of the scene. Second the support of the scene of the scene of the scene of the scene. Second the support of the scene of the scene of the form of the form of the scene of the sc		Starting with located at out hard of each manage India Control Requestored. There and its india cound weak the file season particle of decay of the same particle of the file decay of the same particle of the same particle of decay of the same particle of the file decay of the same particle of the same particle of the same particle of the file Weakford an experiment list, service To Same Particle of the same particle of the file Weakford and particle of the same file Weakford and particle of the same file of the same particle of the file Weakford and particle of the same file Answer is the file of the same file on excitation to daring it for day Answer is the file of the same file on excitation to daring it for day file of the same particle of the same file on excitation to daring it for day.	
Examine Second Sec	Examinary Secondary Anno Policitation and and a secondary and secondary and a secondary and a secondary and second	ns dag the full pipeline route.	ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex.	Non Status	Both via locat and an of all non- Extric locate departments New edites units could reached for the council of any of the scene, pix or other alls of the tores. Second the supported in the spectra of the scene of the scene, pix or other alls of the tores. Second the support of the scene of the scene of the scene of the scene. Second the support of the scene of the scene of the scene of the scene. Second the support of the scene of the scene of the scene of the scene. Second the support of the scene of the scene of the form of the form of the scene of the sc		Starting with located at out hard of each manage India Control Requestored. There and its india cound weak the file season particle of decay of the same particle of the file decay of the same particle of the same particle of decay of the same particle of the file decay of the same particle of the same particle of the same particle of the file Weakford an experiment list, service To Same Particle of the same particle of the file Weakford and particle of the same file Weakford and particle of the same file of the same particle of the file Weakford and particle of the same file Answer is the file of the same file on excitation to daring it for day Answer is the file of the same file on excitation to daring it for day file of the same particle of the same file on excitation to daring it for day.	
Example Example The start of the first picture of the start	Annihold Annihold Annihold Anique Aniq	Note that the full pipeline result.	ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex	International State Control only be required in International State Sta	Both via locat and an of all non- Extric locate departments New edites units could reached for the council of any of the scene, pix or other alls of the tores. Second the supported in the spectra of the scene of the scene, pix or other alls of the tores. Second the support of the scene of the scene of the scene of the scene. Second the support of the scene of the scene of the scene of the scene. Second the support of the scene of the scene of the scene of the scene. Second the support of the scene of the scene of the form of the form of the scene of the sc		Starting with located at out hard of each manage India Control Requestored. There and its india cound weak the file season particle of decay of the same particle of the file decay of the same particle of the same particle of decay of the same particle of the file decay of the same particle of the same particle of the same particle of the file Weakford an experiment list, service To Same Particle of the same particle of the file Weakford and particle of the same file Weakford and particle of the same file of the same particle of the file Weakford and particle of the same file Answer is the file of the same file on excitation to daring it for day Answer is the file of the same file on excitation to daring it for day file of the same particle of the same file on excitation to daring it for day.	
Examined Section 2014 Barrier Lee American Structure 1 of the far pit by pathon on order material 15 is alternative of the far pit by section 2014 Section 2014 Barrier Lee American Structure 1 of the far pit by pathon on order material 15 is alternative of angle the section 2014 Section 2014 Barrier Lee American Structure 1 of the far pit by pathon on order material 15 is alternative of angle 15 is alte	Annihold Annihold Annihold Anique Aniq	Note that the full pipeline result.	ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex	International State Control only be required in International State Sta	Both will be load of a short of all houses Ends Good a bayerounds There all its only could would be the constant of any of the same plus or other alls of the tores. Second the hypothesis Facility of the second of the second of the second of the tores. Ended in regioneration ended in regioneration ended in regioneration ended in the second of the second of the second of the second ended in the second of the second of the second of the second ended in the second of the second of the second of the fact ended in the second of the second of the second of the fact ended in the second of the second of the second of the fact ended of the second of the second of the second of the fact ended of the second of the second of the second of the fact Ended of the second of the second of the second of the fact Ended of the second of the second of the second of the fact Ended of the second of the second of the second of the fact Ended of the second of the second of the second of the fact Ended of the second of the second of the second of the fact ended of the second of the second of the second of the fact ended of the second of the second of the second of the fact ended of the second of the second of the second of the fact ended of the second of the s		Starting with located at out hard of each manage India Control Requestored. There and its india cound weak the file season particle of decay of the same particle of the file decay of the same particle of the same particle of decay of the same particle of the file decay of the same particle of the same particle of the same particle of the file Weakford an experiment list, service To Same Particle of the same particle of the file Weakford and particle of the same file Weakford and particle of the same file of the same particle of the file Weakford and particle of the same file Answer is the file of the same file on excitation to daring it for day Answer is the file of the same file on excitation to daring it for day file of the same particle of the same file on excitation to daring it for day.	
Exercise Provide a start of the days by speeds on of all much 15 to the vide of the 17 with transh. In more than the start of the days by speeds on of all much 15 to the vide of the 17 with transh. In more than the speeds of the days by speeds on of all much 15 to the vide of the 17 with transh. In more than the speeds of the days by speeds on of all much 15 to the vide of the 17 with transh to the much 15 to the vide of the 17 with transh to the much 15 to the vide of the 17 with transh to the much 15 to the vide of the 17 with transh to the much 15 to the vide of the 17 with transh to the much 15 to the vide of the 17 with transh to the much 15 to the 17 with transh to the much 15 to the 17 with transh to the much 15 to the 17 with transh to the much 15 to the 17 with transh to the much 15 to the 17 with transh to the much 15 to the 17 with transh to the much 15 to the 17 with transh to the much 15 to the 15 with transh to the much 15 to the 15 with transh to the much 15 to the 15 with transh to the much 15 to the 15 with transh to the much 15 to the 15 with transh to the much 15 to the 15 with transh to the much 15 to the 15 with transh to the much 15 with transh to the	Annihold Annihold Annihold Anique Aniq	Note that the full pipeline result.	ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex. ex	International State Control only be required in International State Sta	Both will be load of a short of all houses Ends Good a bayerounds There all its only could would be the constant of any of the same plus or other alls of the tores. Second the hypothesis Facility of the second of the second of the second of the tores. Ended in regioneration ended in regioneration ended in regioneration ended in the second of the second of the second of the second ended in the second of the second of the second of the second ended in the second of the second of the second of the fact ended in the second of the second of the second of the fact ended in the second of the second of the second of the fact ended of the second of the second of the second of the fact ended of the second of the second of the second of the fact Ended of the second of the second of the second of the fact Ended of the second of the second of the second of the fact Ended of the second of the second of the second of the fact Ended of the second of the second of the second of the fact Ended of the second of the second of the second of the fact ended of the second of the second of the second of the fact ended of the second of the second of the second of the fact ended of the second of the second of the second of the fact ended of the second of the s		Starting with located at out hard of each manage India Control Requestored. There and its india cound weak the file season particle of decay of the same particle of the file decay of the same particle of the same particle of decay of the same particle of the file decay of the same particle of the same particle of the same particle of the file Weakford an experiment list, service To Same Particle of the same particle of the file Weakford and particle of the same file Weakford and particle of the same file of the same particle of the file Weakford and particle of the same file Answer is the file of the same file on excitation to daring it for day Answer is the file of the same file on excitation to daring it for day file of the same particle of the same file on excitation to daring it for day.	

Reach 4, Preferred Alignment CEQA Responses, MWD RRWP (7 feet Diameter Pipeline) CM-3 Roadways							
Ch-1 Readways Contraction that air furner care Continue of the care of the of		CM-3A LAFCD Externent (Adjacent to River)		CM-48 Microtuneting		CM-4C Traditional	
				Discharge Lines	I		
		Kr Network Kr Million Soldeno Kr R Million Soldeno Million R	- TRENEN BOK/ SHORING MOVELED INFEE PIPELINE SH'OR TOP SMARTERS			LAURCHNIG PT CUTTING FEAD FAIT COMMENTED STATUT COMMENTED STATUT	
Andrew - Tracia do Control and the second		EPENNING OF INFE SOMETRIC OF INFE SOMETRIC CONSTRUCTION METHOD 3A - RIVER BANK	<u>1997</u>	THRUST BLOCK LAUNCHING PIT CUTTING HEAD RECEIVING PIT JACKING FIRME JACKING FIRME		CONSTRUCTION METHOD 4C - TRADITIONAL	
MOTO AND		1 m H C A		CONSTRUCTION METHOD 4B - MICRO-TUNNELING (SLURRY FACE TBM W/ PIPE JACKING)		TOWNELING (EP BM W/ CONCRETE LINERS) NOTE: NS NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOT	RE IS 4-0° OF MENT AVAILABLE
CONTRUCTION METHOD 1 - ROADWAY CONTRUCTION METHOD 1 - ROADWAY Pige Segments of This Construction Type		Pipe Segments of This Construction Type		NTS Pipe Segments of This Construction Type		Pipe Segments of This Construction Type	
Plan Nos. [pdf] Segment No. 24, 25, 26, 27 62 Total	Length (ft) 12,783 12,783	Plan Nos. (pdf) Segment No. 22 59 Total	Length (ft) 1,216 1,216	Plan Nos. (pdf) Segment No. 24 61 Total	Length (ft) 425 425	Plan No. Segment No. 22,23 60 27 63 Total	Length (ft) 5,666 2,397 8,063
				2 shafts		4 shufts	
Estimated Number of Construction Workers Per Day Piedles Construction		Estimated Number of Construction Workers Per Day Pipeline Construction		Estimated Number of Construction Workers Per Day		Estimated Number of Construction Workers Par Day	
Construction Schedule (working days) Daily Crew Production (FT per day) Estimated Number of Piptine Crews Per Day Number of Pipeline Crews	1280 30 0.33 1	Construction Schedule (working days) Feat of Pipeline Construction par day needed Estimated Number of Pipeline Crews Par Day Number of Pipeline Crews	1280 100 0.01 1	Construction Schedule (working days) (120 days proc. mobil: -60 test, comm., demob) Feet of Turnel Construction needed per day Estimated Number of Turnel Crews Per Day	0.33 0.02	Construction Schedule (working days) (-12) days proc. mobil 40 test, comm. , demob) Feat of Trainel Construction needed p.i. days Estimated Number of Turnel Crews Per Day	1280 6.30 0.21
Pipeline Construction Cirews Workers per create Shoring Crews Workers per Crew Sim Cut Crew	1 7 0.2 3	Pipeline Construction Crews Workies per crew Shoring Crews Workies per Crew	1 9 0.2 3	(based on 20 feet per day per crew) Estimated Number of Pipeline Crews Per Day (based on 40 feet per day per crew) Estimated Number of Shuft Crews Per Day	0.01	(based on 30 feet per day per crew) Estimated Number of Pipeline Crews Per Day (based on 40 feet per day per crew) Estimated Number of Shaft Crews Per Day	0.16
Saw Cut Crew Workiers par crew Demolition Crew Workiers par crew Paving Crew	0.05 3 0.05 3	Utility Nelocation Crew Workers per Crew Water Truck Crew Water Truck Crew Site Restantion Crew Site Restantion Crew	0.05 6 0.15 1	(basid on 90 days per shaft) Estimated Number of Paving Crews Per Day Workers per friend Crew Workers per Pipeline Crew	0.10	(based on 90 days per shift) Estimated Number of Paving Crows Per Day Workness per rimonit Crew Workness per Pipeline Crew	0.10 15 16
Workers per crew Utility Relocation Crew Workers per crew	0.2 5 0.1 6	Workers per crew Temporary Gravel Roadway Crew Crew Siao	0.15 3 0.1 4	Workers per Shaft Crew Workers per Paving crew Total Workers per Day (Average Throughout Construction Schedule)	8 3 1.81	Workers par Shuft Crew Workers par Parking crew Total Workers par Day (Average Throughout Construction Schedule)	8 3 8.22
Traffic Control Crea Site Total Workers per Day (Average Throughout Pipeline Construction) Total Workers per Day (Average Throughout Construction Schedule)	0.15 4 10.10 3.36	Total Workers per Day (Average Throughout Pipeline Construction) Total Workers per Day (Average Throughout Construction Schedule)	10.9 0.10	Note: The installation of Fiber Optic cabling is estimated to be within these provided production rates.		Note: The installation of Fiber Optic cabling is estimated to be within these provided production rates.	
Fiber Optic Duct Bank Construction Schedule (working days) Daily Crew Production (PT part day)	1280 200 0.05	Fiber Optic Duct Bank Construction Schedule (workling days) Daily (rew Production (FT per day)	1280 220				
Estimated Number of Combined Fiber Optic Crews Per Day Number of Combined Fiber Optic Crews Trenching Backling Londait, Fortmoork Crew Workers per crew	0.05 1 1 4	Estimated Number of Combined Fiber Optic Crews Per Day Number of Combined Fiber Optic Crews Trenching, Backfill, Conduit, Fornwork Crew Workers per crew	0.004 1 1 4 4				
Concrete Crew Workers per Crew Bectrician Crew Workers per crew Workers per crew Paring Crew Paring Crew	0.75 4 0.2 4	Concrete Crew Workies per Crew Electrician Crew Workies per Crew Electrician Crew Workies per crew Paving Crew Paving Crew	0.75 4 0.2 4				
Plang Crew Workers per crew Total Workers per Day (Average Throughout Fiber Optic Construction) Total Workers per Day (Average Throughout Construction Schedule)	5 8.30 0.41	Paring Grew Workers per crew Total Workers per Day (Average Throughout Fiber Optic Construction) Total Workers per Day (Average Throughout Construction Schedule)	0 7.80 0.03				
Estimated Number of One-Way Construction Worker Vehicle Trips Per Day Pipeline Construction Total Workers per Day (Nevrage Throughout Construction Schedule)	3.36	Estimated Number of One-Way Construction Worker Vehicle Trips Per Day Pipeline Construction Total Workers per Day (Average Throughout Construction Schedule) One-Ware Trios on Day 150 miles)	0.10	Estimated Number of One-Way Construction Worker Vehicle Trips Per Day Total Workers par Day (Average Throughout Construction Schedule)	1.81	Estimated Number of One-Way Construction Worker Vehicle Trips Per Day Total Workers per Day (Average Throughout Construction Schedule)	8.22
One-Way Trips per Day (50 milss) Shuttle to More Workers from Park to Site (One way - 5 miles) Total One Way Trips per Day of Worker Velicites (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle and 20% of workers need shuttle	6.72 2 8.7	Cone-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Site (One way - 5 miles) Total One Way Trips per Day of Worker Vehicks (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle	0.21 0 0.2	One-Way Trips per Day (S0 miles) Shuttle to Move Worker's from Park to Site (One way - 5 miles)* Total One way "trips per Day of Worker Cars (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle.	3.61 4 7.6	One-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Site (One way - 5 miles)* Tetal One Way Trips per Day of Worker Cars (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle.	16.44 2 18.4
Fiber Ontic Durchank Total Workers per Day (Average Throughout Construction Schedule) One-Way Trins per Day (Somissi) Shuttis to Move Moviners from Park to Stel (One wav - 5 miles)	0.41 0.83	Hiber Optic Durthank Total Workers per Day (Average Throughout Construction Schedule) One-Way Trips per Day (50 miles) Shuttle to Move Workers (from Park to Sile (One war- 5 miles)	0.03				
Total One Way Trips per Day of Worker Vehicles (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle	0.8	Total One Way Trips per Day of Worker Vehicles (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle	0.1				
Total Construction Total Workners per Day (Maximum During Construction Schedule) One-Way Traps per Day (So miles) Sturts to More Workners from Park to Site (One way - 5 miles)** Total One Way Traps per Day of Workner Care (Makamum During Construction Schedule)	26.00 52.00 4 56.0	Pjelinke Construction Total Workers per Day (Maximum During Construction Schedule) One-Way Trips per Day (50 miles) Shurtite to More Workers from Park to Ste (One way - 5 miles)* Total One Way Trips per Day of Worker Cars (Maximum Throughout Construction Schedule)	12.00 24.00 2 26.0	Total Workers per Day (Maximum Throughout Construction Schedule) One-Way Trips per Day (50 miles) Shuttle to Move Workers from Yark to Site (One way - 5 miles)* Total One Way Trips per Day Of Worker Case (Maximum Throughout Construction Schedule)	16.00 32.00 6 38.0	Total Workers per Day (Maximum Throughout Construction Schedule) One-Way Trips per Day (50 miles) Shottle to Move Workers from Park to Site (One way - 5 miles)* Total One Way Trips per Day of Worker Cars (Maximum Throughout Construction Schedule)	16.00 32.00 2 34.0
Total Dev Way Trips per Day of Warker Can (Maximum During Construction Schedule) * Assumet maximum of 15 workers per shortba and OX6 of workers need shuttle totage trading Worksis included in them: below. Eliber Oxfc Doct Bank		Total One Way Tips per Day of Worker Cars (Maximum Throughout Construction Schedule) * Assume maximum of 15 workers per shutch and 70% of workers need shutche totage Hauling Worker's included in terms below. Eber Datic Dati Chart Bank	20.0	Total One Way Trips per Day of Worker Cass (Maximum Throughout Construction Schedule) * Ascument manufacture of 3 5 workers yes hostite. <u>Note:</u> Hauling Vehicles included in Items below.	6.00	Total One Way Trips per Day of Worker Cars Maximum Throughout Construction Schedule) * Assume maximum of 35 workers of Anttine. <u>Note:</u> Haufing Vehicles included in Items below.	~~
Total Workers per Day (Maximum During Construction Schedule) One-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Site (One way - 5 miles)*	17.00 34.00 2 36.0	<u>Biter Cost Dust Bank</u> Total Workers per Day (Makimum During Construction Schedule) One-Way Trips per Day (Somins) Sutatis to Notwer Warkers from Park to Site (One way - 5 miles)* Total Core Way Trips per Day d Worker Care (Makimum Origi Construction Schedule) * Assume maintained of Si Sovefers per Horitistia and 20% of workers need shuttle	12.00 24.00 2 26.0				
Total Ow Way Ying see Day of Worker Cars (Maximum During Construction Schedule) * Acument maximum of 15 workers per shattle and 70% of workers need shuttle <u>Totage</u> taking Workers included in terms below. Construction Worker Vehicle Parking Location(s)	an.0	Note: Hauling Vehicles included in Items below. Construction Worker Vehicle Parking Location(s)	20.0	Construction Worker Vehicle Parking Location(s)		Construction Worker Vehicle Parking Location(s)	
Construction Worker Vehicle Parking Location(s) Pjelinia Construction Total Workers per Day (Average Throughout Construction Schedule) Assume 30% of Staff can park Nearby the Construction Location Remaining 20% where an Estable Fuencing Location	3.36	Construction Worker Vehicle Parking Location(s) Pipeline Construction Total Workers per Day (Average Throughout Construction Schedule) Assume 80% of Staff can park Neathy the Construction Location Remaining 80% Nead as fastab. Parking Location	0.10	Construction Worker Vehicle Parking Excetains(s) Total Workers per Day (Average Throughout Construction Schedule) Assume 30% of Staff can park Nearby the Construction Incotion Remaining 30% of ead an Estable Parking Excitons	1.81	Construction Worker Vehicle Parking Location(s) Total Workers par Day (Average Throughout Construction Schedule) Assume 30% of Salf can park Nearby the Construction Location Remaining 70% Veloa of a tstable Analysing Location	8.22
Remaining 705 Need an Establ. Parking Loc'ns Total Workers per Day (Maximum During Construction Schedula) Assuma 305 of Staff can park Nearby the Construction Loadon Remaining 705 Need an Establ. Parking Loc'ns	2.4 26.00 18.2	Remaining 70% Need an Establ. Parking Loc/ns Total Workers per Day (Maximum During Construction Schedule) Assume 30% of Staff can park Nearby the Construction Location Remaining 70% Need and Establ. Parking Loc/ns	0.1 12.00 8.4	Remaining 70% Need an Establ. Parking Loc'ns Total Workners par Day (Masimum Daring Construction Schedule) Assume 30% of Staff can park Neerby the Construction Location Remaining 70% Need an Establ. Parking Loc'ns	1.3 16.00 11.2	Remaining 70% Reed an Establ: Parking Loc'ns Total Workers par Day (Maximum During Construction Schedule) Assume 20% of Salf can park Newby the Construction Location Remaining 70% News and Estable Newby Goc'ns	5.8 16.00 11.2
Fiber Optic Duct Bank Total Workers per Day (Average Throughout Construction Schedule)	0.41	Fiber Optic Duct Bank Total Workers per Day (Average Throughout Construction Schedule)	0.03	Remaining 70% Need an Establ. Parking LoC'ns	112	Remaining 70% Need an Extable Parking LoC 16	11.2
Assume 30% of Staff can park Neurby the Construction Location Remaining 20% Need an Establ. Parking Loc'ns Total Workers par Day (Maximum During Construction Schedule) Sosume 30% of Staff can park Neurb the Construction Location	0.3 17.00	Assume 30% of Staff can park Nearby the Construction Location Remaining 20% Need an Establ. Parking LoCns Total Workers per Day (Maximum During Construction Schedule) Assume 30% of Staff can park Nearby the Construction Location	0.0 12.00				
Remaining 70% Need an Establ. Parking Loc'ns Will There be Weekend or Nightline Construction? Will we likely Comply with Noise Ordinance or Will We Request Variance?	11.9	Remaining 70% Need an Establ. Parking Loc'ns Wil There be Weekend or Nightlime Construction? Will we Likely Comply with Noise Ordinance or WII We Request Varia		Will There be Weekend or Nightlime Construction? Will we Likely Comply with Noise Ordinance or Will We Request Variation	1007	Will There be Waskend or Nighttime Construction? Will we Likely Comply with Noise Ordinance or Will We Request Variance?	
No construction work is planned for weekends: There may be nightmis work dictated by particular needs along the al community and business impacts. For example in come locations nighttime work would have liss impact to businesses Contractors will periodically request variances to extend work beyond normal noise ordinance hours.	es. We expect	No construction work is planned for weekends. There may be nightlime work dictated by particular needs along t community and submisms impacts. For example in some for locations nightlime work world have less impact to busin will periodically request variances to extend work beyond normal noise ordinance hours.	resses. We expect Contractors		, may av needed.	Tunniling will likely require near 24/7 work. Tunnel launch shaft sites will need to assume 24/7 work and provide for lineded. Assume a variance for 24/7 work at launch sites.	Anne integration as
Construction Staging Area and Storage Location(s) We currently anticipate two staging/storage locations per contract package. We currently anticipate & contract package there will be a total of 15 staging and storage areas. Typically a staging/storage area will be on average 4 acres and is a	rages for the pipeline so	Construction Staging Area and Storage Location(s) We currently anticipate two staging/storage locations par contract package. We currently anticipate 8 contract p will be a total of 16 staging and storage areas. Typically a staging/storage area will be on average 4 acres and is an	sackages for the pipeline so there	Construction Staging Area and Storage Location(s) Construction staging located at each shaft site (each and of crossing). Juschleid status arows with the Status of a stud the occiding status 3 900 ro. It		Construction Staging Area and Storage Location(s) Construction staging located at each shuft site (each end of crossing). Launching staging area will be 22,680 scH: and the receiving staging 11,670 scH	
Deniry win be a tolear or an scaging and scorage areas. Typicany a scaging scorage area win be on average 4 acres and is a miles from the site.	A ASSUMED TO BE WITHIN S	with the a count of 10 scaging and storage anexe. Typicany a scaging/storage area with the on average 4 acres and is an from the site.	Conned to be written 5 miles	Launching staging area will be 6,300 sq-ft and the receiving staging 3,800 sq-ft Additional material and equipment storage available at 4 acre pipeline staging area.		Lauroning staging area will be 22,000 sq-rt and the recovering staging 21,070 sq-rt	
Locations/Procedures for Storing/Transporting Spoils Does to the limited work area at each construction itie we anticipate that stocipiling of sols at the site will not be poss will likely be hauled offsite to a stockpile at the staging/storage area. The spoil portion of the excavate will be separate disposal site(g) and the remaining only will be hauled back to the construction site to be used to refil the spipe transf.v.	ssible. All excavated soil ated and hauled to	Locations/Procedures for Storing/Transporting Spoils Due to the limited work reva at each construction site we anticipate that stockpiling of soils at the site will not be likely be hauled offsite to a stockpile at the staging/stocage area. The spoil portion of the excavate will be separat and the remaining oil will be hauled back to the construction site to be used to relift the pipe trench. We estima	a possible. All excavated soil will ited and hauled to disposal site(s)	Locations/Procedures for Storing/Transporting Spoils Excavated spoils will be temporarily stockpiled at the launch shaft sites or loaded directly into dump trucks and ha	auled offsite daily for disposal.	Location/Procedures for Storing/Transporting Spoils Excavated spoils will be temporarily stocipiled at the launch shaft sites or loaded directly into dump trucks and hauled	offsite daily for disposal. Spoils
Biopolia Stepping and one ventioning some wise of example source source to the Understand starts and the source so	Is at an average one way J require hauling and	and the remaining los win be native back to the construction and to de dwe to remain the pipe french. We estimate executed the material will be spoils of deemed unscaled that will need to be haved and disposed of all indiffics and 50 miles. It is also estimated that 10% of the total spoils (10% of the 40%) will be deemed hazardous and require hazardous waste landfill at an estimate one way distance of 150 miles.	n average one way distance of a hauling and disposal at a			from night shift work will be temporarily stockpiled at the launch shaft site if nightime hauling is restricted.	
Number of Dahy Dow Way Insul Truck Trips Davis Material Transportation (e.g. of Hau/Altipotal, material); Type of Trucks <u>Pleatine Construction</u> Volume of Exacute (CP) per Fe of Trench (125 W x 15 ⁴ D) (includes paving debris) Volume of Exacute (CP) per Fe of Trench (125 W x 15 ⁴ D) (includes paving debris)	304.0 11.26	Number of Daily One-Way Mast Truck Trips Dav to Material Transportation (e.g. off-haul/disposal, material); Type of Truck <u>Pipeline Construction</u> Volume of Escavate (CF) per Pt of Trench (15' W x 19' D) (includes paving debris) Volume of Escavate (CF) per Pt of Trench (15' W x 19' D) (includes paving debris)	da 304.0 11.26	Number of Daily One-Way Haul Truck Trips Due to Material Transportation (e.g. off-haul/disposel, material): Type of Truck Langth (ft) Exclusion Diameter (ft)	425	Normher of Daily One-Way Haud Truck Trips Due to Material Transportation (e.g. off-hau(disposal, material); Type of Trucks Length (ft) Excuration Generator (ft)	8,063
Volume Excerate (CY) par FT including Swell of 15% Capacity par Dump Truck (CY) Number of Haul Truck sper FT of Trench	12.95 10.0 1.29	Volume Excavate (CP) par FT Including Swell of 15% Capacity per Dump Truck (CY) Number of Haul Trucks per FT of Trench	12.95 10.0 1.29	Turnel Volume (in-situ) (cu-yds)* Shaft Volume (cu-yds) Total Volume Shafts and Tunnel (cu-yds)*	9 1,152 914 2,056	Tunnel Volume (in-situ) (cu-yds)* Shift Volume (cu-yds) Total Volume of Shifts and Tunnel (cu-yds)*	11 32,638 1,866 34,504
Estimated Length of Trench per Day Per Crew (It) Number of Haul Trucks per Crew per Daily Production Total One-Way Haul Trips from Site to Staging/Storage and return Estimated (Psips adding Soil Import to Site (CP) from Storage Per Foot of Pipeline	30.0 38.8 77.7	Estimated Langth of Trench per Day Per Crew (ft) Number of Haul Trucks per Crew per Daily Production Total One-Way Haul Trips from Site to Staging/Storage and return Estimated Pipe Beding Soil Import to Site (CF) from Storage Per Foot of Pipeline	100.0 129.5 259.0	Total Number of Truck Trips for Soil Removal Total Number of Truck Trips for Nping and Casing Total Number of Truck Trips for Shaft Construction Disturber desame food?	207 34 720 705	Total Number of Truck Trips for Soil Removal Total Number of Truck Trips for Sping and Casing Total Number of Truck Trips for Shaft Construction Distuberd Powement (So-ft)	3,450 645 1,440 1,440
(4.75' H x 16' W minus (0.5'3.14'7.25'2)/4) Est. Pipe Bedding Soil Import to 35te (CT) PM F of Pipeline Pipe Bedding Soil Import (CT) pm FT Including Swell of 15%	55.37 2.05 2.36	(4.75' H x 16' W minus (0.5*3.14*7.25*2)(4) Exr. Pipe Badding Sail Import to Site (CY) PH for Pipeline Pipe Badding Sail Import (CY) per F1 Including Swell of 15%	55.37 2.05 2.36	Paving Replacement Import (18" thick) (cu-ft) Paving Replacement Import (18" thick) (cu-yds) Total Number of Truck Trips for Replacing Paving	1,058 39 4	Data des Parentes Lipera Paring Rapiacement Import (12° thick) (cu-ft) Paring Rapiacement Import (12° thick) (cu-ft) Total Number Of Truck Trips for Repairing Pareng	2,160 80 8
Capacity per Dump Truck (CY) Number of Haul Trucks per FD Torench Estimated Length of Trench per Day Per Crew (It) Number of Pipe deforing Import Trucks per Day	10.0 0.24 30 7.1	Capacity per Dump Truck (CY) Number of Haul Trucks per T of Trench Estimated Langth of Trench per Day Per Crew (ft) Number of Pipe Bidding Import Trucks per Day	10.0 0.24 100 23.6	Total Truck Trips During Construction Number of Truck Trip per day on Average	964 0.75	Total Truck Trips During Construction Number of Truck Trip per day on Average	5,543 4.33
Total One-Way Haul Trips of Pipe Bedding Import to Site Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return) (68.31% of Excavate Firg from Site to Storage)	14.1 14.1 52.9	Total One-Way Haul Trips of Pipe Bedding Import to Site Aito Number of Heul Trips of Pipe Bedding to Storage Site from Supplier Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return) (65.1% of Excavater Trips from Site To Storage)	47.2 47.2 176.4	*Assumes a 1.15 bulking factor 10 CY loads in 12 CY dump trucks		*Assumes a 1.15 bulking factor 10 CY loads in 12 CY dump trucks	
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back (31.9%*90% of Exavate Trips from Site to Storage) No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back	22.3 2.5	No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back (31.9% '90% of Excavate Trips from Site to Storage) No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back	74.3 8.3				
(31.9)x*30% of Excavate Trips from Site to Storage) No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 milles ea. way) (Assumes 20 ft of 7 DiA pipe par trip) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 milles ea way)	15 15	(31.9%*10% of Excavate Trips from Site to Storage) No. of One-Way Daily Haul Trips of Pipe Frem Supplier to Storage (50 miles ea. wwy) (Assume: 20 ft of 7 DIA pipe per trip) No. of One-Way Daily Haul Trips of Pipe Frem Storage to Site (5 miles ea way)	5.0 5.0				
(Assumes 20 ft of 7 DIA pipe per trip) No. of One way Trips to Sile importing Paving Materials (50 miles ea way) (Assumes 37 thick above 20' wide at trench plus 40' full overlay for half the full road wide) Daily One-Way Haul Trips per Crew During the Pipeline Construction	11	(Assumes 20 ft of 2' DiA pipe per trip) No. of One way Trips to Site Importing Paving Materials (30 miles ea way) Daily One-Way Haul Trips per Crew During the Pipeline Construction	0.0 622.3				
Daily Average One-Way Haul Trips Throughout Construction Schedule	62.5	Daily Average One-Way Haul Trips Throughout Construction Schedule	5.9				
10 Wheel Dump Trucks for Solis Transport: 18 Wheel Flatbad Trucks for Haufing Pipe							
Fiber Optic Duct Bank Volume of Excavate (CF) per Ft of Trench (2' W x 5' D) to be Excavated (incl. paving debris)	10.0	Ether Optic Duct Bank Volume of Excavate (CF) per Ft of Trench (2' W x 5' D) to be Excavated (incl. paving debris) Volume of Excavate (CF) per Ft of Trench to be Stockpiled and Reused in the Trench					
Volume of Excavate (CF) per Ft of Trench to be Stockpiled and Reused in the Trench Volume of Excavate (CF) per Ft of Trench (2'W x 3' D) to be Removed (incl. paulog debris)	4.0 6.0		10.0 4.0 6.0				
Volume of Excavate (C) per f of Trench to be Seculptile and Reaced in the Trench Volume of Excavate (C) per f of Trench to the Seculptile and Reaced in the Trench Volume of Excavate (C) per f of Trench to be Removed incl. 35% Swall (incl. paving debrid) Volume of Excavate (C) per f of Trench to be Removed incl. 35% Swall (incl. paving debrid) Volume of Excavate (C) per f of Trench to be Removed incl. 35% Swall (incl. paving debrid) Volume of Excavate (C) per f of Trench to LW to SST Volume of Excavate (C) per f of Trench to LW to SST Volume of Excavate (C) per f of Trench to LW to SST	6.0 6.9 0.26 1.00	Volume of Excavate (CP) per Pf of Trench (2' W x 3' D) to be Removed (incl. paving debris) Volume of Excavate (CP) per Pf of Trench to be Removed (incl. 35% Swell (incl. paving debris) Volume of Excavate (CP) per Pf of Trench to be Removed incl. 15% Swell (incl. paving debris) Volume of Imported Soli (CP) per Pf of Trench (2' W x 0.5') Volume of Imported Soli (CP) per Pf of Trench (2' W x 0.5')	4.0 6.0 6.9 0.26 1.00				
Values of Excession (C) per n of Tennic to be targetified and Record to the Tennin Markan of Excession (C) per n of Tennic (T) erv (1) to be Removed (nc) and perform Walken of Excession (C) per n of Tennic (T) erv (1) to be Removed (nc) attraction (C) per normality Walken of Excession (C) per n of Tennic to be Removed (nc) attraction (C) per normality Walken of Excession (C) per n of Tennic (T) erv (1) Capacity per home Tennic (C) Capacity per home Tennic (C) Capacity per home Tennic (C) Capacity per per form (C) to be an efforts (C) Capacity per per form (C) to be an efforts (C) Capacity per per form (C) to be an efforts (C)	6.0 6.9 0.26 1.00 0.04 10.0 200	Volume of Exacute (C) per f of Trench C W x T () to be Removed (c), paiving distribution (D) per f of Trench to Removed (c). TS Schull (c), paiving distribution (D) per f of Trench to Removed (c). TS Schull (c), paiving distribution (C) and the second schull (S) schull (c) per f of Trench (c) (C) per f of Trench (c) (C) w (c) (C	4.0 6.9 0.26 1.00 0.04 10.0 220				
Volume of Excession (2) per for 4 there is be taxisplicated to board in the Themas Markow of Excession (2) per of Taxis(2), VP = 10 the Remove (efficient), edited (3) and (3)	6.0 6.9 0.26 1.00 0.04 10.0 200 8.89 16.0 1.8 1.5	Volume of Security (2) per 1 of Verso (2) per 3 of Verso (2) per 4 of	4.0 6.0 6.3 1.00 1.00 2.00 9.78 2.0 5.78 2.0 1.6 1.6 880				
Values of Excession (15) per for 4 months to be strackplicated to back on the Treent Markan of Excession (15) per for 4 months (14 × 16) to be knowed (or Lange (back) Markan of Excession (15) per for 4 months (14 × 16) to be knowed (or Lange (back) Values of Excession (15) per for 4 months (14 × 16) to be an encode (or Lange (back) Markan of Impacted Sall (15) per for 4 months (14 × 16.5) Values of Impacted Sall (15) per for 1 months (14 × 16.5) Values of Impacted Sall (15) per for 1 months (14 × 16.5) Values of Impacted Sall (15) per for 1 months (14 × 16.5) Values of Impacted Sall (15) per for 1 months (14 × 16.5) Values of Impacted Sall (15) per for 10 months (16 × 16 × 16 × 16 × 16 × 16 × 16 × 16	6.0 6.9 0.26 1.00 0.04 10.0 200	Water of Executes (17) per 1 of Execute (17) or 2 × 2 (1) to be Henrose (16) or 2 period (26) of 100	4.0 6.0 6.3 0.26 0.04 10.0 220 9.78 2.6 2.6 1.6				
Submit de Execute (15) per le 1 from to be transibilitat and Roucet (bet 17). Marchan de Execute (15) per le 1 from (17 v v 15) to be Annova (be character) (be character) Marchan de Execute (15) per le 1 from (12 v v 15) to be Annova (be character) Marchan de Ingende (150 per le 11 from (12 v v 15)) Execute (150 per le 11 from (12 v v 15)) Execute (150 per le 11 from (12 v v 15)) Execute (150 per le 11 from (12 v v 15)) Execute (150 per le 11 from (12 v v 15)) Execute (150 per le 11 from (12 v v 15)) Execute (150 per le 11 from (12 v v 15)) Execute (150 per le 11 from (12 v v 15)) Execute (150 per le 11 from (12 v v 15)) Execute (150 per le 11 from (15 v v 15)) Execute (150 per le 11 from (15 v v 15)) Execute (150 per le 11 from (15 v v 15)) Execute (150 per le 11 from (15 v v 15)) Execute (150 per le 11 from (15 v v 15)) Execute (150 per le 11 from (15 v 15)) Execute (15 v 1	6.0 6.9 0.26 1.00 2.00 8.89 16.0 1.8 1.5 1.5 800 5,600 0.3 0.3 3.0	volume of Grazums (17) per fr of Hum (17) (27 ± 27 (10) be Hum code (100, pum) default) volume of Grazums (17) per fr of Hum (17) are Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) per fr of Hum (17) are 4.51 volume of Hum (17) (20) (20) (20) (20) (20) (20) (20) (20	4.0 6.9 0.26 1.00 2.00 2.00 2.00 2.05 1.6 1.6 3.80 3.80 3.00 4.3 4.3 4.3 3.00 3.00 3.00 3.00 3				
Values of Excession (17) per of Francis to Statistician and Records in the Transit Markam of Excession (17) per of Transit (17 v 21 https://www.statistician.edu/org/ Values of Excession (17) per of Transit (17 v 21 https://www.statistician.edu/org/ Values of Excession (17) per of Transit (17 v 21 https://www.statistician.edu/org/ Values of Excession (17) per of Transit (17 v 21 https://www.statistician.edu/org/ Values of Excession (17) per of Transit (17 v 21 https://www.statistician.edu/org/ Values of Excession (17 per of Values of Values (17 v 21 https://www.statistician.edu/org/ Values of Values of Values of Values of Values (17 v 21 https://www.statistician.edu/org/ Values of Values of Values of Values of Values	6.0 6.9 0.26 1.00 0.04 100 200 8.89 16.0 1.8 1.5 1.5 1.5 1.5 5.600 0.3 0.3 3.0 2.20 8.0 5.5	Wolman of Recursols (17) per Y of The North (27) with 2 (1) to be Hemosol (20) per participation) which and Recursols (17) per Y of The North Set Hemosol (13). Stand I (north participation) Wolman of Inspirated (16) per Y of The North Set Hemosol (13). Stand I (north participation) Wolman of Importated (16) per Y of The North Set Hemosol (13). Stand I (north participation) Wolman of Importated (16) per Y of The North Set Hemosol (13). Stand I (north participation) The North Hemosol (16) per Y of Hemosol (12) with (13) per participation) North Way Replan (14) (17) per Y of North Set Hemosol (12) (18) (16) of Exe. Mort (12) A resum One Way Replan (14) (17) per Dol Mills I Statoge Set and Anton One Way Replan (14) (17) per Dol Mills I Statoge Set and Anton One Way Replan (14) (17) per Dol Mills I Statoge Set and Anton United (12) (13) (14) (14) per I (14) (15) (14) (14) (14) (14) (14) (14) (14) (14	4.0 6.9 6.3 0.0 0.0 0.0 0.0 2.0 5.78 2.0 5.78 2.6 4.5 5.60 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.	Styped Laution for Construction Data		Signal Laulin fe Canvalue Sobi-	
Numer of Excession (2) per for d'home has basedwide and Housen's the Thread's Markow of Excession (2) per of Tarker (2) ver 2 (1) the Annowed (Pacial States) (2) per of the Thread's Ver 2 (1) the Annowed (Pacial States) (2) per of the Thread's Ver 2 (1) the Annowed (Pacial States) (2) per of the Thread's Ver 2 (1) the Annowed (Pacial States) (2) per of the Thread's Ver 2 (1) the Annowed (Pacial States) (2) per of the Thread's Ver 2 (1) the Annowed (Pacial States) (2) per of the Thread's Ver 2 (1) the Annowed (Pacial States) (2) per of the Thread's Ver 2 (1) the Annowed (Pacial States) (2) per of the Thread's Ver 2 (1) the Annowed (Pacial States) (2) per of the Annowed (Pac	60 63 63 00 200 200 200 86 86 16 15 15 15 15 15 15 15 15 20 63 15 15 20 80 80 80 80 80 80 80 80 80 80 80 80 80	volume of Resources (7) per fra d'hanno (7) ver at (2) table Hennova (4) per (4) per solo (4) table Markan de Cassan (5) (7) per fra d'hanno (7) ver at (3) table (4)	4.0 6.0 6.0 6.0 6.0 10.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 8.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6	Bisgend Jacobs for Construction Public To an instruction de Construction Address Hand and disposal of as a taufill with a one way top of 50 mice. Taucard and anticipation construction de Date Hand and disposal of as a taufill with a one way top of 50 mice.	(of Gan Canada Maria)	Negatal Lastice for Generative Molds. The collaboration for Generative Molds and sport of on a favorite with a one way roy of 50 miles.	Oue Connotine Material Panels
Numer of Execution (1) per for the time is the Statisticit and Russel in the Trans ¹ Markan of Execution (1) per of Trans(1) per v (1) the Russel per lange (def)() Markan of Execution (1) per for the Russ (1) per (1) the Russel per lange (def)() Markan of Execution (1) per for the Russ (1) per (1) statistical markan of Execution (1) per for the Russ (1) per (1) statistical markan of Execution (1) per for the Russ (1) per (1) statistical markan of Execution (1) per for the Russ (1) per (1) statistical markan of Russ (1) per (1) per (1) per (1) per lange (1	60 63 63 00 200 200 200 86 86 16 15 15 15 15 15 15 15 15 20 63 15 15 20 80 80 80 80 80 80 80 80 80 80 80 80 80	when all focuses (1) per if all frame (2) for a 1 (1) to be ferrorsed (per) period (both) when all focuses (1) (2) per if all frames (1) for all (1) to be ferrorsed (1). State (1) for (1) per if all	4.0 6.0 6.0 6.0 6.0 10.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 8.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6	It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles.	1 of Dava Comunities Material 2.006 1 2.105 2	It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles.	34,504 80 34,584
Numer de Security (1) per et 4 meint tes la socialisat est hours (1) Menter de Security (2) per et 4 meint tes la socialisat est hours (1) Menter de Security (2) per et 4 meint (1) est (1) be hours est (1) est hours (1) Menter de Security (2) per et 4 meint (1) est (1) be hours (1) est (1) Menter de Security (2) per et 4 meint (1) est (1) Security tes (1) per et 4 meint (1) est (1) Menter de Security (2) per et 4 meint (1) est (1) Security tes (1) per et 4 meint (1) est (1) Security tes (1) per et (1) meint (1) est (1) Security tes (1) per et (1) meint (1) est (1) Security tes (1) per et (1) meint (1) est (1) Security tes (1) per et (1) meint (1) est (1) Security tes (1) est (1) est (1) est (1) est (1) Security tes (1) est (1) est (1) est (1) est (1) Security tes (1) est (1) est (1) est (1) est (1) Security tes (1) est (1) est (1) est (1) est (1) Security tes (1) est (1) est (1) est (1) est (1) Security tes (1) est (1) est (1) est (1) est (1) Security tes (1) est (1) est (1) est (1) est (1) Security tes (1) est (1) est (1) est (1) est (1) est (1) Security tes (1) est (1) est (1) est (1) est (1) est (1) Security tes (1) est (1) Security tes (1) est (1	600 603 603 604 604 604 604 604 604 604 604 604 604	 Valence Strategie (2) per frage frame (2) per strategie bei hermoscie (proc. parsegie debie) Valence All Casses (2) per frage frame (2) per strategie bei hermoscie (proc. parsegie debie) Valence All Casses (2) per frage frame (2) per strategie bei hermoscie (proc. parsegie debie) Valence All Casses (2) per frage frame (2) per strategie bei hermoscie (proc. parsegie debie) Valence All Casses (2) per frage frame (2) per strategie bei hermoscie (proc. parsegie debie) Valence All Casses (2) per frage frame (2) per strategie bei hermoscie (proc. parsegie debie) Valence All Casses (2) per frage frame (2) per strategie bei hermoscie (proc. parsegie debie) Valence All Casses (2) per frame (2) per strategie bei hermoscie (proc. parsegie debie) Valence All Casses (2) per frame (2) per strategie bei hermoscie (proc. parsegie debie) Valence All Casses (2) per frame (2) per strategie bei hermoscie (proc. parsegie bei hermoscintered) Valence All Castello (proc. parsegie be	40 60 03 10 03 10 03 10 10 10 10 10 10 10 10 10 10 10 10 10	It is estimated that construction defails will be haved and depared of no Landfill with a new way trip of 50 miss. Waters of any stated important/copering including benatism Water parabet/Sciences, Solt, Heinedens Tech, Barry, See(Metrial Browns, Parlies Teoporta, Barry, B	2,056 3,056 3,056 3,056 3,056	It is estimated that construction before with the handed and disposed of in a landfill with a core way trip of SD mise. Values of any Material Imported/Queries, landing Secultation Material (Japanies (Japanie, Sacha, Manadau Sach, Rang, Sach(Metal)) and Mighter Segment, Sacha, and Material/Calandon, etc.) Total Values of SDMs and Turned (Landid) Total Values of SDMs and Turned (Landid)	34,504 80
Numer of Excession (1) per of Fisher table standardset and Faces (1) the fisher of Faces (1) of Fisher (1) the fisher of Faces (1) of Fisher (1) the fisher of Faces (1) of Fisher (1) o	6 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Visional Grazulas (1): per f d Trins (2): per d (2): set (1): be Henrose (1): per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function of per g d vision (2): be the function (2): be the function (2): be the function of per g d vision (2): be the function	4 0 6 0 6 0 8 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	It is estimated that construction defails will be haved and depared of no Landfill with a new way trip of 50 miss. Waters of any stated important/copering including benatism Water parabet/Sciences, Solt, Heinedens Tech, Barry, See(Metrial Browns, Parlies Teoporta, Barry, B	2 of Osea Countrates Married 2006 2005 2,005 2,005	It is estimated that construction before with the handed and disposed of in a landfill with a core way trip of SD mise. Values of any Material Imported/Queries, landing Secultation Material (Japanies (Japanie, Sacha, Manadau Sach, Rang, Sach(Metal)) and Mighter Segment, Sacha, and Material/Calandon, etc.) Total Values of SDMs and Turned (Landid) Total Values of SDMs and Turned (Landid)	34,504 80 34,584
Numer de Security (1) per et d'inne ta be stracigier and haven in the Trans Martine of Security (1) per d'inne (1) et al. (1) be a knowed per la period period period Martine of Security (2) per d'inne (1) et al. (1) be a knowed period period period Martine of Security (2) per d'inne (1) et al. (1) be a knowed period period period Martine of Security (2) per d'inne (1) et al. (1) be a knowed period period period period Martine of Security (2) per d'inne (1) be a knowed period period period Martine of Security (2) per d'inne (2) period period period Martine of Security (2) period period period period Security (2) period period period period period period Security (2) period period period period period period Security (2) period period period period period period period Security (2) period period period period period period period period Security (2) period period period period period period period period period Security (2) period period period period period period period period period Security (2) period perio	6 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	 Valence Scalass (C) per H of Tends (C) was 2 (c) to be Homosof (c) pares (d) end (c) valence (d) end (c) valence	4 0 6 0 0 3 10 0 3 10 0 4 10 10 10 10 10 10 10 10 10 10	It is estimated that construction defails will be haved and depared of no Landfill with a new way trip of 50 miss. Waters of any stated important/copering including benatism Water parabet/Sciences, Solt, Heinedens Tech, Barry, See(Metrial Browns, Parlies Teoporta, Barry, B	(1970) - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000	It is estimated that construction before with the handed and disposed of in a landfill with a core way trip of SD mise. Values of any Material Imported/Queries, landing Secultation Material (Japanies Application), and the second secular Society (Society Society	34,504 80 34,584
Numer of Excession (1) per of Financia bits bits and solution at the Therman Market of Excession (1) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Excession (1) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Excession (1) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Excession (1) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Excession (1) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Excession (1) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Excession (1) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Excession (1) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Excession (1) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Excession (1) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Excession (1) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Excession (1) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Excession (1) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Count (due) (a) per of Financia Per 2 (1) bits hermonop (due) (a) Market of Count (due) (a) per of Financia Per 2 (1) bits hermonop (due) (6 6 8 6 8 6 8 6 9 6 9 6 9 6 9 6 9 6 9 6 9 6 9	 Valence of Carcelan (C) (P) or F of Units (P) (P) as F (D) to be Homoso of Homo (P) as and (P) of Homo (P) as a f (P) of Homo (P) of Homo (P) as a f (P) of Homo (P) as a f (P) of Homo (P) o	4 0 4 0 4 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5	It is estimated that construction defails will be haved and degraded of no Landfill with a new way trip of 50 miss. Waters of any stated important/copering including behaviors and the pathatic/covers. Solit, interdents Tarls, Sone/Metrial formation in youring temportant to accurate the state of the pathatic/covers. Solit, interdents Tarls, Sone/Metrial formation of Shafts and Turnet (so-pdd) Tarlat Volume of Shafts and Turnet (so-pdd) Tarlat Volume (127 Model) (so-pdd)	(and Class Construction Materia) 2,056 3 3 3,255 2,056	It is estimated that construction before with the handed and disposed of in a landfill with a core way trip of SD mise. Values of any Material Imported/Queries, landing Secultation Material (Japanies Application), and the second secular Society (Society Society	34,504 80 34,584
Numer of Execution (1) per for the first host basic basic basic host here the first period (1) of the	6 6 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	 Valence of Scalarski (C) per rf d Trend (C) was a C (u) to be Minored (C) per specify debid) Valence of Scalarski (C) per rf d Trend (C) was for each (C) be Scalar (C) per specify debid) Valence of Scalarski (C) per rf d Trend (C) was for each (C) be Scalar (C) per specify debid) Valence of Scalarski (C) per rf d Trend (C) was for each (C) be Scalar (C) per specific debid) Valence of Scalarski (C) per rf d Trend (C) was for each (C) be Scalar (C) per specific debid) Valence of Scalarski (C) per rf d Trend (C) was for each (C) be Scalar (C) per rf d Trend (C) was foreed (C) be specific debid) Valence of Scalarski (C) per rf d Trend (C) was foreed (C) was foreed (C) per rf d Trend (C) was foreed (C) per rf d Trend (C) was foreed (C) was foreed (C) was foreed (C) was foreed (C) per rf d Trend (C) was foreed (C)	4 0 4 0 5 0 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	It is estimated that construction defails will be haved and degraded of no Landfill with a new way trip of 50 miss. Waters of any stated important/copering including behaviors and the pathatic/covers. Solit, interdents Tarls, Sone/Metrial formation in youring temportant to accurate the state of the pathatic/covers. Solit, interdents Tarls, Sone/Metrial formation of Shafts and Turnet (so-pdd) Tarlat Volume of Shafts and Turnet (so-pdd) Tarlat Volume (127 Model) (so-pdd)	Land Dates Generative Metalitie 2006 39 2,006 2,006	It is estimated that construction before with the handed and disposed of in a landfill with a core way trip of SD mise. Values of any Material Imported/Queries, landing Secultation Material (Japanies Application), and the second secular Society (Society Society	34,504 80 34,584
Numer of Executed (1) per (1 of the set is the statistical and teached in the Teach Marken of Executed (1) per (1) of the set (1) or (1) the Annowed (1) and (1) of (1) Numer of Executed (1) per (1) of the (1) or	6 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	 visional Grazula (C) per II d'intend (C) per II d'intend	4 0 4 0 5 0 5 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	It is estimated that construction defails will be haved and degraded of no Landfill with a new way trip of 50 miss. Waters of any stated important/copering including behaviors and the pathatic/covers. Solit, interdents Tarls, Sone/Metrial formation in youring temportant to accurate the state of the pathatic/covers. Solit, interdents Tarls, Sone/Metrial formation of Shafts and Turnet (so-pdd) Tarlat Volume of Shafts and Turnet (so-pdd) Tarlat Volume (127 Model) (so-pdd)	a ed Casa Gantualite Manna 1.056 2.055 2.055 2.055	It is estimated that construction before with the handed and disposed of in a landfill with a core way trip of SD mise. Values of any Material Imported/Queries, landing Secultation Material (Japanies Application), and the second secular Society (Society Society	34,504 80 34,584
Numer de casacie (c) per et d'hance (c) se los hances de casacie de l'an los hances de casacie de la verte d'hance de la verte de la ve	6 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Visional Grazula (C) per rf d'instruct (U) ta le filosofie (org. party) debid) visional d'actaines (C) per rf d'instruct (U) ta le filosofie (org. party) debid) visional d'actaines (C) per rf d'instruct (U) ta le filosofie (C) ta le filosofie	40 40 40 40 40 40 40 40 40 40 40 40 40 4	It is estimated that construction defails will be haved and degraded of no Landfill with a new way trip of 50 miss. Waters of any stated important/copering including behaviors and the pathatic/covers. Solit, interdents Tarls, Sone/Metrial formation in youring temportant to accurate the state of the pathatic/covers. Solit, interdents Tarls, Sone/Metrial formation of Shafts and Turnet (so-pdd) Tarlat Volume of Shafts and Turnet (so-pdd) Tarlat Volume (127 Model) (so-pdd)	2.05 (Star Controller Midrof) 2.05 2.05 2.055 2.056	It is estimated that construction before with the handed and disposed of in a landfill with a core way trip of SD mise. Values of any Material Imported/Queries, landing Secultation Material (Japanies Application), and the second secular Society (Society Society	34,504 80 34,584
Numer and executes (1) per ef af here (1) here (1) here here of eq (1) here (1) h	6 6 6 6 8 6 8 6 8 6 8 6 8 6 8 6 8	 Valence Carcelan (C) per ref al "ten Strap Star (C) to be Homosoft (C) parts (C) and (C)	4 0 4 0 5 0 5 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	It is estimated that construction defails will be haved and degraded of no Landfill with a new way trip of 50 miss. Waters of any stated important/copering including behaviors and the pathatic/covers. Solit, interdents Tarls, Sone/Metrial formation in youring temportant to accurate the state of the pathatic/covers. Solit, interdents Tarls, Sone/Metrial formation of Shafts and Turnet (so-pdd) Tarlat Volume of Shafts and Turnet (so-pdd) Tarlat Volume (127 Model) (so-pdd)	Land One Generative Manual 2006 39 2006 2006	It is estimated that construction before with the handed and disposed of in a landfill with a core way trip of SD mise. Values of any Material Imported/Queries, landing Secultation Material (Japanies Application), and the second secular Society (Society Society	34,504 80 34,584
Numer of Execution (1) per of the first heir to be straight and the source of the strain (2) where the first heir to be strain (2) be be strain (6 6 6 7 6 8 7 6 9 7 10 0 10 0 1	 violand Arcause (1) per H of here (2) was 2 (1) use 4 kmood equip sample dead) violand Arcause (1) per H of here (2) was found (1) the set of here (2) was 2 (1) was 1 (4 0 4 0 4 0 5 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	It is estimated that construction defails will be haved and degraded of no Landfill with a new way trip of 50 miss. Waters of any stated important/copering including behaviors and the pathatic/covers. Solit, interdents Tarls, Sone/Metrial formation in youring temportant to accurate the state of the pathatic/covers. Solit, interdents Tarls, Sone/Metrial formation of Shafts and Turnet (so-pdd) Tarlat Volume of Shafts and Turnet (so-pdd) Tarlat Volume (127 Model) (so-pdd)	() and Class Chemiculates Material 2.056 2.255 2.255 2.056	It is estimated that construction before with the handed and disposed of in a landfill with a core way trip of SD mise. Values of any Material Imported/Queries, landing Secultation Material (Japanies Application), and the second secular Society (Society Society	34,504 80 34,584
Numer of Execution (1) per of the first here is the standard set of the TermS Water of Execution (1) per of the first per of the set of the standard set of the TermS Water of Execution (1) per of the first per of the set of the standard set of the TermS Water of Execution (1) per of the first per of the set of the standard set of the TermS Water of Execution (1) per of the first per of the set of the standard set of the termS Water of Execution (1) per of the term (1) per of the set of t	6 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8	 Valence of Carcalas (C) per rel d'inter (C) per set (L) to be formed only carcal good of valence of valence	4 0 4 0 4 0 5 0 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	B a similar de la controlica deba en la hubit a de departe de la subdit ven en a rej ha de Similar de la hubit a de la posta de la hubit a de la	2 and Otata Conservation Materia 2 0066 3 0 3 0.005 2 0.005 2 0.005	B is sticled that entroceins show will be hauld and disposed of a landfit will a one way for of 50 mins. Hyper langest start and the	34,504 80 34,584
Numer of execute (i) per eff there is the statistic and there is a first performed is the statistic of th	6 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8	 Words of Carcala (C) or F of The Carc (C) or F of C) and F (C) or F of C) or F of C) and F (C) or F of C) or F of C and F (C) or F of C) or F of C and F (C) or F of C) or F of C and F (C) or F	4 0 4 0 4 0 5 0 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	Bi is estimated by controlling with multiple of the hundre of degrade of the substance of t	1 at Cas Convolte Manna 2.065 3.365 3.265 2.066	8 is similar days taken by the Markel of Reg Constant Materials or Equipment Special Access Rootes in the Neonbed or Far Constant Materials or Equipment	34,504 80 34,584
 Value of accessing (i) per of the robe size sole point and the form? Value of accessing (i) per of the robe size sole point and the robe of the	6 6 3 6 3 6 3 100 100 100 100 100 100 100 10	 Victure of Carcalas (C) or Pri of Carl (C) or 2 (C) or 2 (C) to be formed of pri of priority of prior 1 (C) or 2 (C)	4 0 4 0 4 0 5 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	Bit is estimated by controlling which we be hand and depicted of the subfit with is are any by of 20 mins. Bit is estimated by the subfit is an exploration of the subfit is and the subfit is and the subfit is an exploration of the subfit is and the subfit is and the subfit is an exploration of the subfit is and the subfit is an exploration of the sub		B is directed that construction show will be haded and disposed of a shortful with a use any try of 50 min. Hadron dark texter hadron decoderation will be haded and disposed of a shortful with a dark way by try of 50 min. Hadron dark texter hadron decoderation will be hadron and the hadron will be hadron and the hadron be hadron and the hadron	94,564 96 94,554 94,554
Variant of exacts (c) (c) in r of them is use socially added and on the Terminal Section (C) is a feasible of the Annoold (C) is	6 6 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5	 Victure of Scalars (C) per Let of Letters (C) was 2 (c) to be Homosof (c) particly details) Victure of Scalars (C) per Letters (C) was 2 (c) to be Homosof (c) particly details) Victure of Letters (C) per Letters (C) was 2 (c) to be Homosof (c) per Letters (C) was a constructed of Letters (C	4 0 4 0 4 0 5 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	Bit is estimated to controller advances the hand and depend of a subfit with a new style of the first dependence in the style advances and pendencement. Let, here benefitsed and a subfit with a set and	er degts, construction devokating tradi dishappa sa kasi kewa	En sindical hut conscion data will be haded and Egospe of an inetfit with a user way frag of 50 min. Hyper days tarket holds that conscions that had and Egospe of an inetfit with a user way frag of 50 min. Hyper days tarket had and the hyper of hyper of the hyper of thyper of the hyper	ALSA BO DISA SISSI SISSI SISSI SISSI ALSA SISSI SISSI ALSA SISSI SISSI ALSA SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SI
<pre>values of isolate() if if it is it it</pre>	6 6 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5	 when a facture (1) or 1 of a factor (2) with a factor (2)	4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0	Bit is estimated by controlling which will be handle ad degrad of the substitution of the one any type of 20 mics. Below of a Marcine Marcine School Sch	er degts, construction devokating tradi dishappa sa kasi kewa	Is a solution of the intervence makes will be hadel and disposed of in justifit with a use wighting of solution. The intervence of the	ALSA BO DISA SISSI SISSI SISSI SISSI ALSA SISSI SISSI ALSA SISSI SISSI ALSA SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SISSI SI
<pre>values of the section of the se</pre>	6 6 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5	 Victure of Scalars (C) or F of The North Scalar Scal	4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0	Bit is estimated to controller allow the hand and depend of a subfit with a new style of the first dependence of the subfit with the subfit	er degts, construction devokating tradi dishappa sa kasi kewa	B is divided that entraction data will be hade and disposed of in landfit will a use of ying of 50 min. How do ying with entractical points and an entractical and entraces of the landfit will be a point of the second of the landfit of the second of the landfit of th	ALGA BG BG BG BG BG BG BG BG BG BG BG BG BG
<pre>values of scales (c) (c) in r of theories is scales in a scale of the frame. When soft scales (c) (c) if r of frame (c) if v (c) is a schemol (c) if scales (c) if v (c) is a schemol (c) if scale (c) if v (c) is a schemol (c) if scale (c) if v (c) if</pre>	6 6 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5	 Victure of Carcases (C) per rd of Vices 2 (2) to be formed of per panel added) Victure of Carcases (C) per rd of Vices 1 (2) to be formed of the per panel added) Victure of Victure (C) per rd of Vices 1 (2) to be formed of the per panel added (2) to be very panel (2) to be very panel added (2) to to to be very panel added (2) to to	4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0	Bit is estimated by controlling which will be handle ad degrad of the substitution of the one any type of 20 mics. Below of a Marcine Marcine School Sch	er degts, construction devokating tradi dishappa sa kasi kewa	Is a solution of the intervence makes will be hadel and disposed of in justifit with a use wighting of solution. The intervence of the	ALGA BG BG BG BG BG BG BG BG BG BG BG BG BG
<pre>values of the set of the set</pre>	6 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7	 Wolman & Grazelle (C) per rf d'home (C) was d'home (C) so hand (c) de participation) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) Statistical (c) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) Statistical (c) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) Statistical (c) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) Statistical (c) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) statistical (c) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) statistical (c) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per regione)		Bit is strated by controller and with hand and depend of the studied and a new style of 20 mics. Beam of present system, the state hand the state and strategies and the state style of 20 mics. Beam of present system, the state hand the state state of 20 mics. Beam of present system, the state state of 20 mics. Beam of present system, the state state of 20 mics. Beam of present system, the state state of 20 mics. Beam of present system, the state state of 20 mics. Beam of present system, the state state of 20 mics. Beam of present system, the state state of 20 mics. Beam of present system, the state state of 20 mics. Beam of present system, the state state of 20 mics. Beam of present state in the Neutral of the Description Macrole or Exployment The application. Beam of present state in the Neutral of the Description Macrole or Exployment The application. Beam of present state in the Neutral of the Description Macrole or Exployment The application. Beam of present state and the state state of the state of the state state of the state state of the state sta	ar daph, construction developing taref discharge tra kical wew formional including discharge including discharge including discharge	It is stinded that enstruction show will be hade and disposed of in hardfl will ave a very ray of of them. Hardflow and a very streme end to be an end of the hardflowers, bits, have been hardflowers and hardflowers. Bits is the transmitted of the hardflowers, bits is the hardflowers of the hardflowers. Bits is the hardflower and the hardflowers and the hardflowers and the hardflowers. Bits is the hardflower and the hardflowers and	ALAM 40 23 24 24 24 24 25 25 25 25 25 25 25 25 25 25 25 25 25
<pre>values of cases if () per of the set is also staging and set is the second per set is also stage is per set is also</pre>	6 6 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5	 Workson Groups (1) per ref af here (2) per set (1) per set (1) per set (2) pe		Bit is stranded by controller and by hand and depend of a subfit with a new style of 20 mics. Bellewin of a Meeting and Strand Bellewin and St	er dagt, sconstaction desenting terminal induced global global terminal induced global global global global the piece read for all desentence discharge	Ex 6 indicated hut another bank will be haded and disposed of an indiff with a user any rung of 50 min. Hyper databases have a the transformation manufacture in the haded bank of the second of the seco	At 24 10 10 10 10 10 10 10 10 10 10
<pre>Nummer focussion (1) per of the first his standard set of the first Water of focussion (1) per of the first (1) to the first one of the first operation (1) Nummer focussion (1) per of the first (1) to the first operation (1) Nummer focussion (1) per of the first (1) to the first operation (1) Nummer focussion (1) per of the first (1) per of the first operation (1) Nummer focussion (1) per of the first (1) per of the first (1) Nummer focussion (1) per of the first (1) per of the first (1) Nummer focussion (1) per of the first (1) per of the first (1) Nummer focussion (1) per of the first (1) per of the first (1) Nummer focussion (1) per of the first (1) per of the first (1) Nummer focussion (1) per of the first (1) per of the first (1) Nummer focussion (1) per of the first (1) per of the first (1) Nummer focus in (1) per of the first (1) per of the first (1) Nummer focus in (1) per of the first (1) per of the first (1) Nummer focus in (1) per of the first (</pre>	6 6 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5	 Wolman & Grazelle (C) per rf d'home (C) was d'home (C) so hand (c) de participation) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) Statistical (c) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) Statistical (c) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) Statistical (c) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) Statistical (c) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) statistical (c) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) statistical (c) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was d'home (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per rf d'home (C) was developed (C) per regione) Wolman & Grazelle (C) per regione)		Bit is strated by controller and by handle and depend of the studied with a new style of 20 mics. We have any head or strateging of the strateging of the strateging of the strateging of 20 mics. Before a field branch backet is the threshold or bor borehard black by the strateging of 20 mics. Before a field branch backet is the threshold or bor borehard black by the strateging of 20 mics. Before a field branch backet is the threshold or borehard black by the strateging of 20 mics. Before a field branch backet is the threshold or borehard black back by the strateging of 20 mics. Before a field branch backet is the threshold or borehard black back by the strateging of 20 mics. Before a field branch backet is the threshold or borehard black back by the strateging of 20 mics. Before a field branch backet is the threshold or borehard black back by the strateging of 20 mics. Before a field branch backet is the threshold or borehard black black back by the strateging of 20 mics. Before a field branch backet by the threshold or borehard black black back backet back backet b	er dagt, sconstaction desenting terminal induced global global terminal induced global global global global the piece read for all desentence discharge	B is divided that an anotocion above will be haded and disposed of in hardfl will a view any reg of 50 mins. Mayned any kine is an among independent on hardfly and the problems. But have been any reg of the mins of the second biols, have been block have, baseline biols, have been block have, baseline biols, have been block have block	15.54 10.3 10.3 10.3 20.551 depth, contraction deutering of exhibits in the page of exhibits in the page of exhibits and the page of exhibi
Value of accessing (i) per of the per test is basis placed and per test. We also access (ii) per of the per test is basis placed and per test. We also access (iii) per of the per test is basis placed and per test. We also access (iii) per of the per test is basis per test. We also access (iii) per of the per test. We also access (iii) per of the per test. We also access (iii) per of the per test. We also access (iii) per of the per test. We also access (iii) per of the per test. We also access (iiii) per test. We also access (iiii) per test. We also access (iiii) per test. We also access (iiiii) per test. We also access (iiiiiiii) per test. We also access (iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	6 6 10 6 10 6 10 6 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 11 10 12 10 14 10 15 10 14 10 15 10 14 10 15 10 16 11 17 10 18 10 190 10 10 10 11 10 12 11 13 11 14 11 15 11 16 10 17 10 18 1	 Wolman & Grazelle (C) per rf d'inter (C) per s d'inte		Bit is strated by controller and the handle and depend of the strated with it are any type of the inst behavior of header and strategies and strategies and strategies and strategies and strategies and behavior of header and strategies and strategies and strategies and strategies and behavior of header and strategies and strategies and strategies and strategies and behavior of header and strategies and strategies and strategies and strategies and header and header and strategies and strategies and strategies and header and header and strategies and strategies and strategies and header and header and strategies and strategies and strategies and header and header and strategies and strategies and strategies and header and header and header and and strategies and strategies and header and header and header and and strategies and and strategies and header and header and header and and strategies and and strategies and header and header and header and and strategies and and header and header and header and header and and strategies and and header and header and header and and strategies and and header and header and header and and strategies and and header and header and header and and strategies and and header and header and header and and strategies and header and header and header and header and and strategies and header and headers and header and header and header and and strategies and header and headers and headers and header and headers and and strategies and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and headers and header	er dagt, sconstaction desenting terminal induced global global terminal induced global global global global the piece read for all desentence discharge	Ex 6 indicated hut another bank will be haded and disposed of an indiff with a user any rung of 50 min. Hyper databases have a the transformation manufacture in the haded bank of the second of the seco	15.54 10.3 10.3 10.3 20.551 depth, contraction deutering of exhibits in the page of exhibits in the page of exhibits and the page of exhibi
<pre>values of scarses (C) per of theorem is be stocked and on the TermS Water of Scarses (C) per of theorem is be stocked and the stocked per optical scarses (C) per of a theorem is be stocked and the stocked per optical scarses (C) per of a theorem is be stocked and the stocked per optical scarses (C) per of a theorem is be stocked per optical scarses (C) per optical scarses (C) per optical scarses (C) per optical scarses (C) per optical scarses (C) per optical scarses (C) per optical scarses (C) per optical scarses (C) per op</pre>		 Words of Cascala (C) per rd d'hon (C) was d'out a long to be lanced on participation) Words of Cascala (C) per rd d'hon (C) was d'out a long to be lanced on participation) Words of Cascala (C) per rd d'hon (C) was d'out a long to de lanced on participation) Words of Cascala (C) per rd d'hon (C) was d'out a long to de lanced on participation (C) per rd d'hon (C) was d'out a long to de lanced on participation (C) per rd d'hon (C) was de lanced on participation (C) per rd d'hon (C) was de lanced on participation (C) per rd d'hon (C) was de lanced on participation (C) per rd d'hon (C) was de lanced on participation (C) was developed on the participation (C) was developed on the participation (C) was developed on the participation (C) was developed on participation (C) was developed on the participati		Bit is strated by controller and by handle and depend of the studied and the are any by of 20 mics. Hence of photon strategies and the strategies and strategies and the strategies	er dagt, sconstaction desenting terminal induced global global terminal induced global global global global the piece read for all desentence discharge	Is a solution of an isotratic frame an indication and approxed of an isotratic when a very ray of solution. Mayned and setting and approxed isotratic and approxed and approxed and approxed isotration. Mayned and approxed isotratic and approxed isotration and apple discovery. Solution and approxed isotration and approxed isotration. First Paperdo Access In the Mannehold or face Operating difference during approxed. First Paperdo Access In the Mannehold or face Operating difference during approxed. Mark organization. Mark or	15.54 10.3 10.3 10.3 20.551 depth, contraction deutering of exhibits in the page of exhibits in the page of exhibits and the page of exhibi

way we be used by saving but of sectors one side of the street as a we be used by saving o	AN AT THE VALUE AND AN AT AN AN AN AN A	III AND A REAL OF A REAL AND A				
Construction Zone and maintaining a Traffic Way on the other side of the street.						
Consideration zone and maintaining a maint way on the other ade of the screet.						
Generator Requirements		Generator Requirements		Generator Requirements	Generator Requirements	
Large Generator Set 45kw for Night Lighting		Laree Generator Negurements		Included in equipment list - see tab "Equipment - CM-4A through CM-4F"	Included in equipment list - see tab "Equipment - CM-4A through CM-4F"	
Standby Large Generator Set 45kw for Night Lighting		Standby Large Generator Set 45kw for Night Lighting		included in edulpment list - see tablic dulpment - CM-4A through CM-4P	included in equipment ist - see tablic quipment - CM-ex through CM-er	
Large Generator Set 75kw for Dewatering Pumps and Ventilation Fans		Large Generator Set 75kw for Dewatering Pumps and Ventilation Fans				
Standby Large Generator Set 75kw for Dewatering Pumps and Ventilation Fans		Standby Large Generator Set 75kw for Dewatering Pumps and Ventilation Fans				
(All included in equipment list - see tab "Equipment - CM-1, CM-2, CM-3A)		(All included in equipment list - see tab "Equipment - CM-1, CM-2, CM-3A)				
Ventilation Requirements		Ventilation Requirements		Ventilation Requirements	Ventilation Requirements	
Pipe welding will require ventilation - Utility Blower Fan 520W 2,295 CFM High Velocity Ve		Pipe welding will require ventilation - Utility Blower Fan 520W 2,295 CFM High Velocity Ventilator with Duct Hose		100 HP Ventilation fan for each tunnel	100 HP Ventilation fan for each tunnel	
Shoring installation (sheeting) as needed will require ventilation during welding - Utility Blo	ower Fan 520W 2,295 CFM	Shoring installation (sheeting) as needed will require ventilation during welding - Utility Blower Fan 520W 2,295 CI	FM	40 HP Ventilation fan per shaft	40 HP Ventilation fan per shaft	
High Velocity Ventilator with Duct Hose		High Velocity Ventilator with Duct Hose		Assume 24-hr day, 90% usage of the ventilation fan during 24-hr day	Assume 24-hr day, 90% usage of the ventilation fan during 24-hr day	
(All included in equipment list - see tab "Equipment - CM-1, CM-2, CM-3A)		(All included in equipment list - see tab "Equipment - CM-1, CM-2, CM-3A)				
Equipment Usage		Equipment Usage		Equipment Usage	Equipment Usage	
See attached worksheet "Equipment - CM-1, CM-2, CM-3A"		See attached worksheet "Equipment - CM-1, CM-2, CM-3A"		See attached worksheet "Equipment - CM-4A through CM-4F"	See attached worksheet "Equipment - CM 4A through CM 4F"	
CM-1 Roadways (Cut & Cover) - Excavation/Trenching		CM-3A LAFCD Easement (Cut & Cover) - Excavation/Trenching				
Pipeline Construction		Pipeline Construction				
Typical Trench dimensions are: 16 ft wide X 19 ft deep		Typical Trench dimensions are: 16 ft wide X 19 ft deep				
Total Length (ft)	12.783	Total Length (ft) 1.21	16			
Total Excavation (cu-ft)	3.886.123	Total Excavation (cu-ft) 369				
Total Excavation (cu-rt) Total Excavation (cu-rds)						
	143,930		551			
(This does not include swelling of the soil once removed.)		(This does not include swelling of the soil once removed.)				
Fiber Optic Duct Bank		Fiber Optic Duct Bank				
Typical Trench dimensions are: 2 ft wide X 5 ft deep		Typical Trench dimensions are: 2 ft wide X 5 ft deep				
Total Length (ft)	12,783	Total Length (ft) 1,21	16			
Total Excavation (cu-ft)	127,833	Total Excavation (cu-ft) 12,1	160			
Total Excavation (cu-yds)	4,735	Total Excavation (cu-yds) 450				
(This does not include swelling of the soil once removed.)		(This does not include swelling of the soil once removed.)				
CM-1 Roadways - Pavement/Concrete Replacement or Rehabilitation						
Pipeline Construction						
Trench Width Pavement (sq-ft)	255,666					
(20 feet wide through length of pipeline)						
Trench Width Pavement (sq-yds)	28,407					
Finished Coat on half of Roadways (sq-yds)	511,332					
(40 feet wide through length of pipeline - covering half of full roadway)						
Fiber Optic Ductbank						
Trench Width Pavement (so-ft)	25.567					
(2 feet wide through length of pipeline)						
(2 level wide through length of pipeline) Trench Width Pavement (sq-yds)	2,841					
control and and a second of the law	a.,a=a.					
CM-1 Roadways (Cut & Cover) - Temporary Median Removal						
Median Locations: None this Contract						
1						
1						
1						
1						

tasts, trefered digeneratings (see a second								
		CM-25CE Essenent	CM-4A Pipe Jacking		CM-48 MEcretaneeling		CM-4C Traditional PRECASE CONCRETE LINER	
			BORWO MACHINE PIPE CASING		POMP DISCHARGE LINES	1		
			JACKING PT CUTTING HEAD RECEIVING PT				LAURCHNO PIT CUTTINI AGAO CONTRY & EXTENSION FOR MARKED BERKETTEN LAURCH	
ADDEDED REMAIN					THMUST BLOCK / LAINCHING PIT CUTTING HERD / RECEIVING I JACKING FRAME	41	CONSTRUCTION METHOD 4C - TRADITIONAL TUNNELING (EPBM W/ CONCRETE LINERS) NOTE:	
Professionary Profess			CONSTRUCTION METHOD 4A - JACK & BORE		CONSTRUCTION METHOD 4B - MICRO-TUNINELING (SLURRY FACE TBM W/ PIPE JACKING) MTR			TO IF OF IF THERE IS 4"OF OF INCTION EASEMENT ANREABLE HTY.
Openational Control with these 1 - Annonexy Pipe Segments of This Construction Type Plan Nox. (pdf) Segment No.	Length (ft)	Pipe Segments of This Construction Type Pipe Segment No. Length [1] Segment No. Longth [1] Segment No. Length [1]	Pipe Segments of This Construction Type 50 Plan Nos. Golf Segment No.	Length (ht)	Pipe Segments of This Construction Type Pipe Segment No. (pdf) Segment No.	Length (%)	Pipe Segments of This Construction Type Plan Nos. (pdf) Segment No.	Length (ft)
27,28 64 28 66 29,30,31,32,33 66 25 73	1,184 1,751 15,229 1,227	34 20 52 24, 25 72 1,27 Total 1,29	28 65 29 67 Total	252 228 580	34 71 25 74 25 76	211 233 234	22, 24 60 Total	1,190 1,299
25 75 Total Miles	1,340 22,731 4.21				Total	778	-	
Estimated Number of Construction Workers Per Cay Registre Construction		Estimated Number of Construction Workers Per Day	Number of Shafts : 4 Catinuted Number of Candination Workers Per Day		Number of Shafts : 6 Estimated Number of Construction Warkers Fer Day		Number of Shafts : 2 Estimated Number of Construction Workers Per Day	
Construction Schedule (working days) Daily Crew Production (17 per day) Extimated Number of Pipeline Crews Per Day Number of Pipeline Crews	455 20 1.67 2	Construction Schedule (working days) 455 Feet of Pipoline communicion per days needed 100 Extinsted Riumber of Pipoline Craws Per Day 0.08 Number of Pipoline Craws 0.08	Construction Schedule (working days) Fees of Tuanal Construction needed par day Existential Number of Tuanal Crews Per Day (based on 10 better per day per crew)	455 1.27 0.13	Construction Schedule (working days) Feet of Transel Construction needed per day Estimated Number of Transel Coreas Per Day (Daved on 10 feet per day or Core)	455 171 0.17	Construction Schedule (working days) Fret of Turoni Construction needed per day Estimated Number of Turoni Consus Per Day (based on 20 forte per day per crow)	455 7.45 0.25
Pipeline Construction Crews Warkers per crew Shoring Crews Warkers per Crew	1 7 0.2 3	Papeline Construction Crews 1 Voldnet per crew 0 Shoring Crews 0,2 Shoring Crews 3	Extinuated Number of Pipeline Crews Per Day (based on 40 feet per day per crews) Extinuated Number of Shaft Crews Per Day (based on 90 days per shaft)	0.03	Estimated Number of Pipeline Crews Per Day (based on 60 first par day per crew) Estimated Number of Shaft Crews Per Day (based on 50 days per shaft)	0.04	Estimated Number of Pipeline Crews Per Day (paard on 40 feet per day per crew) Estimated Number of Shaft Crews Per Day (paard on Stodays per shaft)	0.19
Saw Cut Crew Wecking par com Demosition Crew Workings par com Pavlog Crew	0.05 3 0.05 3	Ubitry Relocation Crew 0.05 Warders par crew 6 Warder Truck Crew 0.15 Warder par Crew 0.15 Warder par Crew 0.15 Warder par Crew 1 Size Instantion Crew 0.15	Estimated Neurobar of Paving Crows For Day Workers per Tunnol Crow Workers per Spelline Crow Workers per Shift Crow	0.10 7 16 8	Estimated Number of Pauling Crews Per Day Workers per Tannel Crew Workers per Popeline Crew Workers per Shaft Crew	6.10 15 16 8	Extension Number of Paulog Crews Per Day Workers per Tunnel Crew Workers per Robel Crew Workers per Shaft Crew	0.10 15 16 8
Pavlog Crow Workers per crow Ukliny Relocation Crow Wackers per crow	02 5 01 6	Workers per crew 1 Tempory Gravel Roadway Crew 0.1	Workers per Paiving crew Total Workers per Travighted Construction Schedule) Total Workers per Tay (Average Throughout Construction Schedule) Note: The installation of Fiber Optic cabling is estimated to be within these provided production rates.	3 8.03	Workers per Paring crow Total Workers per Oay (Average Throughout Construction Schedule) Note: The Installation of Fiber Optic cabling is estimated to be within these provided production rates.	3 12.04	Workers per Faulog crew Total Workers per Day (Average Throughout Construction Schedule) Note: The installation of Fiber Optic cabling is estimated to be within these provided production rates.	3 10.17
Traffic Control Crow Size Total Workers per Day (Awenge Throughout Pipeline Construction) Total Workers per Day (Avenge Throughout Construction Schedule)	0.15 4 20.20 16.82	Total Workers per Day (Average Throughout Pipeline Construction) 10.0 Total Workers per Day (Average Throughout Construction Schedule) 0.52						
Fiber Optic Duct Bank Construction Schedule (unofiling days) Daily Crew Production (FT per day) Estimated Number of Combined Fiber Optic Crews Per Day	705 200 0.16	Fiber Optic Duct Bank 705 Construction Schedule (working days) 705 Daily Craw Hoodsching (Fiper Optic Craws Fer Day) 203 Externated Number of Combined Fiber Optic Craws Fer Day 0.02						
Number of Contelluted Fiber Optic Crews Trenching, Buckfill, Conduit, Formwork Crew Workers per crew Concrete Crew	1 1 4 0.75	Number of Londvide Seler Upper Lows 1 Trenching Radiofi, Conduit, Contwink Crew 1 Wildners par crew 4 Consrete Crew 0.75						
Workers per Crew Electrican Crew Workers per Crew Paving Crew Paving Crew	4 02 4 03	WindersperCrew 4 Bidetrian Crew 0.2 Winderspercew 4 Paving Crew 0						
Workness par crow Total Workers per Day (Average Throughout Fiber Optic Construction) Total Workers per Day (Average Throughout Construction Schedule) Estimated Number of One-Way Construction Worker Vehicle Trips Per Day	5 8.30 1.34	Wolders per crew 0 Total Workers per Day (Average Throughout Fiber Optic Construction) 2,340 Total Workers per Day (Average Throughout Construction Schedula) 0.19 Estimated Number of One-Way Construction Worker Vehicle Trips Per Day	Estimated Number of Data New Fourthwrites Worker Vabilita Toto, Bar Data		Estimated Number of Donalities Construction Worker Valida Trice Ser Day		Enformated Number of Deal-Way Construction Worker Malifely Trins For Day	
Pioeline Construction Total Workers per Day (Average Throughout Construction Schedule)	16.82 33.64 2	Total Workers per Day (Average Throughout Construction Schedule) 0.92	Total Workers per Day (Average Throughout Construction Schedule) Der-Way Trips per Day (50 miles) Skattle to Mave Workers thom Park to Ste (Dae way - 5 miles)* Total Dae Way Trips per Day of Worker Can (Jewrage Throughout Construction Schedule)	8.03 16.05 2	Total Workers per Day (Average Throughout Construction Schedule) One-Way Trips per Day (Schmite) Southe to New Workers from Park to Site (One way - 5 miller) ¹⁰ Total One Way Trips per Day of Worker & run (Average Throughout Construction Schedule)	12.04 26.09 4	Total Worken per Day (Journge Throughout Construction Schedule) Cne-Way Tips per Day (Schedule) Total Construction Schedule) Function to New Way Trips per Day of Worker Cne (Jeurege Throughout Construction Schedule) * Auswenn Remained of Schedule per Natoline	10.17 20.34 2
Umerene gas per Log (a comm) Stantis to More (Steeken tom Pick to Stee (Cros way - 5 miles) Tatal Coe Way Trips per Day of Worker Vehickies (Iverage Throughput Construction Schedule) * Anamere maintain of Si workers per shuttle Efter Cretic Decharie	2 35.6	Austra to fusione immonianes Itala (Internego - Smithal) 2.2 Austra to fusione immonianes Itala (Internego - Smithal) 2.2 Austra to fusiones Italia (Internego - Internego - Constructions Schedule) 2.8 * Austranes maximum of LS workney per shuttle and YMS of workney need shuttle <u>Bior Partice Routeback</u> 2.93 Cala Internet year (Internet general Transplaces Constructions Schedule) 2.53	Total One Way Trips per Day of Worker Can (<i>Jiverage</i> Throughout Construction Schedule) * Assumes maximum of 15 workers per shuffle	18.1	Total One Way Tops per Day of Worker Cars (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle	4 30.1	Total One Way Trips per Day of Worker Cars (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle	22.3
Table Constantiant Table Sharehowski (San Sharehowski) Cane Way Higs per Chry (Constant) Cane Way Trips per Chy of Warrier Vehicles (Jonrage Thoughout Construction Schedule) Table Cone Way Trips per Chy of Warrier Vehicles (Jonrage Thoughout Construction Schedule) * Ausware manimum of Scheduler per Hustist and 2056 of exact need huttis	1.34 2.68 2 4.7	Total Weylews per Day (Iverage Throughout Construction Schedule 0.19 One-Way (Trips per Day (Sd miler) 0.30 Statils to Move Winders from Park to Size (Crie way - 5 miler) 0 Total One Way Trips per Day of Worker Vehicles (Jerange Throughout Construction Schedule) 0 Ausment mailtowing of Saviders per National Worker Vehicles (Jerange Throughout Construction Schedule) 0.4						
* Austern maintenin 15 wirter par bublit and 20 is divident read bubli Pagetar Contrast (Marken par Dar) (Marken par During Contruction Schedule Totti Worthing par Boyl (Marken) Dar Warthing (Marken) Dar Warthing (Marken) Tead Contrast (Marken) Tead Contrast (Schedule) Tead Contrast (Schedule) Austern maintening (Schedule)	52.00 104.00		Total Workers per Day (Maximum During Construction Schedule One-Way Trips per Day (50 miles)	16.00 32.00	Total Workens per Day (Maximum Throughout Construction Schedule One-Way Trips per Day (Stimling)	24.00 48.00	Total Workers per Day (Maximum Throughout Construction Schedule One-Way Trips per Day (52 miles)	16.00 32.00
Note: Having vehicles included in terms below.	6 110.0	Shuttle to Moore Wilorkers from Park to Site (Dee way - 5 milet)* 2 Total One Way Trigo per Dog of Worker Carel (Maalmann Thosaghast Construction Schedule) 38.0 * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle	Start Weat any park by Markinean Deving Contraction Schedule Green Weit (Singer Perk (S Global) Batter to Mere Weiter hann mit to Stel (Con weit, S miller) Tradi do Bwy Weiter Kang and Con Markanean Deving Contraction Schedule * Ausuren manimum of S sourches par et Auth. <u>Tary III weiter</u> Verbein and Lock of mit to stel Source.	2 24.0	Total Workers per Day (Nutrianan Throughout Construction Schedule Dave Work (regar 2004 Splithaule) Routzis to Mean Workers from Parkto Data (Dan way - Smith) ⁴ Total Cole Way (Frigar Edu of Without Con (Masharam Throughout Costruction Schedule) ⁴ Assume maximum of Schwichen per churtle. <u>Ammy Workers</u> Workers Andrea Marchanter Marten Worker, Workers Andrea Marten Marchanter Marten Worker, Worker Schwicz, Schwister Marten Marten Marten Worker, Worker Schwister, Schwister Marten Marten Worker, Worker Schwister, Schwister Marten Marten Worker, Schwister Marten, Schwister Marten Marten Marten Marten, Schwister Marten, Schwister Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten Marten	6 54.0	Taudi Walan ya chu Makanan Throghesi Contruction Schedule Com-Way Haya, ang Keng Ki Shali, Dactite ta Mara Warten Ton Yaka to Die (Don wur - Innie) ¹ Total Con Way They par Dong Walance (Databasen Throughest Construction Schedule) * Austranse maintand Si Swelers per budie. <u>Buar Isulary Walance Include I Innie</u> Mara.	2 34.0
Eher Octic Oust Bank Total Worken per Day (Maximum During Construction Schedule) One-Way Tops per Day (20 miles) Switch to Move Worken from Park to Site (One way - 5 miles)*	17.00 34.00 2	Their Detric Detrict Statist 12.00 Total Workers per Day (Maximum During Censtruction Schedule) 12.00 Deve Way Totap per Day (Totinite) 24.00 Souths to Mare Washers from Parket Statis (Dire way - Smiller)* 2 Anal Deve Way Totap per Day of Washers from Parket Complexition Schedule) 26.0						
Total One Way Trips per Day of Worker Cars (Maximum During Construction Schedule) * Anumes maximum of 25 workers per shuttle and 20% of workers need shuttle <u>Notes</u> Hauling Whitches included in terms below.	2 36.0	* Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle <u>Note:</u> Hauling Vehicles included in items below.						
Construction Worker Wehlde Parking Location() <u>Pionite Construction</u> Total Workers per Day (Wenzge Throughout Construction Schedule)	36.82	Construction Worker Vehicle Parking Location() <u>Restance Construction</u> Total Workers per Day (werge Throughout Construction Schedule) 0.52	Construction Worker Webick Parking Location(s) Total Workers per Day (Average Throughout Construction Schedule) Assume 26: of Staff can park Neerby the Construction Location	8.03	Construction Worker Vehicle Parking Location(s) Total Workers per Day (Average Throughout Construction Schwidule) Assume 2016 F datt Can park Nearby the Construction Location	13.04	Censtruction Worker Vehicle Parking Location(s) Total Worken per Day (Average Throughout Construction Schedule) Ansuren 2015: Cata Lon park Kendr Ho Construction Location	10.17
Assume 2016 of Staff can purk Nearby the Construction Location Remaining 2014 Need as Estable. Parking Locine Total Workers per Day (Maximum During Construction Schedule) Assume 2016 of Staff can purk Nearby the Construction Location	11.4 52.00	Assume 20% of Catification park Headly the Construction Location Remaining 70% Head on Establ. Parking Locins 0.6 Total Workers per Day (Maximum During Construction Schedule) 18.00 Assume 20% of State park Headly the Construction Location	Total Workers per Day (Maximum During Construction Schedule)	5.6	Assume XXX of Solid cap park Neutry the Construction Location Remaining XXX Need as Establ. Parking LoCric Total Workers per Day (Maximum During Construction Schedule) Assume XXX of Solid cap park Neutry the Construction Location	9.1 24.00	Assume 2016 of Staff cap park Neurby the Construction Location Remaining 2016 Need an Establ. Parking Location Total Workers per pay (Maximum During Construction Schedule) Assume 2016 of Staff cap park Neurby the Construction Location	7.1
Amending 20% failed at Endale Provide Unit Advanced Laboration Remarking 20% failed at Endale Provide Laboration TEME of going Decell Band Total Workshop per Day (Warning Throsophola, Construction Schedule) Assume 20% of Soft Can park Managely the Construction Schedule) Remarking 20% head a Laborat Provide Lechine	36.4 1.34	Remaining 70% Need an Establ. Parking Loc'ns 12.6	Passerie no do cara car par men y provinci provinci activitati accidari Remaining 70% Need an Establ. Parking Lac'ns	11.2	Presenter and section and an United part (Herizon and Construction) Construction Reemaining 70% Need an Estable, Parking Loc'rs	16.8	Pennante do de una car sun para retario y un constancia con a constance. Remaining XXII: Need an Establ. Parking Loc'he	11.2
Total Workers per Day (Maximum During Construction Schedule)	0.9 17.00	Assume 20% of Saff Can purk Newby the Construction Location Remaining 70% Need as Establ. Parking Loc'ns 0.1 Total Workers per Day (Maximum During Construction Schedule) 12.00						
Assume 20% of Staff can park Nearby the Construction Location Remaining 20% Need an Establ. Parking Loc'res Will There be Weekend or Nighttine Construction? Will we Likely Comply with Noise Ordinance or Will We Re	11.9	Assume 2016 of Staff can park Nearby the Construction Location Remaining 70% Need as Establ. Parking Loc'ns & &A Will There be Weekend or Nighttines Construction? Will we Likely Comply with Noise Ordinance or Will We Request Variance?		et Variance?	Will There be Weekend an Nightsime Construction? Will we Likely Camply with Noise Ordinance or Will We Req	ant Variance?	Will There be Weekend or Nighttine Construction? Will we Likely Complywith Noise Ordinance or Will We Req	uest Variance?
No construction work is planned for weekends. There may be nighttime work dictated by particular needs community and business inspact. For example is nome locations nighttime work would have less impact to will periodically request variances to extend work beyond normal noise ordinance hours.		No construction work is planned for weekends. There may be rightline work distated by particular needs along the alignment community and business impacts. For example is some locations rightline work would have lies impact to businesses. We exp Costruction will predictably request induces to stende work shaped normal noise ordinance burs.	to address. Some critical crossings may require weekend or nightime work by permit. Where wakers are feasible, Salar pect	fay day work may be needed.	Some critical crossings may require weekend or nighttime work by permit. Where waivers are feasible, Satu	rday day work may be needed.	Tunneling will likely require near 24/7 work. Tunnel launch shaft sites will need to assume 24/7 work and pr Assume a variance for 24/7 work at launch sites.	ovide for light and noise mitigation as needed
	fract out was for the		Construction Staging Area and Starage Lecation(a) re pipeline so [Construction staging located at each shaft she (soft and of crossing).		Construction Staging Area and Storage Lacation(s) Construction usingle lacation at each shall be found of drosoning. Launching staging area will be 3,000 act and the receiving staging 2,000 act!		Candifuction foraging Area and Manager Location(s) Construction craging located at each shaft dise (and end of crossing), Lounching straight and lab 22,000 kpc and the receiving straight 21,070 kpc fr	
Contraction Stapley Area and Storage Location(), We currently integrate two staple/pictage locations () We currently integrate two staple/pictages locations are there will be a local of 56 stapleg and storage areas. Typically a staging/iterage area will be on swenge 4 a miles from the site.		Constructions Staping Area and Enzyma (Location) We correctly setticipate it is obligging through actions per contract package. We correctly setticipate it contract packages for th there will be a total of S6 staging and storage areas. Typically a staging/itorage area will be on saverage 4 acres and is assumed males from the site.	re pipeline so. I. Construction taging located at each shaft size (each mod of crossing). Is be within 5. Launching staging area will be 6,200 kpcf and the receiving staging 3,800 kpcft Additional material and equipment storage available at 4 acre pipeline staging area.		Construction staging located at each shaft site (anch end of creasing). Launching staging area will be 6,000 sq-ft and the receiving staging 3,000 sq-ft Additional material and equipment storage smallable at 4 acce pipeline staging area.		resource scapes -scales at each start site (such end of crossing). Launching staging area will be 22,680 up ft and the receiving staging 11,670 up ft	
Lecations/Procedures for Storing/Transporting Spoils Due to the limited work are at each construction is we anticipate that stocipiling of sols at the site will will likely be have define to a stocipiling at the statisticityme way. The sold and and an each of the stociated	not be possible. All excavated soil be separated and harded to dive	Leastions/Procedures for Storing/Transporting Spolits Due to the limited work area at and construction tile we articipate that integling of solit at the site will not be possible. All de Ill linky be haude of the to a sociation the single Albaceae area. The world works or the uncertainty in the same	Lecations/Procedures for Staning/Transporting Spoils escanded tool bacrueted spoils will be temporarily stockpiled at the launch shaft sites or loaded directly into dump trucks a	d hauled offsite daily for disposal.	Locations/Procedures for Storing/Transporting Spails Excavated spails will be temporarily stockpiled at the launch shaft sites or loaded directly into dump trucks :	nd hauled offsite daily for disposal.	Locations/Procedures for Storing/Transporting Spails	and builded ethics of a
the()) and the remaining out will be automatic the survey will be accurate will be accurate will be apple three manufactures and the survey of the survey o	 we used to dispose We estimate that 40% of the total lis at an average one way distance of require hauling and disposal at a 	Labeliant biological managements (and biological managements) and an antipart of the straightform of the straightform of the straightform with the biological management of the straightform graves. The straightform of the straightform of the superscale straightform of the straightform of the straightform graves. The straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straightform of the straight	ante thate 40% average one line hauling				Excessing spolls will be temporarily stockplied at the launch shaft sites or loaded directly into dump trucks i night shift work will be temporarily stockplied at the launch shaft site if nightime having is restricted.	no naureo offsite daily for disposal. Spoils fron
Number of Daily Dar Way Hout Truck Trips Dar to Material Transportation (e.g. of Base) disposed, materially Type of Trucks <u>Realistic Constructions</u>		Number of Stally Den Way Haul Truck Trips Den to Material Transportation (e.g. off Haul/Aspecial, material), type of Succis Biochine of Construction Biochine and Truck Trips Den to All Truck (MT May 1970), Biochine and an advanced and advanced	Number of Daily One-Way Haul Truck Trips Due to Material Transportation (e.g. of Fhank/Stapesal, exterial), Typ		Number of Daily One-Way Haul Truck Trips Due to Material Transportation (e.g. off-haul/dispose), material); Ty		Number of Daily One-Way Haul Truck Trips Due to Moterial Transportation (e.g. off-haul/disposel, material), Ty	
Painter Construction Volame of Exacute (C) per FL of Thrench (LF W x 19° D) (includes paving debrit) Volame of Exacute (C) per FL of Thrench (LF W x 29° D) (includes paving debrit) Volame & Exacute (C) per FL houlding street of 15% Capacity per Damp Track (Cr) Number of Hault (Uncludes per FL of Thrench	304.0 11.26 12.95 10.0	Declar Contraction Declar Contraction 204.0 Walkins of Example (E7) per K of Trench (147 W x 197 D) (includes paving debin) 11.0 Walkins of Example (C7) per K of Trench (147 W x 197 D) (includes paving debin) 11.0 Walkins of Example (C7) per K of Trench (147 W x 197 D) (includes paving debin) 11.0 Maines Dockse (C7) per K Trobing See and 15% 12.6 Capacity per Amery Track (K7) 12.0 Number of Hist (Trackse) per F of Trench 12.9	Escavation Diameter (h)	580 9 1,572 1,828	Length (ft) Excurvation Diameter (ft) Taunet Volume (cu-yds)* Shuth Volume (cu-yds)*	778 9 2,108 2,742	Length (h) Euraviso Diameter (h) Tunnel Volume (Doue) (cu-ydu)* Shaft Volume (cu-ydu)*	1,390 11 13,722 933
Estimated Length of Trench per Day Per Crew (h) Number of Haul Trucks per Crew per Daily Production Total Crew May Haul Trigs Hern Site to Stagling/Storage and return	129 30.0 38.8 77.7	Estimated Length of Trench per Day Per Crew (ft) 100.0 Number of Haul Tracks per Crew per Day Per Calify Production 1293.5 Total One-Way Haul Trips from Site to Staging/Sorage and return 259.0	Total Number of Truck Trips for Soil Removal Total Number of Truck Trips for Piping and Caulog Total Number of Truck Trips for Shaft Construction	1,572 1,828 1,400 340 46 1,440	Total Volume of Statts and Tunnel (cu-ydq)* Total Number of Truck Trips for Sol Remonal Total Number of Truck Trips for Piping and Casing Total Number of Truck Trips for Statt Construction	2,108 2,742 4,850 485 62 2,160	Total Volume of Shafts and Tunnel (cu-yds)* Total Number of Truck Trips for Soli Removal Total Number of Truck Trips for Piping and Casing Total Number of Truck Trips for Shaft Construction	14,655 1,465 126 720
Estimated Pipe Redding Soil Import to Site (CF) from Storage Per Foot of Pipeline (4.27 H x 16 'W minux (0.5*2.147.25*2)(4) Est. Pape Redding Soil Import to Site (Cf) Per F of Pipeline Pipe Redding Soil Import 10'D rev F including Sewil of 12%	55.37 2.05 2.36 30.0	Extinuted Ryae Redding Sol Import to Site (CT) from Storage Per Facet of Pipeline (CT2 VH & LSY Wins (LST): L472: SY2(H) S5.27 Ext. Pipe Redding Sol Import (LST): H172: SY2(H) 25.27 Pipe Redding Sol Import (D) Per II (CP) Per II of Pipeline 20.65 Pipe Redding Sol Import (D) PER II (CP) Per II of Pipeline 23.65	Disturbed Pawamene (up 41) Pauling Replacement import [187 thick] (cu-H1) Pauling Replacement import (187 thick] (cu-H3) Total Number of Track Tryns for Replacing Pauling Total Number of Track Tryns for Replacing Pauling	1,440 1,410 2,115 78 8	I do a Number of Truck Topo for Antra Contraction Catacitade Devenent (iq:47) Pavling Replacement Import (18" thick) (cu-th) Pavling Replacement Import (18" thick) (cu-th) Tooth Number of Truck Topo for Replacing Pavling	2,160 2,115 3,173 118 12	Total Number of Track Tips for Shart Calorization Distubles Payment (just) Paying Replacement (just) Total Number (Track Tips for Replacing Paying Total Number (Track Tips for Replacing Paying	720 720 40 4
Capacity per Dump Truck (CY) Number of Haul Trucks per FT of Trench Extimated Length of Trench per Day Per Crew (ft) Number of Pipe Bedding Import Trucks per Day	0.24 20 7.1	Capacity per Durg Truck (V) 100 Number of Hault Trucks per FT of Tranch 6.24 Sciented Length of Tranch per Day Per Crew (t) 100 Number of Hault Selding Inport Trucks per Day 23.6	Total Truck Trips During Construction Number of Truck Trip per day on Average	8 1,834 4.03	Total Truck Trips During Construction Number of Truck Trip per day on Average	12 2,719 5.98	Total Truck Trips During Construction Number of Truck Trip per day on Average	4 2,225 5.11
Total One-Way Haul Trips of Pipe Bedding Import to Site Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier Number of One-Way Daily Trips Hauling Exavated Sol From Storage back to the Site (and return)	7.1 14.1 14.1 52.9	Total One-Way Hawl Trips of Pipe Bedding Import to Site 47.2 Also Number of Hawl Trips of Pipe Bedding in Storage Site from Supplier 47.2 Aurobur of One-Way Daily Trips Hawling Excessed Solit from Storage Back to the Site (and return) 176.4	*Ansumers a 1.15 building factor 10 CYToada in 12 CY dump trucks		*Ansumers a 1.15 bulking factor 10 CY loads in 12 CY dump trucks		*Assumes a 1.15 building factor 10 Ctriloads in 12 Ctri damp tracks	
(62.1% of Learnet Trips from Site to Storage) No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back (12.0% "Site Caravet Trips from the So Storage) No. of One-Way Spoils Daily Trips from Storage Site to Nax. Waste Landfill (200 miles) and back (20.0% Note: Caravet Trips from the So Storage)	22.3 2.5	(62.1% of Excent Trips from Take to Scorage) No. of One-Way Spein Daily Trips from Storage Site to Landfill (50 miles) and back 74.3 (1).01%*246 of Scorage Take Scorage) No. of One-Way Spein Daily Trips from Storage Site to Hair. Waste Landfill (200 miles) and back 8.3 (1).0101076 of Contents Take Sonage Take In Hair. Waste Landfill (200 miles) and back 8.3						
(21.95/*05% of Eucavate Trips from Site to Scorage) No. of One-Way Daily Hault Trips of Kipe From Suppler to Storage (52 miles ex. way) (Auxames 20 for 17 OA spice part 19) No. of One-Way Daily Hault Trips of Kipe From Storage to Site (5 miles ex. way)	15	(11.9)*100* of Science Trips from Site to Science 1 Sci difference of Science 1 Sci difference 0 Sci difference						
(Assumes 20 ft of 7 ^o DiA pipe per trip) No. of One way Trips to Site importing Pavling Materials (Sio miles ea way) (Assumes 2 ^o thick above 20 ^o wide at trench plus 40 ^o full overlay for half the full road wide) Daily One Way Hoad Tota per own Darins the Roeline Construction	11	mo. or Cone-Way (basing House) in the error part of the House Statement of Sta						
Daily One-Way Haul Trips During the Pipeline Construction (Two Crews) Daily Average One-Way Haul Trips Throughout Construction Schedule 20 Wheel Dump Trucks for Solis Transport: 18 Wheel Flatbed Trucks for Hauling Pipe	187.8 175.6 112.7	Daily One-Way Haul Trips per Crew Darling the Pipeline Construction 422.3 Daily Average One-Way Haul Trips Throughout Construction Schedule 52.4						
		Fiber Optic Duct Bank						
Volume of Excavate (CF) per Ft of Trench (2' W x 5' D) to be Excavated (incl. paving debris) Volume of Excavate (CF) per Ft of Trench to be Stockpilled and Reused in the Trench	10.0 4.0 6.0 6.9	Volume of Excavate (CF) per Ft of Trench (2' W x 5' D) to be Excavated (incl. paving debris) 10.0 Volume of Excavate (CF) per Ft of Trench to be Stockpiled and Reused in the Trench 4.0						
Visitate of stachaster (L) per Let of heads // w Let u) be a workband (bit: panage sterin) visitate of classifier (L) per Let of heads heads heads (bit: panage sterin) visitate of the start (b) per Let of heads heads heads (b) heads (b) heads (b) heads visitate of important Sel (C) per Let of heads heads (b) heads (b) heads (b) heads visitate of important Sel (C) per Let of heads (L) w 0.55) Capacity per Damp Truck (K) Thruch langt by a for (D) []	63 0.26 0.04 100 200 8.89 160 18 15 15	Water of Excessing (-) part (-B) (mon) (-) W X-11) (SS & Methoda (bit, plane) (Meth) 6.5 Water of Excessing (-) part (-B) (mon) (-) W X-11) (SS & Methoda (bit, plane) (Meth) 6.5 Water of Excessing (-) part (-B) (mon) (-) W X-11) (SS & Methoda (bit, plane) (Methoda (b						
Lappend per London Lindon, P. Lappend per London Lindon, P. Lappend per London Lindon, P. Lappend Lindon, Lindon Lindon, L	200 8.89 16.0	Thrench Length pur Day (FT) 100 Done-Way Spoils Haul Tilips horn Size to Storage Site and return 6.78 Done-Way Spoils Haul Tilips horn Size gas Site to Landfill 50 miles (BKK of Sac. Mat1) and return 17.6						
One-Way Imported Soil Trips from Office to Storage Site and return One-Way Imported Soil Trips from Storage Site and return	1.8	One-Way Spolis Haul Trips from Site to Haz. Waste Landfill 200 miles (1/W of Evres Marth &						
uength of 6" Conduit Installed per Day (LF) (assumes 4 conduits in ductbank) Length of 6" Conduit per Conduit Haul Truck		In the same program of the same of the sam						
One-Way Daily Haul Trips of Pipe from Storage Site to Site and return Volume of Concrete (C) per 57 of Duck Sank Volume of Concrete (C) per Day of Duck Bank Installation	800 5,600 0.3 3.0 22.0	Choir Way Dahy Hoad Tolgo at Ploys hana Sagaga Ento Star ange Sate (30 mills ea. way) and return 0.3 Ono-Way Dahy Hoad Tolgo at Ploys hana Sagaga Ento Sate and return 0.3 Doo-Way Dahy Hoad Tolgo at Ploys hana Sagaga Ento Sate and return 0.3 Valueme of Concores (ST) per F of Ouch Bank 24.2 Valueme of Concores (ST) per F of Ouch Bank Hoad Hoad Dang 24.2						
One-Way Daily Haad Trips of Pays Trans Starrage She to She and return Volume of Conversel (CO) per FG Obtas Hank Volume of Conversel (CO) per FG Obtas Hank Institution Converts Tuck Conversel (CO) Give-Way Conversel Trick Trips are Day and return Obtaw Way Trips Institution Institution (Seminary Conversion)	800 5,600 0.3 3.0 3.0 3.0 5.5 0.4	One-stop bay Head Tops of Pays Into Regular to Storage She (D mixes as wal) and return 43 Owershop Shay Head Tops (Pays Inscissa) and Sha and return 43 Water of Control (S) (Payr I') of Storage She (Sha and return 43 Water of Control (S) (Payr I') of Storage She (Sha and return 43 Control (S) (Payr I') of Storage She (Sha and return 43 Control (S) (Payr I') of Storage She (Sha and return 43 Control (S) (Control (Sha (Sha (Sha (Sha (Sha (Sha (Sha (Sha						
Cone with your plant of the plant through the table and return through and a conversion of the classical converts through the plant classical converts through the plant classical converts through the plant classical converts the classical convertical classical converts the classical classical classical classical classica	800 5,600 0.3 3.0 3.0 5.5 0.4 25.0 8.4 26.1 5.8	She Way Daily lead Topic of Figs Into Fogged for to Strange Ske (R) miles ex. weg) and return 0.3 She Way Daily lead Topic of Figs Into Stoged for to Strange Ske (R) miles ex. weg) and return 0.3 She will y Daily lead (Figs Into Stoged for to Strange Ske (R) miles ex. weg) and return 0.3 She will y Daily lead (Figs Into Stoged for to Strange Ske (R) miles (R). 0.3 She will y Compare Topic Organization (Strange Ske (R) miles (R). 0.3 She will y Daily will be at the Ske (R). 0.3 She will y Daily of Daily of Dail Ske (R). 0.3 Daily Daily of D		an.		rda.		104.
An energy of the second	800 5,600 0.3 3.0 3.0 5.5 0.4 25.0 8.4 26.1 5.8	Dota they dotate the part of the strength of the streng	 Approximation for framework to black A protocol and the framework of the black of displayed of a specific and specific and	iles. Anfanji and Davas Canarita Malamith (Sa	Depart relative for detaulusies Relative 4 submitted for an inclusion of adjusted of a scattering of the scattering of adjusted of a scattering of the	ning. Mitalaj ad Cher Guerrarian Miteriak	Regard Learnin To Constraints Data 1 - Constraint To Constraints Data 1 - Constraint To Learning Learning 2 - Section 2 - Sect	nia.
An use togothymair flast of the family the soft of the	800 5,000 4.3 3.0 2.0 4.6 4.6 5.8 2.8 20 million 40/Million 776.9 529.1	کمی است و ا	Stapping location for Evaluation balant	in. Molej ad the formula (based) 3,400 78 3,401 3,401 3,400	Experimentation for Construction Extent Extendence for Construction Extendence Extendence for Construction Extendence Extendence for Construction Extendence Extendence for Construction Extendence Extendence Extendence Extendence Extendence	nins Modge of Chr. Southers Manual 4,650 1,12 4,660 4,660	Byourd Leastin for (contrasts labors Statistical for a contrast and statistical and dynamic direct social with social and statistical Statistical for any contrast and statistical and dynamic direct social with social Statistical end statistical social social Statistical end statistical social Prince Represent Control (PT 400(10)) Prince Represent Control (PT 400(10))	ning Minil an dites featuring Manual Journey 14,005 14,005
An even opposite of the set of th	100 500 43 43 43 43 45 44 54 54 54 55 776 8 53 1 776 8 53 1 22 24 8	200 A HB (a) and (a) and (b) and	Bayesi Islandrak for Semistraha Mahi A semistraha Mahi Mahi Mahi Mahi Mahi Mahi Mahi M	in. Motil of the Loninske Materia (in 1.60 2.7 2.0 3.60	Repair Labels to Constructe Data Security of the Construction	ning Mangjuri Da Samandan Manok Kasa Kasa Kasa Kasa Kasa	Regard Laction for Galaxies in Index 1 a montant for gamma can be in the first and and Spaces of a 1 a solid with some asy to a 12 where the gamma can be asy to a 12 a montant of the solid s	nin Mol offar Salada Marin Joann 1400 9 400 1405 1405
An even opposite of the set of th	200 6.0 4.3 4.3 4.5 4.6 4.6 4.6 4.6 4.6 4.6 4.6 756.8 756.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8 251.8	Solver Start Solver Start Solver Start Solver Start Solver Solver Start Solver Solv	Depend functions for determinants balant 1 to a structure for exercision balant	An. Ancia of the Convolutio Marchia (Jo 14.60 3.1 3.60 3.460	English and a for Constraints Data, English and a for a foreign of the sound of the sou	din. Micig of Ex Sounders March 510 410 410 410 410	England Lacial for Costantial to Solar 1. In Costantial Costantial Solar Solar 2. In Costantial Solar Sola	nia. Nadi arfato instantas Marana (handa). 14.05 14.05 14.05
An even operating of the strength of the stren	200 100 100 100 100 100 100 100	Solar Sharp	Expand location for Construction Data Expand location for a substance of the standard and diguest of it is built with a site ways top of this expand location and the standard location and the standard location and the standard location manual standard location and the standard location and the standard location Transf loganest difference of the standard location Transf loganest difference (in-stal) Transf loganest difference (in-stal)	765 MARIA of Data Lanza, San Mariana (Jo 3.400 3.400 3.400	Repartment for control and balance Provide a state of the sta		Engend Later for Contractor Data The Contract of Contractor Data Contract of Data (Contractor Data) Participation of the Contractor Data (Contractor Data) Participation of Data (Contractor Data) P	nia Mora di Anara Internativa Mora (Janaa) 14,005 14,005 14,005 14,005
en en en person de la construcción de la construcci	200 200 201 201 201 201 201 201	200	Expand location for Construction Data Expand location for a substance of the standard and diguest of it is built with a site ways top of this expand location and the standard location and the standard location and the standard location manual standard location and the standard location and the standard location Transf loganest difference of the standard location Transf loganest difference (in-stal) Transf loganest difference (in-stal)	50. 10. 10. 10. 10. 10. 10. 10. 10. 10. 1	Experimentation for the framework for the second and s	non Mania da Gua Ganadan Maraka 1.0 1.0 4.0 4.0 4.0 4.0 5	Repert facilities for december that backs	inin Walk of for letholds Motils Talauts 4.05 4.05 4.05 4.05 4.05
Beneric Section 2012 and	2000 400 201 201 201 201 201 201 201 2	2000 A High Section Secti	Expert Institute for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solid So	δα Μαζί d'ha Caronellan Materia Α. 60 2. 1 3. 40 3. 40 5. 4	Expert radies to Construction Selfs 4. Submitted Fall statistical and statistical and segment if in statistical and searce up by EVE Mark relation Self statistical and statistical and segment if in statistical and searce up by EVE Mark relation of them and searce them and self segment if in statistical and searce up by EVE Mark relation of them and searce them and self segment if in statistical and searce up by EVE Mark relation of them and searce them and self segment if in statistical and searce up by EVE Total relation of them and searce them and self searce them and searce up and the searce	vini Maniferial Das Gaussian Maniferi (53) (53) (53) (53) (53)	Report sectors for constraints John I constraint first constraints from a large sector and ground of a scattering with a sector sector by of SPI move of a network memory memory and provide sectors and productions. And Academic Mill, Arris, Nat Marchine of SPI and a sector and a sector of the sector of the sectors and productions. And Academic Mill, Arris, Nat Marchine of SPI and a sector of the secto	nin. Madi utara tatan kara panah. Kara Kara Kara
even segment of the second secon	2000 2001 2001 2001 2001 2001 2001 2001	 Same and Same and Same	Expert Institute for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solids Expert Institute for Construction Solids It is an interpret for Construction Solid So	50 500 (of the London Markel) 300 3.00 3.00	Bigued acutors for Consumine State(Experimental acutors for Consumine State) A scattering of the scatterin	non Mania of Da Gamarian Manni 431 436 436	Bygead Leasters for Conservation Mater The Least of the Conservation Mater Service of the Conservation Mater Service of the Conservation Mater Provide Spectra Mater Terratory (2011) Provide Spectra Mat	na, Wali of the lasticulu Maria Dourne, Kali o Kali o Kali o
en en en gener an	2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 200 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2	 Same Same Same Same Same Same Same Same	Paper Locate for Endocution Media Paper Locate	50. 2010) of the Control of Work (10 3.00 3.00 3.00 3.00	Experimentation for Controller Galaxy 1. Subtraction for Controller Galaxy 1. Subtraction for Controller Galaxy Controller Galaxy <td>view Marcia La Facilitation Marrier 131 132 132 132</td> <td>By your Castron for Conservation Below. The Interface Of the conservation define and in the Nuclear and Appand of the a tender of the conservation of the Nuclear and Appandiate Nuclear Appandiate Nuclea</td> <td>nine Wag unfant in dusta Wasan Jawa Ma Ada Ada Ada</td>	view Marcia La Facilitation Marrier 131 132 132 132	By your Castron for Conservation Below. The Interface Of the conservation define and in the Nuclear and Appand of the a tender of the conservation of the Nuclear and Appandiate Nuclear Appandiate Nuclea	nine Wag unfant in dusta Wasan Jawa Ma Ada Ada Ada
and an end of the second secon	2000 2001 2001 2001 2001 2001 2001 2001	 A sub-starting sing sing sing sing sing sing sing s	Paperal location for family and the set of days of the scheduler of t	00 2000 of the Charlent In 3 Charl 2 Charlent 2 Charlen	Experimentation for Continuing Balance Continuence for continuing Balance and the second of	olar Wata at Da Kalandan Warek 138 4.80	Byourd Learnin for Construction Data The Construction Data Security of Data Construction Data Construction Security of Data Construction Data Construction Security Data Construction Data Construction Security Data Consteconstruction Security Data Construction Security Data Con	nia Wata of the Social Maria 4 4 4 4 4 4 4 4 5 4 5 5 5
en e	400 400 400 400 400 400 400 400	Solution Status St	Experient control for formation basis Experient control for the control of the basis of disperse of the target of the control of the basis of disperse of the control of the basis of the control of the basis of the bas	76. 107	Repair Labols to Constants Date: International Constants Date: Second Constants Date: Consta	olo Marai ari far Jonneton Marriet 18 48 48 48 48 48 48 48 48 48 48 48 48 48	Byged scalars for (scalars) in these 1 a scalar of a scal	tin Wali of fast toolsis Marini (Jamin, 1400 4000 44400
en en en gener en gen	2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 200 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2	 Abs and a set of a set	Experient control for formation basis Experient control for the control of the basis of disperse of the target of the control of the basis of disperse of the control of the basis of the control of the basis of the bas	36. MARIA of Flan Landon, San Maria 3.40 2.40	Beging and with the Constraints (BAR) Property and the Constraints (BAR)	dor. Maria or the storator barrier 18 4.0 4.0 5	Expand Lacitic for Constraints False 1	nia Manii affasi tanulas Mania 14,455 14,455 14,455
and a set of the set o	4000 4004 4004 4004 4004 4004 4004 400	San	Appart Locks to Catalogue A Lock Automatic Material and Catalogue of a to be off and the material and the format of the second	248 268	- Beach soon faalas the Bachadar Ve Sonical Maintes & Spaperse Vergebalan.		ganzi Asses basis in bi Bankala in In Dan Zan Mayrini at Lygeneni Mayan tu Aldan basis punturugi Tunanna (Tuna Daga da Mayrini at Lygeneni	
and a set of the set o	400 400 400 400 400 400 400 400	Sub and point Sub of Point Sub and Sub	Append scalar be for advances bake Append scalar be for advances bake A scalar back and scalar ba	248 268	Bend Asses Net Network at the Constant Record or Engineers Unged Asses Net Network at the Constant Record or Engineers Bend Asses Net Network at the Constant Record or Engineers Bend Asses Net Network at the Constant Record or Engineers Bend Asses Network at the Instanting Transmitty at the Assessment Bender Assessment Assessment Transmitty at the Assessment Bender Assessment Assessment Transmitty at the Assessment		ganzi Asses basis in bi Bankala in In Dan Zan Mayrini at Lygeneni Mayan tu Aldan basis punturugi Tunanna (Tuna Daga da Mayrini at Lygeneni	
and a set of the set o	400 400 400 400 400 400 400 400	Sub major Sub major <t< td=""><td>Experience for the framework of the</td><td>248 268</td><td>Encluture holes to be Eachdry to Constant Mannia & Eggenet Mannia Mannia Markana Mannia Markana Mannia Ma</td><td></td><td>Enclose Induces to the Bandwal and the David and Mannika and Spagneets Enclose the Mannika to the Bandwal and the David and Mannika and Spagneets Enclose the Mannika Touristic Protein Spagneet Spag</td><td></td></t<>	Experience for the framework of the	248 268	Encluture holes to be Eachdry to Constant Mannia & Eggenet Mannia Mannia Markana Mannia Markana Mannia Ma		Enclose Induces to the Bandwal and the David and Mannika and Spagneets Enclose the Mannika to the Bandwal and the David and Mannika and Spagneets Enclose the Mannika Touristic Protein Spagneet Spag	
and a set of the set o	400 400 400 400 400 400 400 400	Sub and point Sub of Point Sub of Sub Sub Sub Sub Of Sub	Append scalar be for advances bake Append scalar be for advances bake A scalar back and scalar ba	248 268	Bend Asses Net Network at the Constant Record or Engineers Unged Asses Net Network at the Constant Record or Engineers Bend Asses Net Network at the Constant Record or Engineers Bend Asses Net Network at the Constant Record or Engineers Bend Asses Network at the Instanting Transmitty at the Assessment Bender Assessment Assessment Transmitty at the Assessment Bender Assessment Assessment Transmitty at the Assessment		ganzi Asses basis in bi Bankala in In Dan Zan Mayrini at Lygeneni Mayan tu Aldan basis punturugi Tunanna (Tuna Daga da Mayrini at Lygeneni	
 Bener Bernstein der Schlem Schlemer der Schlemer der Schlemer der Schlemer Schle	400 400 400 400 400 400 400 400	Sub	Append cachine for detections in Adam A particular for detections in Adam A cancel the detection of the detectio	248 268	Braid Is was Kasan its National at 10 Sonitari Mannia y Egiptemi. Braid Is was Kasan its National at 10 Sonitari Mannia y Egiptemi. Braid Is was Kasan its National at 10 Sonitari Mannia y Egiptemi. Braid Is was Kasan its National at 10 Sonitari Mannia y Egiptemi. Braid Is was Kasan its National at 10 Sonitari Mannia y Egiptemi. Braid Is was Kasan its National at 10 Sonitari Mannia y	Anter dagi, seninatina desarrol manana dagi, seninatina desarrol anter dagi, seninatina de para desarrol (dagi dagi dagi dagi dagi dagi desarrol (dagi dagi dagi dagi dagi dagi desarrol (dagi dagi dagi dagi dagi dagi dagi dagi	Event Acons Scale 1: Nr B. Bindla of the District Marchine of Lightness Ministry Scale 1: Nr B. Bindla of the District Marchine Scale	Anne oph, santa sis downing and single based of the second single based of the second of challed global particulars in the second step based on the second size of the second size of the second height based on the second size of the second size of the second height based on the second size of the s
and a second sec		Sub and point Sign of S	Autor of a second secon		Band from Notes the Banded at the Constant Material or Egypterial Band from Notes the Banded at the Constant Material or Egypterial Band from Notes the Banded at the Constant Material or Egypterial Bander State Bander State	Autor (ap), sometice at an anti- tario (ap), sometice at a second second second is descended at a second second second second is descended at a second second second second at a second second second second second second second at a second second second second second second second second at a second second second second second second second second at a second	Byold Acuss Doubs Is ID: Barbel of the Doursel Marchisk of Eggsteet Byold Acuss Doubs Is ID: Barbel of the Doursel Marchisk of Eggsteet Barbel Acuss Doubs Is ID: Barbel of the Doursel Marchisk of Eggsteet Barbel Acuss Doubs Is ID: Barbel of the Doubsel Marchisk of Eggsteet Barbel Acuss Doubs Is ID: Barbel of the Doubsel Marchisk of Eggsteet December 2014	Ander degts, special color descarring encoded and special color descarring encoded and special colors for several encoded and special colors for several encoded and special colors for several encoded and several colors of the several colors of the several encoded and several colors of the several colors of the several encoded and several colors of the several colors of the several encoded and several colors of the several colors of the several encoded and several colors of the several colors of the several encoded and the several colors of the several colors of the several encoded and the several colors of the several colors of the several encoded and the several colors of
and ensemble and a set of the set		Sub	Approximation of the second seco		Bit of American Tell Electricity for Constant Monich (or Egginerat Del or Space American Tell Electricity for Constant Monich (or Egginerat Bit of American Tell Electricity for Constant Monich (or Egginerat Bit of American Tell Electricity for Standard Program Electricity (or Egginerat Bit of American Tell Electricity (or Engineerat Bit of American Tell Electricity (or Engineerat Bit of American Tell Electricity (or Engineerat Bit of American Tell Electricity (or Engineeration Tell Electricity) (or Electrity) (or Electricity) (or Electricity) (or Electricity) (Bencal Local Is for Biblio and to Discription Musicity or Egispoint Bencal Local Is for Biblio and to Discription Musicity or Egispoint Bencal Local Is for Biblio and to Discription Musicity or Egispoint Bencal Local Is for Biblio and to Discription Musicity or Egispoint Bencal Local Is for Biblio and to Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity or Egispoint Bencal Local Is for Biblio and the Discription Musicity Bencal Local Is for Biblio and the Discription Musicity Bencal Local Is for Biblio and the Discription Musicity Bencal Local Is for Biblio and the Discription Musicity Bencal Local Is for Biblio and the Discription Musicity Bencal Local Is for Biblio and the Discription Musicity Bencal Local Is for Biblio and the Discription Musicity Biblio And Ander Is for Biblio And Ander Is for Biblio And Andere	Ander degts, special color descarring encoded and special color descarring encoded and special colors for several encoded and special colors for several encoded and special colors for several encoded and several colors of the several colors of the several encoded and several colors of the several colors of the several encoded and several colors of the several colors of the several encoded and several colors of the several colors of the several encoded and several colors of the several colors of the several encoded and the several colors of the several colors of the several encoded and the several colors of the several colors of the several encoded and the several colors of
 Bener Berger, S. S.		Sub and point Sign of S	And Constrained of the Second and Annual Ann		Based Assess Nath Mandrad as Vacional Manarata as Ingenerat Experience Second Assess Nath Mandrad as Vacional Manarata as Ingenerat Experience Second Assess Nath Mandrad as Vacional Manarata as Ingenerat Experience Second Assess Nath Mandrad as Vacional Manarata as Ingenerat Experience Second Assess Nath Mandrad as Vacional Manarata as Ingenerat Experience Second Assess Nath Nath Mandrad as Ingeneration Manarata and Nath Manaratanand Nath Manarata and Nath Manarata and Nath Manarata and Nath M		applot Access boards of the Barded of for board of Marcels of Eggeneric Barder Access Boards of the Barded of for board of Marcels of Eggeneric Barder Access Boards of Barded of the Barded Marcels of Eggeneric Barder Access Boards of Barded of the Barded Marcels of Eggeneric Barder Access Boards of Barded of the Barded Marcels of Eggeneric Barder Access Boards of Barded of the Barded Marcels of Eggeneric Barder Access Boards of Barded Marcels and Barded	Sector Appl, control to Control Appl, and contro
 Bener Bernstein, S. S.		Sub	AN INTERCENT OF A DESCRIPTION OF A DESCR		Bit of American Tell Electricity for Constant Monich (or Egginerat Del or Space American Tell Electricity for Constant Monich (or Egginerat Bit of American Tell Electricity for Constant Monich (or Egginerat Bit of American Tell Electricity for Standard Program Electricity (or Egginerat Bit of American Tell Electricity (or Engineerat Bit of American Tell Electricity (or Engineerat Bit of American Tell Electricity (or Engineerat Bit of American Tell Electricity (or Engineeration Tell Electricity) (or Electrity) (or Electricity) (or Electricity) (or Electricity) (Boot Assos Success In RR Burbled at the Devised Marchine at Supported Boot Assos Success In RR Burbled at the Devised Marchine at Supported Boot Assos Success In RR Burbled at the Devised Marchine at Supported Boot Assos Success In RR Burbled at the Devised Marchine at Supported Boot Assos Success In RR Burbled at the Devised Marchine at Support Boot Assos Success In RR Burbled at the Devised Marchine at Support Boot Assos Success In RR Burbled at the Devised Marchine at Success Boot Assos Success In RR Burbled at the Devised Marchine at Success Boot Assos Success In RR Burbled at the Devised Marchine at Success Boot Assos Success In RR Burbled Assos Success Boot Assos Success In RR Burbled Assos Success Boot Assos Success In RR Burbled Assos Success Boot Assos Success In RR Burbled Assoc Success Boot Assos Success In RR Burbled Assoc Success Boot Assos Success In RR Burbled Assoc Success Boot Assoc Assoc Success Boot Assoc Asso	Sector Appl, control to Control Appl, and contro
 The second second		Sub stage s	Application of a constraint of basis A constraint of a constraint of basis A constraint of basi		Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria 30 Debutar 1 Balada 9	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	Enclose Marcin I do Rambia do las Destante Marcinia de Egispenet Enclose Marcin I do Rambia do las Destante Marcinia de Egispenet Enclose da Alexa Destante I do Rambia do las Destante Marcina do Las Destantes Enclose da Alexa Destante I do Rambia do las Destantes Destantes Destantes Enclose da Alexa Destantes I do Rambia do	Sector dept. consector decemptions of the sector of the se
 Bener Berger, S. S.		Sub stage sta	Application of a constraint of basis A constraint of a constraint of basis A constraint of basi		Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sectors Manual or Legence Build scare facts to be backed at 10 Sector	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	Bood Acuts Reader In Boundard In Structured Materials on Experient Science Control Structure Conteconte Control Structure Control Structure Control Stru	Sector dept. consector decemptions of the sector of the se
 Bener Berger, S. S.		Sub stage sta	Application of a constraint of basis A constraint of a constraint of basis A constraint of basi		Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria a Japanes Bod Asso Bala 36 Balada 9 Debutar Maria 30 Debutar 1 Balada 9	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	Enclose Marcin I de Rombel en la Destante Marcine la Egiperent Enclose Marcine I de Rombel en la Destante Marcine la Egiperent Enclose de la Antice Destante I de Rombel de la Destante Destante I de Sontante Enclose de la Antice Destante I de Sontante I de Sontante Destante I de Sontante Enclose de la Antice Destante I de Sontante I de Sontante I de Sontante Enclose de la Antice Destante I de Sontante I de Sontante I de Sontante Enclose de la Antice Destante I de Sontante I de Sontante Enclose de la Antice Destante I de Sontante I de Sontante Enclose de la Antice Destante I de Sontante I de Sontante Enclose de la Antice Destante I de Sontante I de Sontante I de Sontante Enclose de la Antice Destante I de Sontante I de Sontante I de Sontante Enclose de la Antice Destante I de Sontante I de Sontante I de Sontante Enclose de la Antice I de Sontante I de Sontant	Sector dept. consector decemptions of the sector of the se
In the second se		Sub	Head Local & Landow Mail Amaz Local		Send Asso have to be backed of to Desized Marches Expanse Expanse Asso have to be backed of to Desized Marches Expanse Expanse Asso have to be backed of to Desized Marches Expanse Expanse Asso have to be backed of to Desized Marches Expanse Expanse Asso have to be backed of the Desized Marches Expanse Expanse Asso have to be backed of the Desized Marches Expanse Expanse Asso have to be backed of the Desized Marches Expanse Expanse Asso have to be backed of the Desized Marches Expanse Expanse Asso have to be backed of the Desized Marches Expanse Expanse Asso have to be backed of the Desized Marches Expanse Expanse Asso have to be backed of the Desized Marches Expanse Expanse Association of the Backed Association of the Backed Marches Expanse Expanse Association of the Backed Association of the Backed Marches Expanse Expanse Association of the Backed Association of the Backed Marches Expanse Expanse Association of the Backed Backed Backed Backed Association of the Backed Association of	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	pred/come backets in the Kenderd of the Decision Decision is a Experiment des particulars des	Sector dept. consector decemptions of the sector of the se
In the second se		Sub Star Star Star Star Star Star Star Star	Application of a control of a cont		Band Asses the Declarity of V Second Materia of Segment Band Asses the Declarity of V Second Materia of Segment Band Asses the Declarity of V Second Materia of Segment Band Asses the Declarity of V Second Materia of Segment Band Asses the Declarity of V Second Materia of Segment Band Asses the Declarity of V Second Materia of Segment Band Asses the Declarity of V Second Materia of Segment Band Asses the Declarity of V Second Materia of Segment Asses the Second Materia Band Asses the Declarity of V Second Materia of V Second Materia Band Asses the Declarity of	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	Specif Access Section 10 III Resolution for Section 20 Microsoft 20 Access Section 20 Microsoft 20	Sector dept. consector decemptions of the sector of the se
In each of the second s		Description in Signafie Spraffer Spraffe	And and a field and		Book Assess the Namedad of the Second Materials & Sequence Description Book Assess the Namedad of the Second Materials & Sequence Description Book Assess the Namedad of the Second Materials & Second Second Description Book Assess the Namedad of the Second Materials & Second Second Description Book Assess the Namedad of the Second Materials & Second Second Description Book Assess the Namedad of the Second Materials & Second Second Description Book Assess the Namedad of the Second Materials & Second Second Second Description Book Assess the Second Description Book Assess the Second Description<	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	pold Aussis Martin In B. Bandad a for Sparsed Marries of Sparsed Particle Martin Mar	Sector dept. consector decemptions of the sector of the se
In the second se		Sub any subject Sup of Park Subject Sub	Automatical and an instrumentational and an antipart of the specific and and an antipart of the specific and		Extra base has its Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constraint the Excluder to Constraint Manual y Excluder to Co	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	Biological Control (Section 1) Biological Control (Section 1) Biological Control (Section 1) Biological Control (Sector dept. consector decemptions of the sector of the se
In even of the second s			Automatical and an instrumentational and an antipart of the specific and and an antipart of the specific and		Extra base has its Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constraint the Excluder to Constraint Manual y Excluder to Co	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	Biological Control (Section 1) Biological Control (Section 1) Biological Control (Section 1) Biological Control (Sector dept. consector decemptions of the sector of the se
In even of the second s			Automatical and an instrumentational and an antipart of the specific and and an antipart of the specific and		Extra base has its Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constraint the Excluder to Constraint Manual y Excluder to Co	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	Biological Control (Section 1) Biological Control (Section 1) Biological Control (Section 1) Biological Control (Sector della, construction de contrette terrette del Antique de la contrette de la contrette contret de la production de la contrette de la production de la contret de la production de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la co
Best of a state a state of a state of a state of a state of a sta		Sub	Automatical and an instrumentational and an antipart of the specific and and an antipart of the specific and		Extra base has its Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constraint the Excluder to Constraint Manual y Excluder to Co	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	Biological Control (Section 1) Biological Control (Section 1) Biological Control (Section 1) Biological Control (Sector della, construction de contrette terrette del Antique de la contrette de la contrette contret de la production de la contrette de la production de la contret de la production de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la co
Best of a state a state of a state of a state of a state of a sta			Automatical and an instrumentational and an antipart of the specific and and an antipart of the specific and		Extra base has its Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constraint the Excluder to Constraint Manual y Excluder to Co	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	Biological Control (Section 1) Biological Control (Section 1) Biological Control (Section 1) Biological Control (Sector della, construction de contrette terrette del Antique de la contrette de la contrette contret de la production de la contrette de la production de la contret de la production de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la co
Benefician and a set of the			Automatical and an instrumentational and an antipart of the specific and and an antipart of the specific and		Extra base has its Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constraint the Excluder to Constraint Manual y Excluder to Co	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	Biological Control (Section 1) Biological Control (Section 1) Biological Control (Section 1) Biological Control (Sector della, construction de contrette terrette del Antique de la contrette de la contrette contret de la production de la contrette de la production de la contret de la production de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la co
Best of a state a state of a state of a state of a state of a sta			Automatical and an instrumentational and an antipart of the specific and and an antipart of the specific and		Extra base has its Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constraint the Excluder to Constraint Manual y Excluder to Co	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	Biological Control (Section 10) Biological Control (Section 10) Biological Control (Section 10) <td>Sector della, construction de contrette terrette del Antique de la contrette de la contrette contret de la production de la contrette de la production de la contret de la production de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la co</td>	Sector della, construction de contrette terrette del Antique de la contrette de la contrette contret de la production de la contrette de la production de la contret de la production de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la co
Benerging and a set of the second second set of the second set of the second second set of the se			Automatical and an instrumentational and an antipart of the specific and and an antipart of the specific and		Extra base has its Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constra Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constrain the Excluder to Constraint Manual y Experiment We constraint the Excluder to Constraint Manual y Excluder to Co	Anter dapi, contractor deserving theorem dapi, contractor deserving the deserving of the deserving the deserved of the deserved of the segre- contract of the deserved of the segre- ter deserved of the deserved of the deserved the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved the deserved of the deserved of the deserved of the deserved of the deserved the deserved of the des	Biological Control (Section 10) Biological Control (Section 10) Biological Control (Section 10) <td>Sector della, construction de contrette terrette del Antique de la contrette de la contrette contret de la production de la contrette de la production de la contret de la production de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la co</td>	Sector della, construction de contrette terrette del Antique de la contrette de la contrette contret de la production de la contrette de la production de la contret de la production de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la contrette de la co

Reach 6, Preferred Alignment CEQA Responses, MWD RRWP (9 feet Diameter Pipeline)



Plan Nos. (pdf)	Segment No.	Length (ft)
35	77	6,226
37, 38	78	6,878
	Total	13,104
	Number of Shafts : 4	
stimated Number of Construction Workers Per Day		
estimated Number of Construction workers Per Day		
Construction Schedule (working days)		769
eet of Tunnel Construction needed per day		17.04
Estimated Number of Tunnel Crews Per Day		0.57
based on 30 feet per day per crew)		
stimated Number of Pipeline Crews Per Day		0.57
based on 30 feet per day per crew)		
Estimated Number of Shaft Crews Per Day		0.47
based on 90 days per shaft)		
Estimated Number of Paving Crews Per Day		0.10
Norkers per Tunnel Crew		20
Norkers per Pipeline Crew		17
Norkers per Shaft Crew		10
Norkers per Paving crew		3
Total Workers per Day (Average Throughout Construction		26.00

Estimated Number of One-Way Construction Worker Vehicle Trips Per Day

Total Workers per Day (Average Throughout Construction Schedule)	26.00
One-Way Trips per Day (50 miles)	52.00
Shuttle to Move Workers from Park to Site (One way - 5 miles)*	2
Total One Way Trips per Day of Worker Cars (Average Throughout Construction Schedule)	54.0
* Assumes maximum of 15 workers per shuttle.	5410

Total Workers per Day (Maximum Throughout Construction Schedule)	20
One-Way Trips per Day (50 miles)	40
Shuttle to Move Workers from Park to Site (One way - 5 miles)*	2
Total One Way Trips per Day of Worker Cars (Maximum Throughout Construction Schedule)	42.0
* Assumes maximum of 15 workers per shuttle.	
Note: Hauling Vehicles included in Items below.	

Construction Worker Vehicle Parking Location(s)	
Total Workers per Day (Average Throughout Construction Schedule)	26.00
Assume 30% of Staff can park Nearby the Construction Location	
Remaining 70% Need an Establ. Parking Loc'ns	18.2
Total Workers per Day (Maximum During Construction Schedule)	20.00
Assume 30% of Staff can park Nearby the Construction Location	
Remaining 70% Need an Establ. Parking Loc'ns	14.0

Will There be Weekend or Nighttime Construction? Will we Likely Comply with Noise Ordinance or Will We Request Variance?

Tunneling will likely require near 24/7 work. Tunnel launch shaft sites will need to assume 24/7 work and provide for light and noise mitigation as needed. Assume a variance for 24/7 work at launch sites.

Construction Staging Area and Storage Location(s)

Construction staging located at each shaft site (each end of crossing). Launching staging area will be 22,680 sq-ft and the receiving staging 11,670 sq-ft

Locations/Procedures for Storing/Transporting Spoils

Excavated spoils will be temporarily stockpiled at the launch shaft sites or loaded directly into dump trucks and hauled offsite daily for disposal. Spoils from night shift work will be temporarily stockpiled at the launch shaft site if nightime hauling is restricted.

Number of Daily One-Way Haul Truck Trips Due to Material Transportation (e.g. off-haul/disposal, material); Type of Trucks

Length (ft)	13,104
Excavation Diameter (ft)	15,104
	-
Tunnel Volume (loose) (cu-yds)*	98,630
Shaft Volume (cu-yds)*	5,444
Total Volume of Shafts and Tunnel (cu-yds)*	104,074
Total Number of Truck Trips for Soil Removal	10,407
Total Number of Truck Trips for Piping and Casing	524
Total Number of Truck Trips for Shaft Construction	1,440
Disturbed Pavement (sq-ft)	1,440
Paving Replacement Import (18" thick) (cu-ft)	2,160
Paving Replacement Import (18" thick) (cu-yds)	80
Total Number of Truck Trips for Replacing Paving	8
Total Truck Trips During Construction	12,380
Number of Truck Trip per day on Average	16.10

*Assumes a 1.15 bulking factor 10 CY loads in 12 CY dump trucks





Disposal Location for Construction Debris

It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles.

Volume of any Material Imported/Exported, Including Demolition Waste (Asphalt/Concrete, Soils, Hazardous Soils, Slurry, Steel/Metals) and Clean Construction Materials (Concrete, Pipeline Segments, Rebar, Base Material/Sand/Gravel, etc)

Total Volume of Shafts and Tunnel (cu-yds)	104,074
Paving Replacement Import (18" thick) (cu-yds)	80
Total Exported Material (cu-yds)	104,154
	104,074

Special Access Routes in the Riverbed or for Oversized Materials or Equipment

Not applicable.

Measures to Address Dewatering/Treatment/Proper Disposal of Groundwater

Geotechnical and hydrogeologic investigations will be performed during detailed design to determine groundwater depth, construction dewatering requirements, and groundwater quality along the pipeline route. The contractor will likely provide local treatment and discharge to a local sewer system per an agreement established with the local authority. Dewatering and treatment requirements will be determined including discharge locations for treated dewatering flow. It is anticipated that dewatering will be accomplished mainly through dewatering pumps located in the pipe trench during construction and in some cases may require wellpoint dewatering methods. Permitting will be obtained for all dewatered discharge locations.

Temporary Lighting

Temporary lighting requirements: One 0.1 KW light inside tunnel per 25 feet. Two 10 KW post lights per shaft site.

Water Supply (Hydrants? Water Trucks?)

Water for construction will likely to obtained from local hydrants per an agreement with the local authority.

Temporary or Permanent Right-of-Way/Easements

For pipelines located in city streets no additional right of way needs are anticipated. For pipelines located within rivers or within SCE or private property subsurface easements will be required.

Demolition?

There may be some limited demolition needed in some locations where shafts are constructed including trees, concrete walkways, etc. All demolition will be reconstructed/replaced in kind.

Access Pits/Locations and Spacing

Shafts will be located at each end of each crossing.

Traffic Control Requirements

There will be traffic control needed for the construction of many of the access pits on either side of the tunnel.

Generator Requirements

Included in equipment list - see tab "Equipment - CM-4A through CM-4F""

Ventilation Requirements

100 HP Ventilation fan for each tunnel

40 HP Ventilation fan per shaft

Assume 24-hr day, 90% usage of the ventilation fan during 24-hr day

Equipment Usage

See attached worksheet "Equipment - CM-4A through CM-4F"

Reach 7, Preferred Alignment CEQA Responses, MWD RRWP (9 feet Diameter Pipeline) CM-1 Roadways		CM-2 SCE Easement		CM-4E Shield Tunneling with Rbs and Lagging		CM-4F Traditional Tunneling	
Construction pair with training and the pair of the pa				Decryption: Shife furwhere, us shife with a digger and more than the second resulting where here a more requires producing joints are near of the shife point of the previously instable support enterests to prove the shife forward. Seen this are of them shife point of the previously instable support to the excatation pion to the instabilities of the encourt may para and builting of the areas agrees.			
				institution of the steet carrier pipe and backfilling of the annual space.			
					-1 100m Anno Altoni	LAURCHING PIT CUTTING HEAD RECEIVING PIT COMINGING SYSTEM POR TRANSING OF BECKNINGE MATERIAL	
Trail. 40 Trail. 40						CONSTRUCTION METHOD 4C - TRADITIONAL TUNNELING (EPBM W/ CONCRETE LINERS)NOTE:	
NOTE: 1 Millionamori y di van canazi anti contrato a noto Audona					SB, PPEIME	NTS * WIDTH CAN TEMPORAR ON ADJACE	REDUCE TO 6-0" IF THERE IS 4-0" OF CONSTRUCTION EASEMENT ANALABLE VT PROPERTY.
CONSTRUCTION METHOD 1. ROADWAY T- HER Pipe Segments of This Construction Type Pipe Nos. (of) Segment No.	Length (ft)	gggmetrosteeteeteeteeteeteeteeteeteeteeteeteetee	Length (ft) 4.692		gth (ft)	Pipe Segments of This Construction Type Plan Nos. (pdf) Segment No.	Length (ft)
45 54 45,46 96 Test	1,084 3,600 4,684	38,39 79 39,40 81 41 83 41,42 85	3,512 620 1.686	39 80 11 41 84 8 42 86 11 42 86 11	194 86 112 457	40,41 82 44,45 92	3,687 2,925 otal 6,612
		42 87 42,43 89 43,44 91 Total	1,833 986 4,342 17.671	45 93 33 45 95 8	118 353 87 407		
				Number of Shafts : 10		Number of Sha	hs: 4
Estimated Number of Construction Workers Per Day Pipeline Construction Construction Schedule (working days)	535	Extimated Number of Construction Workers Per Day Piseline Construction Construction Construction Schedule (working days)	535	Estimated Number of Construction Workers Per Day Construction Schadula Isovicies Asia1 5	535	Estimated Number of Construction Workers Per Day Construction Schedule (working days)	535
Daily Crew Production (FT per day) Estimated Number of Pipeline Crews Per Day Number of Typeline Crews Per Day Bendlan Construction Crews	25 0.35 1	Feet of Pipeline Construction per day needed Estimated Number of Pipeline Crews Per Day Number of Pipeline Crews Breiline Construction Crews	80 0.41 1	(-120 days proc. mobil.; -60 test, comm., demob) Feet of Tunnel Construction needed per day 2.	2.63	Feet of Tunnel Construction need by Eavy Estimated Number of Tunnel Crews Por Day (based on 30 feet per day per crew)	12.36 0.41
Workars per crew Shoring Crews Workars per Crew Saw Cut Crew	7 0.2 3 0.05	Workers per crew Shoring Crews Workers per Crew Utility Natiocation Crew	9 0.2 3	Estimated Number of Pipeline Crews Par Day 0. (based on 30 feet per day per crew)	1.68	Estimated Number of Pipeline Crews Per Day (based on 30 feet per day per crew) Estimated Number of Shaft Crews Per Day (based on 90 days per shaft)	0.41
Workers per crew Demolition Crew Workers per crew Powing Crew	3 0.05 3 0.2	Workers per crew Water Truck Crew Workers per Crew Site Rostonation Crew	6 0.15 1 0.15		0.10 14 17	Estimated Number of Paving Crews Per Day Workners per Tunnel Crew Workners per Pipeline Crew Workners est Shaft Crew	0.10 20 17 10
Workers per crew Utility Hussian Crew Workers per crew Traffic Central	5 0.1 6 0.15	Workers per crew Temporary Gravel Roadway Crew Crew Size	3 0.1 4 10.9	Workers per Paving crew	3 10.45	Workars per Paving crew Total Workers per Day (Average Throughout Construction Schedule) Note: The installation of Fiber Optic cabling is estimated to be within these provided production	3 32.40
Crew Size Total Workers per Day (Average Throughout Pipeline Construction) Total Workers per Day (Average Throughout Construction Schedule)	4 10.10 3.54	Total Workers per Day (Average Throughout Pipeline Construction) Total Workers per Day (Average Throughout Construction Schedule)	4.50			· · · · · · · · · · · · · · · · · · ·	
Fiber Optic Dard Bank Constructions Sheddle (working days) Daily Crew Wroduction (FT per day) Estimated Number of Combined Fiber Optic Crews Per Day	515 200 0.05	Fiber Optic Duct Bank Construction Schedule (working days) Daily Crew Production (PT per day) Estimated Number of Combined Fiber Optic Crews Per Day	615 220 0.13				
Number of Combined Fiber Optic Crews Trenching, Backlik, Conduit, Formwork, Crew Workers per crew Concrete Crew	1 1 4 0.75	Number of Combined Fiber Optic Crews Trenching, Backfill, Conduit, Formwork Crew Workers per crew Concrete Crew	1 1 4 0.75				
Workers per Crew Exercision Crew Workers per crew Paving Crew	4 0.2 4 0.1	Workers per Crew Bietrician Crew Workers per crew Paving Crew	4 0.2 4 0				
Workers per crew Total Workers per Day (Average Throughout Fiber Optic Construction) Total Workers per Day (Average Throughout Construction Schedule)	5 8.30 0.38	Workers per crew Total Workers per Day (Average Throughout Fiber Optic Construction) Total Workers per Day (Average Throughout Construction Schedule)	0 7.80 1.02				
Estimated Number of One-Way Construction Worker Vehicle Trips Par Day Placing: Construction Total Workers per Day (One (Average Throughout Construction Schedule) One -Way Trips per Day (On miss)	3.54 7.07	Estimated Number of Dne-Way Construction Worker Vehicle Trips Per Day Pleatine Construction Total Workers per Day (Average Throughout Construction Schedule) One-Way Trips per Day (So miks)	4.50 9.00		10.45 0.91	Estimated Number of One-Way Construction Worker Vehicle Trips Per Day Total Workers per Day (Average Throughout Construction Schedule) One-Way Trips per Day (50 miles)	32.40 64.80
Shuttik to Move Workers from Park to Sile (One way - 5 milist) Total One Way Prips per Day Od Worker White(Expression Provident Construction Schedule) * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle	2 9.1	Shuttle to More Workers from Park to Sile (One way - 5 miles) Total One Way Trips per Day of Worker Vehicles (Nearage Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle	2 11.0	Shuttle to Move Workers from Park to Site (One way - 5 miles)*	2 42.9	Une wey i mp per Garj (20 mas) Stutti to Mowerkers from Park to Ste (One way - 5 miles)* Total One Way Trips per Day of Worker Cars (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle.	2 66.8
Fiber Octic Ducthank Total Workers per Day (Average Throughout Construction Schedule) One-Way Trips per Day (50 miles) Shuttle to Move Workers (From Park to Site (One way - 5 miles)	0.38 0.75 2	Filer Ootic Durthank Total Worksins per Day (Average Throughout Construction Schedule) One-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Sile (One way - 5 miles)	1.02 2.04 2				
Total One Way Trips per Day of Worker Vehicles (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle Pipeline Construction	2.8	Total One Way Trips per Day of Worker Vehicles (Average Throughout Construction Schedule) * Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle Plegeline Construction Plegeline Construction	4.0	Tentimote and a Birch and a second		Teachtradaean an Bar Walter an	
Total Workers per Day (Maximum During Construction Schedule) One-Way Tripper Day (Sominis) Shuttle to More Workers from Park to Sile (One way - Smilis)* Total One Way Trippe per Day OWCerk cas (Maximum Throughout Construction Schedule)	26.00 52.00 4 56.0	Total Workers per Day (Maximum During Construction Schedule) One-Way trips per Day (S0 millis) Shuttle to More Workers from Park to Sile (One way - 5 miles)* Total One Way Trips per Day of Worker Car (Maximum Throughout Construction Schedule)	18.00 36.00 2 38.0	Ona-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Site (One way - 5 miles)* Total One Way Trips per Day of Worker Cars (Maximum During Construction Schedule) 33	17 34 2 36.0	Total Workers per Day (Maximum Throughout Construction Schedule) One-Way Trips per Day (30 miles) Stuctis to Move Workers from Park to Site (One way - 5 miles)* Total One Way Trips per Day of Worker Cars (Maximum Throughout Construction Schedule)	17.00 34.00 2 36.0
 Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle <u>Note:</u> Having vehicles included in thems below. <u>Ther Orek Durt Bank</u> 		* Assumes maximum of 15 workers per shuttle and 70% of workers need shuttle Fiber Ootic Duct Bank		* Assumes maximum of 15 workers per shuttle. <u>Notes</u> Hauling Vahicles included in Items below.		* Assumes maximum of 15 workers per shuttle. <u>Noter</u> Hauling Vehicles included in Items below.	
Total Wohrs par Day (Maximum During Construction Schedule) Che-Way Trips per Day (Damis) Shuffes Nowe Wohris from Park to Site (Che way - 5 millst)* Tetal De Way Trips per Day of Wohrie Cas (Maximum During Construction Schedule) * Assume maximum of 15 works per shufts and 705 of worksrs need shufts	17.00 34.00 2 36.0	Total Working per Day (Maximum During Construction Schedule) One-Way Trips per Day (So miss) Shuttie to New Workins from Park to Ste (One way - 5 miss)* Total One Way Trips per Day of Worker Cars (Maximum During Construction Schedule) + Assumes maximum of 5 sworkers per studta and 70% of workers need shuttle	12.00 24.00 2 26.0				
Note: Hauling Vehicles included in Items below.		Note: Hauling Vehicles included in Items below. Construction Worker Vehicle Parking Location(s)		Construction Worker Vehicle Parking Location(s)		Construction Worker Vehicle Parking Location(s)	
Control Construction Total Workers per Day (Neurage Throughout Construction Schedule) Total Workers per Day (Neurage Throughout Construction Schedule) Assume 30% of Staff can park table. Physiking Lochs Remaining 20% Need an Estable. Purking Lochs	3.54 2.5	Description for the second secon	4.50 3.2	Total Workers per Day (Average Throughout Construction Schedule) 20 Assume 30% of Staff can park Nearby the Construction Location 20	10.45	Total Workers per Day (Average Throughout Construction Schedule) Assume 30% of Salf can park Nairby the Construction Location Remaining 70% Keed an Estable Parking Loc'ns	32.40 22.7
Nemaning YUN Netes an Estato. Particip Coc III Total Workers per Day (Maximum During Construction Schedule) Assume 30K of Saff can park Nearby the Construction Location Remaining 70K Need an Estatak Surking Loc IIIs	26.00	Nemaning 20% Need an Estate: Variang Loc IN Total Workers per Day (Mashmum During Construction Schedule) Assume 30% of Staff can park Nearby the Construction Location Remaining 20% Need as Estatab. Parking Loc'ss	18.00 12.6	Total Workers per Day (Maximum During Construction Schedule) 17 Assume 30% of Staff can park Nearby the Construction Location	17.00	Namaning 20% Need an Estadi - Varing Loc na Total Workers per Day (Maximum During Construction Schedule) Assume 30% of Staff can park Nearby the Construction Location Remaining 70% Need an Estable Parking Loc'ns	17.00
Remaining 70% Need an Establ. Parking Lockns Fiber Optic Duck Bank Total Workers per Day (Average Throughout Construction Schedule) Assume 30% of Staff can park Nearby the Construction Location	0.38	Remaining 70% Need an Establ. Parking Loc'ns Fiber Optic Dutt Bauk. Total Workers par Day (Average Throughout Construction Schedule) Assume 30% of Saff can park Nearby the Construction Location	1.02		-	u	
Remaining 70% Need an Establ. Parking Loc'ss Total Workers per Day (Maximum During Construction Schedule) Assume 30% G Saff can park Nearby the Construction Location	0.3 17.00	Remaining 70% Need an Establ. Parking information of the state of the	0.7 12.00				
Remaining 70% Need an Establ. Parking Loc'ns Will Them be Weekend or Nightlime Construction? Will we Likely Comply with Noise Ordinance or Will We Request Variance?	11.9 e alignment to address	Remaining 70% Need an Establ. Parking Loc'ns Will There be Weekerd or Niehtlime Construction? Will we Likely Comely with Noise Ordinance or Will We Request V	8.4 tariance?	Will Three be Weekend or Nightlime Construction? Will we Likely Comply with Noise Ordinance or Will We Request Variance? Some critical crossions: may require weekend or nightline work by commit. Where waivers are fascible. Saturdar day work may be	r be neorlari	Will There be Weekend or Nightline Construction? Will we Likely Comply with Noise Ordinance or Will Tunneline will likely require near 24/7 work. Tunnel bunch shaft sites will need to assume 24/7.	Ve Request Variance?
No construction work is planned for weekends. There may be nightness work dictated by particular needs along the community and business impacts. For example in some locations nightline work would have less impact to busines will periodically request variances to extend work beyond normal noise ordinance hours.		No construction work is planned for weekends. There may be nighttime work dictated by particular needs alo community and business impacts. For mample in some locations nighttime work would have less impact to b Contractors will periodically request variances to extend work beyond normal noise ordinance hours.			_e meeded.	Tunneling will likely require near 24/7 work. Tunnel laurch shaft sites will need to assume 24/7 v meeded. Assume a variance for 24/7 work at launch sites.	and provide for light and holse mitigation as
Construction Staging Area and Storage Location() We currently anticipate two staging/storage locations per contract package. We currently anticipate 8 contract package there will be used of 55 staties and storage areas. Twoisally a statien/storage area will be on average 4 acres and is	kages for the pipeline so	Construction Staging Area and Storage Location(s) We currently anticipate two staging/storage locations per contract package. We currently anticipate 8 contract there will be a total of 15 staging and storage areas. Typically a staging/storage area will be on average 4 acree	ct packages for the pipeline so	Construction Staging Area and Storage Location(s) Construction staging located at each shaft his (each end of crossing). Launching staging are and 116 6,300 erf and the receiving staging 3,800 soft		Construction Staging Area and Storage Location(s) Construction staging located at each shaft side (each end of crossing). Launching staging area will be 2/260 soft and the receiving staging 11,670 soft	
there we not a total or to staging and scorage areas. Typicary a staging storage area will be on average + actes and n miles from the site.	is assumed to be within 5	tmere win de a total of 10 staging and storage areas. Typicary a staging storage area wis de on average « acte 5 miles from the site.	is and is assumed to be writte	California sugang awa wai ae o,5ko sejiti ana sini kaorang sugang 3,6ko sejiti Additional material and equipment storage available at 4 acre pipeline staging area.		Launoning saaging at ear will be 22,000 sq-rt amo the receiving saaging 11,070 sq-rt	
tocations/Procedures for Storing/Transporting Spoils Due to the limited work area at each construction rile we anticipate that stocipting of softs at the site will not be po- likely be hauled officite to a stocipties at the staging/storage area. The spoil portion of the excavate will be separated state(s) and the remaining soil will be hauled back to the construction site to be used to refill the pipe trendh. We esti	ossible. All excavated soil w d and hauled to disposal	Location/Procedures for Storing/Transporting Spoils IID Due to the limited work area at each construction side we anticipate that stockpling of soils at the side will not soil will likely be harded officite to a stockple at the staging/storage area. The spoil portion of the encavate will disposit alkely and the remaining oil will be hauled back to the construction site to be used to riff the piper	t be possible. All excavated Il be separated and hauled to	Location/Procedures for Storing/Transporting Spoils. Excavated spoils will be temporarily stockpilled at the launch shaft sites or loaded directly into dump trucks and hauled offsite di	daily for disposal.	Locations/Procedures for Storing/Transporting Spolis Excavated spolis will be temporarily stockpiled at the launch shaft sites or loaded directly into du	mo trucks and hauled offsite daily for disposal. Spoils
step(s) and the remaining soil will be haused back to the construction site to be used to relat the poper training. Recarded metal will be sport of deemed unsatelise that will need to be hauled and desired of at landfills at an a 50 million. It is also estimated that 10% of the total spoils (10% of the 40%) will be deemed hazardous and require ha hazardous wake handfill at an estimate one way difficusce of 200 million.	timate that 40% of the total average one way distance of auling and disposal at a	disposal stele() and the remaining sol will be hausid back to the construction site to be used to relifi the pipe of the total excavated material will be spoils or deemed unusable that will need to be hausid and disposed of way distance of Smiles. It is also estimated that all SK of the total spoils (10% of the 40%), will be deemed haz and disposal at a hazandous waste landfill at an estimate one way distance of 150 miles.	trench. We estimate that 409 f at landfills at an average on zardous and require hauling			from night shift work will be temporarily stockpiled at the launch shaft site if nightime haufing is	restricted.
Number of Gally One-Way Hould Track Tops Due to Material Transportation (e.g. of Faue)[disposed, material]; Type of Tracks <u>Regulars Construction</u> Volume of Execute (CF) par FL of Trench (18" W x 21" D) (includes parving decisis) Universe of Execute (CF) par FL of Trench (18" W x 21" D) (includes parving decisis)	378.0	Number of Daby One-Way Haut Truck Trips One to Material Transportation (e.g. off-hau/(disposal, material), Type of Trucks <u>Pipeline Construction</u> Volume of Excavate (CP) per Pt of Trench (15' W x 21' D) (includes paring debris) Volume of Excavate (CP) per Pt of Trench (15' W x 21' D) (includes paring debris)	378.0		1,407	Number of Daily One-Way Houl Truck Trips Due to Material Transportation (e.g. off-baul/disposal, mater Length (ft)	6,612
Volume of Exervate (CY) per Pt of Trench (12 W x 21 O) (includes paving debris) Volume Exercised (CY) per Pt Including Swell of 15% Capacity per Damp Truck (CY) Number of Haut Trucks, per IT of Trench	14.00 16.10 10.0 1.61	Volume of Excavate (CY) per Ft of Trench (18' W x 21' D) (includes paving debris) Volume Excavate (CY) per F1 Including Swell of 15% Capacity per Dump Truck (CY) Number of Haul Trucks per FT of Trench	14.00 16.10 10.0 1.61	Turneil Volume (loose) (cu-yds)* 5,0 Shaft Volume (u-yds)* 4,2 Tobal Volume of Shafts and Tunnel (cu-yds)* 10,0	11 5,695 5,570 0,265	Excisivation Diameter (ft) Turnel Volume (locia) (cu-yds)* Shaht Volume (u-yds)* Total Volume of Shafts and Tunnel (cu-yds)*	15 49,767 5,444 55,211
Estimated Length of Trench per Day Per Crew (ft) Number of Haul Trucks per Crew per Daily Production Total One-Way Haul Trips from Site to Staping/Storage and return	25.0 40.3 80.5	Estimated Length of Trench per Day Per Crew (ft) Number of Haul Trucks per Crew per Daily Production Total One-Way Haul Trips form Site to Staging/Storage and return	80.0 128.8 257.6	Total Number of Truck Trips for Soil Removal 1/ Total Number of Truck Trips for Sping and Casing 5 Total Number of Truck Trips for Spink Construction 3/	1,027 56 1,600	Total Number of Truck Trips for Soil Removal Total Number of Truck Trips for Piping and Casing Total Number of Truck Trips for Shaft Construction	5,521 264 1,440
Estimated Pipe Bedding Soil Import to Sile (CF) from Storage Per Foot of Pipeline (5.257 H x 18" W minus (0.5"3.14"8.25"2)(4) Est. Rps Bedding Soil Import (SCI (CY) Per F of Pipeline Pipe Bedding Soil Import (CY) per FT Including Swell of 15%	60.92 2.26 2.59	Estimated Pipe Bedding Soil Import to Site (CF) from Storage Per Foot of Pipeline (S.257 Hr.18 W minus (N.573,14%).25%)//4) Est. Pipe Bedding Soil Import Soil (CP) Per f of Pipeline Pipe Bedding Soil Import (Cr) per FT Including Swell of 15%	60.92 2.26 2.59	Paving Replacement Import (18" thick) (cu-ft) 5, Paving Replacement Import (18" thick) (cu-yds) 2	8,525 5,288 196 20	Disturbed Pavement (sq-ft) Paving Replacement Import (18" bick) (cu-ft) Paving Replacement Import (18" bick) (cu-yds) Total Number of Truck Trips for Replacing Paving	720 1,080 40 4
Capacity per Dump Truck (CY) Number of Haul Trucks per FT of Trench Estimated Length of Trench per Day Per Crew (It) Number of Pep Bedding import Trucks per Day	10.0 0.26 25 6.5	Capacity per Dump Truck (CY) Number of Haul Trucks ger FT of Trench Estimated Length of Trench per Day Per Crew (ft) Number of Diple Bedding Import Trucks per Day	10.0 0.26 80 20.8	Total Truck Trips During Construction 4,	1,702 8.79	Total Truck Trips During Construction Number of Truck Trip per day on Average	7,230 13.51
Total One-Way Haul Trips of Pipe Bedding Import to Site Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier Number of One-Way Fabi Trips Hauling Exavated Soll From Storage back to the Site (and return)	13.0 13.0 54.8	Total One-Way Haul Trips of Pipe Bedding Import to Site Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier Number of One-Way Daily Trips Hauling Excavated Soli from Storage back to the Site (and return)	41.5 41.5 175.4	*Assumes a 1.15 bulking factor 10 CY loads in 12 CY dump trucks		*Assumes a 1.15 bulking factor 10 CY loads in 12 CY dump trucks	
(68.1% of Excavate Trips from Site to Storage) No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back (13.1%**Dix6 of Excavate Trips from Site to Storage)	23.1	(68.1% of Excavate Trips from Site to Storage) No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back					
No. of One-Way Spols Daily Trins from Storage Site to Haz. Waste Landfill (200 miles) and back		(31.9%*90% of Excavate Trips from Site to Storage) No. of One-Way Social Daily Trips from Storage Site to Har. Waste Landfill (200 miles) and back	74.0				
No. of One-Way Spoils Daby Trips from Storage Site to Haz. Waste Landfill (200 miles) and back (11.9%*10% of Excavate Trips from Site 05 Storage) No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way) (Assume 20 for 19 'Uh Apipe per trip)	2.6 1.3	No. of One-Way Spolis Daily Trips from Storage Site to Haz. Waste Landfil (200 miles) and back (31.9%*10% of Excavate Trips from Site to Storage) No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way) (Accumics 2016 of 9 DIA pipe per trip)	8.2 4.0				
No. of One Wardy spins Delty Taylor mem Narang Star to tax. Ward and the start of DE (DB mining and back (EL)) (DB Min	2.6 1.3 1.3	fixe, of over the type both Cally Friedren Storage Site to Mar. Wates Lassiff (200 milet) and back (2013 million of income Transforms from Site Site Site Site Site Site Site Site	8.2				
No. of One-Ward goods Gally Trips from Storage State Data. Waters & LandTill (200 Triple) and back (12) NV Unit of LandWard Triple of They Trans Designed to Storage (3) Notes as a way) Note Ward State Data (14) NV Unit of Hard Trans Trans Designed to Storage (3) Notes as a way) Note of Construct Trans Designed Trans	2.6 1.3 1.3	No. of one-Way Speck Daily Tryis from Xeorge Tete F Nuz. Wastis Lendiff (200 miled) and back (21) XFT 1500 (Stease Tripic from Teta Seorge) No. of One-Way Daily Haul Tripic of Pipe Tom Seorgine to Stearege (50 miles ex. way) (Automus 201 of 47 (20) Apriper trip) No. of One-Way Daily Haul Tripic of Pipe Tom Storage to Site (5 miles ex way) (Automus 201 of 47 (20) Apriper trip)	8.2 4.0 4.0				
No. of One Way System Dayl' Papie mem Strategy Size to tax. Unsuc LeadIII (200 mining and back (12) M ² Unit of LeadII (200 mining and 200 mining	2.6 1.3 1.3 1.0 190.4	He, of Chev Wan Spichik Davily fraging American States (Her. 2014). Second States (Her. 2014) Se	8.2 4.0 4.0 0.0 606.2				
No. of One Way Space Daily Topic mem Strange Size to tax. When LeadIII (200 mining and back (2)) Provide the Constraint System Size Size Size (2) Constraints and Size Size Size (2) Constraints and Size Size Size Size Size Size Size Size	2.6 1.3 1.3 1.0 190.4	He, of Chev Wan Spichik Davily fraging Hend Strateging Date Han. Wester Hand Wand Hand. (1) Servicing of Londona Trigon Left Reg. In Proceedings of Dates (as a way) Hand. of David Trigon Left Reg. (1) Proceedings of Dates (as a way) Hand Hand Hand Hand Hand Hand Hand Hand	8.2 4.0 4.0 0.0 606.2				
M. Give Way dash. Dash Take mean Straing Star bits. X test takes. Y test takes. Y test takes. Y test takes and Y test takes. Y test takes and Y test takes	26 13 10 190.4 66.7	In a of Developmin Dev	82 4.0 0.0 066,2 250,3 100,0 4.0				
M. Give Way dash. Dash "Take mark target at the tar. Uncert Land TE (200 mining and back. (1): With of increases 1: Dash (1): With the mark (1): With the word (1): With the mark (1): With the ma	26 13 19 100 667	 Here Cherry Specific harly froge from Respect to the trans. Uncell (2023 cherrical particular particu	82 40 60 60 7503 7503 7503 7503 7503 7503 7503 750				
In . Give Way dash Dah Ying term Mange State Units. Units Unit (2000 mining what ALL (20	2.6 1.3 1.9 1.0,4 66.7 10,0 4.0 4.0 4.0 4.0 5.0 0.04 0.05 100 0.04	 Here Care Specific barly from Secure Streams (Here Streams (Her	82 40 60 563 563 100 40 40 40 40 40 40 40 40 40 40 40 40 4				
Bit Concerning of the Direct State St	2.6 1.1 1.8 192.4 46.7 46.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.	 Here Check Specific Adapting the Stream St	8.2 4.0 0.0 066.2 256.3 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0				
m. Gov Way dash Dah' Price Was Tare you to tar to tar to tare Untel 2010 main up what it. m. Gov Way dash Dah' Price Was Tare you to tare to tare 1010 main up what it. m. Gov Way dash Dah' Price Was Tare you to tare to tare 1010 main up what it. m. Gov Way dash Dah' Price Was Tare you to tare y	24 13 18 18 18 46 46 46 46 46 46 46 46 46 46 46 46 46	<text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text>	8.2 4.9 0.9 696.2 256.3 256.3 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0				
 In the other by dash dash frage here have any set to the X then channel (1200 make) and have (1200 make) and have (1200 make) and (12	24 33 39 39 463 464 464 464 464 464 464 464 464 464	<text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text>	8.2 4.0 0.0 664.2 250.3 10.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0				
In the one way dash body hype makes may are to that to the state st	24 13 18 182 46 46 46 46 46 46 46 46 46 46 46 46 46	 I. A. C. A. Sey Specific all by they for some specific all the all th	8.2 4.9 0.9 666.1 256.3 256.3 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0				
<text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	24 33 34 36 36 36 36 36 36 36 36 36 36 36 36 36	<text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text>	8.2 4.0 6.62 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3	Engenel Jacobies for Gambinetina Gebris.		Elegand Lacation for Construction Balance To a command that can structure desirs, will be backed and disposed of it is a landfill with a una ver-	Wg of 10 minu
<text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text>	24 33 34 36 36 36 36 36 36 36 36 36 36 36 36 36	<text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text>	8.2 4.0 6.62 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3	It is estimated that construction debris will be haded and disposed of in a landfill with a one way try of 50 miles. Youkens by Maindi Injoines(Try Constitution) and Constitution (Apha)(Cencres, Solt, Numerica) Solt, Dury, Stee(Methil) and Cence Center Paperies Systems, Has, Ban Maintif(Sald, Sald, et al., et al.) Total Volume of Shufts and Tunnel (cu-yds) 10,	netro Mantel (Savon)	It is stimated that construction debris will be hauled and disposed of in a landfill with a one work Values of any Matrial Imposed (papertist, Including Denotations Water (ApphalyConcerts, Salo, Issuerious Salo, S Pippines Signets, Sala, Sala Matriani/Sala (Sala), etc.) Total Volume of Shafts and Tunnel (cu-yrids)	Vig of 120 milos.
<text><text><text><text><text><text><text></text></text></text></text></text></text></text>	2.6 3.3 3.9 3.6 4.6 5.6 5.6 5.6 6.6 6.6 6.6 6.6 6.6 6.6 6	 I. e. C. Aver, Spech Ruby Vipe, Steen Steep. Stee	8.2 4.0 665.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.3 256.	It is desired that construction define with is haded and disposed of in a land! with a ow way top of 50 miles. It is desired that construction define with a land disposed of in a land! with a ow way top of 50 miles. Perfore Segment, Neuk-De Mondright (Self Const., 1997) Perfore Segment, Neuk-De Mondright (Self Const., 1997) The set of the s	Tauta Makkin (Calver), 2026 56 1	It is estimated that construction debris will be hauled and disposed of in a landfil with a one way Volume of any Material Imported/Exported, Including Denvilson Waste (Auphah/Concrete, Sale, Nasardow Sele, S Pipelion Segmente, Nabar, Base Materia/Sand/Gowel, etc)	urry, Steel/Metald) and Clean Construction Materials (Concrete,
<text><text><text><text><text><text><text></text></text></text></text></text></text></text>	2.5 3 3 3 98,4 66,7 66,7 66,7 6,6 6,6 6,6 6,6 6,6 6,6	 In constraints of the source of the	₽.2 4.0 4.0 66.2 256.3 10.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	It is desired that construction define with is haded and disposed of in a land! with a ow way top of 50 miles. It is desired that construction define with a land disposed of in a land! with a ow way top of 50 miles. Perfore Segment, Neuk-De Mondright (Self Const., 1997) Perfore Segment, Neuk-De Mondright (Self Const., 1997) The set of the s	196 0,461	It is stimated that construction debris will be hauled and disposed of in a landfill with a one work Values of any Matrial Imposed (papertist, Including Denotations Water (ApphalyConcerts, Salo, Issuerious Salo, S Pippines Signets, Sala, Sala Matriani/Sala (Sala), etc.) Total Volume of Shafts and Tunnel (cu-yrids)	nrry, Steel/Metald) and Clean Construction Materials (Concrete, 55,211 40 55,251
<text><text><text><text><text><text></text></text></text></text></text></text>	2.6 3.3 3.9 3.0 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6	 In constraints of the stand s	8.2 4.9 0.9 666.2 256.3 10.9 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	It is desired that construction define with is haded and disposed of in a land! with a ow way top of 50 miles. It is desired that construction define with a land disposed of in a land! with a ow way top of 50 miles. Perfore Segment, Neuk-De Mondright (Self Const., 1997) Perfore Segment, Neuk-De Mondright (Self Const., 1997) The set of the s	196 0,461	It is stimated that construction debris will be hauled and disposed of in a landfill with a one work Values of any Matrial Imposed (papertist, Including Denotations Water (ApphalyConcerts, Salo, Issuerious Salo, S Pippines Signets, Sala, Sala Matriani/Sala (Sala), etc.) Total Volume of Shafts and Tunnel (cu-yrids)	nrry, Steel/Metald) and Clean Construction Materials (Concrete, 55,211 40 55,251
 m. dow way dash day' frage makang site sites at the stand stand	2.6 3.3 3.9 3.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4	 In constraints of the state is the	8.2 4.0 665.3 263.3 263.3 10.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	It is desired that construction define with is haded and disposed of in a land! with a ow way top of 50 miles. It is desired that construction define with a land disposed of in a land! with a ow way top of 50 miles. Perfore Segment, Neuk-De Mondright (Self Const., 1997) Perfore Segment, Neuk-De Mondright (Self Const., 1997) The set of the s	196 0,461	It is stimated that construction debris will be hauled and disposed of in a landfill with a one work Values of any Matrial Imposed (papertist, Including Denotations Water (ApphalyConcerts, Salo, Issuerious Salo, S Pippines Signets, Sala, Sala Matriani/Sala (Sala), etc.) Total Volume of Shafts and Tunnel (cu-yrids)	nrry, Steel/Metald) and Clean Construction Materials (Concrete, 55,211 40 55,251
 In or way space high high region makes are used to the the transmission of the section of the section	24 33 39 364 467 467 46 46 46 46 46 46 46 46 46 46 46 46 46	 I. A. C. A. Song Sach Sach Spring for Sachage Sachage	8.2 4.0 665.3 256.3 256.3 10.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	It is desired that construction define with is haded and disposed of in a land! with a ow way top of 50 miles. It is desired that construction define with a land disposed of in a land! with a ow way top of 50 miles. Perfore Segment, Neuk-De Mondright (Self Const., 1997) Perfore Segment, Neuk-De Mondright (Self Const., 1997) The set of the s	196 0,461	It is stimated that construction debris will be hauled and disposed of in a landfill with a one work Values of any Matrial Imposed (papertist, Including Denotations Water (ApphalyConcerts, Salo, Issuerious Salo, S Pippines Signets, Sala, Sala Matriani/Sala (Sala), etc.) Total Volume of Shafts and Tunnel (cu-yrids)	krry, Steel/Metaldj and Clean Construction Materials (Concrete, 55,211 40 55,251
In drow way dash day't free was bare yet to the X was called [100 mine] and use. (100 way dash day't free was bare yet to the X was called (100 mine) and use. (100 way dash day't free was bare yet to the X was called (100 mine) and use. (100 way dash day't free was bare yet to the X was called (100 mine) and use. (100 way dash day't free was bare yet to the X was called (100 mine) and use. (100 way dash day't free was called (100 mine) and use. (100 way dash dash free was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was called (100 mine) and use of the X was cal	2.5 3.3 3.8 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6	 In e. Characterization of the state of the state	8.2 4.0 4.0 66.2 256.3 100 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	It is desired that construction define with is haded and disposed of in a land! with a ow way top of 50 miles. It is desired that construction define with a land disposed of in a land! with a ow way top of 50 miles. Perfore Segment, Neuk-De Mondright (Self Const., 1997) Perfore Segment, Neuk-De Mondright (Self Const., 1997) The set of the s	196 0,461	It is stimated that construction debris will be hauled and disposed of in a landfill with a one work Values of any Matrial Imposed (papertist, Including Denotations Water (ApphalyConcerts, Salo, Issuerious Salo, S Pippines Signets, Sala, Sala Matriani/Sala (Sala), etc.) Total Volume of Shafts and Tunnel (cu-yrids)	krry, Steel/Metaldj and Clean Construction Materials (Concrete, 55,211 40 55,251
Res Res Res R	2.5 3.3 3.9 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6	 I. I. Characterization of the standard strategy of the standard strategy of the standard strategy of the strategy of	8.2 4.0 6.65,2 256,3 76,0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.	It is desired that construction define with is haded and disposed of in a land! with a ow way top of 50 miles. It is desired that construction define with a land disposed of in a land! with a ow way top of 50 miles. Perfore Segment, Neuk-De Mondright (Self Const., 1997) Perfore Segment, Neuk-De Mondright (Self Const., 1997) The set of the s	196 0,461	It is stimated that construction debris will be hauled and disposed of in a landfill with a one work Values of any Matrial Imposed (papertist, Including Denotations Water (ApphalyConcerts, Salo, Issuerious Salo, S Pippines Signets, Sala, Sala Matriani/Sala (Sala), etc.) Total Volume of Shafts and Tunnel (cu-yrids)	nrry, Steel/Metald) and Clean Construction Materials (Concrete, 55,211 40 55,251
m. dowedy adapta high right emissions at set to the X musculal (join main and use). (ii) and one way adapta high right emissions (join the adapta emis). (iii) and one way adapta high right emissions (join the adapta emis). (iii) and one way adapta high right emissions (join the adapta emis). (iii) and one way adapta high right emissions (join the adapta emis). (iii) and one way adapta high right emissions (join the adapta emis). (iii) and one way adapta high right emissions (join the adapta emis). (iii) and one way adapta high right emissions (join the adapta emis). (iii) and one way adapta high right emissions (join the adapta emis). (iii) and one way adapta high right emissions (join the adapta emis). (iii) and (join the adapta emi	24 33 39 30 30 40 40 40 40 40 40 40 40 40 40 40 40 40	 a. d. Cow Spicht Shift Ying Tem Sharey Share a track. Will share a start of the share o	8.2 4.0 6.0 665.2 563 563 100 4.0 4.0 4.0 4.0 4.0 100 100 100 100 100 100 100 100 100 1	It is desired that construction define with is haded and disposed of in a land! with a ow way top of 50 miles. It is desired that construction define with a land disposed of in a land! with a ow way top of 50 miles. Perfore Segment, Neuk-De Mondright (Self Const., 1997) Perfore Segment, Neuk-De Mondright (Self Const., 1997) The set of the s	196 0,461	It is stimated that construction debris will be hauled and disposed of in a landfill with a one work Values of any Matrial Imposed (papertist, Including Denotations Water (ApphalyConcerts, Salo, Issuerious Salo, S Pippines Signets, Sala, Sala Matriani/Sala (Sala), etc.) Total Volume of Shafts and Tunnel (cu-yrids)	nrry, Steel/Metald) and Clean Construction Materials (Concrete, 55,211 40 55,251
m. do. way doal holy free material star take. We can start all (J) (D) main and was). m. do. way doal holy free material start all (D) main and was). m. do. way doal holy free material start all (D) main and was). m. do. way doal holy free material start all (D) main and was). m. do. way doal holy free material start all (D) main and was). m. do. way doal holy free material start all (D) main all (D) main and was). m. do. way doal free free material start all (D) main	2.5 3.3 3.9 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6	 In e. Characterization of the state and the s	8.2 4.0 6.66.2 56.3 56.3 56.3 56.3 56.3 56.3 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	It is desired that construction define with is haded and disposed of in a land! with a ow way top of 50 miles. It is desired that construction define with a land disposed of in a land! with a ow way top of 50 miles. Perfore Segment, Neuk-De Mondright (Self Const., 1997) Perfore Segment, Neuk-De Mondright (Self Const., 1997) The set of the s	196 0,461	It is stimuted that construction debris will be hauled and disposed of in a landfill with a one work Values of any Matrial Imposed (papertist, Including Denotations Water (ApphalyConcerts, Salo, Isoardina Salo, S Pippines Signets, Sala, Sala Matriani/Salo (Salo), et al. Total Volume of Shafts and Tunnel (cu-yrids)	nrry, Steel/Metald) and Clean Construction Materials (Concrete, 55,211 40 55,251
R. dow way dash Day "new manage star bits a two star ball (Dow may a daw ball) R. dow way dash Day "new manage star bits a two star ball (Dow may a daw ball) R. dow way dash Day "new manage star bits a two star ball (Dow may a daw ball) R. dow way dash Day "new manage star bits a two star bits a two star bits a daw ball (Dow may daw ball) R. dow way dash Day a first a daw part of the dash Day of the dash	2.5 3.3 3.3 3.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4	 In e. Characterization of the standard strategy of the standard strategy of the standard strategy of the strategy of	8.2 4.0 6.0 665.2 563 563 100 4.0 4.0 4.0 4.0 4.0 100 100 100 100 100 100 100 100 100 1	It is desired that construction define with is haded and disposed of in a land! with a ow way top of 50 miles. It is desired that construction define with a land disposed of in a land! with a ow way top of 50 miles. Perfore Segment, Neuk-De Mondright (Self Const., 1997) Perfore Segment, Neuk-De Mondright (Self Const., 1997) The set of the s	196 0,461	It is stimuted that construction debris will be hauled and disposed of in a landfill with a one work Values of any Matrial Imposed (papertist, Including Denotations Water (ApphalyConcerts, Salo, Isoardina Salo, S Pippines Signets, Sala, Sala Matriani/Salo (Salo), et al. Total Volume of Shafts and Tunnel (cu-yrids)	nrry, Steel/Metald) and Clean Construction Materials (Concrete, 55,211 40 55,251
m. do. way good help they mean strange for the fact. Name called [job main jurk hask.] m. do. way good help they mean strange for the fact. Name called [job main jurk hask.] M. do. way good help they mean strange for the fact. Name called [job main jurk hask.] M. do. way good help they mean strange for the fact. Name called [job main jurk hask.] M. do. way good help they fact. Name strange for the fact. Name called [job main jurk hask.] M. do. way good help they fact. Name strange for the fact. Name called [job main jurk hask.] M. do. way good way fact. They good way fact. They good way fact. They good way fact. They good way fact.] M. do. way good way fact. They good way fact. They good way fact.] M. way fact. They good way fact.] M. do. way g	2.6 3.3 3.9 3.6 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5	 In e. de Warjsche Barby freje fen Barby and Enge de la Leu (LEU 2014) en la de la Calificia de la Cal	8.2 4.0 665.3 256.3 256.3 10.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	It is desired that construction define with is haded and disposed of in a land! with a ow way top of 50 miles. It is desired that construction define with a land disposed of in a land! with a ow way top of 50 miles. Perfore Segment, Neuk-De Mondright (Self Const., 1997) Perfore Segment, Neuk-De Mondright (Self Const., 1997) The set of the s	196 0,461	It is stimuted that construction debris will be hauled and disposed of in a landfill with a one work Values of any Matrial Imposed (papertist, Including Denotations Water (ApphalyConcerts, Salo, Isoardina Salo, S Pippines Signets, Sala, Sala Matriani/Salo (Salo), et al. Total Volume of Shafts and Tunnel (cu-yrids)	nrry, Steel/Metald) and Clean Construction Materials (Concrete, 55,211 40 55,251
m. do. way doal holy free makes are get to the X way called a set to the X way called a set of the X of the A pape and Y. M. dow way doal holy free makes are get to the X way called a set of the X of the A pape and Y. M. dow way doal holy free makes are get to the X way called a set of the X of the A pape and Y. M. dow way doal holy free makes are get to the X way called a set of the X of the A pape and Y. M. dow way doal holy free makes are get to the X way called a set of the X	2.6 3.3 3.9 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6	 In e. Characterization of the state and the state of the	8.2 4.0 6.66.2 26.3 26.3 10.0 4.0 4.0 0.0 10.0 10.0 10.0 10.0 10	It is estimated and consistent editors with its handed and disputed of a shareful with a care with operating strategies. But hand equivalent in weak hand equivalent in the shareful editor of the shareful editor of the shareful editor of the shareful editor of the shareful equivalent editor. But handed and editor of the shareful editor of the shareful editor of the shareful explores that hand editor of the shareful editor of the shar	196 0,461	In a chinese data contraction definit will be handled and disposed of in a land th one of the format of the same of the sam	un, Savitybeenig aar (daar Caesardan Keeninkii (soorom) 93,031 46 93,035 93,031 93,031
m. do. way doal holy free material gets to take two called [job main packs.] m. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal h	2.6 3.3 3.3 3.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4	 In e. Characterization of the start of the s		Bit is defined at conclusion data or is it is handed and disputed for a landfill with a or way tog of do main. Bit is defined at a conclusion data or is is handed and disputed for the source for the domain of t	106 Add 100 Delse States and a state of the state of the states and a state of the states of the states of the states and a state of the states of the state	It is estimated that contraction define will be hauled and disposed of a large of a site of the observed of the site of the observed of the site of the observed of the obs	un, faleitäviteisi ai Caso Conscientis Marinki (socient, 52,11) 5,531 5,531 5,531 5,531
m. dow way adapta high right ends along up to take to t	2.6 3.3 3.9 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6	 In e. Convergence have types the stream of th		It is estimated and consistent advances of its handed and disposed of an kundit with a own ying of dimensi. Hander and makenet handersproces, the handersproces of the handerspr	106 Add 100 Delse States and a state of the state of the states and a state of the states of the states of the states and a state of the states of the state	In a schema de controller de la la la del pour de la la del pour de la la andital est non ver Veraine en la Manime en la pour de la la del la la del pour de la la del del la del del la del del del la del del la del del la del del la del	un, faleitäviteisi ai Caso Conscientis Marinki (socient, 52,11) 5,531 5,531 5,531 5,531
m. do. way doal holy free material gets to take two called [job main packs.] m. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal holy free material gets to take two called [job main packs.] M. do. way doal h	2.6 3.3 3.9 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6	 In e. Characterization of the start of the s		Bit is defined that consistent data is it is blacked and Egipsed of a slaceful with a care way for of 50 min. Bit is defined and consistent data is it is a blacked and Egipsed of Consolation way for a blacked blacked black blacked b	106 Add 100 Delse States and a state of the state of the states and a state of the states of the states of the states and a state of the states of the state	It is estimated that contraction define will be hauled and disposed of a large of a site of the observed of the site of the observed of the site of the observed of the obs	un, faiel/belleg and Case Carloscelles Matchin (posent, 52,53) 5,531 5,531 5,531 5,531
<text><text><text><text></text></text></text></text>	2.6 3.3 3.9 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6	In el. Ruy spech any type for strange of the star. We star with a star any star a		The activation data consistent data in the Nuclei and Equipated for a Nuclei with a care way for of Some. Based on the Nuclei Activation data in the Nuclei and Equipated for a Nuclei with a Constraint of Some Activation and Some Activat	106 Add 100 Deb S and 100 S and 100	In is ethnological and the contraction define will be haded and disposed of in a landfl only a new york of the second of the sec	un, Stelleheinig auf üher Chestoches Meetinin (poson) 15,231 4, 5,231 5,231 5,231 5,231 10 10 10 10 10 10 10 10 10 1
<text><text><text><text></text></text></text></text>	2.6 3.3 3.9 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6	In e. P. Kow Spech and by they fame there are a to a. we that used and the state of the state		Bit is defined that consistent data is it is blacked and Egipsed of a slaceful with a care way for of 50 min. Bit is defined and consistent data is it is a blacked and Egipsed of Consolation way for a blacked blacked black blacked b	106 Add 100 Deb S and 100 S and 100	In is ethnological and the contraction define will be haded and disposed of in a land the observes to the defined and the contraction defined based and expected in the public devices, take, touches hade, defined and public defined and the contraction of the public devices, take, touches hade, defined and public defined and the contraction of the public devices, take, touches hade, and the public defined and the contraction of the public devices, take, touches hade, defined and the contraction of the public devices of the public devices of the public devices of the device of the public devices of the public devices of the public devices of the devices of the public devices of the devices of the public devices of the devices of the devices of the devices of the devices of the devices of the devices of the devices of the devices of the devices of the devices of devices of the devices of the devices of the devices of the devices of devices of the devices of t	un, Stelfhöterig and Dara Calendaria Hearinh (Spacen) 15,231 4, 5,232 5,233 5,231 5,231 10 10 10 10 10 10 10 10 10 1
<text></text>	2.6 3.3 3.9 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6	 In constraints of the start is the		It is attraction data consistent data in it is handed and disputed for a landfit with a care way for of 50 min.	In control of decayable graph to a control of the c	In it is strong that contraction data will be haded and disposed of a large data will be haded and disposed of a large data will be haded and disposed of a large data will be haded been the haded been the haded been to be ha	un, heliotheerja et Gas Castacelles Naedel (Societ).
R. dow way dash Day Price was barge to the standard [[20 main packs]. Will be a standard of the standard of t	2.5 3.3 3.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4	 In consequence of the second se		It is a dimensional that consistent dation with it handed and disputed of a shareful with a care way for of dimensional and a shareful with a dimensional shareful and a shareful with a dimensional shareful and a shareful with a dimensional shareful and disputed dimensional shareful and dimensional dimensi	Sin data Data Struction developing bit à laid developing bit à lai	It is ethnicited that contraction define will be haded and dispeted of a lateful on the one spectra of the binding optical of Latefunders hade, have been been by the binding optical back particular back and the analysis of the binding optical back particular back and the analysis of the binding optical back particular back parting particular back parting parting particular bac	un, Suelfeterig er Gan Cantocche Hannin (Doroni, 15.211 46 53.521 53.521 53.521 Telephone Service Servic
m. dow way adapt holy free ways are used to use the table of the set and the set of the se	2.5 3.3 3.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4	 In e. Convergence have types for the stage of the stage. The stage of the		The estimate framework in the fiberbal or for Overview Montal Act Equipment (In a land) with a constrained of the second of t	Sin data Data Struction developing bit à laid developing bit à lai	It is stimulated that contraction define will be haded and disposed of a large diff with a way be approximate hade, have been prevented by the stimulated of the standing of the stimulated by the stimulated b	un, Suelfeterig er Gan Cantocche Hannin (Doroni, 15.211 46 53.521 53.521 53.521 Telephone Service Servic
<text></text>	2.6 3.3 3.9 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6	 In constraint of the start of the s		The administration data consistent data is it is handed and disposed for a landfit with a series why dispose the land disposed for a landfit with administration data and the landfit of the landfit o	Sin data Data Struction developing bit à laid developing bit à lai	In it is strong that contraction data will be haded and disposed of a lateral will be who were a first with an experimental strong the strong data is a strong data will be haded and disposed of a lateral were data and a strong data will be haded and will be haded data will be haded and will be haded and will be haded data will be haded and will be haded wil	un, Suelfeterig er Gan Cantocche Hannin (Doroni, 15.211 46 53.521 53.521 53.521 Telephone Service Servic

1	1	1	1
Traffic Control Requirements	Traffic Control Requirements	Traffic Control Requirements	Traffic Control Requirements
Traffic control will be required throughout virtually all pipeline reaches for this construction method CM-1. A Construction Zone with traffic way will be used by xailing out of service one side of the street as a will be used by taking out of service one side of the street as a Construction Zone and maintaining a Traffic Way on the other side of the street.	The majority of the CM-2 method construction will take place cross country away from existing streets. Minimal traffic control may be required in some locations to ensure safety.	There will be truffic control needed for the construction of many of the access pills on either side of the tunnal.	There will be traffic control needed for the construction of many of the access pits on either side of the tunnel.
Generator Requirements	Generator Requirements	Generator Requirements	Generator Requirements
United win respectively for high Lighting Lange Generator Set 454 are for high Lighting Lange Generator Set 754 are Drawkering Pumps and Vestilation Fans Standby Lange Generator Set 754 are Drawkering Pumps and Vestilation Fans (A) included in oursement Har-set De Comment-Oct. (JAC JOA)	Lange Generator Set 45kw for Night Lighting Standby Lange Generator Set 45kw for Night Lighting Lange Generator Set 75km for Dwatering Pumps and Ventilation Fans Standby Lange Generator Set 75km for Dwatering Pumps and Ventilation Fans Blandball in userum fill are used Transmissioner. Och 1. (OK. 200-3)	included in equipment fait - size tab "Equipment - CAL4.0 through CAL4P"	iscluded in equipment lat - see tab "Equipment - Cel-44 through Cel-4P
Ventilation Requirements	Ventilation Requirements	Ventilation Requirements	Ventilation Requirements
Type weiting will require ventilation. Unlity Blower fast 3209 2235 CM regit Ventilater with Duct Houe Shoring installation (Particle and Annual An	Pape welling, will require verbilitation. Unlift Biower fra 15200 22.55 (CM High Welcochy Verbilitation with Duct Hose Shoring Installation (braced bia) are researd in region verbilition during welling - Utility Biower Fan 1500 2.255 (CM High Veckort) verbilitation with Duct Hose (High Netcolder Angegement Hist - see Hall Traglement - CM-5, CM-2, CM-34) Equipment Usage	1009 Wertlickon fan for aan finnent 40 ee Wertlickon fan for aan finnent Assume 2.4er day, DOS usige of he ventliktion fan during 2.4er day Egulgment Usage	120 PP Versitation for the each tunnel 40 PP Versitation for an durk Assume 2-ktr ay, DSC scage of the versitation fan during 24-br day Regispment Usage
See attached worksheet "Equipment - CM-1, CM-2, CM-3A"	See attached worksheet "Equipment - CM-1, CM-2, CM-3A"	See attached worksheet "Equipment - CM-4A through CM-4F"	See attached worksheet "Equipment - CM-4A through CM-4F"
CM-1 Roadways (Cut & Cover) - Excavation/Trenching	CM-2 SCE Easement (Cut & Cover) - Excavation/Trenching		
Typical Local Annualization 4,644 Total Excassion (set) 1,776,553 Total Excassion (set) 6,378 Total Excassion (set) 6,378 The Excassion (set) 6,378 The Excassion (set) 6,378 The Excassion (set) 6,378 The Excassion (set) 6,378 Typical Local Annual Excassion (set) 6,378 Typical Local Annual Excassion (set) 4,484 Typical Local Annual Excassion (set) 4,640 Total Excassion (set) 4,540 Total Excassion (set) 4,540 Total Excassion (set) 4,540 Total Excassion (set) 4,540 Total Excassion (set) 1,782	Paylow Construction Paylow Construction Depart FunctionScience at 31 water 211 theory 2.071 Text Encounter (sev) 6.074.08 Text Encounter (sev) 6.074.08 Paylow Construction (sev) 6.074.08 Text Encounter (sev) 6.074.08 Paylow Construction (sev) 1.071 Paylow Construction (sev) 1.071 Paylow Construction (sev) 1.071 Text Encounter (sev) 2.071 Text Encounter (sev) 2.072 Text Encounter (sev) 0.071 Text Encounter (sev) 4.045 Text Encounter (sev) 0.072 Text Encounter (sev) 4.045		
CM-1 Roadways - Pavement/Concrete Replacement or Rehabilitation			
Paint Control Contrecontrol Control Control Control Control Control Con			
CM-1 Roadways (Cut & Cover) - Temporary Median Removal Median Locations: None this Contract			
Vergelan Locations, Hope (Ins. Commercial			

Reach & Read-and Million and PPAA Researces ARRIVERIAN IS And Provide Manifest		Res on Fig. 2754 Information from Factors Residence Housest With Western							
Basch B, Preferred Algenerant (COA) Response, MAD BEWD (1 feet Claneter Egelind) CM-3 Readways Control Control of the Control		Also see file: CEQA information, Pump Zeaton, Backborn Ageneral 2023/2025 also CAN 3 CEC Essenses	10-0" CONTRUCTION ADDR 10-0" (PT-0"	CM-3A LAFCD Essement (Adjacent to River)		CM-40 Pge inding		CM-45 Shield Transeling with Rbs and Lagging Decorption: Shield transeling uses a shield with a digger ann or raid header occurding at the fice. Hydrocky close at the rear of the abud posh-off the perviced/visitable support elements to inspare the shield thread. There are fitted and there imging our or and a provid signatory for the occurding our to the	4
						BORING MACHINE - PIPE CASING		institution of the street carrier pipe and backfilling of the annual space.	1 m.
			NOT NOT STORES		Incore incore and the	JACKING PIT DECEIVING PIT			1 Iller
And the second s			CON DE MARK	BURGET TO THE BANK	N LOIR	CONSTRUCTION METHOD 4A - JACK & BORE			J-
A DECISION BATCH OF MANAGEMENT CONSTRUCTIONS CONSTRUCTION CONSTRUCTION CONSTRUCTION CONSTRUCTION		- BERGER HEINEL AND BERGER BERGER HEINEL AND BERGER BERGER HEINEL AND BERGER						THE BOOK SHILD TH	
Pipe Segments of This Construction Type Plan Noc. [pdf] Segment No. 45 57 47 58 43 104	Length (ft) 1,094 2,025 1,320	Pipe Segment of This Contraction Type Plan Not. (pdf) Segment No. Length (ft) 51 110 2,536 52 112 803 53 116 2,736	Pipe Segments of This Construction Type Plan Not. (pdf) 47,43,49 43,50 50,51	Segment No. 502 507 100	Length [ft] 5,854 1,213 1,552	Pipe Segment of Thic Control Clin Opp Pipe Segment No. Segment No. 46,47 00 47 100 47 101	Length (ft) 647 518 481	Pipe Segreech of This Construction Type Plan Noi. (pdf) Segreech Noi. ei 106 53 115	Length (tt) 176 57
dy 200 Total	4,429	54,54,55 116 2,733 Total 7,237	36, 51 52, 53	2004 114 Total	1,557 4,558 12,537	47 101 49 103 49 104 50 108 51 10	518 481 1,235 275 1,320 484		Total 222
					-	53, 52 112 Total Number of Shafts : 14	544 5,975	Number of Data	n- 4
Editorial Number of Construction Workers Per Day Pipeline Construction Construction Structure (and an explored Day) ("one Production (IF pro dra) Editoriand Number of Pipeline Creans Per Day	300 25 0.59	Extinuition Munches of Construction Workers Per Day Pipeline Construction 200 Construction Kehadie Neutring days) 200 Feet of Pipeline Cross Per Day 80 Extimated Number Pipeline Cross Per Day 0.20	Estimated Number of Construction Worker Pipeline Construction Construction Schedule (working days) Feet of Pipeline Construction per day needes Estimated Number of Pipeline Crews Per Dir	Per Cay	200 80 0.52	Estimated Number of Construction Workers Per Day Construction Schedule (working days)	300	Estimated Number of Construction Workers Per Day Construction Schedule (working days) (-120 days proc. mobil.; -40 test, comm., demob)	300
Number of Realine Creas Papeline Creas Papeline Creas Workers per creas Shoring Creas	1 1 7 0.2	Namber of Fipeline Creats 0 Market of Fipeline Creats 1 Winders per creat 9 Beening Creats 0.2	Number of Pipeline Crews Pipeline Construction Crews Workers per crew		1 1 9 0.2	Seet of Transi Construction needed per dry Chanad on Die trait Uronie Crease Per Oray (banad on Die trait Uronie Crease Per Oray (banad on Die trait per dra par crease) (Dianad Anaberto Popeline Crease Per Oray (banad on Die trait Charlo Kee Cosy	19.92 1.99 0.66 4.20	Feet of Turnel Construction needed ger day Estimated Munetor of Turnel Construction Crease Ner Day Jouand on 20 feet par day upge crease) Estimated Munetor of Plastine Crease Ner Day Jouand on 20 feet par day upge crease) Estimated Munetor of Data Crease Ner Day	0.04
Workins per Crow Saw Cat Crow Workins per Crow Demologian Demologian Crow Workins per Crow	2 0.05 2 0.05 2	Winders per Crew 1 Uiting Falocitation Crew 0.055 Winders per crew 6 Winders per Crew 0.15 Winders per Crew 1	Social Crews Workers per Crew Utility Relocation Crew Workers per crew Workers per Crew Workers per Crew		3 0.05 6 0.15 1	(based on 90 days per shaft) Extimated Number of Paving Crews Per Day Workers per Cremo Crews	4.20 0.10 10	(based on 90 days per sheft) Estimated Number of Pavlog Crews Per Day Worken per Tannet Crew	2.40 0.10 14 17
Working per cone Pointy Cone Working per cone Utility Advisation Orau Working per cone Totific Centol	0.2 5 0.1 6	See Restanstin Crew 0.15 Windress per crew 2 Temposery Gravel Roadway Crew 0.1 Crew San 4 A	Workers per crew Temporary Gravel Roadway Crew		0.15 2 0.1 4	Woden pay Pipelina Crew Woden par Ball Woden par Bally Crew Total Worken per Davig (Average Throughout Construction Schedula)	10 3 71.51	Workens per Ripeline Craw Workens per Bark Craw Workens per Pavlog craw Total Workens per Day (Average Throughout Construction Schedule)	20 3 25.28
Crew Sta Tetal Workers per Day (Average Throughout Pipeline Construction) Tetal Workers per Day (Average Throughout Construction Schedule)	0.15 4 10.10 5.98	Total Workers per Day (Average Throughout Pipeline Construction) 10.9 Total Workers per Day (Average Throughout Construction Schedule) 12.9	Total Workers per Day (Average Throughor Total Workers per Day (Average Throughor	Pipeline Construction) Construction Schedule)	10.9 5.69	Note: The installation of Fiber Optic cabling is estimated to be within these provided production rates.		Note: The installation of Fiber Optic cabling is estimated to be within these provided production rate	e.
Fiber Optic Duct Bank Contruction Schedule (avorking dayu) Daliy Crow Production (F) For eday) Estimated Number of Combined Fiber Optic Crows Per Day	515 200 0.04	Part Optic Duct Back 515 Contructions On-backed lowaning days) 515 Daily Crew Production (FT per day) 220 Scientate Number Of Combined Dearborght Crews Per Day 0.64	Fiber Optic Duct Bank Construction Schedule (working days) Daily Crew Production (FT per day) Estimated Number of Combined Fiber Optic	rews Per Day	515 220 0.11				
Number of Combined Flam Optic Crews Trenching, Backfill, Conduit, Rormwork Crew Workins par-crew Concress Crew Workins are Crew	1 4 0.75 4	Number of Combined Flaw Capits Creams 1 Trenching Base/Lipits, Contain, Formanick Cream 1 Warkers are cream 4 Constrict Cream 6.75 Warkers are Cream 4 Distribution Cream 6.75	Number of Combined Fiber Optic Crews Trenching, Backfill, Conduit, Formwork Crew Workers per crew Concrete Crew Workers per Crew		1 1 0.75 4				
Working are Craw Exerciclas Craw Working are craw Paning Craw Working par craw Working par craw Tabal Working par craw Tabal Working par craw Tabal Working par craw	0.2 4 0.1 5 8.30	Electrical Crew 0.2 Workers per crew 4 Paintg Crew 0 Workers per crew 0 Total Workers per Clay 0 Total Workers per Clay (Kwange Throughout Fiber Optic Construction) 7.10	Electrician Crew Wickers per crew Paving Crew Wickers per crew Total Workers per Day (Average Throughor	The office function in the interview	0.2 4 0				
Total Workers per Day (Average Throughout Construction Schedule) Estimated Number of One-Way Construction Worker Vehicle Trips Per Day	0.36	Total Worken per Day (Average Throughout Construction Schedule) 0.50 Extimated Number of One-Way Construction Worker Vehicle Tolys Per Day	Total Workers per Day (Average Throughor Estimated Number of One-Way Construction	Construction Schedule) Worker Vehicle Trips Per Day	0.86	Estimated Number of One-Way Construction Worker Vehicle Trips Per Day		Estimated Number of One-Way Construction Worker Vehicle Trips Per Day	
Building Costinguistion Tatal Wootsing registry (Jong Marga Throughout Construction Schedule) Con-Way Top par Day (Contell) Facial Doe Way Top par Day of Worker Whichsel (Average Throughout Construction Schedule) * Assumes maintainen of Its Wootsing per National and 2006 of wootsin oned dustine	5.98 11.96 2 14.0	Backing Construction 1.26 Cone Ways (Fing par Dir Day (Awrage Throughout Construction Schedule) 2.35 Cone Ways (Fing par Dir of Conting) 6.37 Statile to Now Works (Too Park to Site (One way - Siniles) 2 Total Cone Ways (Too par Dir of Works (Works (Deving a Throughout Construction Schedule) 8.4 * Aurone maximum of 2 Works or Parking and 2005 of Works med Autorite 8.4	Pioeline Construction Total Workers per Day (Average Throughout One-Way Trips per Day (50 miles) Shuttle to Move Wilokers from Park to Site (Total One Way Trips per Day of Worker Viel * Acoumes maximum of 1.5 workers per shut	onstruction Schedule) ne way - 5 miles) Lies (Neverge Throughout Construction Schedule) and 2016 of workens need shuttle	5.60 11.29 2 12.4	Total Winkens per Day (Javenge Throughout Construction Schedule) Develwing Yongsper (any Kij Danika) Studia to Move Windem from Park to Sile (Dee way- 5 miles) ⁴ Total Cen Way Tifpsper Day of Winder Cen (Javenge Tansaghout Censtruction Schedule) * Ausmen makimum of Savedone per Hartiste.	71.51 143.02 2 145.0	Tatal Worken per Day Verwage Throughout Contruction Schedule) One-Way Tryos Par Sty (So Miss) Souther to Move Worken from Park to Site (Dne way - Smiles)* Tatal Doe Way Trip per Day of Warker Can (Reerage Throughout Construction Schedule) * Assumer maximum of 15 workens or Hutch.	25.28 50.57 2 52.6
Bar Cetric Ascritunit. Tatter Wahner per Group (Annuego Throughout Contraction Schedule) Startes Wahner Wahner Hann (Schedule) Zurites Saleen Wahner Hann (Schedule) Tetal Cone Way Tüga per Groy Of Warder Wahnish (Annuego Throughout Construction Schedule) *Anarem enational med 15 Schedule and 20 Sch doubles med budte	0.36 0.72 2 2.7	Eller Cost Ductback Total Worken per Day (Average Throughout Construction Schedule) 0.50 One-Way Tips per Day (Somine) 1.00	Fiber Optic Ductbank Total Workers per Day (Average Throughout One-Way Trips per Day (50 miles) Overthe to Move Workers from Park to Site I	onstruction Schedule) ne way - 5 miller) des (Newrage Throughout Construction Schedule) and 70% of workers need shuttle	0.86				
Tead (on Way Tips per Day of Warder White) (Average Throughout Construction Scheduls) * Assumes maximum of 15 workers per shuftle and 20% of workers need shuftle Pepdine Construction Facility Variance per Day (National During Construction Scheduls) Cast Way Tips per Day (Schema) Deve Way Tips per Day (Schema) Deve Way Tips per Day (Schema)		Sharifa to Move Worksen fram Paris Sia (Johnewy - Smiler) Handro Leve Wy Frage and Workser Verkels (Jennerg Throughout Constructions Schedule) 1.0 * Aussen auximum off 25 worksen per Autitie and 20% of worksen need hustle <u>Papalana Constructions</u> Tandi Worksen per Carry (Malariana During Contractions Schedule) 18.0 Data Worksen per Carry (Malariana During Contractions Schedule) 18.0	Tatal Do Work Visites Visites Visites 2 and 1 Tatal Doe Way Tripp per Day of Worker Vel * Assumes maximum of 15 workers per shut Pipeline Construction Total Workers per Day (Maximum During Co Cone-Way Trips per Day (Maximum During Co	e wy 2 mining les [Neverge Phroughout Construction Schedule] and 70% of workers need shuttle	17				
1 for it would be provided to a set of the set of th	26.00 52.00 4 56.0	Total Shortsman per Care Jubalisman During Contraction Schedule) LLD Deve Hayr Toping per Vig (Ori Inni) SLD Dautite to Allow Worksm from Parts State (Deve way - Smile) ¹ 2 Dautite to Allow Worksm from Parts State (Deve way - Smile) ¹ 2 Part and Deve Worksman Parts Vig Worksman Threeghout Constructions Schedule) SLD * Autome nationam of IS socking per Valter and 2% of working need buttle SLD	Che-Way Trips per Day (Maximum Dung Lo Che-Way Trips per Day (50 miles) Shuttle to Move Workers from Park to Site (Total One Way Trips per Day of Worker Cas * Assumes maximum of 15 workers per shut	nuction schedun) ne way - Smilen(* (Maximum Throughout Construction Schedule) and 70% of workers need shuttle s.	12.0 24.0 2 26.0	Teal Workers per Day (Maximum Daring Construction Schedule) One-Wary Tigo per Artis (Ko Rinke) Shands to More Worken from Parkto Siles (Done way - Snilles)* Tead Doe Way Tigo per Bray of Worker Care (Unitarium Daring Construction Schedule) * Assumes manimum of El workers per abutts. Team: Fulding Worker Encluded In term below.	57.00 114.00 2 116.0	Total Workens per Day (Maximum During Contraction Schedule) Can-Way Totage Day (Ko Dinie) Stuction Mawa Waters from Parks Sche (Dina way - Smiller) ⁴ Total Cole Way Totage Parky of Waters Can (Maximum During Construction Schedule) * Ausume maximum of 15 workens per shuttle. Stuce: Valuating Unick in Included Internet Relation.	17.00 34.00 2 36.0
Eber Ontir Durt Bank	17.00 34.00	Eber Ontr Durt Bank	Chara Castle Durat Basel		12.00 24.00	Note: Hauling Vehicles included in thems below.		<u>Mater</u> Hauling Vehicles included in items below.	
Testi Wastern per Day Navirum. During Construction Knindulo) Der Way, Trapp zurge (20 miler) Daufte to Mave Wastern fram Prick Sale (Der way - Emiler) ⁴ Testal Der Wart (Parker per Van Witter einer Markenn During Construction Schwäde) * Austern smaltrum of L's workers per chartite auf 20% of workers need dustio <u>Burtin</u> : wurking Worker includent in them burken.	34.00 2 36.0	Table Windows per Care My Underson Diving Contraction Schedule) 12.00 Develops Topic per day (Sprinke) 34.00 Statute to Now Works m From Parks Table (Dow surv., Finally,* 2 Table Table Ward From Parks Table (Dow surv., Finally,* 2 Parks Table Statute (Dow Ward From Parks Table (Dow surv., Finally,* 2 Parks Table Statute (Dow Ward From Parks Table 2016) Characteris Schedule) 36.0 * Automet maximum of Scards in them Statute 2016) Characteris Schedule 36.0	One-Way Trips per Day (50 miles) Shuttle to Move Wischers from Park to Site (Total One Way Trips per Day of Wischer Cas * Assumes maximum of 15 workers per shut <u>Note:</u> Hauling Vehicles included in items bek	staction Schedule) he way - S miles(* OMaxiesem Darleg Construction Schedule) e and 70% of workers need shuttle e.	24.00 2 26.0				
Table Second works the second access that second	5.98	Construction Worker Vehicle Farling Location(c) Biolise Construction Distribution (Construction Distribution (Construction Schedule) 2.25 Total Workers, priority and Schedule Construction Location 2.25	Construction Worker Vehicle Parking Locat Pipeline Construction Total Workers per Day (Average Throughout January 2016 of Settl can park langth the C	n(i) ontruction Schedule) struction (or tion	5.69	Construction Worker Vehicle Parking Location(d) Total Workers per Day (Average Throughout Construction Schedule) Aurum 2015 of Soff can park Investight the Construction Location Remarking 2015 Week on Listal Parking Location	71.51	Construction Worker Vehicle Parking Location(i) Total Workers per Day (wenge Throughout Construction Schedule) Assume 300 (Saff can aak Needy the Construction Location	25.28
Assume 2010 of Tairf can pick Neurly the Contraction Location Semanling 25N Neural and Exclud Assing Levice Tetal Workers per Day (Mailmum During Construction Schedule) Assume 2010 of Tairf can pick Neurly the Construction Location Remainling 25N Neural an Exclud Assing Levice	42 26.00	Remaining 70% Heed an Establ. Parking Loc'ns 2.3 Total Workens per Day (Maximum Deing Construction Schedule) III.00 Ausman 20% of Marina and Ausman Han Construction Schedule)	Assume 30% of Staff can park leasity the Co Remaining 70% Need an Establ. Parking Lo Total Workers per Day (Maximum During Co Assume 30% of Staff can park Nearby the Co Remaining 70% Need an Establ. Parking Lo	16	4.0	Aurum 2015 of Soff can park heaving the Contraction Location Remaining 2015 Week and Listal Parking Leader Total Workers per Day (Maximum During Construction Schedule) Aurum 2016 of Soff can park heaving the Contraction Location Remaining 2015 Week and Listal Parking Leche	50.1 57.00	Anume 20% of Balf can pay for Newby the Construction Location Remaining 20% Need an Estable Assing Locies Total Workers per Day (Masimum Doing Construction Schedule) Anume 20% of Salf can pay for Newby the Construction Location Remaining 20% Need an Estable Assing Locies	17.7
Fiber Optic Duct Bank	18.2	Fiber Optic Duct Bank	Fiber Optic Duct Bank		8.4 0.86	Remaining 70% Need an Establ. Parking Locins	38.9	Remaining 70% Need an Establ. Parking Loc'ns	11.9
Text Worksman per Dang Maranga Provaglinas Construction Schedulu) Mauren 2010 Offention and Neurohy the Construction Lossion Remaining 2015 Need an Establic Alarcing LaCres Textal Worksman per Alarcing Cantenation Schedulu) Mauren 2010 of Dartin can park Neurohy the Construction Lossion Remaining 2015 Need Re Establic Arealing LaCres	0.3 17.00	Remaining 70% Need as Gatabi. Parking Locins 6.3 Total Workens per Day (Maximum During Construction Schedule) 23.00 Hauman 20% of Chir can per March M Construction Control .	Total Workers per Day (Average Throughout) Assume 2006 of Saff Can park Nearly the C Remaining 20% Need an Establ. Parking Lo Total Workers per Day (Maximum During Co Assume 20% of Saff Can park Nearby the C Remaining 20% Need an Establ. Parking Lo	sa struction Schedule)	0.6				
Remaining 20% Need an Establ Parking Locine Will There is Westend an Nightine Construction Will an Lifely Comply with Name Colonese an Will We Request Yanama? No control system work is planned for weekends. There may be rightime work work dictated by particular media Joineg the align community and busines inspects. For examples in scene locations rightime work work address in signal control businesses.	11.9 sment to address Ve expect Contractors will	Annableg 20% level as fabal. Parking Locks EA Will There is the Network the Registries Constructed? Will we lakely Constyl with Noise Orksans on Will We Request Variance? The construction way is allowed for exercises. The may be registries work doctately a particular meth along the alignment to addre community, and basives inspect. For example, in some loss tables rightfree work work Haw Iss Impact to balances. We repect Construction way Proceeding regest and receives and each work boyont common base of them benum.		ion? Will we Likely Comply with Naise Ordinance or Will We Req	8.4 and Variance? ing the alignment to address uninesses. We expect Contractors will	Will There be Weekend or Nightline Construction? Will we Likely Comply with Nuke Ordeance or Will We Request Vo Score critical cossings may require weekend or rightline work by permit. Where walvers are feasible, Salar	iance? day day work may be needed.	Will There be Wirekend or Nighzines Construction? Will we Likely Comply with Holes Ordinance or Will Some critical crossings may require weekend or rightsime work by permit. Where walvers a	I We Request Variance? re feasible, Saturday day work may be needed.
periodically request variances to extend work beyond normal noise ordinance hours.	. , see all the set of the se					Fostingles Guild Las and Green Constants		facebardina Station Any Pface 1	
Construction Staging Area and Storage Location(s) We currently anticipate two staging torage locations per construct packages. We currently anticipate it contract packages will be a total of Licatory and storage areas. Typically a staging/storage area will be on average 4 acres and is assumed to the size.	s for the pipeline so there to be within 5 miles from	Construction Studies Area and Storage Location(c) We correctly anticipate two studies (and process to an extension per contract packages. We currently anticipate R contract packages for the pipelin Here will be to attack of the stage and storage areas. Typically a studies (storage areas will be on sevenge 4 acres and a assumed to be will make from the star.	coextruction Staging Area and Storage Loc so We currently anticipate two staging/storage will be a total of 16 staging and storage area the size.	Son(d) curitors per contract package. We currently anticipate & contra Typically a staging/storage area will be on average 4 acres and	ct packages for the pipeline so there is assumed to be within 5 miles from	Construction Stagling Area and Starage Lacation(4) Construction staging located at access that the (such end of crossing) Lanching taplique and life ASDA of et al de menuling stagling 1,300 se, ft Additional material and equipment storage available at 4 acces pipeline stagling area.		Construction Staging Area and Storage Location(4) Construction staging located at each black tables place find of or cossingi. Launching taging area will be § 2004 frank the receiving staging 1,100 ro, ft Additional material and equipment storage available at 4 acre pipeline staging area.	
Locations/Procedures for Starley/Transporting Specia Due to the Imited work area at each construction site we anticipate that stockpling of solin at the site will not be possible	ie. All excavated soil will	Localises(Procedures for Stanley/Transporting Spain Due to the limited work ones at each construction take we associate that apopping of soft at the elevel of the possible. At executed	Locations/Procedures for Storing/Transpo soil Due to the limited work area at each constru-	ng Spoils tion the wanticipate that stockpiling of soils at the site will no simulateness or or	ot be possible. All excavated soll will	Locations(Procedures for Storing/Tocreporting Spoils Excented spoils will be temporarily stockpiled at the launch shaft sites or laaded directly into dump trucks and hauke	d offske daily for dispressi	Locations/Procedures for Storing/Transporting Spols Executed spoils will be temporarily tocicipiled at the lunch shaft sites or loaded directly into dump	s trucks and hauled offlybe daily for viewnal
Due to the binding devices as a sheak construction do no weichparts that introducing of value if the dar wint to possible like the basicel drives in a stockyle if the transplayting any ans. The angle protocol of the excessive like weighted near and the meaning call will be haved and call the the constructions are to be used to refit the piper transm. We externate that the construction of the piper transmission of the stock of the stock of the stock of the stock of the meaning call weight the stock of the stock of the stock of the stock of the stock of the stock of the stock of the stock of the stock of the stock of the stock of the stock of the stock of the st	mauled to disposal ste(s) DS of the total excavated distance of SD miles. It is it a hazardous waste	The table the intermediate of the table to the table of tab	likely be hauled offsite to a stockpile at the i and the remaining soil will be hauled back to way material will be spoils or deemed unuable i also estimated that 30% of the total spoils () landfil at an estimate row away deemed	reg Spain. Sign Data was an excipate that stockpling of soft at the sile will re aging/stockpar area. The gold portion of the excuste will be up to construction with the bus und to ref! the pipe trench. We estimate the suffer soft the bus and the ref the pipe trench. We estimate the of the 400% will be deemed hazandous and require having an omiles.	parated and hauled to disposal site(s) mate that 40% of the total excavated ge one way distance of 50 miles. It is id disposal at a hazardous waste	, menery memory we want was a set of added directly into durp tracks and basis			and a series of weap rol disposal.
			et en essentite one way distance of 1						
Number of Daily Den Wayshad Tools Yops Den to Material Transportation (e.g. off Haw/(doperat, material), type of Tools <u>Planither Construction</u> Volume of Escavate (C7) per PL of Trench (LH' W x 21° D) (hockades paving debris)	378.0 14.00	Nonlear of Daily Dae Way Next You's Trady that is Material Transportation (e.g. of Nava(Naporal, national), Type of Youks <u>Bisedine Construction</u> Yolumes of Licitation (ST) pair R1 from (LEF W x 21'C) (includes gaving debtin) 27E.0 Valumes of Licitation (ST) pair R2 Trench (LEF W x 21'C) (includes gaving debtin) 14.00	Pipeline Construction Volume of Excervate (CF) per Pt of Trench (1)	te Material Transportation (s.g. off-haul/Misponal, material); Typ W x 21' D) (includes pasing debris)	e of Trucks 278.0 14.00	Number of Daily One-Way Kaul Truck Trips Due to Maserial Transportation (s.g. off-haul/disposal, material); Type of Tru Length (ft)	cka 5,975	Number of Daily One-Way Hauf Truck Trips Due to Material Transportation (e.g. off-hauf/disposal, mate Length (ht) Evenuetion Discontext (ht)	erial); Type of Trucks 223
Volume of Sazavate (XY) per R of Tennoh (MY W x 21'0) (includes paving debis) Volume Sazavate (XY) per FT including Sweet of 15% Capacity per University Tackit (pr) Number of Isual Tackit per Y of Tennoh. Estimated Length Of Tennoh per Que Ver Caw (P)	16.10	Values of Excavate (C) per to 17 mech (JE W > 21 C) (Include paving debrin) 14.00 Values Constant (C) per to 17 including Swell of 15% 16.10 Dapacity per Comp Timb (C) 80.0 Rumber of Inial Toxics per 17 effectives 16.11 Constant Length or Texch, per 10 per Const (C) 80.0 Rumber of Inial Toxics per 17 effectives 16.12 Constantie ellingth of Texch, per 10 per Const (C) 80.0	Volume of Excavate (CY) per Ft of Trench (1) Volume Excavate (CY) per FT including Swell Capacity per Dump Truck (CY) Number of Haul Trucks per FT of Trench Estimated Length of Trench per Dav Per Cree	r 15%	14.00 16.10 10.0 1.61 80.0	Excausion Diameter (H) Transi Volume (locue) (locue)(h) Staft Volume (locue) (locue)(h) Total Volume of Shafts and Turnel (locue)(h) Total Volume of Shafts and Turnel (locue)(h)	11 24,185 6,298 30,583	Excursion Diameter (%) Tumor Violume (cour) (cour) Shaft Volume (cour)(d) Totali Volume of Shafts and Tumel (cour)(d) Totali Volume of Tunut Ting for Goli Removal	11 943 1,128 2,771 277 9
Lastmissiona Langino on Interno per Lany Ver China (UT) Number of Hous (Truckis per China year China) Production Total One-Waay Haua Tripis from Sile to Stagling/Skonage and return Estimated Pipel Redding Soli Import to Sile (C) From Skonage Fer Foot of Pipeline (5.21 Kin JB Weinissi, US-21 Area) Sc2(3))	10.0 1.61 25.0 40.3 80.5	Number of Haul Trucks per Crew per Daily Production 128.8 Tobal One-Way Isau Trips than Site to Staging/Storage and return 257.6 Contracted Trips Index to City Creation Streep to Staging Storage Streep Str	Listinated Leight of Trench per Day Ver Crei Number of Haul Trucks per Crew per Daily P Total One-Way Haul Trips from Sile to Stag Estimated Pipe Bedding Sol Import to Sile ((5.25'H x 18' W minus (0.5*3.14*9.25*2)(4)	duction g/Storage and return	10.0 128.8 257.6 54.42	I Each Allumber of Truck (Tright Fraid Marthout) Tatela Maumber of Truck Tright for Figure and Casing Total Maumber of Truck Tright for Shaft Construction Distanted Parvement (Jup 11) Hanging Registrometic Import (Jaff 15tck) (cu-ft)	6,288 20,583 3,058 478 5,090 4,985 7,483 274 27	Total Number of Hulk Injug for Sol Metrolai Total Number of Tuuk Thip for Pailing and Gasing Total Number of Tuuk Thip for Pailing and Gasing Total Number of Tuuk Thip for Shaft Construction Disturbed Pawmeet (scht) Pawing Replacement Import (11 thick) (scht)	9 1,440 1,410 2,115
(p. 2) We at the Window (SS-24, 24, 24, 24, 24, 24, 24, 24, 24, 24,	60.92 2.26 2.59 93.0 0.26	Constructive from Mondage Anti-Appendix Data (Carl Franchiscopper Production Programs) 60.121 Carl Productive Structure	(5.25 H x DF W minus (0.5* 0.0* 0.0* 0.0* 0.0* Est. Pipe Bedding Soll Import to Ste (CY) Per Pipe Bedding Soll Import (CY) per FT includin Capacity per Dump Truck (CY) Number of Hau Trucks per FT of Trench	t of Pipeline Swell of 15%	2.02 2.32 10.0 0.23	vaning kepsicinentic import (ji in visci) (co-rd) kening Registicinenti (import (ji in visci) (co-rd) Total Number of Truck Trips for Replacing Paving Total Truck Trips During Construction		Paving Replacement Import (at: Thick) (so-th) Paving Replacement Import (at: Thick) (so-sh) Total Number of Truck Trips for Replacing Paving Total Truck Trips During Construction	78 8
Number 24 Haui Hinca ger 4 of Hendon Extension Company of Tencho per Colew (H) Number of Ripe Redding Import Trucks per Day Teal Come-Way Haui Trigo of Ripe Redding Import Sile Nach Number of Haui Trigo of Ripe Redding to Stoarge Sile from Supplier	25 6.5 13.0 13.0 54.8	Anather of multi Ancienzy For Form (Chr. (11)) B0 Standset eining of Tunko For Var (For (11)) B0 Standset eining of Tunko For Var (For (11)) B0 Tunko Form Var (Var (11)) B0 Anather Var (11) B0 Atta Market For (11) B1 Atta Market For (11) B1 Atta Market For (11) B1 Market For (11) B1 Market For (11) B1	Number of Head Track per 51 of Treech Estimated Length of Treech per Day Per Cree Number of Pipe Bedding Import Tracks per D Total One-Way Head Trips of Pipe Bedding I Also Number of Haul Trips of Pipe Bedding	y sport to Site	0.24 80 18.5 37.1 27.1	Total Huck Tips During College Antereden Number of Tuck Trip per day on Average "Assumes a 1.15 building factor 10 C/ Iosh 10.2 C Amp Tucks	8,604 28.68	Total Index migo Suring Control Control Number of Truck Tripper day on Average *Assumes a 1.15 building factor 10 CF loads in 22 CF dump trucks	1,724 5.78
Number of One-Wing My Disky Topis Hanging Kazavated Selfson Storage back to the Site (and return) (62.11% of Dazavate Trips from Site to Storage) No. of One-Way Spole Daily Trips from Storage Site to Landfill (50 miler) and back (12.0% *50% Calcurvite Trips from Site to Storage)	23.1	Number of One-Way Daily Trips Hauling Exavated Soil from Storage back to the Site (and return) 175.4 (SELS) of Exavate Trips from Site to Storage) No. of Dae-Way Spoils Daily Trips from Storage Site to LandBill (50 miles) and back 24.0	Number of One-Way Daily Trips Hauling Ex (68.1% of Excavate Trips from Site to Storag No. of One-Way Spolis Daily Trips from Sto	vated Sail from Storage back to the Site (and return) we Site to Landfill (50 miles) and back	175.4 74.0	ar un norman et al un sonny solution		AN CALMAN IN LA CITABILITY UNIX	
No. of One-Way Spok Dally Trips from Storage Site to Hax. Waste Land Hill (200 miles) and back (21.09) - 2005 of Clauseste Frige from Storage for Storage (20 miles ex. way) No. of One-Way Dally Hauli Trips of Pipe From Supplement Storage (20 miles ex. way) (Autumes 2017 of 17 GA Appenting) No. of One-Way Dally Hauli Trips of Pipe From Storage to Site (5 miles ex. way)	2.6 1.3	(1.19/10% of License Topic tends for Science) No. of Ose-Nay Spok Daily Topic from Science File to Hac. Wante LeadTII (200 miles) and back L2 License Topic decrements Topic form State to Science) No. of Ose-Nay Subject License Topic for Science Science No. of Ose-Nay Subject Topic Topic for Science License Topic of Visio (Appi per 17%)	(31.9%*10% of Excavate Trips from Ste to S No. of One-Way Daily Haul Trips of Pipe Fro (Assume 2015 of \$7.0% pipe per trip)	supplier to Storage (50 miles ea. way)	8.2				
(Assumes 20 ft of 9° DIA pipe per trip) No. of One way Trips to Site importing Paving Materials (32 miles oa way) (Assumes 3° Dirickabove 22' wide a trench pisa 40' full overlay for half the full road wide)	13 10	No. of One-Way Dally Hould Topical Playe Room Stange to Sile (5 miller as way) 4.0 (warmers 20 for VIC Alspipe r train VIC Als	No. of One-Way Daily Haul Trips of Pipe Fin (Assumes 20 ft of 9' D(A pipe per trip) No. of One way Trips to Site Importing Pav	g Materials (50 mãos ea way)	4.0 0.0				
Daily One-Way Haul Trips per Crew During the Pipeline Construction Daily Average One-Way Haul Trips Throughout Construction Schedule	190.4 112.7	Dashy One-Way Houd Trips per Crew During the Pipeline Construction 666.2 Dashy Average One-Way Houd Trips Throughout Construction Schedule 182.8	Daily One-Way Haul Trips per Crew During Daily Average One-Way Haul Trips Through		597.4 212.1				
2) Wheel Daves Taxis for fash Taxward: UK Wheel Packed Taxis for Handra Ree									
Fber Optic Duct Bank		Flow Optic Ouct Bank With 2010 Test Art Trench (2" W x C O) to be Securated (incl. paving detrin) 30.0 Waterer of Exclusively (2) per Ref Trench to be Securated and Research the Trench 4.0	Fiber Optic Duct Bank						
volume of sacavate (C) per H of Trench (2 W x 5 U) to be sacavated (inc. paving debra)	10.0 4.0	Volume of Escavate (CF) per Pt of Trench (2' W x 5' D) to be Escavated (incl. paving debris) 10.0 Volume of Escavate (CF) per Pt of Trench to be Stockpiled and Reused in the Trench 4.0	Fiber Optic Duct Bank Volume of Escavate (CF) per Ft of Trench (2' Volume of Escavate (CF) per Ft of Trench to	if x 5° D) to be Excavated (incl. paving debris) e Stockpiled and Reused in the Trench (x 3° D) to be Removed (incl. pavine debris)	10.0 4.0 6.0				
Volume of Excavate (CF) per Pt of Trench (2' W x 2' D) to be Removed (Incl. paving debrin) Volume of Excavate (CF) per Pt of Trench to be Removed incl. 15% Serell (Incl. paving debrin) Volume of Excavate (CF) per Pt of Trench to De Removed incl. 15% Serell (Incl. paving debrin)		Volume of Excavate (CF) per Ft of Trench (2' W x 3' D) to be Removed (incl. paving debris) 6.0 Volume of Excavate (CF) per Ft of Trench to be Removed Incl. 15% Swell (incl. paving debris) 6.9 Volume of Excavate (CF) per Ft of Trench to be Removed Incl. 15% Swell (incl. paving debris) 6.9	Volume of Excavate (CF) per Pt of Trench (2' Volume of Excavate (CF) per Pt of Trench to	e Removed incl. 15% Swell (incl. paving debris)	63				
Volume of Eucovete (S) per R of Trench (2) W & Z (S) to be Removed (not, Envirop debrin) Volume of Eucovete (S) per R of Trench to be Removed not, USA seel (Enc.) avoing debrin) Volume of Eucovete (S') per R of Trench to be Removed incl. LSN Seel (Enc.) paving debrin Volume of Imported Sei (S) per R of Trench (2) W & S.S.) Volume of Imported Sei (S) per R of Themsh (2) W & S.S.)		Values of Liczuwis (E) per for Thinch the Narrow (E) (Licz javing dehn) 6.0 Values of Liczuwis (E) per for Thinch the Narrow (E) (Lic Schwig dehn) 6.3 Values of Liczuwis (E) per for Thinch the Narrow (E) (Lic Schwig dehn) 0.32 Values of Liczuwis (E) per for Thinch the Narrow (E) (Lic Schwig dehn) 0.32 Values of Linguis (E) (S) per for Thinch the Narrow (E) (Lic Schwig dehn) 0.36 Values of Linguis (E) (S) per for Thinch the Narrow (E) (Lic Schwig dehn) 0.16 Values of Imported Sci (S) per for Thinch (Y V Sci Sci) 0.64 Ligackty per Long Think(SY) 0.0	Volume of Sazavate (Cf) per F of Trench to Volume of Sazavate (Cf) per F of Trench (2' Volume of Sazavate (Cf) per F of Trench to Volume of Sazavate (Cf) per F of Trench to Volume of Imposited Sol (Cf) per FT of Trenc Sapachy per Dang Truck (Cf) Trench Lengthere Dav (FT)	e Removed Incl. 15% Swell (incl. paving debris) e Removed Incl. 15% Swell (incl. paving debris) (27 W x 0.57) (27 W x 0.57)	6.0 6.9 0.26 1.00 0.04 10.0 220				
Volume of Sazavate (ST) per R of Tranch (2) W & Z (ST) to be Removed (nc), applicit default) Volume of Sazavate (ST) per R of Tranch to be Removed incl. (SS: Swell (Inc), applicit default) Volume of Incontrol Gol (ST) per R of Tranch to the Removed incl. (SS: Swell (Inc), paving default) Volume of Imported Gol (ST) per R of Tranch (SW & SG.ST) Volume of Imported Gol (ST) per R of Tranch (SW & SG.ST)		Waters of the sector of the sector of the sector sector sector set of the sector sector sector sector sector sector set of the sector sector sector	Volume of Scauste (C) per Fol Trench (C) Volume of Scauste (C) per Fol Trench (C) Volume of Scauste (C) per Fol Trench (C) Volume of Inscauste (C) per Fol Trench (C) Volume of Inscatof Call (C) per Fol Trench Capacity per Caury Truck (Cr) Trench Lengther Cauy (Tr) One-Way Spoils Issuit Trips from Site to Site One-Way Spoils Issuit Trips from Site to Site	e Removed Incl. 1555 Savel (soc.) paring debrit) e Removed Incl. 1525 Savel (incl. paring debrit) (27 W a 0.57) ge Site and return to Landott EXD milles (100% of Exc. Mart') and return Nates Landott 200 milles (100% of Exc. Mart') & return Storage Site and return	220 9.78 17.6 2.0 1.6				
Subject decades (E) [27] and 1 the (27) and 2 Table tab (Resolutional Scie Langel (A)) (28) and (28)		minute constraints The first of the start (2 are 12 (2 be for the start (1 be start) (2 be start)) 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3 minute of constraints (1 be start) for any off constraints 6.3	Des-Way Spoil Haul Trips from Site to Site One-Way Spoil Haul Trips from Site to Site One-Way Spoil Haul Trips from Site to Hau One-Way Imported Sail Trips from Offsite I One-Way Imported Sail Trips from Offsite One-Way Imported Sail Trips from Songe Langeth of £ ² Concili Installed nor Public Bill	ge Site and return to Landtill S0 miles (80% of Exc. Mat'l) and return Maste Landtill 200 miles (10% of Excav. Mat'l) & return Storage Site and return lies to Site and return uma d-conduct in directment)	220 9.78 17.6 2.0 1.6				
A start of taxan (b) (b) or of tax) (b) = 2.1 (b) tax (b mond b) is a projection (b) a start of taxes (b) (b) = 1.1 (b) = 1.0	6.0 6.9 1.00 0.04 100 100 200 8.89 160 15 15 15 800 63 80 0 30 0 80 0 15 80 0 0 15 80 0 15 80 0 20 0 6 4 1 6 4 8 4 8 4 8 20 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	minute constraints The first of base 12 for 12 (a base bit constraints), and a signal of the signal of	International applications of the second sec	ge Silan adar tehan bi andel Sil O milan (Silo) of Lac, Martij and rekan bisata Landi Silo) anika (Silo) of Lacer, Martij & rekan bisa Sala and otkati bisa Sala and otkatisa (Silo) da Sala Sala adar da Sala ge Sala Si Sila and rekan citasilation	6 35. 6 35. 160 160 100 200 1314 20 1314 20 134 20 14 14 80 80 80 81 83 83 83 83 83 83 83 83 83 83				
A share of second Dipp in a first type 2 and the second Disp and definition of the second Disp and Dis	6.0 6.9 0.26 1.00 0.04 100 200 8.89 160 18 15 15 15 15 15 15 000 5,600 0.3 0.3 0.3	minute constraints 1	Individual services and the program to be to be done with project that Project messages of the with project that Project messages of the project that Project Project that Project Project Project Length of C contact insuble and project Project Project Des with project project Project Project Project Withow of Concernet Coll per effort that Project Project Project Des with Project Project Project Project Project Des with Project Project Project Project Project Des Withow of Concernet Project Project Project Project Des Withow of Concernet Project Project Project Project Des Withow of Concernet Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project Project P	ge Silan adar tehan bi andel Sil O milan (Silo) of Lac, Martij and rekan bisata Landi Silo) anika (Silo) of Lacer, Martij & rekan bisa Sala and otkati bisa Sala and otkatisa (Silo) da Sala Sala adar da Sala ge Sala Si Sila and rekan citasilation	220 9.78 17.4 16 16 16 80 6.1 2.0 2.4 2.6 2 6.3 2.6 2 6.3 2.6 2 6.3 2.6 2 6.3 2.6 2 6.3 2.6 2 6 9				
A share it can be a share of the share of th	6.0 6.9 0.35 1.00 0.04 1.01 2.00 2.00 5.00 5.00 5.00 5.00 5.00 2.0 3.0 3.0 3.0 2.0 5.00 5.00 5.00 5.00 5.00 5.00 5.0	minute of sense 12 are 12 are 12 are 10 are 12 ar	The second se	på få så and nom usettet til svån giver for skunge upper som som konge stå som	220 533 24 24 14 14 14 14 14 14 14 14 14 14 14 14 14	Engan Lucios de Constantes Balo Ta alfande la constante de la sub al la acuada con diguna de la sub-dira de sua engrega de la des	ang (Shara Tanaha Jaka Manda) (Shara Na	Repart Leader to Continue to Kee	
where the second Digs is a the transition of a second Disk second	6.0 6.9 0.35 1.00 0.04 1.01 2.00 2.00 5.00 5.00 5.00 5.00 5.00 2.0 3.0 3.0 3.0 2.0 5.00 5.00 5.00 5.00 5.00 5.00 5.0	minute of second 2 and 2	The second se	pe is an array may net per series array and an array of the series of th	220 533 24 24 14 14 14 14 14 14 14 14 14 14 14 14 14	Regard Statistic for Statistical Bubble The administration of the statistical Bubble Administration of the statistical Statist	ard Hare Standardina Marcinia (Sovanta, 16,33) 29,33 26,33 26,33	It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip	
when the stand (b) grin of the the stand (b) and (b) a	4 0 0 4 0 0 1 20 1 20	minute (Second Second Se	 more integration of the second second	pe i be a demonstration frame a frame, a demonstration de la demon	20 0 20 0 20 0 24 2 24 2 24 2 24 2 25 2 26 26 2 26	It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles. Yokawa of any Material Impointed, hapated, houdy powel from the (departed Conserves, balk, Name, Benef/Metald) Typicine Regionses, takes, taxe Material/houdy Rouel, red Table Yokawa (departed, houdy Rouel, red)	10/16/ 50-0010 90-0010 (Source) 10.041 10.041 20.05 20.05	It is estimated that construction debris will be having and disposed of in a landfill with a one way trig "When of any Marcial hyperbolifypoints, howing to excite a trade (hyperbolic) answer, both, howing the hyperbolic marcine segment. These have Marcial Allows (HG) Total Volume of South and Tournel (10-y16) Parker Replacement Insort (11)" Fried (10-y16)	ury, Meel/Metabl and Clean Construction Materials (Consurts, 2,771 78
A share a start of the start of	60 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	minute of a sector of the sector of th	 The second second	pe i be a doma (may rice, sue y le doma and un i be a doma and un sue y le doma and un sue y le doma and un i be a doma and un sue y le doma and un sue y le doma and un i be a doma and un sue y le doma and un i be a doma and un sue y le doma and un i be a doma and un sue y le doma and un i be a doma and un sue y le doma and un i be a doma and un sue y le doma and un i be a doma and un sue y le doma and un i be a doma and un sue y le doma and un i be a doma and un sue y le doma and un i be a doma and un sue y le doma and un i be a doma and un sue y le doma and un i be a doma and un sue y le doma and un i be a doma and un sue y le doma and un i be a doma and un i	200 00 201 00 20	It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles. Yokawa of any Material Impointed, hapated, houdy powel from the (departed Conserves, balk, Name, Benef/Metald) Typicine Regionses, takes, taxe Material/houdy Rouel, red Table Yokawa (departed, houdy Rouel, red)	arf faar Naderdala Valenda (Sovarda, 2004) 2007 2007 2007	It is estimated that construction debris will be having and disposed of in a landfill with a one way trig "When of any Marcial hyperbolifypoints, howing to excite a trade (hyperbolic) answer, both, howing the hyperbolic marcine segment. These have Marcial Allows (HG) Total Volume of South and Tournel (10-y16) Parker Replacement Insort (11)" Fried (10-y16)	ury, West/Metabl, and Clean Construction Materials (Constructo, 2,771 78
where the section of the section	6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	minute of a set of a fease if a set of a se	 The second second		20 0 20 0	It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles. Yokawa of any Material Impointed, hapated, houdy powel from the (departed Conserves, balk, Name, Benef Metald) Typicine Regionses, takes, taxe Material/houdy Rouel, red Table Yokawa (departed, houdy Rouel, red)	arf fhan Yaolodda Malodd (Swister, 1007 2027 2023 2023	It is estimated that construction debris will be having and disposed of in a landfill with a one way trig "When of any Marcial hyperboll/paperies, howing to executions their (heplash/canves, bash, howing their hyperboll) "When it is a structure of the structure of "Statis Volume of Shofts and Tournel (10-y-10) "Parties Regiment Innoce (11)" (The Volume of the structure of t	ury, Meel/Metabl and Clean Construction Materials (Consurts, 2,771 78
Much of the sector (Sign Park Park Park Park Park Park Park Park	6 0 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		 March Stephen and Yung March Stephen and	pi bi an dirage many pin to to serve and an an and an	20 Photosoft 20 Ph	It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles. Yokawa of any Material Impointed, hapated, houdy powel from the (departed Conserves, balk, Name, Benef Metald) Typicine Regionses, takes, taxe Material/houdy Rouel, red Table Yokawa (departed, houdy Rouel, red)	artine hadrada Wanak Disenti, 2003 201 201 202 202 203	It is estimated that construction debris will be having and disposed of in a landfill with a one way trig "When of any Marcial hyperboll/paperies, howing to executions their (heplash/canves, bash, howing their hyperboll) "When it is a structure of the structure of "Statis Volume of Shofts and Tournel (10-y-10) "Parties Regiment Innoce (11)" (The Volume of the structure of t	ury, Meel/Metabl and Clean Construction Materials (Consurts, 2,771 78
 March and School Program of Provide Program 20 (1988) and Provide Provide Provide Program 20 (1988) and Provide Provi	6 0 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	minute of part of which is the start of the sta	 Bernstein auf der Sterner der	pi bi se and minimum and minim	20 Photometry 20	It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles. Yokawa of any Material Impointed, hapated, houdy powel from the (departed Conserves, balk, Name, Benef Metald) Typicine Regionses, takes, taxe Material/houdy Rouel, red Table Yokawa (departed, houdy Rouel, red)	ard from Standard Marcard Standard 2023 2023 2023 2023 2023	It is estimated that construction debris will be having and disposed of in a landfill with a one way trig "When of any Marcial hyperboll/paperies, howing to executions their (heplash/canves, bash, howing their hyperboll) "When it is a structure of the structure of "Statis Volume of Shofts and Tournel (10-y-10) "Parties Regiment Innoce (11)" (The Volume of the structure of t	ury, Meel/Metabl and Clean Construction Materials (Consurts, 2,771 78
 March and Start of the Start Part of the Start Part	6 0 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	minute of part of which if or the share of a start of start of a	 The second second		20 0 20 0	It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles. Yokawa of any Material Impointed, hapated, houdy powel from the (departed Conserves, balk, Name, Benef Metald) Typicine Regionses, takes, taxe Material/houdy Rouel, red Table Yokawa (departed, houdy Rouel, red)	ar fina standarda gurana 12.53 12.53 2.53 2.53 2.53 1.53 1.53 1.53 1.53 1.53 1.53 1.53 1	It is estimated that construction debris will be having and disposed of in a landfill with a one way trig "When of any Marcial hyperboll/paperies, howing to executions their (heplash/canves, bash, howing their hyperboll) "When it is a structure of the structure of "Statis Volume of Shofts and Tournel (10-y-10) "Parties Regiment Innoce (11)" (The Volume of the structure of t	ury, Meel/Metabl and Clean Construction Materials (Consurts, 2,771 78
 March and Carly and P a		 minute of sense of period frame bit for set of the set of s	 men men of the second se		20 0 20 0	It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles. Yokawa of any Material Impointed, hapated, houdy powel from the (departed Conserves, balk, Name, Benef Metald) Typicine Regionses, takes, taxe Material/houdy Rouel, red Table Yokawa (departed, houdy Rouel, red)	ang fanga basak-sa Manala (Parang), 2007 2007 2007 2007 2007	It is estimated that construction debris will be having and disposed of in a landfill with a one way trig "When of any Marcial hyperboll/paperies, howing to executions their (heplash/canves, bash, howing their hyperboll) "When it is a structure of the structure of "Statis Volume of Shofts and Tournel (10-y-10) "Parties Regiment Innoce (11)" (The Volume of the structure of t	ury, West/Metabl, and Clean Construction Materials (Constructo, 2,771 78
 March and School Park Park Park Park Park Park Park Park		 minute of sense of periods from the the theory of sense of sen	 Internet and the second second		20 0 20 0 20 0 20 0 20 0 20 0 20 0 20 0	It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles. Yokawa of any Material Impointed, hapated, houdy powel from the (departed Conserves, balk, Name, Benef Metald) Typicine Regionses, takes, taxe Material/houdy Rouel, red Table Yokawa (departed, houdy Rouel, red)	ar from transmitten Standa Standa 201 202 203 203 203	It is estimated that construction debris will be having and disposed of in a landfill with a one way trig "When of any Marcial hyperboll/paperies, howing to executions their (heplash/canves, bash, howing their hyperboll) "When it is a structure of the structure of "Statis Volume of Shofts and Tournel (10-y-10) "Parties Regiment Innoce (11)" (The Volume of the structure of t	ury, West/Metabl, and Clean Construction Materials (Constructo, 2,771 78
 March and School Program of Provide Program 2011 The Antoneous Program 2014 Control Program 2014 Cont		 minute of sense of period frame bit for set of the set of s	 In the second sec		20 0 20 0	Ita kining ang ang ang ang ang ang ang ang ang a	ed fan Guidelân Warde Streett, 2013 2017 2017 2017 2017 2017 2017	1 a sense for consistent addres and the sense of the s	ury, Meel/Metabl and Clean Construction Materials (Consurts, 2,771 78
 March and Carl Park of Pa		 and and a start of a bank of a ba	 Internet and the second second		20 0 20 0 20 0 20 0 20 0 20 0 20 0 20 0	It is estimated that construction debris will be hauled and disposed of in a landfill with a one way trip of 50 miles. Yokawa of any Material Impointed, hapated, houdy powel from the (departed Conserves, balk, Name, Benef Metald) Typicine Regionses, takes, taxe Material/houdy Rouel, red Table Yokawa (departed, houdy Rouel, red)	ar flag Statement (Source) 8,543 24,07 26,03 25,033	It is estimated that construction debris will be having and disposed of in a landfill with a one way trig "When of any Marcial hyperboll/paperies, howing to executions their (heplash/canves, bash, howing their hyperboll) "When it is a structure of the structure of "Statis Volume of Shofts and Tournel (10-y-10) "Parties Regiment Innoce (11)" (The Volume of the structure of t	ury, Meel/Metabl and Clean Construction Materials (Consurts, 2,771 78
 Marchael Construction (Construction) and the Construction of the Construc	4 0 4 4 0 4 0	$ \begin{array}{llllllllllllllllllllllllllllllllllll$	 In the second sec		20 0 20 0 20 0 20 0 20 0 20 0 20 0 20 0	It is in the intermedian of the land of applied of a solid of the intermedianeous of the in	78 8,03	I se contracte de la construcción de la contracte	n, solvati e fan fan de la solva de la 37 37 37 37 37 37 37 37 37 37 37 37 37 3
 March and School Program of Provide Program 2011 The Anton Program 2014 Control Program 2014 Control	4 0 4 4 0 4 0	minute of part of p	 In the second sec		20 0 20 0 20 0 20 0 20 0 20 0 20 0 20 0	Its enhance of a constraint of a first and and grant of a set off a time strength of the set. The match of the constraints of the set of the s	74 20 20 20 20 20 20 20 20 20 20 20 20 20	1 s constant de la	2014 Sector 2014 - 2014 Sector
 Marchael Construction (Construction) and the Construction of the Construc	4 0 4 4 0 4 0	minute of severe of the sev	 Marcel Andream State St		20 0 20 0 20 0 20 0 20 0 20 0 20 0 20 0	is a united one constraints of the land and paper of a set with the second paper of th	74 20 20 20 20 20 20 20 20 20 20 20 20 20	I i a constant de la constant de la facta de la departed d'a la constant de la	2014 Sector 2014 - 2014 Sector
 March and Carl Park of Park o	4 0 4 4 0 4 0	mature of period of which is the state of	me men en e		20 0 20 0 20 0 20 0 20 0 20 0 20 0 20 0	It is in information of the sub-and and grant of a set with the sub-set of the UNIX The Transmission of the Unix	74 20 20 20 20 20 20 20 20 20 20 20 20 20	Is a sense for consistent and the set for a large days of a large any set of the set	2014 Sector 2014 - 2014 Sector
 March and Carl Park of Pa	4 0 0 4 0 4	minute of part of parts of	 Internet and the second second		20 0 20 0 20 0 20 0 20 0 20 0 20 0 20 0	In a information of a manufacture of a property of a sub of the information of the inform	74 20 20 20 20 20 20 20 20 20 20 20 20 20	I is constant after a subject after a full part of a full part of a subject of	ny, sayahati a rine-transmo Kasa Jawa. 137 19 20 20 20 20 20 20 20 20 20 20
 Muchan Google and Park and	4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0	minute of part of parts of	 In the second sec		20 0 20 0 20 0 20 0 20 0 20 0 20 0 20 0	It is in the intermediate of the land and and and and and and and and and	74 20 20 20 20 20 20 20 20 20 20 20 20 20	Is a smaller data consistent of the last of and particular of a last of	ny, sayahati a rine-transmo Kasa Jawa. 137 19 20 20 20 20 20 20 20 20 20 20
 March and Carl Process of Proce	4 0 0 4 0 4	minute of part of parts of	 Internet and the second second		200 200 200 200 200 200 200 200 200 200	In a information of a manufacture of a property of a sub of the information of the inform	74 20 20 20 20 20 20 20 20 20 20 20 20 20	I is constant after a subject after a full part of a full part of a subject of	ny, sayahati a rine-transmo Kasa Jawa. 137 19 20 20 20 20 20 20 20 20 20 20
 March and School Program of Provide Program 2011 the Antomatic Pair angle Angle	4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0	minute of second P of a boot of the P of the	 Internet and the second second	pi bi pi and many many functions and many many many many many many many many	29 29 29 29 29 29 29 24 24 25 24 25 26 27 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 <td>It is in the intervention of the land of a grant and angue of a set with the intervention of the land of the land</td> <td>74 20 20 20 20 20 20 20 20 20 20 20 20 20</td> <td>subscription of the construction bits with the description of the local of a local of the local of the</td> <td>ny, sayahati a rine-transmo Kasa Jawa. 137 19 20 20 20 20 20 20 20 20 20 20</td>	It is in the intervention of the land of a grant and angue of a set with the intervention of the land	74 20 20 20 20 20 20 20 20 20 20 20 20 20	subscription of the construction bits with the description of the local of a local of the	ny, sayahati a rine-transmo Kasa Jawa. 137 19 20 20 20 20 20 20 20 20 20 20
 March and School Program of Provide Program 2019 is a financing building address of the source of the		minute of second set of second second set of second second second set of second sec	 men en programme a service de la construcción de la const	pi p	29 29 29 29 29 24 24 24 25 24 24 25 26 27 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 <td>ita unita di un sun un di un di un di a di a di a di a di a di un son qui di di la di Man di a di un sun di un di un di a di</td> <td>74 20 20 20 20 20 20 20 20 20 20 20 20 20</td> <td> I i constanti andiri u constanti andiri a di se di populari di se di angi anti a se angi a menti dei angi angi angi angi angi angi angi ang</td> <td>ny, sayahati ar familian kan ka ka ka kan 37 37 37 37 37 37 37 37 37 37</td>	ita unita di un sun un di un di un di a di a di a di a di a di un son qui di di la di Man di a di un sun di un di un di a di	74 20 20 20 20 20 20 20 20 20 20 20 20 20	 I i constanti andiri u constanti andiri a di se di populari di se di angi anti a se angi a menti dei angi angi angi angi angi angi angi ang	ny, sayahati ar familian kan ka ka ka kan 37 37 37 37 37 37 37 37 37 37
 March and Carl Process of Proce		mining of products of the back for a start of the b	 In the second sec		Biology and a set of a set	is a unique of a u	74 20 20 20 20 20 20 20 20 20 20 20 20 20	 I van met kan som opplet op kan besker in en som opplet opplet op kan besker in	ny, sayahati ar familian kan ka ka ka kan 37 37 37 37 37 37 37 37 37 37
<pre>where the second s</pre>			 In the second sec		Biology and a set of a set	ita unita di un sun un di un di un di a di a di a di a di a di un son qui di di la di Man di a di un sun di un di un di a di	74 20 20 20 20 20 20 20 20 20 20 20 20 20	 I i constanti andiri u constanti andiri a di se di populari di se di angi anti a se angi a menti dei angi angi angi angi angi angi angi ang	ny, sayahati ar familian kan ka ka ka kan 37 37 37 37 37 37 37 37 37 37
 And and example of a firmed or a firmed by a range detection of a firmed by a range detection of a firmed by a fi			 International Control of Contro		Biology and a set of a set	ita unita di uni uni uni uni uni uni uni uni ada di aginar di au uni di uni uni uni uni uni uni uni uni uni un	74 20 20 20 20 20 20 20 20 20 20 20 20 20		ny, sayahati ar familian kan ka ka ka kan 37 37 37 37 37 37 37 37 37 37
 March and School Program of Provide Program 2018 in Manual Program 2014 (Context Program 2014) March and Context Program 2014 (Context Program 2014) March and Anno Program 2014 (Context Program 2014) March and Anno 2014 (Context Program 2014)<td></td><td></td><td>min en la construction de la</td><td></td><td>Biology and a set of a set</td><td>is a united on a source of a s</td><td>74 20 20 20 20 20 20 20 20 20 20 20 20 20</td><td></td><td>ny, navihati ar fan de san basis fanos 177 187 277 277 277 277 277 277 277 2</td>			min en la construction de la		Biology and a set of a set	is a united on a source of a s	74 20 20 20 20 20 20 20 20 20 20 20 20 20		ny, navihati ar fan de san basis fanos 177 187 277 277 277 277 277 277 277 2
<pre>when the section of the section</pre>		mining a specific product of a specific p	min en la construction de la		23 24 24 24 24 24 24 24 24 24 24 24 24 25 26 27 26 27 26 27 26 27 26 27 26 27 28 29 20 20 20 20 20 20 21 22 23 24 25 26 27 28 29 20 20 20 21 22 23 24 25 26 27 28 29 29 20 20 20 21 22 23 24 25 26 27 <td>its an instantion of a scale of a</td> <td>74 20 20 20 20 20 20 20 20 20 20 20 20 20</td> <td></td> <td>ny, navihati ar fan de san basis fanos 177 187 277 277 277 277 277 277 277 2</td>	its an instantion of a scale of a	74 20 20 20 20 20 20 20 20 20 20 20 20 20		ny, navihati ar fan de san basis fanos 177 187 277 277 277 277 277 277 277 2
<pre>when the second program of the second program second program second second second program second second</pre>			 International and a second seco		Alight of a set of	its an instantion of a scale of a	74 20 20 20 20 20 20 20 20 20 20 20 20 20		ny, navihati ar fan de san basis fanos 177 187 277 277 277 277 277 277 277 2
<pre>when the second program of the second program second program second second second program second second</pre>			 Bernstein and State Sta	sh Ba and an		its an instantion of a scale of a	74 20 20 20 20 20 20 20 20 20 20 20 20 20		ny, kaykang artik dan karang tang tang tang tang tang tang tang t
<pre>when the section of the section</pre>			 Bernstein auf der Schler sich eine Schler sich ein Schler sich eine Schler sich eine Schler sich eine Schler sic	sh Ba and an	23 24 24 24 24 24 24 24 24 24 24 24 24 24 25 26 27 26 27 26 27 26 27 26 27 28 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 21 22 23 24 25 26 27 28 29 20 20 21 22 23 24 25 26 27 <td>its an instantion of a scale of a</td> <td>74 20 20 20 20 20 20 20 20 20 20 20 20 20</td> <td></td> <td>ny, sayahati ar familian kan ka ka ka kan 37 37 37 37 37 37 37 37 37 37</td>	its an instantion of a scale of a	74 20 20 20 20 20 20 20 20 20 20 20 20 20		ny, sayahati ar familian kan ka ka ka kan 37 37 37 37 37 37 37 37 37 37
<pre>when the section of the section</pre>			 Bernstein and Stephen and Ste	sh Ba and an		its an instantion of a scale of a	74 20 20 20 20 20 20 20 20 20 20 20 20 20		ny, sayahati ar familian kan ka ka ka kan 37 37 37 37 37 37 37 37 37 37
<pre>stand and a set of the set o</pre>			 Bernstein and Stephen and Ste	sh Ba and an		its an instantion of a scale of a	74 20 20 20 20 20 20 20 20 20 20 20 20 20		ny, sayahati ar familian kan ka ka ka kan 37 37 37 37 37 37 37 37 37 37
			 Bernstein and Stephen and Ste	sh Ba and an		its an instantion of a scale of a	74 20 20 20 20 20 20 20 20 20 20 20 20 20		ny, sayahati ar familian kan ka ka ka kan 37 37 37 37 37 37 37 37 37 37
			 Bernstein and Stephen and Ste	sh Ba and an		its an instantion of a scale of a	74 20 20 20 20 20 20 20 20 20 20 20 20 20		ny, sayahati ar familian kan ka ka ka kan 37 37 37 37 37 37 37 37 37 37



APPENDIX C – PIPELINE CONSTRUCTION VMT FOR NOISE CALCULATION

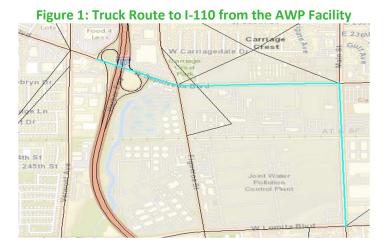
ADTs for Noise Analysis on Backbone Conveyance System Construction

A calculation of Average Daily Traffic (ADT) was performed to generate input for noise calculations. This calculates the ADT adjacent to the pipeline and its associated construction traffic and the land uses that might be affected by noise due to the backbone conveyance system construction.

Assumptions on adjacent land uses were based on a review of aerial imagery. There is a separate "freeway" land use category for long haul trips once they are assumed to have reached the freeway and no longer travel on local streets and become immaterial to the noise calculations. The calculations are provided in this Appendix.

ADTs for Noise Analysis on AWP Facility Construction

Similar to pipeline construction, a separate calculation was performed to generate an estimate of ADT on streets used by construction traffic for input to the noise analysis. For noise analysis purposes, the assumed path from the AWP Facility to the I-110 freeway for the truck trips heading to and from the landfill is shown in Figure 1.



The construction ADT by roadway classification for the AWP Facility is shown in **Table 1**. This is used as an input to the noise analysis. Based on **Table 1**, there would be a 4 percent increase in truck traffic on arterials within a 5-mile buffer of the AWP Facility and the same level of truck traffic on local and collector streets. There would be a 3 percent increase in total ADT on arterials and around 1 percent increase in total ADT on local and collector streets.

Daily Al	DT per Link by Roadwa	y Classification W	ithin 5 miles	buffer of AWP	Facility
Scenario	Vehicle Type	Roadway Class	Phase 1	Phase 2	Total
		Arterial	1,329	1,329	2,658
	Truck ADT	Collector	424	424	849
No		Local	177	177	354
Project (NP)		Arterial	19,877	19,877	39,754
()	All ADT	Collector	1,741	1,741	3,481
		Local	2,279	2,279	4,557
		Arterial	78	33	111
Project Trips	Truck ADT	Collector	2	0	2
11103		Local	1	0	1

Table 1: AWP Facility ADT by Roadway Classification

		Arterial	681	370	1,051
	All ADT	Collector	14	7	21
		Local	20	11	31
		Arterial	1,407	1,362	2,769
	TruckADT	Collector	426	425	851
NP +		Local	178	177	355
Project Trips		Arterial	20,558	20,247	40,805
	All ADT	Collector	1,755	1,748	3,503
		Local	2,299	2,290	4,589
0/		Arterial	6%	2%	4%
% Change	TruckADT	Collector	0%	0%	0%
(NP +		Local	0%	0%	0%
Project		Arterial	3%	2%	3%
Trips)/	All ADT	Collector	1%	0%	1%
(NP)		Local	1%	0%	1%

					Reach 1							
				Di	aily VMT by Land Use							
	Within 5 miles of site	Outside 5 miles of site	Total				0% 1	0% 20% 3	0% 40%	50% 60%	70% 80%	90% 100%
Light Vehicle	717	1998	2714									
Heavy Vehicle	3181	4178	7359									
Total	3898	6176	10073	1			Light Vehicle 18	% 2 <mark>9</mark> %6%D%		74%		
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total						
Light Vehicle	495	53	157	12	1998	2714	Heavy Vehicle	30%	<mark>3%</mark> 9% 1 <mark>%</mark>		57%	
Heavy Vehicle	2197	236	696	53	4178	7359						
Total	2692	289	853	64	6176	10073						
							Total	27% 39	8%1 <mark>%</mark>		1%	
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total	1000	2170 37	0/01/0		4.10	
Light Vehicle	18%	2%	6%	0%	74%	100%						
Heavy Vehicle	30%	3%	9%	1%	57%	100%	Industrial	ommorcial =	Recidential	Openspace/	conchlore	Fromuou
Total	27%	3%	8%	1%	61%	100%	industriai C	ommercial II	nesidential	 openspace/ 	renuness	riceway

Within 5 miles of site include everything for the first 5 miles Outside 5 miles of site only include everything beyond the first 5 miles

					Reach 2												
				D	aily VMT by Land Use												
	Within 5 miles of site	Outside 5 miles of site	Total]					0%	10% 20	0% 30%	40%	50%	60% 7	0% 80	% 90%	100%
Light Vehicle	655	1808	2463]													
Heavy Vehicle	2805	3202	6008							_	_					_	_
Total	3460	5011	8471	1				Light Vehicle	03456	21%	296			73%			
				-													
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total											
Light Vehicle	0	103	507	45	1808	2463	н	eavy Vehicle	0%7%		36%	3	6		53%		
Heavy Vehicle	0	441	2173	191	3202	6008										_	
Total	0	545	2680	236	5011	8471											
								Total	26360		32%	3%			59%		
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total		i ocui			210	-				_	_
Light Vehicle	0%	4%	21%	2%	73%	100%											
Heavy Vehicle	0%	7%	36%	3%	53%	100%		lodustr	rial 🗖	Commer	cial = R	esidential		insnare/T	ranchlace	Free	away
Total	0%	6%	32%	3%	59%	100%		Industr		continer		caractitidi	ope	map alle/1	10110110055	_///	

					Reach 3												
				D	aily VMT by Land Use												
	Within 5 miles of site	Outside 5 miles of site	Total]				a	6 10	% 20%	30%	40%	50% 60	% 70%	80%	90% 1	100%
Light Vehicle	273	719	992]													
Heavy Vehicle	1064	1859	2923]					_	_	_				_		
Total	1337	2578	3916	1			Ligh	nt Vehicle	6%2 <u>%</u>	20%	0%			72%			4
				-													
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total											
Light Vehicle	60	15	198	0	719	992	Heav	y Vehicle	8% 29	5 2	1%	0%		64%			
Heavy Vehicle	235	58	771	0	1859	2923											Т.
Total	295	73	968	0	2578	3916											
								Total	00/ 10	25	6 0	~		66%			
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total		Total	0/0 4/0	25	0	•		00/6			٩.
Light Vehicle	6%	2%	20%	0%	72%	100%											
Heavy Vehicle	8%	2%	26%	0%	64%	100%		Industri		mmorei	BRO	idential	000000		shlore	Eroowa	
Total	8%	2%	25%	0%	66%	100%		Industri		Jiiiiieicia	i ili ive:	ruentiai	Opensp	ace/irei	iciliess i	riceway	/

					Reach 4		
				D	aily VMT by Land Use		
	Within 5 miles of site	Outside 5 miles of site	Total				0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Light Vehicle	164	409	573				
Heavy Vehicle	467	658	1125				
Total	631	1067	1698				Light Vehicle 02% 27% 71%
				-			
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total	
Light Vehicle	0	0	8	156	409	573	Heavy Vehicle 0% 39% 59%
Heavy Vehicle	0	0	23	443	658	1125	
Total	0	0	32	599	1067	1698	
							Total 0% 35% 63%
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total	10(3) (0%) 3375 6375
Light Vehicle	0%	0%	1%	27%	71%	100%	
Heavy Vehicle	0%	0%	2%	39%	59%	100%	Industrial Commercial Residential Openspace/Trenchless Freeway
Total	0%	0%	2%	35%	63%	100%	Industrial Commercial Residential Openspace/Trenchiess Preeway

					Reach 5										
				D	aily VMT by Land Use										
	Within 5 miles of site	Outside 5 miles of site	Total]				0%	10% 20	% 30%	40% 5	0% 60%	70%	80%	90% 100
Light Vehicle	554	1481	2035	1											
Heavy Vehicle	2504	3238	5742	1											
Total	3057	4719	7777	1			Light Vehic	le 49386	20%			73	3%		
				-											
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total									
Light Vehicle	84	0	53	417	1481	2035	Heavy Vehi	le 7%0%	*	33%			56%		
Heavy Vehicle	379	0	241	1883	3238	5742									
Total	463	0	295	2299	4719	7777									
							То	al 690%		30%			61%	_	-
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total	10	0/0/4	~	3076			01/6	_	_
Light Vehicle	4%	0%	3%	20%	73%	100%									
Heavy Vehicle	7%	0%	4%	33%	56%	100%	= lod	strial	Commerc	ial = Ro	sidential	Onensna	ne/Trench	Nore	Freewow
Total	6%	0%	4%	30%	61%	100%		i annai	comment	and Enc	macricidi	openspa	Ley menici	n.33	receidy

					Reach 6		
				Dai	ly VMT by Land Use [1]		
	Within 5 miles of site	Outside 5 miles of site	Total]			0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Light Vehicle	265	762	1027	1			
Heavy Vehicle	248	338	586				
Total	513	1100	1613				Light Vehicle 0% 26% 74%
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total	
Light Vehicle	0	0	0	265	762	1027	Heavy Vehicle 0% 42% 58%
Heavy Vehicle	0	0	0	248	338	586	
Total	0	0	0	513	1100	1613	
							Total 0% 32% 68%
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total	
Light Vehicle	0%	0%	0%	26%	74%	100%	
Heavy Vehicle	0%	0%	0%	42%	58%	100%	Industrial Commercial Residential Openspace/Trenchless Freeway
	0%	0%	0%	32%	68%	100%	industrial commercial meaderical openapace/incidences

[1] Alignment is all in trenchless

					Reach 7		
				D	aily VMT by Land Use		
	Within 5 miles of site	Outside 5 miles of site	Total				0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 10
Light Vehicle	664	1826	2490				
Heavy Vehicle	2277	2550	4827				
Total	2941	4376	7317				Light Vehicle 7%0% 19% 73%
				-			
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total	
Light Vehicle	179	0	0	485	1826	2490	Heavy Vehicle 13% 0% 34% 53%
Heavy Vehicle	614	0	0	1663	2550	4827	
Total	794	0	0	2148	4376	7317	
							Total 11% 0% 29% 60%
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total	
Light Vehicle	7%	0%	0%	19%	73%	100%	
Heavy Vehicle	13%	0%	0%	34%	53%	100%	Industrial Commercial Residential Openspace/Trenchless
Total	11%	0%	0%	29%	60%	100%	induction commercial residential openapace/incidentesa incervaly

				Di	aily VMT by Land Use											
	Within 5 miles of site	Outside 5 miles of site	Total]				0	6 10	6 20%	30%	40% 50	0% 60%	70%	80% 9	0% 100
Light Vehicle	1183	3327	4510]												
Heavy Vehicle	4227	4632	8859	1											_	
Total	5410	7959	13368	1			Lig	ght Vehicle	9% 0%	18%			749	6		
				-												
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total										
Light Vehicle	389	0	0	794	3327	4510	Hea	avy Vehicle	16%	0%	32%			529		
Heavy Vehicle	1389	0	0	2838	4632	8859										
Total	1778	0	0	3632	7959	13368										
								Total	13%	744	27%			60%		
	Industrial	Commercial	Residential	Openspace/Trenchless	Freeway	Total			1070		2172			0070		
Light Vehicle	9%	0%	0%	18%	74%	100%										
Heavy Vehicle	16%	0%	0%	32%	52%	100%		Industria		mmorein	Borid	iontial 📕	Ononcoor	Tronch		
Total	13%	0%	0%	27%	60%	100%				ciud	= Nesiu	Critical I	openspac	.,	nuaa <mark>n</mark> P	cenay

	Vehicle Type		Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8	
	Light Vehicle		146	133	59	36	115	54	137	241	
	Heavy Vehicle		854	704	339	138	674	80	619	1151	1
	Total		1001	837	398	174	789	134	755	1392	1
											-
					oject Trips ADT by						_
	Vehicle Type	Roadway Class	Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8	
	Light Vehicle	Arterial	124	115	51	31	98	45 5	113	199	-
	Light vehicle	Collector Local	7	6 12	3	3	9	5	11	17	-
			-			-	-		13	26	-
	Heavy Vehicle	Arterial Collector	618 152	602 35	291 19	118 8	576 41	66 7	506 46	958 68	-
	neavy venicie	Local	84	67	28	8 12	57	7	46 66	125	-
		Arterial	742	717	342	12	674	111	619	1156	-
	Total	Collector	159	41	22	149	50	111		85	-
	Iotai	Local	99	79	33	11	65	11	57 79	151	-
I		LUCAI	99	79	33	14	60	12	79	151	1
			Daily ADT pe	er Link by Roadwa	ay Classification -	Within 5 mile bu	iffer of Reach				
Scenario	Vehicle Type	Roadway Class	Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8	Sum
Sechario	veniele rype	Arterial	971	762	744	853	925	715	543	433	Jun
	TruckADT	Collector	239	44	49	60	66	73	50	31	1
		Local	132	85	73	83	91	79	71	57	1
NP		Arterial	18,346	20,623	24,764	25,540	26,401	23,286	20,246	17,783	1
	All ADT	Collector	1,254	1,067	1,569	2,117	2,328	2,335	1,901	1,482	1
		Local	2,200	2,189	2,245	2,334	2,351	2,183	2,313	2,287	1
		Arterial	970	761	745	851	921	720	543	435	1
	TruckADT	Collector	241	46	49	60	66	73	50	32	1
WP Reassignment		Local	132	85	73	83	91	79	71	57	
Only		Arterial	18,468	20,737	24,916	25,628	26,481	23,378	20,246	17,785	1
	All ADT	Collector	1,342	1,148	1,615	2,165	2,395	2,381	1,946	1,544	1
		Local	2,200	2,193	2,249	2,340	2,351	2,183	2,313	2,287	
		Arterial	618	602	291	118	576	66	506	958	
	TruckADT	Collector	152	35	19	8	41	7	46	68	
Project Trips		Local	84	67	28	12	57	7	66	125	
i i oject i i ipo		Arterial	742	717	342	149	674	111	619	1156	
	All ADT	Collector	159	41	22	11	50	11	57	85	
		Local	99	79	33	14	65	12	79	151	
		Arterial	1,588	1,363	1,036	970	1,497	786	1,049	1,393	
	TruckADT	Collector	393	81	68	68	108	80	97	100	
WP Reassignment		Local	217	153	101	95	148	87	137	182	
+ Project Trips		Arterial	19,211	21,454	25,258	25,777	27,154	23,489	20,865	18,941	1
	All ADT	Collector	1,502	1,189	1,638	2,176	2,445	2,393	2,003	1,628	-
		Local	2,299	2,273	2,282	2,355	2,416	2,195	2,392	2,437	-
	THEFT	Arterial	617	601	292	117	573	72	506	960	-
(WP	TruckADT	Collector	154	37	19	8	41	7	47	69	-
Reassignment +		Local	84	67	29	12	57	7	66	125	-
Project Trips) (NP)		Arterial	864	831	495	237	754	204	619	1,158	
(NF)	All ADT	Collector	247	123	69	59	117	58	102	146	
		Local	99	84	37	21	66	12	79	151	
		Arterial	64%	79%	39%	14%	62%	10%	93%	222%	
% Change (WP	TruckADT	Collector	65%	83%	40%	14%	62%	9%	94%	224%	-
Reassignment +		Local	64%	79%	39%	14%	62%	9%	93%	221%	
	All ADT	Arterial	5%	4%	2%	1%	3%	1%	3%	7%	
Project Trips) (NP)		Collector	20%	11%	4%	3%	5%	2%	5%	10%	
Project Trips) (NP)		Local	4%	4%	2%	1%	3%	1%	3%	7%	-



APPENDIX D – PIPELINE CONSTRUCTION VMT CALCULATION

				equipment per		1									
CM-1 (Pipeline) for Reach 1,2,3,4,5,7,8	# of crews	workers per crew	total workers	crew	total equipment										
Pipeline Construction Crews	1	7	7	31	31										
Shoring Crews Saw Cut Crew	0.2	3	0.6	6	1.2 0.1	1									
Demolition Crew	0.05	3	0.15	4	0.2										
Paving Crew	0.2	5	1	6	1.2	1									
Utility Relocation Crew	0.1	6	0.6	6	0.6										
Traffic Control Trenching, Backfill, Conduit, Formwork Crew	0.15	4 4	0.6	4	0.6	34.	Pipeline Equipment	Only (on average t	hroughout pipeline c	onstruction)					
Concrete Crew	0.75	4	3	1	0.75	1									
Electrician Crew	0.2	4	0.8	4	0.8	1									
Paving Crew	0.1	5	0.5	6	0.6	9.1	Fiber Optic Duct Bar	nk Equipment Only	(on average through	out fiber optic constr	uction)				
				equipment per		1									
CM-2, CM-3A for Reach 3,4,5,7,8	# of crews	workers per crew	total workers	crew	total equipment	1									
Pipeline Construction Crews Shoring Crews	0.2	9	9	31	31	-									
Utility Relocation Crew	0.05	6	0.8	6	0.3	1									
Water Truck Crew	0.15	1	0.15	1	0.15	1									
Site Restoration Crew	0.15	3	0.45	5	0.75	1									
Temporary Gravel Roadway Crew	0.1	4	0.4	3	0.3	33.	Pipeline Equipment	Only (on average t	hroughout pipeline o	onstruction)					
Trenching, Backfill, Conduit, Formwork Crew Concrete Crew	0.75	4 4	4 3	7	0.75	-									
Electrician Crew	0.73	4	0.8	4	0.8	1									
Paving Crew	0	0	0	6	0	8.5	Fiber Optic Duct Bar	nk Equipment Only	(on average through	out fiber optic constr	uction)				
							-								
CM-4 seris workers per crew for Reach 1,2,3,4,5,6,7,8	CM-4A	CM-4B	CM-4C	CM-4D	CM-4E	CM-4F									
Tunnel Crew	7	15	15	10	14	20	1								
Pipeline Crew	16	16	16	14	17	17									
Shaft Crew	8	8	8	10	10	10	-								
Paving Crew	3	3	3	3	3	3	1								
			CM-4A					CM-4B							
Reach 1	# of crews	workers per crew	total workers	equipment per	total equipment	# of crews	workers per crew	total workers	equipment per	total equipment					
Tunnel Crew	0.45		3.18	crew	0	0.14		2.17	crew 16	2.32					
Tunnel Crew Pipeline Crew	0.45	7	3.18	31	0 3.52	0.14	15 16	2.17	16	2.32					
Shaft Crew	2.8	8	22.4	29	81.20	2	8	12.8	29	46.4					
Paving Crew	0.10	3	0.3		0	0.10	3	0.3		0					
			Tota	l Equipment CM-4A	84.72			Tota	al Equipment CM-48	49.95					
			CM-4A					CM-4B							
Reach 2	# of crews	workers per crew	total workers	equipment per	total equipment	# of crews	workers per crew	total workers	equipment per	total equipment					
		workers per crew		crew					crew						
Tunnel Crew Pipeline Crew	0.02	16	0.11 0.07	31	0.13	0.48	15 16	7.20	16	7.68 4.08					
Shaft Crew	0.28	8	2.22	29	8.03	4	8	28.8	29	104.4					
Paving Crew	0.10	3	0.3		0	0.10	3	0.3		0					
			Tota	l Equipment CM-4A	8.16			Tota	al Equipment CM-4B	116.15					
			CM-4A					CM-4B							
Reach 3	# of crews	workers per crew	total workers	equipment per	total equipment	# of crews	workers per crew	total workers	equipment per	total equipment					
				crew					crew						
Tunnel Crew Pipeline Crew	0.15	7 16	1.06	31	0	0.27	15	4.01 2.14	16	4.28					
Shaft Crew	0.87	8	6.94	29	25.16	0.13	8	3.47	29	12.58					
Paving Crew	0.10	3	0.3		0	0.10	3	0.3		0					
			Tota	l Equipment CM-4A	26.33			Tota	al Equipment CM-48	19.13					
			CM-4B					CM-4C							
Reach 4	# of crews	workers per crew	total workers	equipment per	total equipment	# of crews	workers per crew	total workers	equipment per	total equipment					
Tunnel Crew	0.02	15	0.25	crew 16	0.27	0.21	15	3.15	crew 16	3.36					
Pipeline Crew	0.02	15	0.25	16	0.27	0.21	15	2.52	16	2.99					
Shaft Crew	0.14	8	1.13	29	4.08	0.28	8	2.25	29	8.16					
Paving Crew	0.10	3	0.3		0	0.10	3	0.3		0					
			Tota	l Equipment CM-4B	4.48			Tota	al Equipment CM-4C	14.51					
			CM-4A					CM-4B					CM-4C		
Reach 5	# of crews	workers per crew	total workers	equipment per	total equipment	# of crews	workers per crew	total workers	equipment per	total equipment	# of crews	workers per crew	total workers	equipment per	total equipment
Tunnel Crew	0.13	2 Concers per crew	0.89	crew	total equipment	0.17	15	2.56	crew 16	2.74	0.25	15	3.73	crew 16	3,97
Tunnel Crew Pipeline Crew	0.13	7	0.89	31	0.99	0.17	15	2.56	16	2.74	0.25	15	3.73	16	3.97 3.54
Shaft Crew	0.79	8	6.33	29	22.95	1.19	8	9.49	29	34.42	0.40	8	3.16	29	11.47
Paving Crew	0.10	3	0.3		0	0.10	3	0.3		0	0.10	3	0.3		0
			Tota	l Equipment CM-4A	23.93			Tota	al Equipment CM-4B	37.88			Tota	I Equipment CM-4C	18.99
			CM-4F			1									
Reach 6	# of crews	workers per crew	total workers	equipment per	total equipment	1									
				crew											
Tunnel Crew Pipeline Crew	0.57	20	11.36 9.66	16 18	9.09	ł									
Shaft Crew	0.57	1/ 10	9.66	27	10.22	1									
Paving Crew	0.10	3	0.3		0	1									
			Tota	I Equipment CM-4F	31.95										
			CM-4E					CM-4F							
Reach 7	# of crews	workers per crew	total workers	equipment per	total equipment	# of crews	workers per crew	total workers	equipment per	total equipment					
Tunnel Crew	0 13	14	1.84	crew 16	2.10	0.41	20	8.24	crew 16	total equipment					
Tunnel Crew Pipeline Crew	0.13	14	1.84	16	2.10	0.41	20	8.24	16	6.59					
Shaft Crew	1.68	10	16.82	27	45.42	1.69	10	16.86	27	45.52					
Paving Crew	0.10	3	0.3		0	0.10	3	0.3		0					
			Tota	I Equipment CM-4E	49.10			Tot	al Equipment CM-4F	59.53					
			CM-4D					CM-4E							
Reach 8	# of crews	workers per crew	total workers	equipment per	total equipment	# of crews	workers per crew	total workers	equipment per	total equipment					
Tunnel Crew	1.99	10	19.92	crew	0	0.04	14	0.54	crew 16	0.62					
Pipeline Crew	0.66	10	9.29	31	20.58	0.04	14	0.34	18	0.47					
Shaft Crew	4.20	10	42	27	113.4	2.40	10	24	27	64.8					
Paving Crew	0.10	3	0.3 Tota	Equipment CM-4D	0 133.98	0.10	3	0.3 Tot	al Equipment CM-4E	0 65.89					
			1002	- cquipment CW-4D	133.70			100	ar equipment GM-4E	03.03					

			CI	M-1					С	M-2					CN	1-3A				СМ	-4A	
Reach #	Estimated Number of Pipeline Crews Per Day	Total Equipment per Day (on average throughout pipeline construction)	Estimated Number of Combined Fiber Optic Crews Per Day	Total Equipment per Day (on average throughout fiber optic construction)	Total Equipment per Day (on average throughout construction schedule)	Daily Construction Vehicle (HV) Trips (on average throughout construction schedule)	Estimated Number of Pipeline Crews Per Day	Total Equipment per Day (on average throughout pipeline construction)	Estimated Number of Combined Fiber Optic Crews Per Day	Total Equipment per Day (on average throughout fiber optic construction)	Total Equipment per Day (on average throughout construction schedule)	Daily Construction Vehicle (HV) Trips (on average throughout construction schedule)	Estimated Number of Pipeline Crews Per Day	Total Equipment per Day (on average throughout pipeline construction)	Estimated Number of Combined Fiber Optic Crews Per Day	Total Equipment per Day (on average throughout fiber optic construction)	Total Equipment per Day (on average throughout construction schedule)	Daily Construction Vehicle (HV) Trips (on average throughout construction schedule)	Estimated Number of Crews Per Day	Total Equipment per Day (on average throughout construction)	Total Equipment per Day (on average throughout construction schedule)	Daily Construction Vehicle (HV) Trips (on average throughout construction schedule)
1	2.12	34.90	0.32	9.15	76.77	153.55													1	84.72	84.72	169.44
2	1.66	34.90	0.25	9.15	60.25	120.50													1	8.16	8.16	16.31
3	0.21	34.90	0.03	9.15	7.55	15.09	0.19	33.70	0.03	8.55	6.54	13.09	0.08	33.70	0.03	8.55	2.83	5.65	1	26.33	26.33	52.65
4	0.33	34.90	0.05	9.15	12.08	24.15							0.01	33.70	0.00	8.55	0.36	0.71				
5	1.67	34.90	0.16	9.15	59.59	119.19	0.08	33.70	0.02	8.55	3.05	6.09							1	23.93	23.93	47.87
6																						
7	0.35	34.90	0.05	9.15	12.64	25.28	0.41	33.70	0.13	8.55	15.03	30.06										
8	0.59	34.90	0.04	9.15	21.05	42.10	0.30	33.70	0.06	8.55	10.71	21.42	0.52	33.70	0.11	8.55	18.55	37.10				

		CM	-4B			CM	I-4C			CM	-4D			CN	1-4E			CN	1-4F	
Reach #	Estimated Number of Crews Per Day	Total Equipment per Day (on average throughout construction)	Total Equipment per Day (on average throughout construction schedule)	Daily Construction Vehicle (HV) Trips (on average throughout construction schedule)	Estimated Number of Crews Per Day	Total Equipment per Day (on average throughout construction)	Total Equipment per Day (on average throughout construction schedule)	Daily Construction Vehicle (HV) Trips (on average throughout construction schedule)	Estimated Number of Crews Per Day	Total Equipment per Day (on average throughout construction)	Total Equipment per Day (on average throughout construction schedule)	Daily Construction Vehicle (HV) Trips (on average throughout construction schedule)	Estimated Number of Crews Per Day	Total Equipment per Day (on average throughout construction)	Total Equipment per Day (on average throughout construction schedule)	Daily Construction Vehicle (HV) Trips (on average throughout construction schedule)	Estimated Number of Crews Per Day	Total Equipment per Day (on average throughout construction)	Total Equipment per Day (on average throughout construction schedule)	Daily Construction Vehicle (HV) Trips (on average throughout construction schedule)
1	1	49.95	49.95	99.89																
2	1	116.15	116.15	232.31																
3	1	19.13	19.13	38.26																
4	1	4.48	4.48	8.97	1	14.51	14.51	29.02												
5	1	37.88	37.88	75.76	1	18.99	18.99	37.97												
6																	1	31.95	31.95	63.90
7													1	49.10	49.10	98.20	1	59.53	59.53	119.06
8									1	133.98	133.98	267.96	1	65.89	65.89	131.77				

Distance per Trip for "Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and	d return)"		Distance per Tri	ip for "One-Way Im	ported Soil Trips from O
Distance per Trip for "No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back"	32		Distance per Tri	ip for "One-Way Im	ported Soil Trips from St
Distance per Trip for "No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles)	200		Distance per Tri	ip for "One-Way Dai	ily Haul Trips of Pipe from
Distance per Trip for "No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way)"	50		Distance per Tri	ip for "One-Way Dai	ily Haul Trips of Pipe from
Distance per Trip for "No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way)"	5		Distance per Tri	ip for "One-Way Co	ncrete Truck Trips per Da
Distance per Trip for "No. of One way Trips to Site Importing Paving Materials (50 miles ea way)"	50		Distance per Tri	ip for "One way Trip	os to Site Importing Pavi
Pipeline Construction				Fiber Opt	tic Duct Bank
Reach 1, CM-1					-
Pipeline Construction		Trips	Trip Distance	VMT	VMT first 5 miles V
Total One-Way Haul Trips from Site to Staging/Storage and return		77.69	3.51	272.80	272.80
Total One-Way Haul Trips of Pipe Bedding Import to Site		14.15	3.51	49.69	49.69
Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier		14.15	30.00	424.50	70.75
Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return)		52.91	3.51	185.78	185.78
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back		22.30	31.50	702.59	111.52
No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back		2.48	200.00	495.66	12.39
No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way)		1.50	50.00	75.00	7.50
No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way)		1.50	5.00	7.50	7.50
No. of One way Trips to Site Importing Paving Materials (50 miles ea way)		1.10	50.00	54.94	5.49
Sum				2268.46	723.43
Estimated Number of Pineline Crews Per Day				2.12	2.12

Distance per Trip for "Total One-Way Haul Trips from Site to Staging/Storage and return"	3.51
Distance per Trip for "Total One-Way Haul Trips of Pipe Bedding Import to Site"	
Distance per Trip for "Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier"	30
Distance per Trip for "Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (an	d return)"
Distance per Trip for "No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back"	32
Distance per Trip for "No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles)	200
Distance per Trip for "No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way)"	50
Distance per Trip for "No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way)"	5
Distance per Trip for "No. of One way Trips to Site Importing Paving Materials (50 miles ea way)"	50
Pineline Construction	

Fiber Optic Duct Bank
One-Way Spoils Haul Trips from Site to Storage Site and return
One-Way Spoils Haul Trips from Storage Site to Landfill So miles (90% of Exc. Mat'l) and return
One-Way Spoils Haul Trips from Storage Site to Landfill So miles (90% of Exc. Mat'l) and return
One-Way Spoils Haul Trips from Storage Site to Landfill So miles (90% of Exc. Mat'l) and return

Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction

Distance per Trip for "One-Way Spoils Haul Trips from Site to Storage Site and return" Distance per Trip for "One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return" m Site to Haz. Waste Landfill 200 miles (10% of Excav, Mat')) & r from Offsite to Storage Site and return" from Storage Site to Site and return" lipe from Storage Site to Site and return" ipe from Storage Site to Site and return" per Day and return" g Paving Materials (50 miles ea way) and return"

2.12 4801.41

VMT 31.21 504.00

2.12 1531.20

/MT fire

1531.20 5 miles VMT b 31.21 80.00 8.89 7.41

VMT beyond first 5 miles

0.00 0.00 353.75 0.00 591.07 483.26 67.50 0.00 49.45 1545.03

2.12 3270.21

0.00 424.00 346.67

One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return	16.00	31.50	504.00	80.00	424.00
One-Way Spoils Haul Trips from Site to Haz. Waste Landfill 200 miles (10% of Excav. Mat'l) & return	1.78	200.00	355.56	8.89	346.67
One-Way Imported Soil Trips from Offsite to Storage Site and return	1.48	30.00	44.44	7.41	
One-Way Imported Soil Trips from Storage Site to Site and return	1.48	3.51	5.20	5.20	0.00
One-Way Daily Haul Trips of Pipe from Supplier to Storage Site (50 miles ea. way) and return	0.29	50.00	14.29	1.43	
One-Way Daily Haul Trips of Pipe from Storage Site to Site and return	0.29	5.00	1.43	1.43	
One-Way Concrete Truck Trips per Day and return	5.49	30.00	164.72	27.45	
One way Trips to Site Importing Paving Materials (50 miles ea way) and return	0.43	50.00	21.30	2.13	
Sum	0.45	50.00	1142.15	165.15	
Estimated Number of Combined Fiber Optic Crews Per Day	1		0.32	0.32	
Haul Truck VMT for Fiber Optic Duct Bank			362.62	52.43	
		Total VMT	5164.03	1583.63	3580.39 Total VMT
		iotai tiiri	5104.05	_	5560.55 10(a) (111
Reach 2, CM-1				1	
Pipeline Construction	Trips	Trip Distance	VMT	VAT first E miles	VMT beyond first 5 miles
Total One-Way Haul Trips from Site to Staging/Storage and return	77.69	3.83	297.85	297.85	0.00
Total One-Way Haul Trips of Pipe Bedding Import to Site	14.15	3.83	54.25	54.25	
Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier	14.15	30.00	424.50	70.75	
Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return)	52.91	30.00	202.84	202.84	
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back	22.30	32.00	713.74	111.52	
No. of One-Way Spoils Daily Trips from Storage Site to Eardini (30 miles) and back	22.30				
No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way)		200.00	495.66	12.39	
No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way)	1.50	50.00 5.00	75.00	7.50	
No. of One way Trips to Site Importing Paving Materials (50 miles ea way)					
Sum	1.10	50.00	54.94	5.49	
Estimated Number of Pipeline Crews Per Day			2326.28	770.10	
			1.00	1.66	1.66
Haul Truck WAT for Dinaling Construction					0504.07
Haul Truck VMT for Pipeline Construction			3864.04	1279.17	
Fiber Optic Duct Bank	Trips	Trip Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return	8.89	3.83	VMT 34.08	VMT first 5 miles 34.08	VMT beyond first 5 miles 0.00
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Eitand return One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return	8.89 16.00	3.83 32.00	VMT 34.08 512.00	VMT first 5 miles 34.08 80.00	VMT beyond first 5 miles 0.00 432.00
Fiber Optic Duct Bank One-Way Spolis Haul Trips from Site to Storage Site and return One-Way Spolis Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return One-Way Spolis Haul Trips from Site to Haz. Waste Landfill 200 miles (10% of Excav. Mat'l) & return	8.89 16.00 1.78	3.83 32.00 200.00	VMT 34.08 512.00 355.56	VMT first 5 miles 34.08 80.00 8.89	VMT beyond first 5 miles 0.00 432.00 346.67
Fiber Optic Duct Bank One-Way Spolis Haul Trips from Site to Storage Site and return One-Way Spolis Haul Trips from Site to Storage Site to Landfill 50 milles (90% of Exc. Mat'l) and return One-Way Spolis Haul Trips from Site to Haz. Waste Landfill 20 milles (20% of Exc. Mat'l) are terurn One-Way Imported Soil Trips from Offsite to Storage Site and return	8.89 16.00 1.78 1.48	3.83 32.00 200.00 30.00	VMT 34.08 512.00 355.56 44.44	VMT first 5 miles 34.08 80.00 8.89 7.41	VMT beyond first 5 miles 0.00 432.00 346.67 37.04
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Landfill 300 miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Site Jo Haz. Waste Landfill 300 miles (10% of Excav. Mat'l) & return One-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return	8.89 16.00 1.78 1.48 1.48	3.83 32.00 200.00 30.00 3.83	VMT 34.08 512.00 355.56 44.44 5.68	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00
Fiber Optic Duct Bank One-Way Spolis Haul Trips from Site to Storage Site and return One-Way Spolis Haul Trips from Site to Landfill 50 miles (90% of Exc. Mat'l) and return Dine-Way Spolis Haul Trips from Site to Landfill 50 miles (10% of Exc. Mat'l) and return Dine-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site Son Return One-Way Imported Soil Trips from Storage Site Son Return One-Way Imported Soil Trips from Storage Site Son Return One-Way Imported Soil Trips from Storage Site Son Return One-Way Imported Soil Trips from Storage Site Son Return One-Way Imported Soil Trips from Storage Site Son Return One-Way Imported Soil Trips from Storage Site Son Return One-Way Imported Soil Trips from Storage Site Son Return One-Way Imported Soil Trips from Storage Site Son Return One-Way Imported Soil Trips from Storage Site Son Return One-Way Imported Soil Trips from Storage Site Son Return One-Way Imported Soil Trips from Storage Site Son Return One-Way Imported Sonage Site Son Return One-Way Imported Sonage Site Son Return One-Way Imported Sonage Site Sonage Site Son Return One-Way Imported Sonage Site Sonage Site Son Return One-Way Imported Sonage Site Sonag	8.89 16.00 1.78 1.48 1.48 0.29	3.83 32.00 200.00 30.00 3.83 50.00	VMT 34.08 512.00 355.56 44.44 5.68 14.29	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68 1.43	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00 12.86
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Landfill SO miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Site to Haz. Waste Landfill 200 miles (10% of Excav. Mat'l) & return One-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Supplier to Storage Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return	8.89 16.00 1.78 1.48 1.48 0.29 0.29	3.83 32.00 200.00 30.00 3.83 50.00 5.00	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68 1.43 1.43	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Loandfill SD miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Site To Haz. Waste Landfill 200 miles (10% of Excav. Mat'l) & return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site (50 miles e.a. way) and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Concrete Truck Trips per Day and return One-Way Concrete Truck Trips per Day and return	8.89 16.00 1.78 1.48 1.48 0.29 0.29 5.49	3.83 32.00 200.00 30.00 3.83 50.00 5.00 30.00	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68 1.43 1.43 27.45	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00 137.27
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and Initis (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Storage Site to Landill 30 miles (20% of Exc. Mat'l) and return One-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Concrete Truck Trips per Day and return One-Way Concrete Truck Trips per Day and return One-Way Impo Soil Site Soil Trips Soil Site Indicates (So Miles ea way) and return One-Way Impo Soil Site Soil Site Indicates (Som Soiles ea way) and return One-Way Impo Soil Site Importants (Som Soiles ea way) and return One-Way Importe Soil Site Soile Site Indicates (Som Soiles ea way) and return One-Way Imported Soil Trips Soile Imported Truck Trips per Day and return One-Way Imported Soil Truck Trips per Day and return One-Way Imported Soile	8.89 16.00 1.78 1.48 1.48 0.29 0.29	3.83 32.00 200.00 30.00 3.83 50.00 5.00	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68 1.43 1.43 2.7.45 2.13	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00 137.27 19.17
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site to Iandfill 300 miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Storage Site to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Soily Haul Trips of Pipe from Storage Site to Site and return One-Way Soily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Concrete Truck Trips per Day and return One-Way Daily Laul Trips to Site Importing Paving Materials (50 miles ea way) and return Sum	8.89 16.00 1.78 1.48 1.48 0.29 0.29 5.49	3.83 32.00 200.00 30.00 3.83 50.00 5.00 30.00	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30 1153.49	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68 1.43 1.43 2.745 2.33 1.43 2.745 2.13	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00 137.27 19.17 985.00
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Istanditi JO miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Imported Soil Trips from Ofsite to Storage Site and return One-Way Imported Soil Trips from Ofsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Imported Soil Trips per Day and return One-Way Trips to Site Importing Paving Materials (S0 miles ea way) and return One-Way Trips to Site Importing Paving Materials (S0 miles ea way) and return One way Trips to Site Importing Paving Materials (S0 miles ea way) and return Sum Estimated Number of Combined Fiber Optic Crews Per Day	8.89 16.00 1.78 1.48 1.48 0.29 0.29 5.49	3.83 32.00 200.00 30.00 3.83 50.00 5.00 30.00	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30 1153.49 0.25	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68 1.43 1.43 27.45 2.13 168.50 0.25	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00 137.27 19.17 985.00 0.25
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site to Iandfill 300 miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Storage Site to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Soily Haul Trips of Pipe from Storage Site to Site and return One-Way Soily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Concrete Truck Trips per Day and return One-Way Daily Laul Trips to Site Importing Paving Materials (50 miles ea way) and return Sum	8.89 16.00 1.78 1.48 1.48 0.29 0.29 5.49	3.83 32.00 200.00 30.00 3.83 5.00 5.00 30.00 50.00	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30 1153.49 0.25 287.40	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68 1.43 1.43 2.7.45 2.13 168.50 0.25 41.98	VMT beyond first \$ miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00 137.27 19.17 985.00 0.25 245.42
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Istanditi JO miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Imported Soil Trips from Ofsite to Storage Site and return One-Way Imported Soil Trips from Ofsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Imported Soil Trips per Day and return One-Way Trips to Site Importing Paving Materials (S0 miles ea way) and return One-Way Trips to Site Importing Paving Materials (S0 miles ea way) and return One way Trips to Site Importing Paving Materials (S0 miles ea way) and return Sum Estimated Number of Combined Fiber Optic Crews Per Day	8.89 16.00 1.78 1.48 1.48 0.29 0.29 0.29 5.49	3.83 32.00 200.00 30.00 3.83 50.00 5.00 30.00	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30 1153.49 0.25	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68 1.43 1.43 27.45 2.13 168.50 0.25	VMT beyond first \$ miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00 137.27 19.17 985.00 0.25 245.42
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Landfill SO miles (90% of Exc. Mat'l) and return One-Way Imported Soil Trips from Storage Site and return One-Way Imported Soil Trips from Ofsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips Storage Site to Site and return One-Way Imported Soil Trips Storage Site to Site and return One-Way Imported Soil Trips Soil Fiber Storage Site to Site and return One-Way Imported Soil Trips Soil Fiber Storage Site to Site and return Extensite Aumber of Combined Fiber Optic Crews Per Day Haul Truck VMT for Fiber Optic Duct Bank	8.89 16.00 1.78 1.48 1.48 0.29 0.29 0.29 5.49	3.83 32.00 200.00 30.00 3.83 5.00 5.00 30.00 50.00	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30 1153.49 0.25 287.40	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68 1.43 1.43 2.7.45 2.13 168.50 0.25 41.98	VMT beyond first \$ miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00 137.27 19.17 985.00 0.25 245.42
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Hac. Waste Landfill 300 miles (90% of Exc. Mat'l) and return One-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips for Pipe from Storage Site to Site and return One-Way Daily Haul Trips for Pipe from Storage Site to Site and return One-Way Daily Haul Trips for Pipe from Storage Site to Site and return One-Way Concrete Truck Trips per Day and return One way Trips to Site Importing Paving Materials (50 miles ea way) and return Sum Estimated Number of Combined Fiber Optic Crews Per Day Haul Truck VMT for Fiber Optic Duct Bank Reach 3, CM-1	8.89 16.00 1.78 1.48 0.29 0.29 5.49 0.43	3.83 32.00 200.00 30.00 5.00 5.00 5.00 50.00 Total VMT	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30 1153.49 0.25 287.40 4151.44	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68 1.43 2.745 2.745 2.745 1.43 1.68.50 0.25 4.198 1321.15	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00 137.27 19.17 985.00 0.25 245.42 2830.29 Total VMT
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Starage Site and return One-Way Spoils Haul Trips from Site to Starage Site and Site Starage Site and Teturn One-Way Spoils Haul Trips from Site to Starage Site and Return One-Way Imported Soil Trips from Offsite to Starage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips per Day and return One-Way Imported Soil Trips Der Day and return One-Way Imported Soil Trips Der Day and return One-Way Imported Soil Trips Sorage Site to Site and return One-Way Imported Soil Trips Der Day and return Sum Estimated Number of Combined Fiber Optic Crews Per Day Haul Truck VMT for Fiber Optic Duct Bank Reach 3, CM-1	8.89 16.00 1.78 1.48 0.29 0.29 0.29 0.29 0.43 0.43	3.83 32.00 200.00 30.00 3.83 50.00 5.00 30.00 50.00 Total VMT Trip Distance	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30 1153.49 0.25 287.40 4151.44 VMT	VMT first 5 miles 34.08 8.000 8.89 7.41 5.66 1.43 1.43 2.745 2.13 1.68.50 0.25 4.198 1321.15 VMT first 5 miles	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00 137.27 19.17 985.00 0.25 245.42 2830.29 Total VMT VMT beyond first 5 miles
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Storage Site (SD miles (90% of Exc. Mat'l) & return One-Way Imported Soil Trips from Storage Site (SD miles eaway) and return One-Way Daily Haul Trips of Pipe from Storage Site (SD miles eaway) and return One-Way Daily Haul Trips of Pipe from Storage Site (SD miles eaway) and return One-Way Daily Haul Trips of Pipe from Storage Site (SD miles eaway) and return One-Way Daily Haul Trips of Pipe from Storage Site (SD miles eaway) and return One-Way Concrete Truck Trips per Day and return One-Way Concrete Truck Trips of Dipe from Storage Site (SD miles eaway) and return One-Way Concrete Truck Trips per Day and return One-Way Concrete Truck Trips to Storage Site (SD miles eaway) and return Sum Estimated Number of Combined Fiber Optic Crews Per Day Haul Truck VMT for Fiber Optic Duct Bank Reach 3, CM-1 Pipeline Construction Total One-Way Haul Trips from Site to Staging/Storage and return	8.89 16.00 1.78 1.48 0.29 0.29 5.49 0.43 Trips 77.69	3.83 32.00 200.00 30.00 3.83 50.00 50.00 50.00 50.00 Total VMT Trip Distance 2.77	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30 1153.49 0.25 287.40 4151.44 VMT 215.32	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68 1.43 2.745 2.13 1.68.50 0.255 4.199 1321.15 VMT first 5 miles 215.32	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00 137.27 19.17 985.00 0.25 245.42 2830.29 Total VMT VMT beyond first 5 miles 0.00
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and Fault 20% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site Site Site and return Sim Estimated Number of Combined Fiber Optic Crews Per Day Haul Truck VMT for Fiber Optic Duct Bank Pipeline Construction Total One-Way Haul Trips from Site to Staging/Storage and return Total One-Way Haul Trips of Pipe Bedding Import to Site	8.89 16.00 1.78 1.48 0.29 0.29 0.29 0.29 0.43 Trips 77.69 14.15	3.83 32.00 200.00 30.00 3.83 50.00 50.00 50.00 Total VMT Trip Distance 2.77 2.77	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30 0.25 287.40 4151.44 4151.44 VMT 215.32 39.22	VMT first 5 miles 34.08 8.000 8.89 7.41 5.66 1.43 1.43 2.745 2.13 1.68:50 0.25 4.198 132115 VMT first 5 miles 215.32 39.22	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00 137.27 19.17 985.00 0.25 245.42 2830.29 Total VMT VMT beyond first 5 miles 0.00
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and Return One-Way Inported Soil Trips from Storage Site to Landfill SO miles (90% of Exc. Mat'l) and return One-Way Inported Soil Trips from OfSite to Storage Site and return One-Way Inported Soil Trips from Storage Site (50 miles ea way) and return One-Way Inported Soil Trips of Pipe from Storage Site (50 miles ea way) and return One-Way Daily Haul Trips of Pipe from Storage Site (50 miles ea way) and return One-Way Daily Haul Trips of Pipe from Storage Site (50 miles ea way) and return One-Way Daily Haul Trips of Pipe from Storage Site (50 miles ea way) and return One-Way Daily Haul Trips of Pipe from Storage Site (50 miles ea way) and return One-Way Concrete Truck Trips per Day and return One-Way Inport Soil Storage Site (50 miles ea way) and return Sum Estimated Number of Combined Fiber Optic Crews Per Day Haul Truck VMT for Fiber Optic Duct Bank Reach 3, CM-1 Pipeline Construction Total One-Way Haul Trips from Site to Staga gift for Site and return Cotal One-Way Haul Trips from Site Staging/Storage and return Total One-Way Haul Trips from Site Staging/Storage and return Cotal One-Way Haul Trips from Site Staging/Storage and return Cotal One-Way Haul Trips of Pipe Bedding to Storage Site from Supplier	8.89 16.00 1.78 1.48 0.29 0.29 5.49 0.43 Trips 77.69 14.15 14.15	3.83 32.00 200.00 30.00 3.83 50.00 50.00 50.00 50.00 Total VMT Trip Distance 2.77 2.77 30.00	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30 1153.49 0.25 287.40 4151.44 VMT 215.32 39.22 39.22 424.50	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68 1.43 2.13 1.68.50 0.25 4.198 1321.15 VMT first 5 miles 215.32 39.22 70.75	VMT beyond first 5 miles 0.00 432.00 346.67 346.67 0.00 12.86 0.00 137.27 19.17 985.00 0.25 245.42 2830.29 VMT beyond first 5 miles 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
Fiber Optic Duct Bank One-Way Spolis Haul Trips from Site to Starage Site and return One-Way Spolis Haul Trips from Site to Starage Site and return Dne-Way Spolis Haul Trips from Site to Starage Site and return Dne-Way Imported Soil Trips from Offsite to Starage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips per Dayand return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips per Dayand return One-Way Infine Trips of Pipe from Storage Site to Site and return One-Way Doily Haul Trips of Pipe from Storage Site to Site and return One-Way Doily Haul Trips of Pipe from Storage Site to Site and return One-Way Doily Haul Trips of Pipe from Storage Site to Site and return One-Way Doily Haul Trips of Dipt Duct Return Sum Estimated Number of Combined Fiber Optic Crews Per Day Haul Truck VMT for Fiber Optic Duct Bank Pipeline Construction Total One-Way Haul Trips from Site to Stage Site And return Pipeline Construction Total One-Wau Trips From Site to Stage Site And return Cone-Way Haul Trips From Site to Stage Site from Storage Back to the Site (and return	8.89 16.00 1.78 1.48 0.29 0.29 0.43 0.43 77.69 14.15 14.15 52.91	3.83 32.00 200.00 30.00 3.83 50.00 50.00 50.00 50.00 Total VMT Trip Distance 2.77 2.77 2.77 30.00 2.77	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30 0.25 287.40 0.25 287.40 0.25 287.40 VMT 215.32 39.22 424.50 146.63	VMT first 5 miles 34.08 80.00 8.89 7.41 5.68 1.43 1.43 2.745 2.13 1.68.50 0.25 4.199 132115 VMT first 5 miles 215.32 39.22 7075 146.63	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00 137.27 19.17 985.00 0.25 245.42 2830.29 Total VMT VMT beyond first 5 miles 0.00 0.00
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and Rull 200 miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips of Pipe from Storage Site to Site and return One-Way Long Site Solar Storage Site to Site and return One-Way Imported Soil Trips of Pipe from Storage Site to Site and return One-Way Long Site Solar S	8.89 16.00 1.78 1.48 0.29 0.29 5.49 0.43 77.69 77.69 14.15 14.15 52.91 22.30	3.83 32.00 200.00 30.00 3.83 50.00 5.00 30.00 Total VMT Trip Distance 2.77 2.77 30.00 2.77 22.90	VMT 24.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30 1153.49 0.25 287.40 4151.44 VMT 215.32 39.22 424.50 146.63 646.63	VMT first 5 miles 34.08 8000 8.89 7.41 5.66 1.43 1.43 2.13 1.68:50 0.25 4.198 1321.15 VMT first 5 miles 215.32 39:22 70.75 1.46:35 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.25 1.55 1.55 1.45 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1	VMT beyond first 5 miles 0.00 432.00 346.67 346.67 12.86 0.00 137.27 19.17 985.00 0.25 245.42 2830.29 Total VMT VMT beyond first 5 miles 0.00 0.00 353.75 0.00 535.31
Fiber Optic Duct Bank One-Way Spolis Haul Trips from Site to Storage Site and return One-Way Spolis Haul Trips from Site to Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return Dne-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Donrete Truck Trips per Day and return One-Way Concrete Truck Trips per Day and return One-Way Concrete Truck Trips per Day and return One Way Concrete Truck Trips of Diptic Optic Crews Per Day Haul Truck VMT for Fiber Optic Duct Bank Reach 3, CM-1 Pipeline Construction Total One-Way Haul Trips of Pipe Bedding to Storage Site from Storage back to the Site (and return) Number of One-Way ITrips Hault Excavated Soil from Storage back to the Site (and return) No. O One-Way Spolis Daily Trips From Storage Site from Storage back to the Site (and return)	8.89 16.00 1.78 1.48 0.29 0.29 0.43 77.69 14.15 14.15 14.15 14.15 12.2.30 2.48	3.83 32.00 200.00 30.00 3.83 50.00 50.00 50.00 50.00 50.00 50.00 7 total VMT 7 trip Distance 2.77 2.77 2.77 2.77 2.77 2.77 2.77 2.9.00 2.77 2.9.00 2.77 2.9.00 2.77 2.9.00 2.00.00	VMT 34.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 22.30 0.25 287.40 0.25 287.40 0.25 287.40 415.144 VMT 215.32 39.22 424.50 146.63 646.83 495.66	VMT first 5 miles 34,08 80,00 8,89 7,41 5,66 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,43 1,4	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00 12.86 0.00 137.27 19.17 985.00 0.25 245.42 2830.29 Total VMT VMT beyond first 5 miles 0.00 353.75 0.00 535.31 483.26
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and Rull 200 miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips of Pipe from Storage Site to Site and return One-Way Long Site Solar Storage Site to Site and return One-Way Imported Soil Trips of Pipe from Storage Site to Site and return One-Way Long Site Solar S	8.89 16.00 1.78 1.48 0.29 0.29 5.49 0.43 77.69 77.69 14.15 14.15 52.91 22.30	3.83 32.00 200.00 30.00 3.83 50.00 5.00 30.00 Total VMT Trip Distance 2.77 2.77 30.00 2.77 22.90	VMT 24.08 512.00 355.56 44.44 5.68 14.29 1.43 164.72 21.30 1153.49 0.25 287.40 4151.44 VMT 215.32 39.22 424.50 146.63 646.63	VMT first 5 miles 34.08 8000 8.89 7.41 5.66 1.43 1.43 2.13 1.68:50 0.25 4.198 1321.15 VMT first 5 miles 215.32 39:22 70.75 1.46:35 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.25 1.55 1.55 1.45 1.55 1.55 1.45 1.25 1.55 1.25 1.55 1.25 1.55 1.25 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1	VMT beyond first 5 miles 0.00 432.00 346.67 37.04 0.00 127.27 19.17 985.00 0.25 245.42 2830.29 Total VMT VMT beyond first 5 miles 0.00 353.75 0.00 535.31 483.26 67.50

Trips 8.89 16.00 1.78 1.48

Trip Distance 3.51 31.50

No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way)	1.50	5.00	7.50	7.50	0.00
No. of One way Trips to Site Importing Paving Materials (50 miles ea way)	1.10	50.00	54.94	5.49	49.45
Sum			2105.60	616.33	1489.27
Estimated Number of Pipeline Crews Per Day			0.21	0.21	0.21
Haul Truck VMT for Pipeline Construction			438.03	128.22	309.82
Fiber Optic Duct Bank	Trips	Trip Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles
One-Way Spoils Haul Trips from Site to Storage Site and return	8.89	2.77	24.64	24.64	0.00
One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return	16.00	29.00	464.00	80.00	384.00
One-Way Spoils Haul Trips from Site to Haz. Waste Landfill 200 miles (10% of Excav. Mat'l) & return	1.78	200.00	355.56	8.89	346.67
One-Way Imported Soil Trips from Offsite to Storage Site and return	1.48	30.00	44.44	7.41	37.04
One-Way Imported Soil Trips from Storage Site to Site and return	1.48	2.77	4.11	4.11	0.00
One-Way Daily Haul Trips of Pipe from Supplier to Storage Site (50 miles ea. way) and return	0.29	50.00	14.29	1.43	12.86
One-Way Daily Haul Trips of Pipe from Storage Site to Site and return	0.29	5.00	1.43	1.43	0.00
One-Way Concrete Truck Trips per Day and return	5.49	30.00	164.72	27.45	137.27
One way Trips to Site Importing Paving Materials (50 miles ea way) and return	0.43	50.00	21.30	2.13	19.17
Sum			1094.47	157.48	937.00
Estimated Number of Combined Fiber Optic Crews Per Day			0.03	0.03	8 0.03
Haul Truck VMT for Fiber Optic Duct Bank			34.15	4.91	29.24
		Total VMT	472.18	133.13	339.05 Total VMT

Reach 3, CM-2					
Pipeline Construction	Trips	Trip Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles
Total One-Way Haul Trips from Site to Staging/Storage and return	258.96	2.77	717.73	717.73	0.00
Total One-Way Haul Trips of Pipe Bedding Import to Site	47.17	2.77	130.72	130.72	0.00
Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier	47.17	30.00	1414.99	235.83	1179.16
Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return)	176.35	2.77	488.78	488.78	0.00
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back	74.35	29.00	2156.10	371.74	1784.36
No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back	8.26	200.00	1652.18	41.30	1610.88
No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way)	5.00	50.00	250.00	25.00	225.00
No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way)	5.00	5.00	25.00	25.00	0.00
No. of One way Trips to Site Importing Paving Materials (50 miles ea way)	0.00	50.00	0.00	0.00	0.00
Sum			6835.51	2036.11	4799.40
Estimated Number of Pipeline Crews Per Day			0.19	0.19	0.19
Haul Truck VMT for Pipeline Construction			1274.68	379.69	894.99
Fiber Optic Duct Bank	Trips	Trip Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles
One-Way Spoils Haul Trips from Site to Storage Site and return	9.78	2.77	27.10	27.10	0.00
One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return	17.60	29.00	510.40	88.00	422.40
One-Way Spoils Haul Trips from Site to Haz. Waste Landfill 200 miles (10% of Excav. Mat'l) & return	1.96	200.00	391.11	9.78	381.33
One-Way Imported Soil Trips from Offsite to Storage Site and return	1.63	30.00	48.89	8.15	40.74

One-Way Imported Soil Trips from Storage Site to Site and return	1.63	2.77	4.52	4.52	0.00
One-Way Daily Haul Trips of Pipe from Supplier to Storage Site (50 miles ea. way) and return	0.31	50.00	15.71	1.57	14.14
One-Way Daily Haul Trips of Pipe from Storage Site to Site and return	0.31	5.00	1.57	1.57	0.00
One-Way Concrete Truck Trips per Day and return	6.04	30.00	181.19	30.20	151.00
One way Trips to Site Importing Paving Materials (50 miles ea way) and return	0.00	50.00	0.00	0.00	0.00
Sum			1180.50	170.88	1009.61
Estimated Number of Combined Fiber Optic Crews Per Day			0.03	0.03	0.03
Haul Truck VMT for Fiber Optic Duct Bank			35.67	5.16	30.51
		Total VMT	1310.35	384.86	925.50 Total VMT

Reach 3. CM-3A				7	
Reach 3, CM-3A Pipeline Construction	Trips	Trip Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles
Total One-Way Haul Trips from Site to Staging/Storage and return	258.96	2.77	717.73	717.73	0.00
Total One-Way Haul Trips of Pipe Bedding Import to Site	47.17	2.77	130.72	130.72	
Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier	47.17	30.00	1414.99	235.83	
Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return)	176.35	2.77	488.78	488.78	
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back	74.35	29.00	2156.10	371.74	
No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back	8.26	200.00	1652.18	41.30	
No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way)	5.00	50.00	250.00	25.00	225.00
No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way)	5.00	5.00	25.00	25.00	0.00
No. of One way Trips to Site Importing Paving Materials (50 miles ea way)	0.00	50.00	0.00	0.00	0.00
Sum	0.00	50.00	6835.51	2036.11	4799.40
Estimated Number of Pipeline Crews Per Day			0.08	0.08	
Haul Truck VMT for Pipeline Construction			513.90	153.08	360.83
Fiber Optic Duct Bank	Trips	Trip Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles
One-Way Spoils Haul Trips from Site to Storage Site and return	9.78	2.77	27.10	27.10	0.00
One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return	17.60	29.00	510.40	88.00	422.40
One-Way Spoils Haul Trips from Site to Haz. Waste Landfill 200 miles (10% of Excav. Mat') and return	1.96	29.00	391.11	9.78	
One-Way Imported Soil Trips from Offsite to Storage Site and return	1.63	30.00	48.89	9.78	
One-way imported soil may from torace to thouge site and return	1.63	2.77	48.89	4.52	
One-Way Daily Haul Trips of Pipe from Storage Site (50 miles ea. way) and return	0.31	50.00	4.32	4.32	14.14
One-Way Daily Haul Trips of Pipe from Storage Site to Site and return	0.31	5.00	1.57	1.57	0.00
One-Way Concrete Truck Trips per Day and return	6.04	30.00	1.57	30.20	151.00
One way Trips to Site Importing Paving Materials (50 miles ea way) and return	0.04	50.00	0.00	0.00	0.00
Sum	0.00	50.00	1180.50	170.88	1009.61
Estimated Number of Combined Fiber Optic Crews Per Day			0.03	0.03	0.03
Haul Truck VMT for Fiber Optic Duct Bank			40.34	5.84	34.50
		Total VMT	554.25	158.92	395.33 Total VMT
			554.25	150.52	555.55 Total VIVI
Reach 4, CM-1]	
Pipeline Construction	Trips	Trip Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles
Total One-Way Haul Trips from Site to Staging/Storage and return	77.69	3.06	238.10	238.10	0.00
Total One-Way Haul Trips of Pipe Bedding Import to Site	14.15	3.06			
Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return)			43.37	43.37	0.00
	14.15	30.00	424.50	70.75	0.00 353.75
	52.91	30.00 3.06	424.50 162.14	70.75 162.14	0.00 353.75 0.00
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back	52.91 22.30	30.00 3.06 25.00	424.50 162.14 557.61	70.75 162.14 111.52	0.00 353.75 0.00 446.09
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back	52.91 22.30 2.48	30.00 3.06 25.00 200.00	424.50 162.14 557.61 495.66	70.75 162.14 111.52 12.39	0.00 353.75 0.00 446.09 483.26
No. of One-Way Spolis Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spolis Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles e.a. way)	52.91 22.30 2.48 1.50	30.00 3.06 25.00 200.00 50.00	424.50 162.14 557.61 495.66 75.00	70.75 162.14 111.52 12.39 7.50	0.00 353.75 0.00 446.09 483.26 67.50
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea.way)	52.91 22.30 2.48 1.50 1.50	30.00 3.06 25.00 200.00 50.00 5.00	424.50 162.14 557.61 495.66 75.00 7.50	70.75 162.14 111.52 12.39 7.50 7.50	0.00 353.75 0.00 446.09 483.26 67.50 0.00
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (20 miles) and back New of One-Way Spoils Daily Trips from Storage Site to Hac. Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way) No. of One-Way Thes To Site Importing Paring Materials (50 miles ea way) No. of One-way Trips to Site Importing Paring Materials (50 miles ea way)	52.91 22.30 2.48 1.50	30.00 3.06 25.00 200.00 50.00	424.50 162.14 557.61 495.66 75.00 7.50 54.94	70.75 162.14 111.52 12.39 7.50 7.50 5.49	0.00 353.75 0.00 446.09 483.26 67.50 0.00 49.45
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Sate to Haz. Waste Landfill (20 miles) and back No. of One-Way Daily Halu Trips of Pipe From Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One way Trips to Site Importing Paving Materials (50 miles ea way) Sum	52.91 22.30 2.48 1.50 1.50	30.00 3.06 25.00 200.00 50.00 5.00	424.50 162.14 557.61 495.66 75.00 7.50 54.94 2058.82	70.75 162.14 111.52 12.39 7.50 7.50 5.49 658.77	0.00 353.75 0.00 446.09 483.26 67.50 0.00 49.45 1400.05
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Site to Aita: Matex Leandfill (50 miles) and back No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea way) No. of One-Way Thys to Site Importing Paraying Materials (50 miles ea way) No. of One-way Trips to Site Importing Paraying Materials (50 miles ea way) Sum Estimated Number of Pipeline Crews Per Day	52.91 22.30 2.48 1.50 1.50	30.00 3.06 25.00 200.00 50.00 5.00	424.50 162.14 557.61 495.66 75.00 7.50 54.94 2058.82 0.33	70.75 162.14 111.52 12.39 7.50 7.50 5.49 658.77 0.33	0.00 353.75 0.00 446.09 483.26 67.50 0.00 49.45 1400.05 0.33
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Site to Haz, Waste Landfill (200 miles) and back No. of One-Way Spoils Daily Trips of Pipe From Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) Sum Sum Estimated Number of Pipeline Construction	52.91 22.30 2.48 1.50 1.50 1.10	30.00 3.06 25.00 200.00 50.00 5.00 50.00	424.50 162.14 557.61 495.66 75.00 7.50 54.94 2058.82 0.33 685.38	70.75 162.14 111.52 12.39 7.50 7.50 5.49 658.77 0.33 219.30	0.00 353.75 0.00 446.09 483.26 67.50 0.00 49.45 1400.05 0.33 466.07
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Sate to Haz. Waste Landfill (20 miles) and back No. of One-Way Daily Haul Trips of Pipe From Storage (50 miles ac. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One way Trips to Site Importing Paving Materials (50 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank	52.91 22.30 2.48 1.50 1.50 1.10 Trips	30.00 3.06 25.00 200.00 5.00 5.00 50.00 Trip Distance	424.50 162.14 557.61 495.66 75.00 7.50 54.94 2058.82 0.33 685.38 VMT	70.75 162.14 111.52 12.39 7.50 7.50 5.49 658.77 0.33 219.30 VMT first 5 miles	0.00 353.75 0.00 446.09 483.26 67.50 0.00 49.45 1400.05 0.33 466.07 VMT beyond first 5 miles
No. of One-Way Spolis Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spolis Daily Trips from Storage Site to Haz, Waste Landfill (200 miles) and back No. of One-Way Spolis Daily Trips from Storage Site to Haz, Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-Way Trips to Site Importing Paving Materials (50 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spolis Haul Trips from Site to Storage Site and return	52.91 22.30 2.48 1.50 1.50 1.10 Trips 8.89	30.00 3.06 25.00 200.00 5.00 5.00 50.00 Trip Distance 3.06	424.50 162.14 557.61 495.66 75.00 7.50 54.94 2058.82 0.33 685.38 VMT 27.24	70.75 162.14 111.52 12.39 7.50 5.49 658.77 0.33 219.30 VMT first 5 miles 27.24	0.00 353.75 0.00 446.09 483.26 67.50 0.00 49.45 1.400.05 0.33 466.07 VMT beyond first 5 miles 0.00
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Sate to Haz. Waste Landfill (20 miles) and back No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea. way) No. of One way Trips to Site Importing Paving Materials (50 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site to Landfill SO miles (90% of Exc. Mat'l) and return	52.91 22.30 2.48 1.50 1.50 1.10 Trips 8.89 16.00	30.00 3.06 25.00 200.00 5.00 5.00 50.00 Trip Distance 3.06 25.00	424.50 162.14 557.61 495.66 75.00 7.50 54.94 2058.82 0.33 685.38 VMT 27.24 400.00	70.75 162.14 111.52 12.39 7.50 5.49 658.77 0.33 219.30 VMT first 5 miles 27.24 8.00	0.00 353.375 0.00 446.09 483.26 67.50 0.00 49.45 1.400.05 0.33 466.07 VMT beyond first 5 miles 0.00 320.00
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Crews Per Day Fault Truck VMT for Pipeline Crews Per Day Haul Truck VMT for Pipeline Crews Per Day Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Landfill 50 miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Site to Landfill 50 miles (90% of Exc. Mat'l) and return	52.91 22.30 2.48 1.50 1.50 1.10 Trips 8.89 16.00 1.78	30.00 3.06 25.00 200.00 5.00 50.00 50.00 50.00 50.00 50.00 20.00 200.00	424.50 162.14 557.61 495.66 75.00 7.50 54.94 2058.82 0.33 685.38 VMT 27.24 400.00 355.56	70.75 162.14 111.52 12.39 7.50 5.49 658.77 0.33 219.30 VMT first 5 miles 27.24 80.00 8.89	0.00 353.75 0.00 446.09 483.26 67.50 0.00 49.45 1400.05 0.33 466.07 VMT beyond first 5 miles 0.00 320.00 320.00
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Stet to Haz. Waste Landfill (20 miles) and back No. of One-Way Daily Haul Trips of Pipe From Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea. way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Starage Site and return One-Way Spoils Haul Trips from Site to Starage Site and return One-Way Spoils Haul Trips from Site to Starage Site and return One-Way Spoils Haul Trips from Site to Starage Site and return	52.91 22.30 2.48 1.50 1.50 1.10 Trips 8.89 16.00 1.78 1.48	30.00 3.06 25.00 200.00 5.00 5.00 50.00 7rip Distance 3.06 25.00 200.00 30.00	424.50 162.14 557.61 495.66 75.00 7.50 54.94 2058.82 0.33 685.38 VMT 27.24 400.00 355.56 44.44	70.75 162.14 111.52 12.39 7.50 5.49 658.77 0.33 219.30 VMT first 5 miles 27.24 80.00 8.809 7.41	0,00 353,375 0,00 446,09 483,26 67,50 0,00 49,45 1,400,05 0,33 466,677 VMT beyond first 5 miles 0,00 320,00 346,67 37,04
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips form Storage Site to Hax. Waste Landfill (50 miles) and back No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-Way Trips to Site Importing Paving Materials (50 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Crews Per Day Haul Truck VMT for Pipeline Crews Per Day Gone-Way Spoils Haul Trips form Site ge Site to And return One-Way Spoils Haul Trips form Site to Storage Site and return One-Way Spoils Haul Trips from Storage Site to Landfill SO miles (90% of Exce. Mat') and return One-Way Spoils Haul Trips from Storage Site to Londfill SO miles (10% of Exce. Mat') and return One-Way Spoils Haul Trips from Storage Site to Londfill SO miles (10% of Exce. Mat') and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to S	52.91 22.30 2.48 1.50 1.50 1.50 1.10 Trips 8.89 16.00 1.78 1.48 1.48	30.00 3.06 25.00 200.00 50.00 50.00 50.00 50.00 50.00 7rip Distance 3.06 25.00 200.00 30.00 3.06	424.50 162.14 557.61 495.66 75.00 7.50 54.94 2058.82 0.33 685.38 VMT 27.24 400.00 2355.56 44.44 4.54	70,75 162,14 111,52 12,39 7,50 5,49 658,77 0,33 219,30 VMT first 5 miles 27,24 8,78 8,78 7,41 4,54	0.00 353.75 0.00 446.09 483.26 67.50 0.00 49.45 1400.05 0.33 466.07 VMT beyond first 5 miles 0.00 320.00 3346.67 37.04 0.00
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back No. of One-Way Spoils Daily Trips of Pipe From Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Track VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Site to Storage Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site to Storage Site and return One-Way Spoils Haul Trips from Offsite to Storage Site to Storage Site and return One-Way Site Vaste Landfill Stor Miles (90% of Exc. Mat'l) & return One-Way Site Haul Trips from Offsite to Storage Site and return One-Way Maported Soil Trips from Offsite to Storage Site to Site and return One-Way Maported Soil Trips from Storage Site to Site and return One-Way May Maul Trips of Pipe from Supriper to Storage Site (50 miles ea. way) and return<	52.91 22.30 2.48 1.50 1.50 1.10 Trips 8.89 16.00 1.78 1.48 1.48 0.29	30.00 3.06 25.00 200.00 5.0.00 5.0.00 5.0.00 7rip Distance 3.06 25.00 200.00 30.00 3.06 3.06 5.0.00	424.50 162.14 557.61 495.66 75.00 7.50 7.50 7.50 85.94 2058.82 0.33 685.38 VMT 27.24 400.00 355.56 44.44 4.54 14.29	70,55 162,14 111,52 12,39 7,50 5,49 658,77 0,33 219,30 VMT first 5 miles 8,00 8,88 7,41 4,45 4,143	0.00 353.75 0.00 446.09 483.26 67.50 0.00 49.45 1.400.05 0.33 466.07 VMT beyond first 5 miles 0.03 320.00 320.00 320.00 320.00 320.00 320.00 12.86
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (20 miles) and back No. of One-Way Spoils Daily Trips from Storage Site to Xie. What Exactfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Sites to Storage Site and return One-Way Spoils Haul Trips from Sites to Storage Site and return One-Way Spoils Haul Trips from Sites to Storage Site and return One-Way Spoils Haul Trips from Sites to Storage Site and return One-Way Spoils Haul Trips from Sites to Storage Site and return One-Way Spoils Haul Trips from Storage Site to Site and return One-Way Spoils Haul Trips from Storage Site to Site and return One-Way Spoils Haul Trips from Storage Site to Site and return One-Way Davidet 6all Trips from Storage Site to Site and return One-Way David Haul Trips of Pipe from Storage Site to Site and return One-Way David Haul Trips of Pipe from Storage Site to Site and return	52.91 22.30 2.48 1.50 1.50 1.10 Trips 8.89 16.00 1.78 1.48 1.48 1.48 0.29 0.29	30.00 3.06 25.00 50.00 50.00 50.00 50.00 50.00 7rip Distance 3.06 25.00 200.00 30.00 3.06 50.00 5.00	424.50 162.14 557.61 495.66 75.00 7.50 54.94 2058.82 0.33 685.38 VMT 27.24 400.00 3355.56 44.44 4.54 14.29 1.43	70,75 162,14 111,52 12,39 7,50 5,54 658,77 0,33 219,30 VMT first 5 miles 27,24 8,000 8,89 7,41 4,54 1,43	0.00 353.75 0.00 446.09 483.26 67.50 0.00 49.45 1400.05 0.33 466.07 VMT beyond first 5 miles 0.00 320.00 346.67 37.04 0.00 12.86 0.00
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (20 miles) and back No. of One-Way Spoils Daily Trips from Storage Site to Naz. Waste Landfill (200 miles) and back No. of One-Way Spoils Daily Trips from Suppler to Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Suppler to Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-way Trips to Site Importing Paving Materials (50 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Imported Soil Trips from Site to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Supplier to Storage Site (50 miles ea. way) and return One-Way Daorted Soil Trips from Storage Site to Site and return One-Way Daorted Soil Trips from Storage Site to Site and return One-Way Daorted Soil Trips from Storage Site to Site and return One-Way Daorted Soil Trips from Storage Site Site and return	52.91 22.30 2.48 1.50 1.50 1.10 Trips 8.89 16.00 1.78 1.48 1.48 0.29 0.29 0.29 5.49	30.00 3.06 25.00 200.00 50.00 50.00 50.00 3.06 25.00 200.00 30.00 30.00 5.00 5.00 30.00	424.50 162.14 557.61 495.66 75.00 7.50 5.9.94 2058.82 0.33 685.38 VMT 27.24 400.00 355.56 44.54 4.54 14.29 1.43 164.72	70,55 162,14 111,52 12,39 7,50 5,49 658,77 0,33 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,30 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 21,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 219,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21,40 21	0.00 353.75 0.00 446.09 483.26 67.50 0.00 49.45 1400.05 0.33 466.07 VMT beyond first 5 miles 0.00 320.00 320.00 320.00 320.00 12.86 0.00 12.86 0.00 12.86
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Stet to Naz. Waste Landfill (20 miles) and back No. of One-Way Daily Haul Trips of Pipe from Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe from Storage to Site (5 miles ea. way) No. of One-Way Daily Haul Trips of Pipe from Storage to Site (5 miles ea. way) No. of One-Way Daily Haul Trips of Pipe from Storage to Site (5 miles ea. way) No. of One-Way Daily Haul Trips of Pipe from Storage to Site (5 miles ea. way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Storage Site to Stare Site and return One-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Juny Haul Trips from Storage Site to Site and return One-Way Juny Haul Trips of Pipe from Storage Site to Site and return One-Way Juny Haul Trips of Pipe from Storage Site to Site and return One-Way Juny Haul Trips of Pipe from Storage Site to Site and return One-Way Juny Haul Trips of Pipe from Storage Site to Site and return One-Way Juny Haul Trips of Pipe from Storage Site to Site and return One-Way Juny Haul Trips of Pipe from Storage Site to Site and return One-Way Juny Haul Trips of Pipe from Storage Site to Site and return One-Way Juny Haul Trips of Pipe from Storage Site to Site and return One-Way Dany Haul Trips of Pipe from Storage Site to Site and return One-Way Dany Haul Trips of Pipe from Storage Site to Site and return One-Way Dany Haul Trips of Pipe from Storage Site to Site and return One-Way Dany Haul Trips of Pipe from Storage Site and return One-Way Dany Haul Trips of Pipe from Storage Site and return O	52.91 22.30 2.48 1.50 1.50 1.10 Trips 8.89 16.00 1.78 1.48 1.48 1.48 0.29 0.29	30.00 3.06 25.00 50.00 50.00 50.00 50.00 50.00 7rip Distance 3.06 25.00 200.00 30.00 3.06 50.00 5.00	424.50 162.14 557.61 495.66 75.00 7.50 54.94 2058.82 0.33 685.38 WMT 27.24 400.00 355.56 44.44 4.54 164.29 1.43 164.72 21.30	70, 55 162, 14 111, 52 12, 39 7, 50 5, 58, 77 0, 33 219, 30 VMT first 5 miles 27, 24 80,00 8, 89 7, 41 4, 45 4, 1, 43 1, 43 2, 74 5, 2, 13	0.00 353.375 0.00 446.09 483.26 67.50 0.00 49.45 1400.05 0.33 466.07 VMT beyond first 5 miles 0.00 320.00 346.67 346.67 346.67 0.00 13.20 0.00 12.86 0.00 13.7.27 19.17
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (20 miles) and back No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-way Trips of Site Importing Paving Materials (50 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Inported Soil Trips from Site to Storage Site and return One-Way Inported Soil Trips from Supplier to Storage Site and return One-Way Inported Soil Trips from Storage Site to Site and return One-Way Inported Soil Trips from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site Site Site and return One-Way Daily Haul Trips of Pipe from Storage Site Site and return	52.91 22.30 2.48 1.50 1.50 1.10 Trips 8.89 16.00 1.78 1.48 1.48 0.29 0.29 0.29 5.49	30.00 3.06 25.00 200.00 50.00 50.00 50.00 3.06 25.00 200.00 30.00 30.00 5.00 5.00 30.00	424.50 162.14 557.61 495.66 75.00 7.50 54.94 2058.82 0.33 685.38 VMT 27.24 400.00 355.56 44.54 14.29 143 164.72 21.30 103.52	70757 16214 11152 1239 7,550 5,44 658.77 0,33 219.30 VMT first 5 miles 27,24 80,00 8,89 7,41 4,54 1,43 1,43 1,43 2,7,45 2,13 160,52	0.00 353.75 0.00 446.09 483.26 67.50 0.00 49.45 1400.05 0.33 466.07 VMT beyond first 5 miles 0.00 320.00 346.67 37.04 0.00 12.86 0.00 12.86 0.00 137.27 19.17 19.17
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (20 miles) and back No. of One-Way Daily Haul Trips of Pipe from Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe from Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe from Storage to Site (5 miles ea way) No. of One-Way Daily Haul Trips of Pipe from Storage to Site (5 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Track VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Offsite to Storage Site and return One-Way Spoils Haul Trips from Offsite to Storage Site and return One-Way Spoils Haul Trips from Offsite to Storage Site and return One-Way Spoils Haul Trips from Storage Site to Site and return One-Way Spoils Haul Trips from Storage Site to Site and return One-Way Spoils Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return	52.91 22.30 2.48 1.50 1.50 1.10 Trips 8.89 16.00 1.78 1.48 1.48 0.29 0.29 0.29 5.49	30.00 3.06 25.00 200.00 50.00 50.00 50.00 3.06 25.00 200.00 30.00 30.00 5.00 5.00 30.00	424.50 162.14 557.61 495.66 75.00 7.50 5.9 94 2058.82 0.33 685.38 VMT 27.24 400.00 355.56 44.44 4.54 1.4.29 1.43 164.72 21.30 103.52 0.05	70,55 162,14 111,52 12,39 7,50 5,49 658,77 0,33 219,30 VMT first 5 miles 27,24 80,000 8,89 7,41 4,54 1,43 1,43 1,43 2,745 2,13 1,60,52 2,13 1,60,52 2,13 1,60,52 2,13 1,60,52 2,13 1,60,52 2,13 1,60,52 2,10,52 1,60,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,50 2,10,5	0.00 353.35 0.00 446.09 483.26 67.50 0.00 49.45 1.400.05 0.33 466.07 VMT beyond first 5 miles 0.00 320.00 346.67 37.04 0.00 12.86 0.00 12.86 0.00 137.27 19.17 873.00 0.05
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (20 miles) and back No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Inported Soil Trips from Site to Storage Site and return One-Way Inported Soil Trips from Supplier to Storage Site and return One-Way Inported Soil Trips from Supplier to Storage Site site and return One-Way Daily Haul Trips of Pipe from Supplier to Storage Site site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Storage Site Site Site and return One-Way Daily Haul Trips of Pipe from Storage Site Site and return	52.91 22.30 2.48 1.50 1.50 1.10 Trips 8.89 16.00 1.78 1.48 1.48 0.29 0.29 0.29 5.49	30.00 3.06 25.00 200.00 50.00 50.00 50.00 3.06 25.00 200.00 30.00 30.00 5.00 5.00 30.00	424.50 162.14 557.61 495.66 75.00 7.50 54.94 2058.82 0.33 685.38 VMT 27.24 400.00 355.56 44.54 14.29 143 164.72 21.30 103.52	70757 16214 11152 1239 7,550 5,44 658.77 0,33 219.30 VMT first 5 miles 27,24 80,00 8,89 7,41 4,54 1,43 1,43 1,43 2,7,45 2,13 160,52	0.00 353.75 0.00 446.09 483.26 67.50 0.00 49.45 1400.05 0.33 466.07 VMT beyond fixt 5 miles 0.00 3346.67 37.04 0.00 12.86 0.00 12.86 0.00 137.27 19.17 873.00 0.05 43.59

Reach 4, CM-3A							
Pipeline Construction	Trips	Trip Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles		
Total One-Way Haul Trips from Site to Staging/Storage and return	258.96	3.06	793.66	793.66	0.00		
Total One-Way Haul Trips of Pipe Bedding Import to Site	47.17	3.06	144.55	144.55	0.00		
Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier	47.17	30.00	1414.99	235.83	1179.16		
Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return)	540.48	540.48	0.00				
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back	74.35	25.00	1858.71	371.74	1486.97		
No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back	8.26	200.00	1652.18	41.30	1610.88		
No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way)	5.00	50.00	250.00	25.00	225.00		
No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way)	5.00	5.00	25.00	25.00	0.00		
No. of One way Trips to Site Importing Paving Materials (50 miles ea way)	0.00	50.00	0.00	0.00	0.00		
Sum			6679.57	2177.57	4502.00		
Estimated Number of Pipeline Crews Per Day			0.01	0.01	0.01		
Haul Truck VMT for Pipeline Construction	Haul Truck VMT for Pipeline Construction						
Fiber Optic Duct Bank	Trips	Trip Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles		
One-Way Spoils Haul Trips from Site to Storage Site and return	9.78	3.06	29.97	29.97	0.00		
One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return	17.60	25.00	440.00	88.00	352.00		
One-Way Spoils Haul Trips from Site to Haz. Waste Landfill 200 miles (10% of Excav. Mat'l) & return	1.96	200.00	391.11	9.78	381.33		
One-Way Imported Soil Trips from Offsite to Storage Site and return	1.63	30.00	48.89	8.15	40.74		
One-Way Imported Soil Trips from Storage Site to Site and return	1.63	3.06	4.99	4.99	0.00		
One-Way Daily Haul Trips of Pipe from Supplier to Storage Site (50 miles ea. way) and return	0.31	50.00	15.71	1.57	14.14		
One-Way Daily Haul Trips of Pipe from Storage Site to Site and return	0.31	5.00	1.57	1.57	0.00		
One-Way Concrete Truck Trips per Day and return	6.04	30.00	181.19	30.20	151.00		
One way Trips to Site Importing Paving Materials (50 miles ea way) and return	0.00	50.00	0.00	0.00	0.00		
Sum			1113.44	174.23	939.21		
Estimated Number of Combined Fiber Optic Crews Per Day		0.004	0.00	0.00			
Haul Truck VMT for Fiber Optic Duct Bank		4.81	0.75	4.06			
	Tota						

.

Reach 5, CM-1				1	
Pipeline Construction	Trips	Trip Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles
Total One-Way Haul Trips from Site to Staging/Storage and return	77.69	3.48	270.54	270.54	0.00
Total One-Way Haul Trips of Pipe Bedding Import to Site	14.15	3.48	49.28	49.28	0.00
Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier	14.15	30.00	424.50	70.75	353.75
Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return)	52.91	3.48	184.24	184.24	0.00
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back	22.30	26.00	579.92	111.52	468.39
No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back	2.48	200.00	495.66	12.39	483.26
No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way)	1.50	50.00	75.00	7.50	67.50
No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way)	1.50	5.00	7.50	7.50	0.00
No. of One way Trips to Site Importing Paving Materials (50 miles ea way)	1.10	50.00	54.94	5.49	49.45
Sum			2141.57	719.22	1422.36
Estimated Number of Pipeline Crews Per Day			1.67	1.67	1.67
Haul Truck VMT for Pipeline Construction			3566.35	1197.71	2368.64
Fiber Optic Duct Bank	Trips	Trip Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles
One-Way Spoils Haul Trips from Site to Storage Site and return	8.89	3.48	30.95	30.95	0.00
One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return	16.00	26.00	416.00	80.00	336.00
One-Way Spoils Haul Trips from Site to Haz. Waste Landfill 200 miles (10% of Excav. Mat'l) & return	1.78	200.00	355.56	8.89	346.67
One-Way Imported Soil Trips from Offsite to Storage Site and return	1.48	30.00	44.44	7.41	37.04
One-Way Imported Soil Trips from Storage Site to Site and return	1.48	3.48	5.16	5.16	0.00
One-Way Daily Haul Trips of Pipe from Supplier to Storage Site (50 miles ea. way) and return	0.29	50.00	14.29	1.43	12.86

One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Concrete Truck Trips per Day and return	0.29 5.49	5.00 30.00	1.43 164.72	1.43 27.45	0.00 137.27
One way Trips to Site Importing Paving Materials (50 miles ea way) and return Sum	0.43	50.00	21.30 1053.85	2.13 164.85	19.17 889.00
Estimated Number of Combined Fiber Optic Crews Per Day Haul Truck VMT for Fiber Optic Duct Bank			0.16	0.16	0.16
		Total VMT	169.90 3736.24	26.58 1224.29	143.32 2511.96 Total VMT
Reach 5, CM-2				1	
Pipeline Construction Total One-Way Haul Trips from Site to Staging/Storage and return	Trips 258.96	Trip Distance 3.48	VMT 901.81	VMT first 5 miles 901.81	VMT beyond first 5 miles 0.00
Total One-Way Haul Trips of Pipe Bedding Import to Site	47.17	3.48	164.25	164.25	0.00
Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return)	47.17 176.35	30.00 3.48	1414.99 614.14	235.83 614.14	1179.16 0.00
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back	74.35 8.26	26.00 200.00	1933.05 1652.18	371.74 41.30	1561.31 1610.88
No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way)	5.00 5.00	50.00 5.00	250.00 25.00	25.00 25.00	225.00 0.00
No. of One way Trips to Site Importing Paving Materials (50 miles ea way) Sum	0.00	50.00	0.00 6955.43	0.00 2379.08	0.00 4576.35
Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction			0.08	0.08	0.08
Fiber Optic Duct Bank	Trips	Trip Distance	585.36 VMT	200.22 VMT first 5 miles	385.14 VMT beyond first 5 miles
One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return	9.78 17.60	3.48 26.00	34.05 457.60	34.05 88.00	0.00 369.60
One-Way Spoils Haul Trips from Site to Haz. Waste Landfill 200 miles (10% of Excav. Mat'l) & return One-Way Imported Soil Trips from Offsite to Storage Site and return	1.96 1.63	200.00 30.00	391.11 48.89	9.78 8.15	381.33 40.74
One-Way Imported Soil Trips from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Supplier to Storage Site (50 miles ea. way) and return	1.63	3.48	5.68 15.71	5.68	0.00 14.14
One-Way Daily Haul Trips of Pipe from Storage Site to Site and return	0.31	5.00	1.57	1.57	0.00
One-Way Concrete Truck Trips per Day and return One way Trips to Site Importing Paving Materials (50 miles ea way) and return	6.04 0.00	30.00 50.00	181.19 0.00	30.20 0.00	151.00 0.00
Sum Estimated Number of Combined Fiber Optic Crews Per Day			0.02	178.99 0.02	956.81 0.02
Haul Truck VMT for Fiber Optic Duct Bank		Total VMT	28.04 613.40	4.42 204.64	23.62 408.76 Total VMT
Reach 7, CM-1 Pipeline Construction Table One Way Hawl Tring from Site to Stanling (Storage and return	Trips	Trip Distance	VMT		VMT beyond first 5 miles
Total One-Way Haul Trips from Site to Staging/Storage and return Total One-Way Haul Trips of Pipe Bedding Import to Site	80.50 12.97	3.44 3.44	276.77 44.60	276.77 44.60	0.00
Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return)	12.97 54.82	30.00 3.44	389.19 188.48	64.87 188.48	324.33 0.00
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back No. of One-Way Spoils Daily Trips from Storage Site to Haz, Waste Landfill (200 miles) and back	23.11 2.57	20.00 200.00	462.23 513.59	115.56 12.84	346.67 500.75
No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way)	1.25	50.00	62.50	6.25	56.25
No. of One way Trips to Site Importing Paving Materials (50 miles ea way)	0.97	50.00	48.45	4.84	43.60
Sum Estimated Number of Pipeline Crews Per Day			1992.07 0.35	720.46 0.35	1271.60 0.35
Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank	Trips	Trip Distance	697.63 VMT	252.31 VMT first 5 miles	445.32 VMT beyond first 5 miles
One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return	8.89 16.00	3.44 20.00	30.56 320.00	30.56 80.00	0.00 240.00
One-Way Spoils Haul Trips from Site to Haz. Waste Landfill 200 miles (10% of Excav. Mat'l) & return One-Way Imported Soil Trips from Offsite to Storage Site and return	1.78 1.48	200.00 30.00	355.56 44.44	8.89 7.41	346.67 37.04
One-Way Imported Soil Trips from Storage Site to Site and return One-Way Daily Haul Trips of Pipe from Supplier to Storage Site (50 miles ea. way) and return	1.48	3.44	5.09	5.09	0.00
One-Way Daily Haul Trips of Pipe from Storage Site to Site and return	0.29 0.29	50.00 5.00	14.29 1.43	1.43 1.43	12.86 0.00
One-Way Concrete Truck Trips per Day and return One way Trips to Site Importing Paving Materials (50 miles ea way) and return	5.49 0.43	30.00 50.00	164.72 21.30	27.45 2.13	137.27 19.17
Sum Estimated Number of Combined Fiber Optic Crews Per Day			957.39 0.05	164.39 0.05	793.00 0.05
Haul Truck VMT for Fiber Optic Duct Bank		Total VMT	43.54 741.17	7.48 259.79	36.06 481.38 Total VMT
Reach 7, CM-2				1	
Pipeline Construction Total One-Way Haul Trips from Site to Staging/Storage and return	Trips 257.60	Trip Distance 3.44	VMT 885.67	VMT first 5 miles 885.67	VMT beyond first 5 miles 0.00
Total One-Way Haul Trips of Pipe Bedding Import to Site Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier	41.51 41.51	3.44 30.00	142.73 1245.41	142.73 207.57	0.00 1037.84
Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return) No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back	175.43	3.44 20.00	603.14	603.14 369.78	0.00 1109.35
No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back	8.22	200.00	1479.14 1643.49	41.09	1602.40
No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way)	4.00 4.00	50.00 5.00	200.00 20.00	20.00 20.00	180.00 0.00
No. of One way Trips to Site Importing Paving Materials (50 miles ea way) Sum	0.00	50.00	0.00 6219.58	0.00 2289.98	0.00 3929.60
Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction			0.41 2567.90	0.41 945.47	0.41 1622.43
Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return	Trips 9.78	Trip Distance 3.44	VMT 33.62		VMT beyond first 5 miles 0.00
One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Site to Haz, Waste Landfill 200 miles (10% of Excav. Mat'l) & return	17.60	20.00	352.00 391.11	88.00 9.78	264.00 381.33
One-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Site and return One-Way Imported Soil Trips from Storage Site to Site and return	1.63	30.00	48.89	8.15	40.74
One-Way Daily Haul Trips of Pipe from Supplier to Storage Site (50 miles ea. way) and return	1.63 0.31	3.44 50.00	5.60 15.71	5.60 1.57	0.00 14.14
One-Way Daily Haul Trips of Pipe from Storage Site to Site and return One-Way Concrete Truck Trips per Day and return One-Way Concrete Truck Trips per Day and return	0.31 6.04	5.00 30.00	1.57 181.19	1.57 30.20	0.00 151.00
One way Trips to Site Importing Paving Materials (50 miles ea way) and return Sum	0.00	50.00	0.00 1029.70	0.00 178.49	0.00 851.21
Estimated Number of Combined Fiber Optic Crews Per Day Haul Truck VMT for Fiber Optic Duct Bank			0.13 134.49	0.13 23.31	0.13 111.17
		Total VMT	2702.39	968.79	1733.60 Total VMT
Reach 8, CM-1 Pipeline Construction	Trips	Trip Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles
Total One-Way Haul Trips from Site to Staging/Storage and return Total One-Way Haul Trips of Pipe Bedding Import to Site	80.50 12.97	3.44 3.44	276.95 44.63	276.95 44.63	0.00 0.00
Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return)		30.00	389.19 188.60	64.87 188.60	324.33 0.00
	12.97			188.60	346.67
No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back	54.82 23.11	3.44 20.00	462.23		F 00 7F
No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way)	54.82 23.11 2.57 1.25	20.00 200.00 50.00	513.59 62.50	12.84 6.25	500.75 56.25
No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One way Trips to Site Importing Paving Materials (50 miles ea way)	54.82 23.11 2.57	20.00 200.00	513.59 62.50 6.25 48.45	12.84 6.25 6.25 4.84	56.25 0.00 43.60
No. of One-Way Spoils Daily Trips from Storage Site Lo Haz. Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea.way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea.way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea.way) No. of One way Trips to Site Importing Paving Materials (50 miles ea.way) Sum Estimated Number of Pipeline Crews Per Day	54.82 23.11 2.57 1.25 1.25	20.00 200.00 50.00 5.00	513.59 62.50 6.25	12.84 6.25 6.25	56.25 0.00
No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste LandHil (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Storage to Site (s a miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (s miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (s miles ea way) No. of One-way Trips to Site Importing Paving Materials (S0 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction	54.82 23.11 2.57 1.25 1.25 0.97	20.00 200.00 50.00 5.00 50.00	513.59 62.50 6.25 48.45 1992.40 0.59 1179.23	12.84 6.25 6.25 4.84 720.79 0.59 426.61	56.25 0.00 43.60 1271.60 0.59 752.62
No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Storage to Site Ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site Ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site Ea way) No. of One way Trips to Site Importing Paving Materials (50 miles ea way) Sum Estimated Number of Pipeline Cress Per Day Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Site Site and Teturn	54.82 23.11 2.57 1.25 1.25 0.97 Trips 8.89	20.00 200.00 5.00 50.00 Trip Distance 3.44	513.59 62.50 6.25 48.45 1992.40 0.59 1179.23 VMT 30.58	12.84 6.25 6.25 4.84 720.79 0.59 426.61 VMT first 5 miles 30.58	56.25 0.00 43.60 1271.60 0.59 752.62 VMT beyond first 5 miles 0.00
No. of One-Way Spoils Daily Trips from Storage Site Let Max. Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spoils Haul Trips from Storage Site to Landfill 50 miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Site to Haux Waste Landfill 200 miles (10% of Exca. Mat'l) areturn	54.82 23.11 2.57 1.25 1.25 0.97 Trips 8.89 16.00 1.78	20.00 200.00 50.00 5.00 50.00 7rip Distance 3.44 20.00 200.00	513.59 62.50 6.25 48.45 1992.40 0.59 1179.23 VMT 30.58 320.00 355.56	12.84 6.25 6.25 4.84 720.79 0.59 426.61 VMT first 5 miles 30.58 8.80.00 8.89	56.25 0.00 43.60 1271.60 0.59 752.62 VMT beyond first 5 miles 0.00 240.00 346.67
No. of One-Way Spoils Daily Trips from Storage Site Lo Haz. Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe From Storage to Site [5 miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site [5 miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site [5 miles ea way) No. of One-Way Daily Haul Trips of Pipe From Storage to Site [5 miles ea way) Sum Estimated Number of Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Storage Site to Landfill 300 miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Storage Site to Har. Waste Landfill 200 miles (10% of Excav. Mat'l) & return One-Way Imported Soil Trips from Offsite to Storage Site and return One-Way Imported Soil Trips from Storage Site to Starage Site and return One-Way Imported Soil Trips from Storage Site to Starage Site and return	54.82 23.11 2.57 1.25 0.97 Trips 8.89 16.00 1.78 1.48 1.48	20.00 200.00 50.00 50.00 Trip Distance 3.44 20.00 200.00 30.00 3.44	513.59 62.50 6.25 48.45 1992.40 0.59 1179.23 VMT 30.58 320.00 3355.56 44.44 5.10	12.84 6.25 4.84 720.79 426.61 VMT first 5 miles 30.58 80.00 8.89 7.41 5.10	56.25 0.00 43.60 0.59 752.62 VMT beyond first smiles 0.00 240.00 346.67 37.04 0.00
No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back No. of One-Way Daily Haul Trips of Pipe from Storage to Site (5 miles ea way) No. of One-Way Daily Haul Trips of Pipe from Storage to Site (5 miles ea way) No. of One way Trips to Site Importing Paving Materials (50 miles ea way) Sum Sum Haul Truck VMT for Pipeline Crews Per Day Haul Truck VMT for Pipeline Construction Fiber Optic Duct Bank One-Way Spoils Haul Trips from Site to Storage Site and return One-Way Spoils Haul Trips from Storage Site to Hat. Waste Landfill 20 miles (90% of Exc. Mat'l) and return One-Way Spoils Haul Trips from Storage Site to Hat. Waste Landfill 20 miles (10% of Excav. Mat'l) & return One-Way Spoils Haul Trips from Storage Site to Storage Site and return	54.82 23.11 2.57 1.25 1.25 0.97 Trips 8.89 16.00 1.78 1.48	20.00 200.00 50.00 5.00 7.00 7.00 3.00 200.00 30.00	513.59 6.25 6.25 48.45 1992.40 0.59 1179.23 VMT 30.58 320.00 355.56 44.44	12.84 6.25 6.25 4.84 720.79 0.59 426.61 VMT first 5 miles 30.58 80.00 8.89 7.41	56.25 0.00 43.60 1271.60 0.59 752.62 VMT beyond first 5 miles 0.00 240.00 346.67 37.04

Owner Description is not reprojent (a unit any unit can be any unit can int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set int any track with the price of the set of the set of the set int any track with the price of the set of the set of the set int any track with the price of the set of the set of the set int any track with the price of the set of the set of the set int any track with the set of the set of the set of the set of the set int any track with the price of the set of	One ways Tales to film two others Davids Mathematics (FO will be an even band on two	0.40	50.00		1	10.13	
Estimate Number of Canabiand Plan Cypic Cortex Pro Dy 0.04 0.04 And Track VMF for Filer Optic Dark Bank Teal VMF 7.09 3.13 0.04 And Track VMF for Filer Optic Dark Bank 7.02 7.09 3.13 7.06 7.09 And Dark VMF for Filer Optic Dark Bank 7.02 7.01 1.04 0.04 0.04 And Dark VMF for Filer Optic Dark Bank 7.02 7.01 1.04 0.04 0.04 And Dark VMF for Filer Optic Dark Bank 7.02 7.00 1.04 0.04 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	One way Trips to Site Importing Paving Materials (50 miles ea way) and return	0.43	50.00	21.30	2.13	19.17	
Had Truck WHT for Fabrer Optic Duck Bank 1.15 1.15 7.09 3.1.3 Total WHT for Fabrer Optic Duck Bank Total WHT for Fabrer Optic Duck Bank 1.00 7.09 3.1.3 Total Gene Very Park for State							
No. Total One. Name Total One. Name Total One. Name Other States Other States<							
Based in S, CM.2 Trigo Trigo Datama VMT Data Convex You and Yop from the Same Same Data Same Same Same Same Same Same Same Sam			Total VMT				
ProductorPriorTrigTrigTrigUtertainedUtertainedUtertained161 die Way July16.85.41.3.41.4.2.41.4.2.41.4.2.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.4<			Total VIVIT	1220.30	455.70	788.80 10141 10141	
ProductorPriorTrigTrigTrigUtertainedUtertainedUtertained161 die Way July16.85.41.3.41.4.2.41.4.2.41.4.2.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.3.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.41.4.4<	Basek 9, CM 3				1		
Tata Dev. Wy used Figs 66 way beak to sample 10 and ease way		Tring	Trin Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles	
1sta 0.wet Way failed Tipp of Pipe Restoring Import to Site 1 41.51 3.44 14.2.2 Awa Number of analytic form Society Stress							
Abs Abs 1.51 0.00 126.41 0.07.5 Now of new Yaw Spain Standing Tenge Yang Yang Yang Yang Yang Yang Yang Yang							
Number of Dec Way Day Type Standing Executed Soft Dec Way Day Type Standing Executed Soft Day Type for Type for Soft Day Type for Sof							
iss. of new Way Spein bally first rom Storage Site to Landfill (20 miles) and back 72:96 72:00 14/73:14 iss. of new Way Spein bally first rom Storage Site to Landfill (20 miles) and back 6.22 200.00 160.00 200.00 100.00 iss. of new Way Spein Sub Type Site Site Site Site Site Site Site Sit	Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return)						
Bits of new Wy sign. Due' Traptines (strage that is, was Ladeff B2D mark) and Lade B 22 200.00 164.349 Ace, of new Wy Day Haat Trigs of Page Trans Storage to Strag Strage S	No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back						
Bool on Way Daily Haal Trips of Prior Storage to State Samily and Yeal Material (SD miles as way) 0.00 5.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 60.00 20.00 60.00 20.00 60.00 20.00 60.00 20.00 60.00 60.00 20.00 60.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00	No. of One-Way Spoils Daily Trips from Storage Site to Haz. Waste Landfill (200 miles) and back	8.22	200.00	1643.49	41.09	1602.40	
No. of new wy Tips to Site insporting Faving Materials (10 miles as way) 0.00 5.00 0.00 Sum 0.00 5.00 0.00 0.00 Extinated Number of Pipeline Cerver Per Day 0.30 0.30 0.30 0.30 Description Cerver Per Day 0.30 Tright Time Time Time Time Time Time Time Time	No. of One-Way Daily Haul Trips of Pipe From Supplier to Storage (50 miles ea. way)						
Sum Construction 6220 63 2251.04 3292.60 Stainard Sumber of Pipelin Ceve Pre Day	No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way)	4.00	5.00	20.00	20.00	0.00	
Estimated Number of Pipeline Corver, Per Day 0.30 Hual Track VMT (Properine Corver, Per Day) 1.327.78 One-Way spoils Haul Trips from Stores Stee to Landhill So miles (96% Esk. Marti) and return 1.76 2.00.0 352.70 One-Way spoils Haul Trips from Stores Stee to Landhill So miles (96% Esk. Marti) and return 1.76 2.00.0 352.00 One-Way spoils Haul Trips from Stores Stee to Landhill So miles (96% Esk. Marti) and return 1.66 3.00 44.89 One-Way spoils Haul Trips from Stores Stee to Stee and return 1.61 3.00 44.89 5.51 0.77 One-Way spoils Haul Trips of Pipe from Stores Stee to Stee and return 0.01 0.00 10.00 11.10 0.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00	No. of One way Trips to Site Importing Paving Materials (50 miles ea way)	0.00	50.00	0.00	0.00	0.00	
Haut Track VMT for Pipeline Construction 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578 1287.578	Sum			6220.63	2291.04	3929.60	
Flore Optic Duct Bank Trigs Top Distance NMT One-Way spink Hull Trigs form Storage Site of Starage Site (Starage Site and return 17.60 20.00 332.00 One-Way spink Hull Trigs form Storage Site of Starage Site (Starage Site and return 16.3 30.00 48.89 One-Way spink Hull Trigs form Storage Site of Starage Site (Starage Site and return 16.3 30.00 48.89 One-Way spink Hull Trigs of The Storage Site Site Site and return 0.31 5.00 15.71 One-Way spink Hull Trigs of The Storage Site Site Site and return 0.01 35.00 15.71 One-Way spink Hull Trigs of The Storage Site Site Site and return 0.00 5.00 0.00 One-Way spink Hull Trigs of The Storage Site Site Site and return 0.00 5.00 0.00 Start Storage Site Site Site and return 0.00 5.00 0.00 0.00 Start Storage Site Site Site Site Site Site Site Sit				0.30	0.30	0.30	
One-Way spok itsual Trips from Site to Storage Site and return 9.78 3.44 33.64 33.64 One-Way spok itsual Trips from Site spok and Storage Site to Landill Storage Site 10 Landill Storage Site	Haul Truck VMT for Pipeline Construction						
One-Way spok Istal Trips from Storage Site to LandIII 50 miles (90% of Exc. Mat') an arteurn 1.96 20.00 335.00 38.00 264.00 One-Way spok Istal Trips from Storage Site to LandIII 50 miles (30% of Exc. Mat') an arteurn 1.63 30.00 48.89 8.15 40.74 One-Way imported Soll Trips from Storage Site to Site and return 0.31 50.00 15.71 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57 <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th></td<>							
One-Way goods find Trigs from Site to Air2, March Land H2 Do mess (Div Of Exace, MULT 2 action) 1.66 200.00 39.111 9.78 38.13 One-Way imported Soit Trigs from Site to Site and return 1.63 3.00 44.89 5.61 5.61 0.00 One-Way imported Soit Trigs from Storage Site to Site and return 0.31 5.00 1.57 1.57 1.57 1.57 1.57 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00							
One-Way imported Soit Tipis from Storage Site to Storage Site and return 1.63 30.00 48.89 8.15 40.74 One-Way imported Soit Tipis from Storage Site to Storage Site (Storage Site (St							
One-Way Imported Sol Trigs from Storage Site Lo Site and return 1.63 2.44 5.61 0.00 One-Way Daily statu Trigs of Pipe from Storage Site Lo Site and return 0.31 5.00 1.57 1.57 One-Way Daily statu Trigs of Pipe from Storage Site Lo Site and return 0.31 5.00 1.57 1.57 One-Way Daily statu Trigs of Pipe from Storage Site Lo Site and return 0.01 1.50 1.57 1.57 One-Way Daily statu Trigs of Pipe from Storage Site Lo Site and return 0.00 5.00 0.00 0.00 Sim 0.00 5.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>							
One-Way Daily Haul Trips of Pipe from Suppite to Storage Site (30 miles as. way) and return 0.31 50.00 15.71 15.71 15.71 One-Way Daily Haul Trips of Pipe from Storage Site to Site and return 0.00 0.00 1022.73 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71 15.71							
One-Way Daily Haul Trips of Pipe from Storage Site to Site and return 0.31 5.00 1.57 One-Way Concent Truck Trips per Day and return 0.00 50.00 0.00 One-Way Concent Truck Trips per Day and return 0.00 50.00 0.00 Sum 0.00 50.00 0.00 0.00 Sum 0.05 0.00 0.00 0.00 Total Way Trips to Site Importing Paving Materials (So miles as way) and return 0.06 0.06 0.06 Haul Truck WMT for Fiber Optic Duct Bank - 65.77 0.00 0.00 Total One-Way Spoils Daily Trips Haul Trips (Pape Edding Insport to Statis 27.56 3.44 285.24 0.00 Alzo Insumber of Law Way Spoils Daily Trips Haul Trips (Pape Edding Insport to Statis 27.56 3.44 285.24 29.7.0 Number of Dave Way Spoils Daily Trips Haul Trips from Storage Site to Instit I use Minist and Statis 23.00 114.34 3.44 66.33 0.00 Number of Dave Way Spoils Daily Trips Haul Trips from Storage Site to Instit I use Minist and Statis 27.50 3.44 60.57 10.53 60.33 0.00 Number							
One-Way Topic to Truck Trips per Day and return 6.04 30.00 19119 30.20 151.00 One-Way Topic Site Importing Paving Materials (50 miles as way) and return 0.00 50.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 1.02.37 0.00 1.02.57 0.01 1.02.57 0.01 1.02.57 0.01 1.02.57 0.01 1.02.57 0.01 1.02.57 0.01 1.02.57 0.00 1.02.57 0.00 1.02.57 0.00 1.02.57 0.00 1.02.57 0.00							
One way Trips to Site Importing Pawing Materials (50 miles as way) and return 0.0 50.00 0.00 0.00 0.00 0.00 0.00 Sum 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06							
Sum 1029.73 Stimated Number of Combined Fiber Optic Crews Per Day 0.06 Haul Truck VMT for Fiber Optic Crews Per Day 0.06 Haul Truck VMT for Fiber Optic Crews Per Day 1140 Total VMT Total One-Way Haul Trips of Pipe Bedding Import Site Total One-Way Haul Trips of Pipe Bedding Import Site Total One-Way Spain The Site Site (and return) One-Way Spain Total Site Site (and return) No. of One-Way Spain Total Strom Storage Eto to Landill (20 miles) and back No. of One-Way Spain Tabit Trips from Storage Eto to Landill (20 miles) and back No. of One-Way Daily Trips tram Storage Site Name Site Insporting Parking Materials (20 miles ea way) No. of One-Way Spain Dail Trips Trip Distance YMT No. of One-Way Daily Mail Trips of Pipe Form Storage Site Name Site Insporting Parking Materials (20 miles ea way) 0.00 163.3 0.00 No. of One-Way Daily Mail Trips on Site Insporting Parking Materials (20 miles ea way) 0.00							
Estimated Number of Combined Fiber Optic Crews Per Day 0.002 0.002 0.002 Haul Truck VMT for Fiber Optic Dutt Bank 65.77 0.002 0.006 Total One-Way Haul Trips from Site to Staging/Storage and return 257.60 3.44 194.155 Total One-Way Haul Trips from Site to Staging/Storage and return 277.60 3.44 127.53 116.4 586.24 No. of One-Way Haul Trips from Site to Staging/Storage Site from Storage Back to the Site (and return) 175.43 3.44 127.53 106.03.3 0.00 No. of One-Way Spoils Dail Trips from Storage Site Ion Storage Eack to the Site (and return) 175.43 3.44 603.53 0.00 No. of One-Way Spoils Dail Trips from Storage Eack to the Site (and return) 157.43 0.00 11643.49 110.9 1602.40 No. of One-Way Daily Haul Trips of Pipe from Storage Back to the Site (and return) 0.00 50.00 20.00 1643.49 10.9 1602.40 No. of One-Way Daily Haul Trips of Pipe from Storage Back to the Site (and return) 0.00 50.00 20.00 125.45 381.83 50.22 0.52 0.52 0.52 0.52 0.52 0.52		0.00	50.00				
Haul Truck VMT for Fiber Optic Duct Bank 65.77 11.40 54.37 Total VMT 1941.55 11.40 54.37 Total One-Way Haul Trips form Site to Staging/Storage and return 257.60 3.44 886.24 0.00 Total One-Way Haul Trips of Pipe Bedding Import to Site (and return) 17.64.3 3.44 886.24 0.00 Number of One-Way Spoils Daily Trips form Storage Site to Instruction 73.96 20.00 1117.52 0.00 No. of One-Way Spoils Daily Trips form Storage Site to Landfill (S0 miles) and back 73.96 20.00 1473.14 No. of One-Way Daily That Form Storage Site to Instruction 73.96 20.00 1473.14 366.78 1109.35 No. of One-Way Daily That Diffic Onlies and way 4.00 5.00 20.00 127.58 0.00 No. of One-Way Daily That Diffic Onlies and way 4.00 5.00 20.00 1473.14 366.78 1109.35 No. of One-Way Daily That Diffic Onlies and way 0.00 50.00 20.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00							
Total VMT 1941 155 702.25 1239.31 Total VMT Figeine Construction Total One-Way Haul Trips from Site to Staging/Storage and return Colspan="2">Colspan="2">Colspan="2">VMT Figeine Construction Trip Statuce VMT beyond first 5 miles Total One-Way Haul Trips from Site to Staging/Storage and return Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2" Colspan="2" Colspan="2" <th colspa<="" th=""><th></th><th></th><th></th><th></th><th></th><th></th></th>	<th></th> <th></th> <th></th> <th></th> <th></th> <th></th>						
Reach 8, CM-3A Pipeline Construction Trips Trip Distance VMT Total One-Way Haul Trips of Pipe Bedding month to Site 37.08 3.44 886.24 0.00 Also Number of Haul Trips of Pipe Bedding to Storage Site from Supplier 37.08 3.44 127.58 0.00 Number of New Way Daily Trips of Pipe Bedding to Storage Site to Landfill (50 miles) and back 77.96 20.00 1417.53 185.42 927.10 No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back 8.22 200.00 1643.49 140.9 1602.40 No. of One-Way Daily Maul Trips of Pipe From Storage Site (5 miles ea way) 4.00 5.00 20.00 20.00 20.00 20.00 20.00 100.92 20.00 1643.49 100.92 20.00 1643.49 100.92 20.00 160.33 0.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00	naur nuck vivir för höer öpic bact bank		Total VMT				
Pipeline Construction Trips Trip Distance VMT VMT first Smiles VMT first Smiles VMT first Smiles VMT first Smiles VMT beyond first Smiles Total One-Way Haul Trips for Dist Eib Staging/Storage and return 37.08 3.44 127.58 0.00 Also humber of Inaul Trips of Pipe Bedding to Storage Site from Suppler 37.08 30.00 1111.22 105.43 0.00 Number of One-Way Daily Trips Houling Exacated Soil from Storage Site to task Mise and back 82.22 20.00 1479.14 605.33 0.00 No. of One-Way Spoils Daily Trips from Storage Site to task Mise and back 82.22 20.00 1643.49 41.09 105.04 No. of One-Way Spoils Daily Trips from Storage Site on			Total Vill	1541.55] /02.25	1255.51 10(a) VM1	
Pipeline Construction Trips Trip Distance VMT VMT first Smiles VMT first Smiles VMT first Smiles VMT first Smiles VMT beyond first Smiles Total One-Way Haul Trips for Dist Eib Staging/Storage and return 37.08 3.44 127.58 0.00 Also humber of Inaul Trips of Pipe Bedding to Storage Site from Suppler 37.08 30.00 1111.22 105.43 0.00 Number of One-Way Daily Trips Houling Exacated Soil from Storage Site to task Mise and back 82.22 20.00 1479.14 605.33 0.00 No. of One-Way Spoils Daily Trips from Storage Site to task Mise and back 82.22 20.00 1643.49 41.09 105.04 No. of One-Way Spoils Daily Trips from Storage Site on	Reach 8. CM-3A				1		
Total One-Way Haul Trips of Pipe Bedding to Storage Ster for Suppler 37.08 3.44 127.58 127.58 0.00 Abs Number of One-Way Daily Trips Bedding to Storage Ster for Suppler 37.08 30.00 1112.52 185.42 927.10 Number of One-Way Spoils Daily Trips Hauling Excavated Soil from Storage Ster to Landfill (So miles) and back 73.96 20.00 1479.14 603.53 0.00 No. of One-Way Spoils Daily Trips from Storage Ster to Landfill (So miles) and back 8.22 20.00 1463.49 4.00 50.00 20.00 106.33 0.00 No. of One-Way Daily Built Trips from Storage Ster to Landfill (So miles an way) 4.00 50.00 20.00 100.00 20.00 100.00 20.00 100.00 20.00 0.00 20.00 0.00 20.00 100.00 20.00 100.00 20.00 100.00 20.00 100.00 20.00 100.00 20.00 0.00 20.00 100.00 20.00 100.00 20.00 100.00 20.00 100.00 20.00 100.01 20.02 20.02 20.02 20.02 20.00 100.01<		Trips	Trip Distance	VMT	VMT first 5 miles	VMT beyond first 5 miles	
Also Rumber of Haul Trips of Pipe Bedding to Storage Site from Supplier 37.08 30.00 1112.52 Number of One-Way Spoils Bualing Eaxot to Bit (and return) 175.43 3.44 603.53 600.0 No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back 73.36 20.00 1479.14 603.53 600.0 No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back 8.22 200.00 1683.49 41.09 1602.40 No. of One-Way Daily Haul Trips of Pipe From Storage Site (5 miles ea way) 4.00 5.00 20.00 20.00 0.00 No. of One-Way Daily Haul Trips of Pipe From Storage Site (5 miles ea way) 0.00 5.00 20.00 0.00 20.00 0.00 20.00 0.00 0.00 0.00 0.00 20.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Total One-Way Haul Trips from Site to Staging/Storage and return	257.60	3.44	886.24	886.24	0.00	
Number of One-Way Daily Trips Hauling Excavated Soil from Storage back to the Site (and return) 175.43 3.44 603.53 No. of One-Way Spoils Daily Trips from Storage Site to Landfill (50 miles) and back 73.96 20.00 1479.14 No. of One-Way Daily Suily Trips from Storage Site to Har. Waste Landfill (50 miles) and back 82.22 20.00 1479.14 No. of One-Way Daily Haul Trips of Pipe from Storage 150 miles ea way) 4.00 55.00 20.00 No. of One-Way Daily Haul Trips of Pipe from Storage to Site (Bines ea way) 0.00 50.00 20.00 No. of One-Way Daily Haul Trips of Pipe from Storage to Site (Bines ea way) 0.00 50.00 20.00 20.00 No. of One-Way Spoils Haul Trips from Storage Site and return 0.52 0.52 0.52 0.52 Mail Truck VMT for Pipeline Construction Trips Trips Instance WMT feys from Storage Site and return 0.78 3.44 33.64 0.00 One-Way Spoils Haul Trips from Storage Site and return 1.76 72.00 382.00 88.00 266.00 One-Way Spoils Haul Trips from Storage Site and return 1.63 3.44 3.64 0.00 5.61 0.00		37.08	3.44	127.58	127.58	0.00	
No. of One-Way Spoils Daily Trips from Storage Ste to Landfill (50 miles) and back 73.9 f. 20.00 1479.14 No. of One-Way Spoils Daily Trips from Storage Ste to Landfill (20 miles) and back 8.22 200.00 1643.49 41.09 1602.40 No. of One-Way Daily Haul Trips of Pipe From Storage Ste to Landfill (20 miles) and back 8.22 200.00 1643.49 41.09 1602.40 No. of One-Way Daily Haul Trips of Pipe From Storage Ste Ste To Hat. Water Landfill (20 miles) and back 8.22 200.00 1643.49 41.09 1602.40 No. of One-Way Daily Haul Trips of Pipe From Storage Ste Ste To Hat. Water Landfill (20 miles) and back 6.00 5.00 0.00 20.00 20.00 0.00 Sum 6.072.51 6.072.51 252.5 3318.85 0.52 0.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 10.52 </td <td></td> <td>37.08</td> <td>30.00</td> <td>1112.52</td> <td>185.42</td> <td>927.10</td>		37.08	30.00	1112.52	185.42	927.10	
No. of One-Way Spoils Daily Trips from Storage Stete to Hear. Waste Landfill (200 miles) and back 8.22 20.00 1643.49 No. of One-Way Daily Maily trips of Pipe From Storage to Site (5 miles as way) 4.00 50.00 200.00 200.00 No. of One-Way Daily Maily Trips of Pipe From Storage to Site (5 miles as way) 4.00 50.00 20.00 0.00 No. of One-Way Daily Maily Trips of Pipe From Storage to Site (5 miles as way) 0.00 50.00 0.00 20.00 0.00 Sum 0.00 50.00 0.00 2253.65 3131.85 Haul Truck VMT for Pipeline Crews Per Day 0.52 0.52 0.52 0.52 Haul Truck VMT for Pipeline Construction Trips Trip Distance VMT VMT feyord first s miles One-Way Spoils Haul Trips from Stree to Storage Stete and return 9.78 3.44 33.64 0.00 One-Way Spoils Haul Trips from Stree Storage Stete and return 1.63 3.44 5.61 0.00 One-Way Spoils Haul Trips from Stree Storage Stete and return 0.31 5.00 1.57 1.57 1.41.44 One-Way Daily Haul Trips of Pipe from S		175.43	3.44	603.53	603.53	0.00	
No. of One-Way Daily Haul Trips of Pipe From Storage 150 miles ea way) 4.00 50.00 200.00 No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) 4.00 5.00 200.00 200.00 No. of One-Way Daily Haul Trips of Pipe From Storage to Site (5 miles ea way) 0.00 5.00 20.00 20.00 20.00 20.00 0.00 5.00 0.00 5.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.							
No. of One-Way Daily Haul Trips of Pipe From Storage 15 Rt (5 miles ea way) 4.00 5.00 20.00 0.00 No. of One-Way Daily Haul Trips to Site importing Paving Materials (50 miles ea way) 0.00 5.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00							
No. of One way Trips to Site Importing Paving Materials (50 miles ea way) 0.00 50.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00							
Sum 6072 51 Stimated Number of Pipeline Crews Per Day 0.52 0.52 Haul Truck VMT for Pipeline Construction 3172 13 1177,25 1994.87 One-Way Spoils Haul Trips from Site to Storage Site and return 9,78 3.44 3.54 33.64 3.64 0.00 One-Way Spoils Haul Trips from Site to Storage Site to Londfill So miles (90% of Exc. Mat'l) and return 17.60 20.00 391.11 9.78 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 3.84 5.61 0.00 One-Way Daily Haul Trips of Pipe from Storage Site to Site and return 0.31 5.00 1.57 1.57 1.44 One-Way Daily Haul Trips of Pipe from Storage Site to Site and return 0.31 5.00 1.57 1.57 1.60							
Estimated Number of Pipeline Crews Per Day 0.52 0.52 0.52 0.52 Haul Truck VMT for Pipeline Construction 317.21.3 317.21.3 1177.25 1994.87 Haul Truck VMT for Pipeline Construction 71ps Trip Distance VMT VMT 0.52 0.52 0.52 0.52 One-Way Spoils Haul Trips from Storage Site to Lotte Bank Trips Trip Distance VMT VMT first 5 mills 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00		0.00	50.00				
Haul Truck VMT for Pipeline Construction 3172.13 1177.25 199.87 One-Way Spoils Haul Trips from Site to Storage Site and return 9.78 3.44 33.64 0.00 One-Way Spoils Haul Trips from Storage Site to Landfill Somiles (90% of Exc. Mat'l) and return 17.60 20.00 352.00 33.64 0.00 One-Way Spoils Haul Trips from Storage Site to Landfill Somiles (90% of Exc. Mat'l) and return 1.66 20.00 391.11 9.78 381.33 One-Way Spoils Haul Trips from Storage Site and return 1.63 3.00 48.89 86.00 264.00 One-Way Spoils Haul Trips form Offsite to Storage Site and return 1.63 3.44 5.61 0.00 One-Way Spoils Haul Trips of Pipe from Storage Site to Site and return 0.31 5.00 1.57 1.57 1.44 One-Way Spoils Haul Trips of Pipe from Storage Site to Site and return 0.31 5.00 1.57 1.57 1.60 One-Way Spoils Exite Site Instructure 0.00 50.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 1.57 1.57 <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th></td<>							
File Optic Duct Bank Trips Trip Distance VMT One-Way Spoils Haul Trips form Storage Site to Starage Site and return 9.78 3.44 33.64 33.64 33.64 33.64 0.00 One-Way Spoils Haul Trips from Storage Site to Landfill S0 miles (90% of Exc. Mat'l) and return 17.60 20.00 392.00 88.00 264.00 One-Way Spoils Haul Trips from Storage Site to Landfill S0 miles (90% of Exc. Mat'l) and return 1.66 200.00 391.11 9.78 381.33 One-Way Spoils Haul Trips from Storage Site to Site and return 1.63 3.44 56.1 0.00 One-Way Imported Soll Trips from Storage Site to Site and return 0.31 5.00 15.71 15.7 14.14 One-Way Daily Haul Trips of Pipe from Storage Site to Site and return 0.31 5.00 15.7 15.7 0.00 One-Way Concrete Truck Trips per Day and return 0.00 50.00 181.19 30.20 15.100 One-Way Concrete Truck Trips per Day and return 0.00 50.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00							
One-Way Spols Haul Trips from Storage Ste and return 9.78 3.44 33.64 33.64 0.00 One-Way Spols Haul Trips from Storage Ste to Landfill 50 miles (90% of Exc. Mat') and return 17.60 20.00 352.00 88.00 264.00 One-Way Spoils Haul Trips from Storage Ste to Landfill 50 miles (90% of Exc. Mat') and return 1.63 20.00 391.11 9.78 381.33 One-Way Imported Soil Trips from Storage Ste to Ste and return 1.63 3.00 48.89 8.15 40.74 One-Way Daily Haul Trips form Storage Ste to Ste and return 1.63 3.44 5.61 0.00 One-Way Daily Haul Trips of Pipe from Storage Ste (50 miles a.way) and return 0.31 5.00 1.57 1.57 14.14 One-Way Daily Haul Trips of Pipe from Storage Ste (50 miles a.way) and return 0.31 5.00 1.57 1.57 0.00 One-Way Concrete Truck Trips per Day and return 0.00 50.00 1.61 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0							
One-Way Spoils Haul Trips from Storage Site to Landfill S0 miles (90% of Exc. Mat'l) and return 17.60 20.00 352.00 88.00 264.00 One-Way Spoils Haul Trips from Storage Site to Landfill S0 miles (10% of Exce. Mat'l) and return 1.96 20.00 391.11 9.78 381.33 One-Way Spoils Haul Trips from Storage Site to Site and return 1.63 30.00 48.89 8.15 40.74 One-Way Imported Soll Trips from Storage Site to Site and return 1.63 3.44 5.61 5.61 0.00 One-Way Imported Soll Trips from Storage Site Solles a.way and return 0.31 50.00 1.57 1.41 One-Way Daily Haul Trips of Pipe from Storage Site to Site and return 0.31 50.00 1.57 1.57 0.00 One-Way Daily Haul Trips of Pipe from Storage Site to Site and return 0.31 50.00 1.57 1.57 0.00 One-Way Daily Haul Trips of Pipe from Storage Site Site Site miles a way and return 0.00 50.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th></t<>							
One-Way spok Huil Trips from Site to Haz. Watet Landill 200 miles (10% of Excav. Mat?) & return 1.66 200.00 391.11 9.78 381.33 One-Way Imported Soil Trips from Offsite to Storage Site and return 1.63 30.00 48.89 8.15 40.74 One-Way Imported Soil Trips from Storage Site to Site and return 1.63 3.44 5.61 0.00 One-Way Daily Haul Trips of Pipe from Storage Site (50 miles ca.way) and return 0.31 50.00 1.57 1.57 14.14 One-Way Daily Haul Trips of Pipe from Storage Site (50 miles ca.way) and return 0.31 5.00 1.57 1.57 0.00 One-Way Daily Haul Trips of Pipe from Storage Site (50 miles ca.way) and return 0.00 1.57 1.57 0.00 One-Way Concrete Truck Trips per Day and return 0.00 50.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
One-Way Imported Soll Trips from Offsite to Storage Site and return 1.63 30.00 48.89 8.15 40.74 One-Way Imported Soll Trips from Storage Site to Site and return 1.63 3.44 5.61 0.00 One-Way Daily Haul Trips of Pipe from Storage Site to Site and return 0.31 5.00 15.71 1.57 1.4.4 One-Way Daily Haul Trips of Pipe from Storage Site to Site and return 0.31 5.00 15.77 1.57 0.00 One-Way Daily Haul Trips of Pipe from Storage Site to Site and return 0.31 5.00 15.77 1.57 0.00 One-Way Concrete Truck Trips per Day and return 6.04 30.00 181.19 30.20 151.00 One-Way Concrete Truck Trips to Site Importing Paving Materials (50 miles ea way) and return 0.00 5.00 0.00 0.00 Sum 0.11 1029.73 178.51 851.21 Stimated Number of Combined Fiber Optic Crews Per Day 0.11 0.11 0.11 Haul Truck VMT for Fiber Optic Duct Bank 113.94 19.75 94.91							
One-Way Imported Soli Trips from Storage Site to Site and return 1.63 3.44 5.61 0.00 One-Way Daily Haul Trips of Pipe from Storage Site (S0 miles ea. way) and return 0.31 5.00 15.7 1.57 14.14 One-Way Daily Haul Trips of Pipe from Storage Site (S0 miles ea. way) and return 0.31 5.00 15.7 1.57 0.00 One-Way Concrete Truck Trips per Day and return 0.64 30.00 181.19 30.20 15.10 One-Way Concrete Truck Trips per Day and return 0.00 50.00 0.00 0.00 0.00 One-Way Concrete Truck Trips per Day and return 0.00 50.00 0.00 0.00 0.00 Sum 0.00 50.00 1029.73 178.51 851.21 Estimated Number of Combined Fiber Optic Duct Bark 0.11 0.11 0.11 0.11 Haul Truck VMT for Fiber Optic Duct Bark 113.34 19.75 94.19							
One-Way Daily Haul Trips of Pipe from Supplier to Storage Site (50 miles ea. way) and return 0.31 50.00 15.71 1.57 14.14 One-Way Daily Haul Trips of Pipe from Storage Site to Site and return 0.31 5.00 1.57 1.57 0.00 One-Way Concerte Truck Trips per Day and return 6.04 30.00 181.19 30.20 151.00 One-way Concerte Truck Trips per Day and return 0.00 50.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0							
One-Way Daily Haul Trips of Pipe from Storage Site to Site and return 0.31 5.00 1.57 1.57 0.00 One-Way Concrete Truck Trips per Day and return 6.04 30.00 181.19 30.20 151.00 One-Way Concrete Truck Trips per Day and return 0.00 50.00 0.00 0.00 0.00 Sum 0.00 1029.73 178.51 851.21 Estimated Number of Combined Fiber Optic Crews Per Day 0.11 0.11 0.11 Haul Truck VMT for Fiber Optic Duct Bank 113.94 19.75 94.19							
One-Way Concrete Truck Trips per Day and return 6.04 30.00 181.19 30.20 151.00 One way Trips to Site Importing Paving Materials (S0 miles ae way) and return 0.00 50.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00							
One way Trips to Site Importing Paving Materials (50 miles ea way) and return 0.00 50.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00					-		
Sum 1029.73 185.12 Estimated Number of Combined Fiber Optic Crews Per Day 0.11 0.11 0.11 Haul Truck WMT for Fiber Optic Duct Bank 113.94 19.75 94.19	One-Way Concrete Truck Trips per Day and return	0.04					
Estimated Number of Combined Fiber Optic Crews Per Day 0.11 0.11 0.11 0.11 Haul Truck VMT for Fiber Optic Duct Bank 113.94 19.75 94.19		0.00					
Haul Truck VMT for Fiber Optic Duct Bank 113.94 19.75 94.19	One way Trips to Site Importing Paving Materials (50 miles ea way) and return	0.00	50.00			851.21	
	One way Trips to Site Importing Paving Materials (50 miles ea way) and return Sum	0.00	50.00	1029.73	178.51		
	One way Trips to Site Importing Paving Materials (50 miles ea way) and return Sum Estimated Number of Combined Fiber Optic Crews Per Day	0.00	50.00	1029.73 0.11	178.51 0.11	0.11	

Summary - Daily VMT (Average Daily Throughout the Construction Schedule when All Construction Methods Occuring Concurrently)										
		Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8	Total Per Day
Construction Worker and Non-Haul	Light Vehicle	2,714	2,463	992	573	2,035	1,027	2,490	4,510	16,805
Truck VMT Per Dav	Heavy Vehicle	1,485	1,415	346	193	999	167	937	1,721	7,264
Truck VIVIT Per Day	Total	4,199	3,878	1,338	765	3,034	1,195	3,428	6,231	24,068
	Light Vehicle	-	-	-	-	-	-	-	-	-
Haul Truck Trips VMT Per Day	Heavy Vehicle	5,874	4,593	2,578	932	4,743	419	3,890	7,137	30,165
	Total	5,874	4,593	2,578	932	4,743	419	3,890	7,137	30,165
	Light Vehicle	2,714	2,463	992	573	2,035	1,027	2,490	4,510	16,805
Total VMT Per Day	Heavy Vehicle	7,359	6,008	2,923	1,125	5,742	586	4,827	8,859	37,428
	Total	10,073	8,471	3,916	1,698	7,777	1,613	7,317	13,368	54,233

			Summary - VN	1T Throughout	Reach Duratio	า				
		Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8	Throughout Proje
Construction Worker and Non-Haul	Light Vehicle	1,221,442	1,601,082	411,868	732,956	942,628	790,085	1,335,661	1,370,389	8,406,110
Truck VMT Throughout Reach	Heavy Vehicle	668,230	919,873	143,482	246,555	457,494	128,775	501,980	519,214	3,585,604
Duration	Total	1,889,672	2,520,955	555,350	979,511	1,400,122	918,861	1,837,641	1,889,603	11,991,714
Haul Truck Trips VMT Throughout	Light Vehicle	-	-	-	-	-	-	-	-	-
Reach Duration	Heavy Vehicle	2,643,334	2,985,169	1,069,670	1,193,417	2,207,406	321,869	2,090,830	2,188,705	14,700,402
Reach Duration	Total	2,643,334	2,985,169	1,069,670	1,193,417	2,207,406	321,869	2,090,830	2,188,705	14,700,402
Tetel MAT Throughout Beach	Light Vehicle	1,221,442	1,601,082	411,868	732,956	942,628	790,085	1,335,661	1,370,389	8,406,110
Iotal VMT Throughout Reach Duration	Heavy Vehicle	3,311,564	3,905,043	1,213,153	1,439,972	2,664,900	450,645	2,592,810	2,707,919	18,286,006
	Total	4,533,006	5,506,124	1,625,020	2,172,928	3,607,528	1,240,730	3,928,471	4,078,308	26,692,116

	Summary - Lengths (Miles)										
Reach #	Total Estimated Reach Length (from GIS)	Total Estimated Reach Length (from Reach)	CM-1 Roadways	CM-2 SCE Easement	CM-3A LAFCD Easement (Adjacent to River)	CM-44 Pine	CM-4B Microtunneli ng	CM-4C Traditional Tunneling	CM-4D Pipe Jacking	CM-4E Shield Tunneling with Ribs and Lagging	CM-4F Traditional Tunneling
Reach 1	6.16	6.05	5.41	-	-	0.39	0.25	-	-	-	-
Reach 2	7.29	7.34	6.13	-	-	0.02	1.18	-	-	-	-
Reach 3	3.08	3.09	0.49	1.47	0.59	0.12	0.42	-	-	-	-
Reach 4	5.01	4.26	2.42	-	0.23	-	0.08	1.53	-	-	-
Reach 5	3.56	5.93	4.31	0.73	-	0.11	0.15	0.64	-	-	-
Reach 6	2.55	2.48	-	-	-	-	-	-	-	-	2.48
Reach 7	5.99	5.75	0.89	3.35	-	-	-	-	-	0.27	1.25
Reach 8	5.53	5.76	0.84	1.37	2.37	-	-	-	1.13	0.04	-
Total	39.17	40.65	20.49	6.91	3 20	0.64	2.08	2 17	1 1 3	0.31	3 73

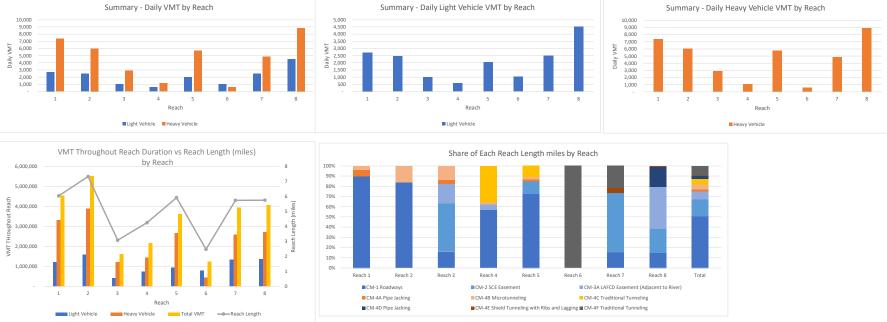
	Summary - Haul Truck Daily VMT										
Reach #	Noise	Total VMT	CM-1 Roadways	CM-2 SCE Easement	CM-3A LAFCD Easement (Adjacent to River)	CM-4A Pipe Jacking	CM-4B Microtunneli ng	CM-4C Traditional Tunneling	CM-4D Pipe Jacking	CM-4E Shield Tunneling with Ribs and Lagging	CM-4F Traditional
Reach 1	7,359	5,874	5,164	-	-	450	260	-	-	-	-
Reach 2	6,008	4,593	4,151	-	-	42	399	-	-	-	-
Reach 3	2,923	2,578	472	1,310	554	129	111	-	-	-	-
Reach 4	1,125	932	737	-	68	-	19	108	-	-	-
Reach 5	5,742	4,743	3,736	613	-	105	155	133	-	-	-
Reach 6	586	419	-	-	-	-	-	-	-	-	419
Reach 7	4,827	3,890	741	2,702	-	-	-	-	-	176	270
Reach 8	8,859	7,137	1,220	1,942	3,286	-	-	-	574	116	-
Total		30,165	16.223	6.568	3,909	726	945	241	574	291	689

(same across construction method)									
	CM-1 Roadways*	CM-2 SCE Easement*	CM-3A LAFCD Easement* (Adjacent to River)	CM-4A Pipe Jacking	CM-4B Microtunneli ng	CM-4C Traditional Tunneling	CM-4D Pipe Jacking	CM-4E Shield Tunneling with Ribs and Lagging	CM-4F Traditional Tunneling
Reach 1	230.0	-	-	4.5	2.9	-	-	-	-
Reach 2	230.0	-	-	0.2	9.6	-	-	-	-
Reach 3	230.0	320.0	320.0	1.5	5.4	-	-	-	-
Reach 4	230.0	-	320.0	-	0.3	6.3	-	-	-
Reach 5	230.0	320.0	-	1.3	1.7	7.5	-	-	-
Reach 6	-	-	-	-	-	-	-	-	17.0
Reach 7	225.0	300.0	-	-	-	-	-	2.6	12.
Reach 8	225.0	300.0	300.0	-	-	-	19.9	0.8	-

	Summary - Construction Schedule # of Days (same across reach)										
	CM-1 Roadways	CM-2 SCE Easement	CM-3A LAFCD Easement (Adjacent to River)	CM-4A Pipe Jacking	CM-4B Microtunneli ng	CM-4C Traditional Tunneling	CM-4D Pipe Jacking	CM-4E Shield Tunneling with Ribs and Lagging	CM-4F Traditional Tunneling		
Reach 1	450	-	-	450	450	-	-	-	-		
Reach 2	650	-	-	650	650	-	-	-	-		
Reach 3	415	415	415	415	415	-	-	-	-		
Reach 4	1,280	-	1,280	-	1,280	1,280	-	-	-		
Reach 5	455	455	-	455	455	455	-	-	-		
Reach 6	-	-	-	-	-	-	-	-	76		
Reach 7	515	535	-	-	-	-	-	535	53		
Reach 8	300	300	300	-	-	-	300	300	-		

Reach 5: Add 250 days for[CM-1, CM-2] fiber optic duct bank. For CM-1 and CM-2, 455 days for pipeline construction, 705 days for fiber optic duct bank Reach 7: Add 20 days for [CM-1, CM-2] pipeline construction, 100 days for CM-2 fiber optic duct bank, 20 days for CM-4E, 20 days for CM-4F. CM-1, 535 days for pipeline construction, 515 for fiber optic duct bank. For CM-2, 535 for pipeline construction, 615 for fiber optic duct bank. Reach 8: Add 215 days for [CM-1, CM-2, CM-3A] fiber optic duct bank. CM-1, CM-2, and CM-3A, 300 for pipeline construction, 515 days for fiber optic duct bank





Length 6.16 7.29 3.08 5.01 3.56 2.55 5.99 5.53 39.16 Reach 1 2 3 4 5 6 7

8



APPENDIX E – PUMP STATION DATA NEEDS

	BACKBONE PUMP STATION DATA NEEDS MATRIX								
	GENE	RAL PROJECT INFORMATION							
Pump Station (if analyzing multiple locations, add new columns)	PS-1: does not include associated storage	PS-3 Alternative: includes offsite piping connecting to transmission main (PS-3 aka Whittier Narrows PS)	Santa Fe Spreading Grounds PS						
Site Locations	Adjacent to AWT at JWPCP	Whittier Narrows Area: vicinity of I-605 and Peck Rd	Near Santa Fe Spreading Grounds						
Relocate PS-2 wet well and use can pumps at PS-2? (FLDR Section 5.1.2)									
Additional pump station(s) needed to connect backbone system to FEWWTP? (FLDR p. 5-15)									
Site configuration - acres/dimensions (site plan for major operating components)	4.1 acre (Scaled from Appendix L, minus area previously assigned to 7.5MG storage tank)	Assume up to 8 acres total needed; of this, most facilities will be located within 4.2 acres. Onsite: 4.2 acre (estimated from 300'x400' site size in CDR and conservatively increased by 50% to account for potential changes in siting layout or site improvements.) Offsite: Overflow pipe is 700' of 102" trenched. Offsite: Inlet pipe is 600' of 84" trenched + 600' of 84" pipe jacking. Offsite: Disch pipe is 600' of 84" trenched + 600' of 84" pipe jacking. Offsite: Disch pipe is 600' of 84" trenched + 600' of 84" pipe jacking.	facilities will be located within 4.2 acres. Onsite: 4.2 acre (estimated from 300'x400' site size in CDR and conservatively increased by 50% to account for potential changes in siting layout or site improvements.) Offsite: Overflow pipe is 700' of 102" trenched. Offsite: Inlet pipe is 600' of 84" trenched + 600' of 84" pipe jacking.						
Completion of Construction (When will project be operational?)	Assume construction would take up to 3 years.	Onsite: Assume construction would take up to 3 years. Offsite: Assume construcion would take approx 1 year, overlapping with PS-3 construction. If substation is build offsite that would take about 1 year of active construction.	Onsite: Assume construction would take up to 3 years. Offsite: Assume construcion would take approx 1 year, overlapping with SFSG construction. If substation is build offsite that would take about 1 year of active construction.						
		CONSTRUCTION PHASE							
Pump Station (if analyzing multiple locations, add new columns)	PS-1: does not include associated storage	PS-3 Alternative: includes offsite piping connecting to transmission main	Santa Fe Spreading Grounds PS						
Will there be pile driving or rock crushing? If so, where, for what duration, and will it be limited to daytime hours?	Need geotech. Doubt there will be rock crushing, but potential for pile driving. It can happen during the day.	Need geotech. Doubt there will be rock crushing, but potential for pile driving. It can happen during the day.	Need geotech. Doubt there will be rock crushing, but potential for pile driving. It can happen during the day.						
Depths/quantities of excavation/fill	Onsite excavation approx 75,000 cy. Onsite fill approx 61,000 cy (8,000 cy of this is imported material) Offsite excavation/fill approx 0 cy.	Onsite excavation approx 45,000 cy. Assume additional 15,000 cy of existing soil excavated and reused during site grading activities. Onsite fill approx 33,000 cy (2,000 cy of this is imported material). Offsite excavation approx 35,000 cy. Offsite fill approx 29,000 cy (6,000 cy of this is imported material). Onsite/Offsite: Substation 4,000 cy excavation and fill	Onsite excavation approx 45,000 cy. Assume additional 15,000 cy of existing soil excavated and reused during site grading activities. Onsite fill approx 33,000 cy (2,000 cy of this is imported material). Offsite excavation approx 35,000 cy. Offsite fill approx 29,000 cy (6,000 cy of this is imported material). Onsite/Offsite: Substation 4,000 cy excavation and fill						
Estimated number of construction workers per day	28 (5 GC, 5 mechanical, 5 electrical, 5 structural, 5 site, 3 pipelines) on average	34 (7 GC, 5 mechanical, 8 electrical, 5 structural, 6 site, 3 pipelines) on average for PS construction; +9 (on average) during offsite pipeline construction	34 (7 GC, 5 mechanical, 8 electrical, 5 structural, 6 site, 3 pipelines) on average for PS construction; +9 (on average) during offsite pipeline construction						
Estimated number of one-way construction worker vehicle trips per day	85 (assume 28 workers come and go to site; some may leave for lunch and return)	PS-3: 100 (assume 34 workers come and go to site; some may leave for lunch and return) Offsite pipeline: 30 (assumes 9 workers come and go to site; most may leave for lunch and return)	SFSG PS: 100 (assume 34 workers come and go to site; some may leave for lunch and return) Offsite pipeline: 30 (assumes 9 workers come and go to site; most may leave for lunch and return)						
Will there be weekend or nighttime construction? Will we likely comply with noise ordinance or will we request variance?	Weekend or nighttime work not anticipated as there are no tie-ins to existing systems. Only reason would be if behind schedule.	Nighttime work possible during pipe jacking activities during construcion of offsite pipelines. Other weekend or nighttime work only if behind schedule.	Nighttime work possible during pipe jacking activities during construcion of offsite pipelines. Other weekend or nighttime work only if behind schedule.						
Construction staging area and storage location(s)	This is at the AWT site. There should be space available there.	If cannot accommodate on-site possibly use one of the other potential PS sites or just require offsite.	If cannot accommodate on-site possibly use one of the other potential PS sites or just require offsite.						
Construction worker vehicle parking location(s)	This is at the AWT site. There should be space available there.	Street parking should be feasible for 25 cars.	Street parking should be feasible for 25 cars.						

	DATA SOURCE/CITATION
	(document/page)
Grounds PS	
ing Grounds	FLDR Chapter 8 and Vol 3 Appendix
total needed; of this, most d within 4.2 acres. hated from 300'x400' site size in ally increased by 50% to account n siting layout or site is 700' of 102" trenched. 0' of 84" trenched + 600' of 84"	FLDR Volume 3, Appendix L; description in Section 8.1.2; but note Backbone System would likely require larger footprint than studied for PS- 3 (FLDR p. 8-24)
ruction would take up to 3 rucion would take approx 1 SFSG construction. If ite that would take about 1 year	3 (FLUK p. 0-24)
Grounds PS	
ere will be rock crushing, but It can happen during the day.	
x 45,000 cy. 0 cy of existing soil excavated and g activities. cy (2,000 cy of this is imported	
x 35,000 cy. cy (6,000 cy of this is imported	
n 4,000 cy excavation and fill	
al, 8 electrical, 5 structural, 6 erage for PS construction; +9 fsite pipeline construction	
ne 34 workers come and go to for lunch and return) isumes 9 workers come and go e for lunch and return)	
during pipe jacking activities during elines. Other weekend or nighttime fule.	

Special access routes in the riverbed or for oversized materials or equipment	Largest equipment will be surge tanks. They could be up to 12'x85'. This is an oversize load. Contractor may elect to fabricate and certify/test on site. Materials located within 400 miles.	Largest equipment will be surge tanks. They could be up to 12'x85'. This is an oversize load. Contractor may elect to fabricate and certify/test on site. Materials located within 400 miles.	Largest equipment will be surge tanks. They could be up to 12'x85'. This is an oversize load. Contractor may elect to fabricate and certify/test on site. Materials located within 400 miles.
Power Supply (generators?)	Demands during construction should be able to be served by temp site power.	Demands during construction should be able to be served by temp site power.	Demands during construction should be able to be served by temp site power.
Temporary Lighting	Temp lighting not anticipated.	Expect any lighting to be minimal and supporting roadway work. Minima lighting of site for security at night. Lights directed away from receptors.	Expect any lighting to be minimal and supporting roadway work. Minimal lighting of site for security at night. Lights directed away from receptors.
Water Supply (hydrants? water trucks?)	Water needed for dust control and hydrotesting. Should be available from hydrants from water utility.	Water needed for dust control and hydrotesting. Should be available from hydrants from water utility.	Water needed for dust control and hydrotesting. Should be available from hydrants from water utility.
Temporary or Permanent Right-of-Way/Easements	This is at the AWT site.	Likely needing to purchase existing property and potentially demo existing structure. Power feed from utility to substation and substation to pump station will likely require new easements	Likely needing to purchase existing property and potentially demo existing structure. Power feed from utility to substation and substation to pump station will likely require new easements
Maximum number of daily one-way haul truck trips due to material transportation (e.g., off-haul/disposal, supplies, material); type of trucks; estimated distance	Assume a peak day could be 400 truck trips, assuming pump station site and at least one pipeline crew is simultaneously under construction. Average day more likely 200 truck trips. (Based on assumed 50' per day pipe installation rate = 180 truck trips) Assume average one-way haul is 5 miles to/from storage yard. Assume 75% are 13 yd dump trucks; 5% concrete trucks; 20% are long bed trucks	Assume a peak day could be 500 truck trips, assuming pump station site and at least one pipeline crew is simultaneously under construction. Average day more likely 200 truck trips. (Based on assumed 50' per day pipe installation rate = 180 truck trips) Assume average one-way haul is 5 miles to/from storage yard. Assume 75% are 13 yd dump trucks; 5% concrete trucks; 20% are long bed trucks	crew is simultaneously under construction. Average
Volume of any material imported/exported, including demolition waste (asphalt/concrete, soils, hazardous soils, slurry, steel/metals) and clean construction materials (concrete, pipeline segments, rebar, base material/sand/gravel, etc.).	Soil import: 8,000 cy Clean Soil export/demo: 17,000 cy Haz Soil export/demo (5% of initial excavation): 4,000 cy Concrete: 4,000 cy	Soil import: 12,000 cy Clean Soil export/demo: 23,000 cy Haz Soil export/demo (5% of initial excavation): 4,000 cy Concrete: 3,200 cy	Soil import: 12,000 cy Clean Soil export/demo: 23,000 cy Haz Soil export/demo (5% of initial excavation): 4,000 cy Concrete: 3,200 cy
Plans for recycling of materials as applicable	Not likely/necessary at AWT site.	Building demo anticipated; anticiapte limited opportunity to reuse any related materials.	Building demo anticipated; anticiapte limited opportunity to reuse any related materials.
Disposal location for construction debris	Assume 50 miles away for disposal of non-haz construction debris. Assume 200 miles away for hazardous materials.	Assume 50 miles away for disposal of non-haz construction debris. Assume 200 miles away for hazardous materials.	Assume 50 miles away for disposal of non-haz construction debris. Assume 200 miles away for hazardous materials.
Construction Features	Start and End Dates (or number of days/ weeks/months)	Equipment Used (Types [incl hp], Quantities, Max Hrs. Use/Day)*	Haul or Material Truck Loads (in truckloads)
Demolition?	PS-1 currently planned in an undeveloped area, so significant demo is not expected. SFSG PS site is still being determined. It will likely be in undeveloped area so significant demo is not expected.	PS-3 and SFSG PS location likely has a light industrial building that will need to be demo'd. Assume 1 month. Assume substation site could also require light demo. Assume 1 month.	PS-1: None PS-3 and SFSG PS: Depends on size and nature of facility demolished. Assuming a 200'x200' building, at 1.3 tons per sqyd is 5,800 tons, requiring 410 14-ton dump trucks.
Remediation	Local site information currenlty not available. Given project is intended for currenlty unused area of AWT property, existing contamination seems unlikely.	USEPA website indicates only a few small industrial-related cleanups in the vicinity. Issues not likely, but need additional information.	PS-1: Unknown. Not anticipated. PS-3: Unknown. Not anticipated. SFSG PS: Unknown. Not anticipated.
Site Preparation	Clear and grub (C&G)	Existing asphalt removal, possible clear and grub.	PS-1: Assume avg 6" C&G across 5.3 ac site is 4,300 cy into 430 dump trucks. PS-3 and SFSG PS: Assume 3,700 cy asphalt removal into 400 dump trucks; plus another 80 dump trucks for 1 acre of C&G
Foundation and below grade infrastructure	Excavate approx 40'Dx60'Wx160'L for pump cans and valve vault	Excavate approx 40'Dx60'Wx90'L for pump cans and valve vault	Most excavated materials stored and reused on pump station sites. PS-1 Foundations and Vaults: 8,300 cy as spoils into 83 dump trucks. PS-3 and SFSG PS Foundations and Vaults: 9,400 cy as spoils into 94 dump trucks.
Excavation/Trenching	Pipe trenches @102" = 1,500 ft x 12' W x 23' deep @84" = 525 ft x 11' W x 15' deep @66" = 150 ft x 10' W x 22' deep @36" = 600 ft x 6' W x 8' deep @30" = 565 ft x 5' W x 13' deep @30" = 120 ft x 5' W x 22' deep	Onsite pipe trenches: @102" = 144 ft x 12' W x 26' deep @84" = 300 ft x 11' W x 15' deep @66" = 150 ft x 10' W x 26' deep @30" = 160 ft x 5' W x 14' deep Offsite pipe trenches: 102" overflow @ 700 ft x 12' W x 20' deep 84" inlet @ 600 ft x 11' W x 15' deep 84" outlet @ 600 ft x 11' W x 15' deep	PS-1: Based on soil import: 8,000 cy; clean soil export/demo: 17,000 cy; haz soil export/demo (5% of initial excavation): 4,000 cy = 2,900 dump trucks PS-3 and SFSG PS: Based on soil import: 12,000 cy; clean soil export/demo: 23,000 cy; haz soil export/demo (5% of initial excavation): 4,000 cy = 3,100 dump trucks (assumes a 13 yd truck can only hold 10 yds of material accounting for bulking and freeboard reqmts)

Truck Travel Distance (in miles)	
Assume landfill is approx 50 miles away	
200 mi each way for haz disposal to Kettleman Hills Landfill	
Assume landfill is approx 50 miles away	
Assume landfill is approx 50 miles away	
Assume soil import and clean soil export within 50 miles. Haz material demo landfill is 200 miles.	

Above grade facilities/equipment and site improvements	New buildings for pumps and electrical room; above grade concrete tank; above grade surge tanks protected by wall; dechlor vault	New buildings for pumps and electrical room; above grade concrete tank; above grade surge tanks protected by wall; dechlor vault	All sites: Assume 2,500 equipment loads over the 3 years of construction. Medium cranes likely required for unloading and setting hydropneumatic tanks, assisting with storage tank fabrication, and setting pumps and motors and transformers.
Paving	2.6 acre (assume will match paving for PS-3 site)	2.6 acre (based on OPCC)	PS-1: for 350 cy AB and 700 tons asphalt, 85 14-cy truck trips PS-3 and SFSG PS: for 2,900 cy AB and 5,800 tons asphalt, 700 14-cy truck trips
Architectural coatings	Buildings will be industrial in appearance.	Buildings will be industrial in appearance.	PS-1: Assume 8 loads of materials PS-3: Assume 15 loads of materials
Power substation	99'x68' High Voltage Transformer yard	99'x66' High Voltage Transformer yard	For each site: 30 loads of equipment and materials. Medium cranes likely required for unloading and setting large/heavy transformers and electrical cabinets.
Pipeline stub out to Conveyance System	102" inlet from conveyance main 84" and 30" outlet pipes to conveyance main 102" overflow pipe	84" inlet from conveyance main 84" outlet to conveyance main 102" overflow	Most large pipe >48" will come with just one 25-ft length per truck. PS-1: Assume 130 pipe loads. PS-3: Assume 130 pipe loads. (same assumptions used in PL table)
		OPERATIONS PHASE	
	PS-1: does not include associated storage	PS-3 Alternative: includes offsite piping connecting to transmission main	Santa Fe Spreading Grounds PS
Height and materials of structures	35' high concrete tank 15' high metal composite building Other vaults and dechlorination trench expected to be set with tops at grade or within 4-ft of grade.	 30' high concrete tank 25' high metal composite building 15' high CMU curtain wall Other vaults and dechlorination trench expected to be set with tops at grade or within 4-ft of grade. 8' high CMU wall around substation 100' high power poles and overhead powerlines feeding the substation 	 30' high concrete tank 25' high metal composite building 15' high CMU curtain wall Other vaults and dechlorination trench expected to be set with tops at grade or within 4-ft of grade. 8' high CMU wall around substation 100' high power poles and overhead powerlines feeding the substation
General design characteristics (architecture/coatings, lighting, landscaping/screening)	Pumps, concrete storage tank, and surge tanks exposed. Electrical room expected to have industrial appearance. Minimal lighting in the area; primarily for site security.	Concrete storage tank and surge tanks exposed. Pump building expected to have industrial appearance. Minimal lighting in the area; primarily for site security. Sustation will have electrical transformers, powerlines, and poles visible above the CMU curtain wall.	Concrete storage tank and surge tanks exposed. Pump building expected to have industrial appearance. Minimal lighting in the area; primarily for site security. Sustation will have electrical transformers, powerlines, and poles visible above the CMU curtain wall.
Total footprint/acreage of new paved/impervious areas	3.0 acre	2.5 acre	2.5 acre
Measures for detention/treatment of stormwater runoff	Follow county requirements for detention/storage and infiltration of runoff.	Follow county requirements for detention/storage and infiltration of runoff.	Follow county requirements for detention/storage and infiltration of runoff.
Preferred site access- employee parking and emergency vehicle access	Onsite- assume 6 permanent spots.	Onsite- assume 6 permanent spots + 2 at substation site if not at pump station site.	Onsite- assume 6 permanent spots + 2 at substation site if not at pump station site.
Estimated number of employees on-site per day/week	Likely staffed from AWT. Assume 1 staff, 8 hrs/day, 7 days/week. 24 hr staffing not likely necessary.	Assume 1 staff, 8 hrs/day, 7 days/week. 24 hr staffing not likely necessary.	Assume 1 staff, 8 hrs/day, 7 days/week. 24 hr staffing not likely necessary.
Employee shifts per day	1	1	1
Number of employees per shift	1	1	1

ars of	Assume 2,500 equipment loads come from within 50 miles of site. Assume pumps, motors, and transformers may come from as far away as eastern US (2,000 miles). Cranes may have to come from within 300 miles.	
ĸ	Assume travel distances within 50 miles.	
	Assume travel distances within 50 miles.	
dium avy	Assume travel distances within 50 miles for most loads. Small cranes may need to come from within 150 miles.	
n per	Assume 50% of the pipe will be produced within 100 miles of the project sites, and 50% within 350 miles of the project sites.	
o be		
/ for ain		
and		
ion		
ffing		

Estimated number of vehicle trips per day/week/month (project operation)	4 per day (arrive, leave, go and return for lunch)	4 per day (arrive, leave, go and return for lunch)	4 per day (arrive, leave, go and return for lunch)	
Maintenance schedule/requirements	Minor mechanical or electircal maintenance expected 1x/month (change seal, etc.)	Minor mechanical or electircal maintenance expected 1x/month (change seal, etc.)	Minor mechanical or electircal maintenance expected 1x/month (change seal, etc.)	
Average trip distance (miles) for employees (project operation)	Assume most workers live within 50 miles of project site.	Assume most workers live within 50 miles of project site.	Assume most workers live within 50 miles of project site.	
Pump size/discharge pipelines	Set A: early delivery: 5 mgd, 1 duty, 1 standby, 250 HP. Set B to PS-3: 150 mgd; 3500-4000 hp; 5 duty, 1 standby; 84" discharge pipe to PS-3	To SFSG: 150 mgd; 4000-4500 hp; 5 duty, 1 standby 84" discharge pipeline	To Canyon SG: 40 mgd; 1000-1500 hp; 3 duty, 1 standby 48" discharge pipeline To DPR: 60 mgd; 2000 hp; 3 duty, 1 standby. 54" discharge pipeline	FLDR ES-12
Standby Generator(s) - Please provide locations, sizing, frequency of testing, and how often it will be used on a yearly basis.	175 kW standby generator for 480V loads (i.e. surge tank air compressors and motorized valves).	175 kW standby generator for 480V loads (i.e. surge tank air compressors and motorized valves).	175 kW standby generator for 480V loads (i.e. surge tank air compressors and motorized valves).	
Other operating equipment that generates emissions (locations and specifications)	Standby generators only	Standby generators only	Standby generators only	
HVAC equipment requirements	Cooling for VFD's and motors could be signficant. Needs further design consideration. Anticipate Aircon for control room; specific design of pump motor colling not yet determined but will be required.	Cooling for VFD's and motors could be significant. Needs further design consideration. Anticipate Aircon for control room; specific design of pump motor colling not yet determined but will be required.	Cooling for VFD's and motors could be signficant. Needs further design consideration. Anticipate Aircon for control room; specific design of pump motor colling not vet determined but will be required	
Please provide annual electricity for pumps and facility	75,300 MW-hrs/year (assumes 150 mgd continuous operation, 92% of the year)	96,200 MW-hrs/year (assumes 150 mgd continuous operation, 92% of the year)	50,100 MW-hrs/year (assumes 100 mgd continuous operation, 92% of the year)	FLDR Section 9.4
Annual natural gas use	Should be minimal	Should be minimal	Should be minimal	
Any alternative energy generation (e.g., solar)?	This has not yet been discussed with Met in this project, but could be looked into.	This has not yet been discussed with Met in this project, but could be looked into.	This has not yet been discussed with Met in this project, but could be looked into.	
Please indicate what SCAQMD air pollutant permits are required for project components.	Anticiapte SCAQMD permit will be required for emergency generator.	Anticiapte SCAQMD permit will be required for emergency generator.	Anticiapte SCAQMD permit will be required for emergency generator.	
SCAQMD Rule 402 prohibits public nuisances related to odors. Please describe if the emergency storage basin would result in a public nuisance related to odors.	No. It is chlorinated water and tank is covered	No. It is chlorinated water and tank is covered	No. It is chlorinated water and tank is covered	
Detail chemical delivery and storage (type/amount of chemicals, delivery schedule, storage location/condition)	Dechlorination media will need to be refreshed after use, or after extended period of non-use and eventual expiration (could be 1+ years if not used). Other basic lubricants and cleaners as required for mainenance.	Dechlorination media will need to be refreshed after use, or after extended period of non-use and eventual expiration (could be 1+ years i not used). Other basic lubricants and cleaners as required for mainenance.	Dechlorination media will need to be refreshed after use, or after extended period of non-use and eventual expiration (could be 1+ years if not used). Other basic lubricants and cleaners as required for mainenance.	
Methods to address potential discharge, including potential dechlorination system	Assumes passive dechlorination system in a vaulted trench using solid/granular media. For dechlor of 150 mgd flowrate, assume a facility 150'Lx40'Wx10'D, with approx 2,000 cy of media.	Assumes passive dechlorination system in a vaulted trench using solid/granular media. For dechlor of 150 mgd flowrate, assume a facility 150'Lx40'Wx10'D, with approx 2,000 cy of media.	Assumes passive dechlorination system in a vaulted trench using solid/granular media. For dechlor of 150 mgd flowrate, assume a facility 150'Lx40'Wx10'D, with approx 2,000 cy of media.	FLDR Section 8.6, 8.7
	T	ECHNICAL INFORMATION		
	PS-1: does not include associated storage	PS-3 Alternative: includes offsite piping connecting to transmission main (PS-3 aka Whittier Narrows PS)	Santa Fe Spreading Grounds PS	
Geology/Soils Report	Performed during preliminary design. Assume 5 borings on site.	Performed during preliminary design. Assume 5 borings on site.	Performed during preliminary design. Assume 5 borings on site.	
Hazardous Materials (Phase 1 ESA, Phase 2, Remedial Action Plan, etc.)	Not likely, but need additional information.	USEPA website indicates only a few small industrial-related cleanups in the vicinity. Issues not likely, but need additional information.	USEPA website indicates only a few small industrial-related cleanups in the vicinity. Issues not likely, but need additional information.	
Conceptual grading/site plan/water quality BMPs	Appropriate BMPs as part of contractor's general permit, and as required by county for permanent site runoff.	Appropriate BMPs as part of contractor's general permit, and as required by county for permanent site runoff.	Appropriate BMPs as part of contractor's general permit, and as required by county for permanent site runoff.	
Municipal Water Demand and Supply	Minimal; equivalent to a single family residence	Minimal; equivalent to a single family residence	Minimal; equivalent to a single family residence	

Wastewater Generation	Minimal; equivalent to a single family residence	Minimal; equivalent to a single family residence	Minimal; equivalent to a single family residence	
Solid Waste Generation and Disposal	Minimal; picked up by local trash company	Minimal; picked up by local trash company	Minimal; picked up by local trash company	
Data Network/Communication Backbone	Assume internet-based, with cellular modem backup.	Assume internet-based, with cellular modem backup.	Assume internet-based, with cellular modem backup.	

*Typical Construction Equipment May Include: backhoes, dozers, scrapers, compactors, trackhoe, trencher, loader, roller, cranes, heavy trucks



APPENDIX F – PUMP STATION ADT AND VMT CALCULATIONS

Reference (Row)	PS1 - Construction VMT - Joint Treatment Site Pump Station	Located in Reach 1	
SCAG	Trip Distance Assumptions (one-way)	19.66 miles	
VMT Calculation-V4	Avg. Worker Commute Distance To Class II landfill - Kettleman Hills Hazardous Waste Facility	200 miles	
VMT Calculation-V4	To regular landfill - Scholl Canyon Landfill	31.5 miles	
	Santa Fe Spreading Ground PS	40 miles	
	Whittier Narrows PS	30 miles	
VMT Calculation-V4	Paving Materials	50 miles	
	Avg. trip for construction equipment traveling to work site	30 miles	
	Architectural Coating	15 miles	
Construction Phase			
Water Conveyance Schedule_v5.1	Assumed Construction Duration (20230901_Pure Water Conveyan	620 days	1.7 years (workdays only)
23	Hual Truck Trips (Off-haul/disposal, supplies, material)		
	minimum	200 one-way trips	
	maximum	400 one-way trips	
	Construction Workers		
13	Construction Workers per day		
	average	28 workers/day	
14	Est. Num of Construction Workers vehicle trips per day		
	average	85 one-way trips/day	
		85 avg. one-way trips/day	

Roadway				
	Arterial	Collector	Local	Assumptions
Regular Landfill Haul Trips	7.30			100% to/from I-110
Hazardous Landfill Haul Trips	1.37			100% to/from I-110
Base Materials Haul Trips	8.08	0.80		45% travel on E/W arterials; 45% on N/S arterials, 10% to/from I-110
Construction Workers	82.45	2.55		20% travel on E/W arterials; 10% on N/S arterials, 70% to/from I-110
Construction Equipment	0.11	0.00		30% travel on E/W arterials; 10% on N/S arterials, 60% to/from I-110
	ADT to/from freeway	ADT E/W arterials	or N/S arterials	
LV	57.72	27.29		
HV	9.55	8.12		
Total	67.26	35.41		

	Construction Phase and Duration	Amount	# of Dump Tuck Needed	Haul & Delivery Trips	Miles/Trips	<u>VMT</u>
32	Site Preparation	4,300 CY	860 Dump Truck	Whittier Narrow PS	30	
				Santa Fe Spreading Ground PS	40	
				44 Hazardous Waste	200	8800
				816 Scholl Canyon Landfill	32	25704
33	Foundation and below grade infrastructure	8,300 CY	166 Dump Truck	Whittier Narrow PS	30	
				Santa Fe Spreading Ground PS	40	
				8 Hazardous Waste	200	1600
				158 Scholl Canyon Landfill	32	4977
34	Excavation/Trenching	8,000 CY soil import	1600 13 yd Dump Truck (holds 10 yd only)	1450 Whittier Narrow PS	30	43500
		17,000 CY clean soil export/demo	3400 13 yd Dump Truck (holds 10 yd only)	1450 Santa Fe Spreading Ground PS	40	58000
		4,000 CY haz soil export/demo	800 13 yd Dump Truck (holds 10 yd only)	800 Hazardous Waste	200	160000
				650 Scholl Canyon Landfill	32	20475
				1450 AWP Facility		
35	Above grade facilities/equipment and site improvements		5,000 Equipment Loads	5,000 Equipment site	30	150000
36	Paving	350 CY AB 700 Tons asphalt	170 14 CY Truck	170 Concrete/Asphalt Plant	50	8500
37	Architectural coatings		16 Loads of Materials	16 Architectural coatings	15	240
38	Power substation		60 Loads of Equipment and Materials	60 Equipment site	30	1800
39	Pipeline Stub out to Coveyance System		260 Pipe Loads	260 Equipment site	30	7800

8.12 35.41

Reference (Row)	PS-3 - Construction VMT - Whittier Narrows Pump Station	Located in Reach 6
SCAG	<u>Trip Distance Assumptions (one-way)</u> Avg. Worker Commute Distance	19.66 miles
VMT Calculation-V4	To Class II landfill - Kettleman Hills Hazardous Waste Facility	200 miles
VMT Calculation-V4	To regular landfill - Scholl Canyon Landfill	26 miles
	Santa Fe Spreading Ground PS	15 miles
	AWP Facility	30 miles
VMT Calculation-V4	Paving Materials	50 miles
	Avg. trip for construction equipment traveling to work site	30 miles
	Architectural Coating	15 miles

Constructio	n Phase							
e Water Conveyance Sched	ule_v5.1 Assumed Construction Duration (20230901_Pure Water Conveyan	620 days	1.7 years (workdays only)	Roadway				
					Arterial	Collector	Local	Assumptions
23	Hual Truck Trips (Off-haul/disposal, supplies, material)			Regular Landfill Haul Trips		11.16		100% to/from I-605
	minimum	200 one-way trips		Hazardous Landfill Haul Trips		1.45		100% to/from SR-60
	maximum	500 one-way trips		Base Materials Haul Trips		10.15	0.73	45% travel on E/W arterials; 45% on N/S arterials, 10% to/from I-605
				Construction Workers		126.10	3.90	20% travel on E/W arterials; 20% on N/S arterials, 60% to/from I-605
	Construction Workers			Construction Equipment		0.11	0.01	30% travel on E/W arterials; 30% on N/S arterials, 40% to/from I-605
13	Construction Workers per day							
	average	34 workers/day			ADT to/from	n freeway ADT E/W a	arterials or N/S arterial	5
	peak	43 workers/day		LV		75.66	54.34	
				HV		13.67	9.95	
14	Est. Num of Construction Workers vehicle trips per day			Total		89.33	64.29	
	average	130 one-way trips/day						
		130 avg. one-way trips/day						

(to and from site)

	Construction Phase and Duration	Amount	# of Dump Tuck Needed	Haul & Delivery Trips	<u>Miles/Trips</u>	<u>VMT</u>
30	Demolition	5,800 tons	820 14-ton Dump Truck	Whittier Narrow PS		
				Santa Fe Spreading Ground PS	15	
				42 Hazardous Waste	200	8400
				778 Scholl Canyon Landfill	26	20228
				AWP Facility	30	
	Site Preparation	3,700 CY	800 Dump Truck	Whittier Narrow PS		
		1 acre of C&G	160 Dump Truck	Santa Fe Spreading Ground PS	15	
				48 Hazardous Waste	200	9600
				912 Scholl Canyon Landfill	26	23712
	Foundation and below grade infrastructure	9,400 CY	188 Dump Truck	Whittier Narrow PS		
				Santa Fe Spreading Ground PS	15	
				10 Hazardous Waste	200	2000
				178 Scholl Canyon Landfill	26	4628
	Excavation/Trenching	12,000 CY soil import	2400 13 yd Dump Truck (holds 10 yd only)	1950 Whittier Narrow PS		
		23,000 CY clean soil export/demo	4600 13 yd Dump Truck (holds 10 yd only)	1950 Santa Fe Spreading Ground PS	15	29250
		4,000 CY haz soil export/demo	800 13 yd Dump Truck (holds 10 yd only)	800 Hazardous Waste	200	160000
				1150 Scholl Canyon Landfill	26	29900
				1950 AWP Facility	30	58500
i	Above grade facilities/equipment and site improvements		5,000 Equipment Loads	5,000 Equipment site	30	150000
	Paving	2,900 CY AB 5,800 Tons asphalt	1,400 14 CY Truck	1,400 Concrete/Asphalt Plant	50	70000
7	Architectural coatings		30 Loads of Materials	30 Architectural coatings	15	450
	Power substation		60 Loads of Equipment and Materials	60 Equipment site	30	1800
	Pipeline Stub out to Coveyance System		260 Pipe Loads	260 Equipment site	30	7800
39	Pipeline Stub out to Coveyance System		260 Pipe Loads	260 Equipment site	30	

rterials	or	N/S
54.34		
9.95		
64.29		

av) 19.66 miles Hazardous Waste Facility 200 miles
Hazardous Waste Facility 200 miles
andfill 20 miles
15 miles
40 miles
50 miles
nt traveling to work site 30 miles
ase) 30 miles

Construction Phase

e Water Conveyance Schedule_v	5.1 Assumed Construction Duration (20230901_Pure Water Conveyan	620 days	1.7 years (workdays only)	Roadway				
					Arterial	Collector	Local	Assumptions
23	Hual Truck Trips (Off-haul/disposal, supplies, material)			Regular Landfill Haul Trips	11.:	16		100% to/from I-605
	minimum	200 one-way trips		Hazardous Landfill Haul Trips	1.4	45		100% to/from I-210
	maximum	500 one-way trips		Base Materials Haul Trips	9.1	72	0.70	45% travel on E/W arterials; 45% on N/S arterials, 10% to/from I-605
				Construction Workers	128.0	05	1.95	10% travel on E/W arterials; 10% on N/S arterials, 80% to/from I-605
	Construction Workers			Construction Equipment	0.:	11	0.01	30% travel on E/W arterials; 30% on N/S arterials, 40% to/from I-605
13	Construction Workers per day							
	average	34 workers/day			ADT to/from freewa	y ADT E/W art	erials or N/S arterials	
	peak	43 workers/day		LV	102.4	4 2	27.56	
				HV	13.6	3	9.52	
14	Est. Num of Construction Workers vehicle trips per day			Total	116.0	7	37.08	
	average	130 one-way trips/day						
		130 avg. one-way trips/day						

(to and from site)

	Construction Phase and Duration	Amount	# of Dump Tuck Needed	Haul & Delivery Trips	Miles/Trips	<u>VMT</u>
30	Demolition	5,800 tons	820 14-ton Dump Truck	Whittier Narrow PS	15	
				Santa Fe Spreading Ground PS		
				42 Hazardous Waste	200	8400
				778 Scholl Canyon Landfill	20	15560
				AWP Facility	40	
32	Site Preparation	3,700 CY	800 Dump Truck	Whittier Narrow PS	15	
		1 acre	160 Dump Truck	Santa Fe Spreading Ground PS		
				48 Hazardous Waste	200	9600
				912 Scholl Canyon Landfill	20	18240
33	Foundation and below grade infrasture	9,400 CY	188 Dump Truck	Whittier Narrow PS	15	
				Santa Fe Spreading Ground PS		
				10 Hazardous Waste	200	2000
				178 Scholl Canyon Landfill	20	3560
34	Excavation/Trenching	12,000 CY soil import	2400 13 yd Dump Truck (holds 10 yd only)	1950 Whittier Narrow PS	15	29250
		23,000 CY clean soil export/demo	4600 13 yd Dump Truck (holds 10 yd only)	1950 Santa Fe Spreading Ground PS		
		4,000 CY haz soil export/demo	800 13 yd Dump Truck (holds 10 yd only)	800 Hazardous Waste	200	160000
				1150 Scholl Canyon Landfill	20	23000
				1950 AWP Facility	40	78000
35	Above grade facilities/equipment and site improvements		5,000 Equipment Loads	5,000 Equipment site	30	150000
36	Paving	2,900 CY AB 5,800 Tons asphalt	1,400 14 CY Truck	1,400 Concert/Asphalt Plant	50	70000
38	Power substation		60 Loads of Equipment and Materials	60 Equipment site	30	1800

Summary - Daily ADT (Average Daily Throughout the Construction Schedule)									
		Joint Treatment Site							
		Pump Station	WNPS	SFSGPS					
Construction Worker and Non-Haul	Light Vehicle	85	130	130					
Truck ADT Per Day	Heavy Vehicle	0	0	0					
Huck ADT Per Day	Total	85	130	130					
	Light Vehicle	-	-	-					
Haul Truck Trips ADT Per Day	Heavy Vehicle	20	27	26					
	Total	20	27	26					
	Light Vehicle	85	130	130					
Total ADT Per Day	Heavy Vehicle	20	27	26					
	Total	105	157	156					

Summary - Daily VMT (Average Daily Throughout the Construction Schedule)									
		Joint Treatment Site							
		Pump Station	WNPS	SFSGPS					
Construction Worker and Non-Haul	Light Vehicle	1671	2,556	2,556					
Truck VMT	Heavy Vehicle	4	4	4					
	Total	1,675	2,559	2,559					
	Light Vehicle	-	-	-					
Haul Truck Trips VMT	Heavy Vehicle	793	929	918					
	Total	793	929	918					
	Light Vehicle	1,671	2,556	2,556					
Total VMT	Heavy Vehicle	796	933	922					
	Total	2,467	3,489	3,478					

Summary - Construction Schedule # of Days						
	Joint Treatment Site					
	Pump Station	WNPS	SFSGPS			
Number of Construction Days	620	620	620			

Sum	nmary - ADT (Through	out the Construction Sc	chedule)			Summary - VMT (Throughout the Construction Schedule)						
		Joint Treatment Site						Joint Treatment Site				
		Pump Station	WNPS	SFSGPS	Total			Pump Station	WNPS	SFSGPS	Total	
Construction Worker and Non-Haul	Light Vehicle	52,700	80,600	80,600	213,900	Construction Worker and Non-Haul	Light Vehicle	1,036,027	1,584,511	1,584,511	4,205,049	
Truck ADT Per Dav	Heavy Vehicle	74	74	74	222	Truck VMT	Heavy Vehicle	2,220	2,220	2,220	6,660	
Huck ADT Per Day	Total	52,774	80,674	80,674	214,122		Total	1,038,247	1,586,731	1,586,731	4,211,709	
	Light Vehicle	-	-	-	-		Light Vehicle	-	-	-	-	
Haul Truck Trips ADT Per Day	Heavy Vehicle	12,332	16,518	16,228	45,078	45,078 Haul Truck Trips VMT	45,078 Haul Truck Trips VMT He	Heavy Vehicle	491,396	576,268	569,410	1,637,074
	Total	12,332	16,518	16,228	45,078		Total	491,396	576,268	569,410	1,637,074	
	Light Vehicle	52,700	80,600	80,600	213,900		Light Vehicle	1,036,027	1,584,511	1,584,511	4,205,049	
Total ADT Per Day	Heavy Vehicle	12,406	16,592	16,302	45,300		Heavy Vehicle	493,616	578,488	571,630	1,643,734	
	Total	65,106	97,192	96,902	259,200		Total	1,529,643	2,162,999	2,156,141	5,848,783	

Vehicle Type	Roadway Class	toadway Class Joint Treatment Site Pump Station WNPS		SFSGPS	Total
	Arterial	81	121	125	327
Light Vehicle	Collector	2	4	2	8
	Local	3	4	3	10
	Arterial	15	22	21	58
Heavy Vehicle	Collector	2	1	1	3
	Local	1	1	1	3
	Arterial	96	143	146	385
Total	Collector	3	5	3	12
	Local	3	5	4	13

Daily Project Trips ADT on Route to Freeway										
Vehicle Type	Roadway Class	Joint Treatment Site Pump Station	WNPS	SFSGPS						
	Arterial	58	76	102						
Light Vehicle										
	Arterial	10	14	14						
Heavy Vehicle										
	Arterial	67	89	116						
Total										

	Daily ADT p	er Link by Roadway Cl	assification - Within 5 mil	e buffer of reach					Daily ADT per l	ink on Route to Freeway	1	
Scenario	Vehicle Type	Roadway Class	Joint Treatment Site Pump Station	WNPS	SFSGPS	Total	Scenario	Vehicle Type	Roadway Class	Joint Treatment Site Pump Station	WNPS	SFSGPS
		Arterial	1,329	692	419	2,440			Arterial	1,710	1,710	1,710
	TruckADT	Collector	424	77	34	536		TruckADT				
NP		Local	177	79	59	315	NP					
NF		Arterial	19,877	23,097	17,020	59,994	NF		Arterial	39,257	39,257	39,257
	All ADT	Collector	1,741	2,294	1,696	5,731		All ADT				
		Local	2,279	2,238	2,321	6,837						
		Arterial	15	22	21	58			Arterial	10	14	14
	TruckADT	Collector	2	1	1	3		TruckADT				
Project Trips		Local	1	1	1	3	Broject Trips	All ADT				
Project mps		Arterial	96	143	146	385	Project Trips		Arterial	67	89	116
	All ADT	Collector	3	5	3	12						
		Local	3	5	4	13						
		Arterial	1,344	714	440	2,498			Arterial	1,719	1,723	1,723
	TruckADT	Collector	426	78	35	539		TruckADT				
NP + Project		Local	178	80	60	318	NP + Project					
Trips		Arterial	19,973	23,240	17,166	60,379	Trips		Arterial	39,324	39,346	39,373
	All ADT	Collector	1,744	2,300	1,699	5,743		All ADT				
		Local	2,282	2,243	2,325	6,850						
		Arterial	1%	3%	5%	2%			Arterial	1%	1%	1%
% Change (ND)	TruckADT	Collector	0%	1%	2%	1%	% Change (ND)					
% Change (NP + Project Trips) -		Local	0%	1%	2%	1%	% Change (NP + Project Trips) -					
(NP)		Arterial	0%	1%	1%	1%	(NP)		Arterial	0%	0%	0%
(,	All ADT	Collector	0%	0%	0%	0%	(,	All ADT				
		Local	0%	0%	0%	0%						



APPENDIX G – TRAFFIC CONTROL PLANS

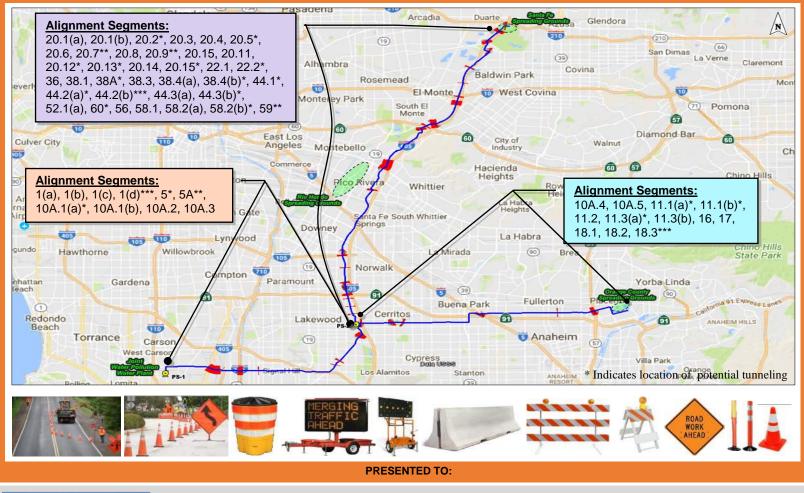


Preliminary Traffic Control Assessment for The Metropolitan Water District of Southern California's Potential Regional Recycled Water Supply Program Feasibilities Studies

Final Traffic Control Assessment

for the

Metropolitan Water District of Southern California's Regional Recycled Water Supply Program (RRWSP) Feasibilities Studies





METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA 700 North Alameda Street



700 North Alameda Street Los Angeles, CA 90012-2944



Black & Veatch 5 Peters Canyon Road Irvine, CA 92606



PREPARED BY:



MINAGAR & ASSOCIATES, INC. Traffic Engineering – Transportation Planning – ITS – CEM 23272 Mill Creek Drive Suite 240 Tel: (949)707-1199 Web: www.minagarinc.com • E-mail: minagarf@minagarinc.com



August 25, 2018



1 GENERAL

1A <u>**Overview**</u>. The Metropolitan Water District of Southern California (MWD), in collaboration with the Los Angeles County Sanitation District (LACSD), is developing a new regional water supply program to deliver recharge water of groundwater basins for conservation, desalination, recycling and potable reuse purposes, and to improve and diversify storage and delivery capabilities and water supply throughout the region. MWD is contemplating a long-term phased approach, with an initial demonstration phase requiring the completion of several feasibility studies. An important part of the feasibility studies pertains to satisfying the comprehensive and multi-jurisdictional set of traffic control requirements, and managing the impacts of project construction on the surface transportation system. The proposed RRWSP pipeline alignment will traverse the following local jurisdictions in Los Angeles and Orange Counties:

Los Angeles County		Orange County
City of Arcadia	City of Lakwood	City of La Palma
City of Baldwin Park	City of Long Beach	
City of Bell Gardens	City of Los Angeles	City of Cypress
City of Bellflower	City of Montebello	City of Cypless
City of Carson	City of Norwalk	City of Buena Park
City of Cerritos	City of Paramount	City of Duella Faik
City of Commerce	City of Pico Rivera	City of Fullerton
City of Compton	City of Santa Fe Springs	City of Fullenton
City of Downey	City of Signal Hill	City of Placentia
City of EI Monte	City of South EI Monte	City of Flacentia
City of Hawaiian Gardens	City of South Gate	
City of Industry	Unincorporated	City of Anaheim
City of Irwindale	L.A. County	

The project design contractor, Black & Veatch, has requested Minagar & Associates, Inc. to provide a preliminary, top-level assessment of the temporary traffic control and work zone-related construction impacts and associated costs involved with constructing the subject Preferred Alignment for MWD's Potential Regional Recycled Water Supply Program (RRWSP). The following discussions include a general overview of the expected procedures, impacts and costs associated with temporary traffic control/work zone set-ups for the various Project alignments.

While there are a number of Potential RRWSP route alternatives that are located offroad, or only cross relatively short widths through city streets which would not require any significant traffic control set-ups within the public right-of-way, most of the alignments are located on public highways and would require MWD to implement proper traffic control methods to ensure construction worker and public safety. Boring/tunneling methods are undetectable to the public and would not interfere with traffic, with the exception of bore pits required at excavation exit and entry points.

1B <u>**General Requirements.**</u> The nature of the project construction involves a moving operation both on and off of the public right-of-way to sawcut and excavate pavement;





load and haul soils to the laydown area; install trench shoring; install, weld, inspect and test pipeline and valve appurtenances; grade, compact and backfill the site; and conduct other site restoration/cleanup on an ongoing basis. Daily construction will operate as a "rolling work zone" that is approximately 600 feet in length along any given alignment, and 36 feet wide. The typical construction method for use in all roadway-street locations requires a 10-foot lateral clearance from the trench or boring pit centerline to the nearside work zone edge, and 26 feet to the far-side work zone edge. Metropolitan estimates that daily trench-based work will be completed at a rate of 40 feet of pipeline construction per day within public roadways, and 200 feet per day within off-street easements. Trenchless-based construction between contiguous boring pits along the alignment is estimated to be completed at a rate ranging between 35 and 60 feet per day, depending on the soil conditions and trenchless method.

1C <u>Specific/Special Requirements</u>.

- 1C.1 <u>Meeting Minutes</u>. MWD has conducted a preliminary agency outreach effort with several local jurisdictions through which the project alignment will be constructed. MWD prepared a minutes summary of these meetings for the following agencies:
 - City of Anaheim
 - City of Buena Park
 - City of Carson
 - City of Cypress
 - City of Fullerton
 - City of La Palma
 - City of Long Beach
 - Los Angeles County Department of Public Works (LACDPW)
 - Southern California Edison (SCE)

For each meeting, the following questions/concerns were raised:

- Traffic management and detour requirements;
- Need to obtain the width of public right-of-way for streets affected by the potential alignment;
- Encroachment permit process/timeframe;
- Utility relocation and median issues, where applicable;
- Upcoming projects or street improvements along the potential alignment?;
- Specification of City ordinances regarding pipeline construction (repaving/backfill requirements, etc.);
- Environmentally sensitive and restricted areas;
- Knowledge of any hazardous materials, contaminated soils, or chemical facilities in the vicinity of the project;
- Availability of electronic files (e.g., Microstation, AutoCad, GIS or PDF utility maps);
- Points of contact for Traffic, Environmental, Permits, Property Access and Street Parking Impacts, Other
- For corridor alignments:





- Need City contact for permanent easement and temporary construction easement process/timeframe;
- Need City contact for coordination of any park closures/impacts during construction
- 1C.2 Municipal Regulations, local concerns and potential nighttime work.

The following includes the traffic control related concerns and feedback provided from each local agency during the outreach meetings:

City of Carson

- The city had concerns that 223rd Street is busy, might want to stay out. Avalon (or Main) to Del Amo could be an option.
- Avoid Wilmington because it's a busy street with a lot of utilities.
- Construction Means and Methods: Maintain at least one lane of traffic in each direction. If you're at an intersection, maintain the left turn open. For trenching, you would need to reroute one block at a time.
- Working hours: 9am to 3pm weekdays. Times may change depending on the project. The City had a previous project with a starting time at 7am.
- We would need a detour plan which would serve as guidance to the contractors
- Sepulveda is busy with a lot of pipes/utilities, traffic is not as much of an issue
- Streets to stay away from:
 - o Intersection of Wilmington/223rd. There's an ongoing construction project.
 - Carson from 405 to Figueroa

City of Long Beach

- Major streets will need to maintain one (1) lane of traffic in each direction at all times. The City does not want to detour any streets completely, but may approve flagging for minor streets on a case by case basis.
- Working hours are restricted to 8:30am to 3:30pm. A special permit request will need to be submitted to work outside of these hours. The City does not allow work on Sundays, however, Saturday work may be allowed with a special permit. Any requests are considered on a case by case basis. Refer to the City's noise ordinance for more information or contact the City's Noise Ordinance Officer to discuss further.

City of Cypress

- A traffic control plan will be required along with advance notification to residents and businesses.
- Working hours in the City are 8:30am to 3:30pm for cone traffic. If k-rails are installed, the working hours can be extended.
- With k-rail installed, there are no restrictions on the length of the open trench. If k-rail is
 not installed, the trench will need to be covered daily (back filled or covered with traffic
 bearing plates).
- The subdivisions to the east of Coyote Creek, on the north and south side of Crescent Avenue (Carob Street and Acacia Street), have only one point of access. Coordinate construction to accommodate these residents.





- A comment was made that Moody Street or Bloomfield Avenue may be better choice for the north/south alignment over Walker Street. All three of these options are within the City of La Palma. Kamran also mentioned that Holder Street in Buena Park is a quiet street. Valley View Street and Knott Avenue are busy north/south streets in Buena Park.
- Crescent Avenue is the best east/west option in the City of Cypress as there would be minimal traffic impacts in this area relative to the other east/west streets in the City.
- The intersection of Walker Street and Crescent Avenue is busy.
- Forest Lawn Cemetery has an access gate onto Crescent Avenue (adjacent to Moody Creek) that is used frequently. Prior to construction, MWD should meet with Forest Lawn to discuss any impacts to this access point and the cemetery. The main entrance to the cemetery is off of Lincoln Avenue.

City of Fullerton

- The City would like for MWD to establish guidelines related to traffic and detour management.
- Working daytime hours in the City are 7am to 4pm.
- Will need to do nighttime work through major intersections (i.e., Harbor & Orangethorpe). The Harbor intersection will be the biggest issue for this alignment.
- The City can give us as-built drawings of Orangethorpe as well as Orange County pipeline drawings. Contact Brian K.

L.A. County

 MWD should try to stay away from using bicycle and other multi-use trails. The public may protest our use of these trails.

City of La Palma

- The City uses MUTCD standards for traffic control. Generally one lane must remain open in each direction. A preliminary traffic control plan should be submitted with MWD's construction plans.
- There is no paving currently planned for Walker Street or Crescent Avenue. They will start slurry seal in 2 years. La Palma Avenue will have grind/overlay completed this summer.
- There are no specific City ordinances regarding pipeline construction.
- Walker Street has less traffic than Moody Street. It operates as a collector street and has less traffic than streets to the east as well (i.e., Valley View Street and Knott Avenue).

2 **ROADWAYS AND INTERSECTIONS**

2A Roadways

2A.1 Roadway Designation and Definitions. All public streets and highways are sorted within three general classes, or functional classifications, established by the Federal Highway Administration (FHWA) and the American Association of State Highway Transportation Officials (AASHTO). They are as follows:





- *Arterials.* Provide the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control.
- *Collectors*. Provide a less highly developed level of service at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterials.
- Local roads. Consist of all streets not defined as arterials or collectors; primarily provides access to land with the least amount of mobility (lower travel speeds, narrower streets, fewer lanes, more driveways, etc.).

The roadway functional classifications are based on the character of traffic service that they are intended to provide and the degree of land access that they allow. Therefore, the degree to which a project roadway segment will be limited or closed off to public use during construction will largely depend on its functional classification, since this represents how the roadway is currently being used and whether or not lane closures are feasible or will be acceptable to the local governing agency.

Due to the diverse combinations of land use patterns, street access, local roadway standards, and individual public interests, local municipalities in Southern California often use functional classifications in their General Plans which do not align verbatim with the FHWA's above three-tiered system. Oftentimes, roadway type designations may not even correlate over jurisdictional boundaries. Generally speaking, however, the FHWA's functional classes are consistent with the urban context of Los Angeles and Orange Counties where the project will be constructed, and can be represented as:

• Arterials

- Principal Arterials (Interstates, Freeways, Expressways, and major conventional highways) carry the large majority of through movements wishing to bypass the central city of an urban area. Although there are no Principal Arterials along which the project will be constructed, there are several base and alternative alignments which would cross underneath Principal Arterials at a handful of locations, including across Interstates (I-) 5, 10, 105, and 605, and State Routes (SR-) 91 and 57.
- In the local context of Los Angeles and Orange Counties, FHWA's *Minor Arterials* classification is represented by what many cities separate into individual categories termed "Major Arterials" and "Primary Arterials". These facilities serve as multi-lane divided highways providing cars, trucks and buses with a high degree of intercity travel, as well as direct access to Principal Arterial facilities. In fully developed areas minor arterials are usually spaced at about 1 mile apart; however, they may be spaced more closely within central business districts and further apart (up to 2-3 miles) in suburban fringes.





- **Collector Streets** in the project area are represented by local jurisdictions by the "Collector" and "Secondary Arterial" (intermediary roadways between collectors and major arterials) functional classifications, and are most often found to be two-lane divided highways or four-lane highways both divided and undivided, providing a mix of intercity and intracity travel with simultaneous access to adjacent land uses.
- Local Streets are comprised of all other functionally unclassified roadways which provide direct access to abutting land and access to the above higher service facilities. Within the project limits these are generally undivided, twolane streets in residential neighborhoods, often with curbside width for onstreet parking. Service to through-traffic movements is usually deliberately discouraged, and bus routes are usually not located on local streets.

From a temporary traffic control standpoint, in terms of mobility impacts and costs, local agencies will generally not permit Principal or Minor Arterials to be fully closed at any time. With proper mitigation and traffic detours, cities may possibly grant the full closure of certain collector roads and local streets during their off-peak usage periods, with seasonal/day-of-week/time-of-day factors considered. However, this will require that MWD address the long-term impacts associated with the affected residents and businesses for whom direct vehicular access from the public right-of-way would be restricted during construction.

- 2A.2 <u>Roadway Map and List</u>. A map of the RRWSP Preferred Alignment is shown on *Figure 1.* A list of the project segments located on public roadways where temporary traffic control will be required is provided under *Attachment 1A*. A truncated list of project segments composed of the current preferred alternative project routing is provided under *Attachment 1B*.
- 2A.3 <u>Roadway Traffic Control Types and Descriptions</u>. Minagar & Associates, Inc. developed four basic traffic control configurations which might be used for pipeline construction along open roadway segments. Traffic control set-ups along the roadway would fall under one of the following basic conditions along the highway:
 - TC Configuration #1 (two-way traffic, both sides of work zone)
 - Interior lanes closure for all roadways ≥ 60' wide
 - Pipeline along center of the street, or offset from street centerline with at least 12' available on both sides of the work zone.
 - TC Configuration #2 (two-way traffic, one side of work zone)
 - Closure of one side for all roadways ≥ 60' wide
 - Pipeline offset from street centerline with ≥ 24' available on one side of the work zone.
 - TC Configuration #3 (one traffic lane alongside the work zone)
 - Closure of one side for all roadways 48-60' wide
 - Pipeline offset from street centerline with < 24' available on one side of the work zone.





- Depending on the needs and requirements of the local agency, the traffic control configuration may include: (1) two-way traffic alternating back and forth on one lane with the use of flagmen; (2) temporary restriction of the segment to one-way traffic with the implementation of detour routes for the closed direction; or (3) a combination of flagmen and/or detouring during designated hours of the day.
- Depending on the traffic volume and capacity of the street in question, the implementation of one-way restrictions with detours or the use flagmen to manage two-way traffic on one travel lane would be feasible on all streets; however, the configuration will likely be limited to Collectors and Local Streets. In the case of collector roads, many local agencies will typically not allow peak traffic flows (e.g., 7:00-9:00AM and 4:00-6:00PM) to be obstructed in this way, and thus may be more amenable to nighttime work where one open lane of traffic is desirable.
- **TC Configuration #4 (closed to through traffic)**—full street closure for local roads and city-approved collector streets
 - Available lane width for through traffic outside of the work zone < 12' on both side of the construction area.

Conceptual layouts of the above generalized traffic control patterns are shown in the diagrams below. Where the project alignment crosses a freeway, at-grade railroad or storm water/flood control channel, the construction method will be trenchless with launching/receiving pits located 25 feet from the controlling jurisdiction's right-of-way line.

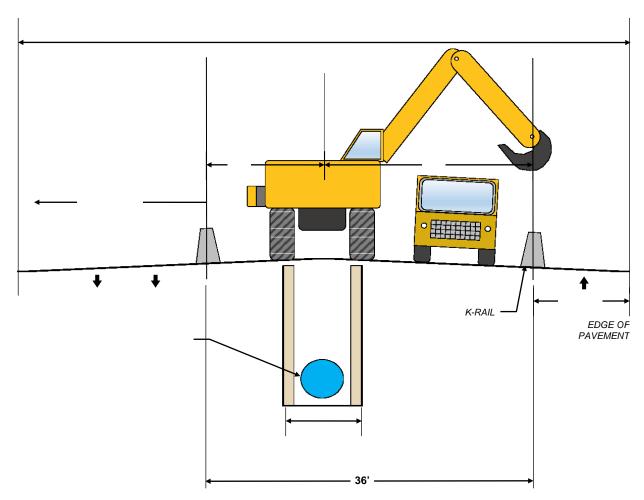
Based on Minagar & Associates, Inc.'s assessment of the Preferred Alignment, there is one (1) roadway segment which would potentially require full-roadway closure (TC Configuration #4) and detour-based temporary traffic control while construction is underway. The segment is described as follows:

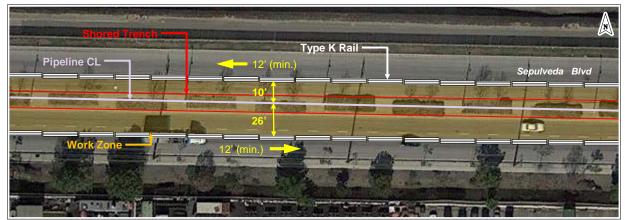
- <u>52 Rivergrade Road between Lower Azusa and Brooks (0.41-mile segment)</u>
 - o Cities of Irwindale and Baldwin Park Local Street
 - o 32-foot wide, 2-lane street, no median
 - Adjacent land use: Industrial (auto and boating service centers)



Traffic Control Configuration #1 (two-way traffic, both sides)

Interior lanes closure for arterials ≥ 60' wide. Pipeline alignment is located along the center of the street, or is offset from the street centerline with ≥ 12 feet available on both sides of the work zone.

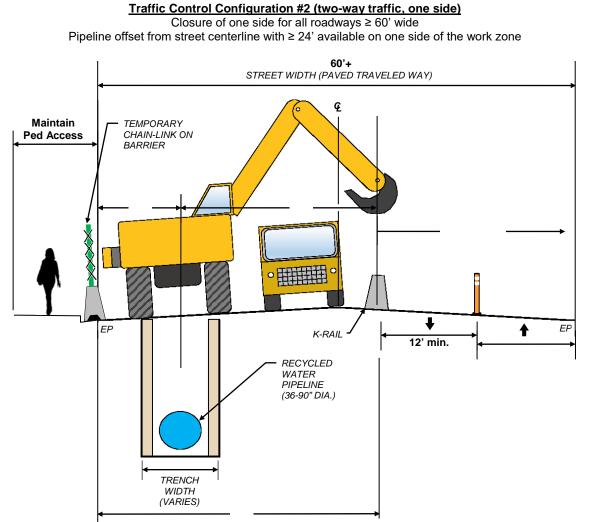




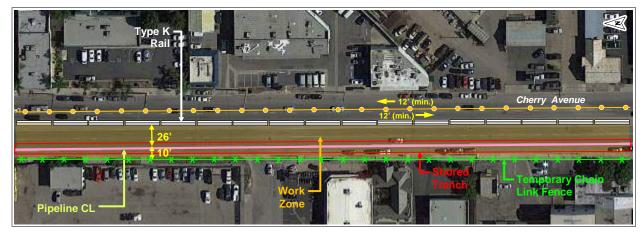
Traffic Control Configuration #1 (Plan View) - Two-way traffic, both sides of work zone







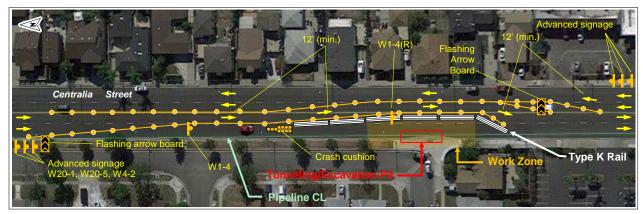
CONSTRUCTION ZONE



Traffic Control Configuration #2 (Plan View) Two-way traffic, one side of work zone







Traffic Control Configuration #2 (Alternative Pattern) Transition to half roadway closure with lane merge

The sign chart below is based on the latest California MUTCD and depicts the typical temporary traffic control/work zone signage which would be used for the proposed project construction along both roadway segments and at intersections.

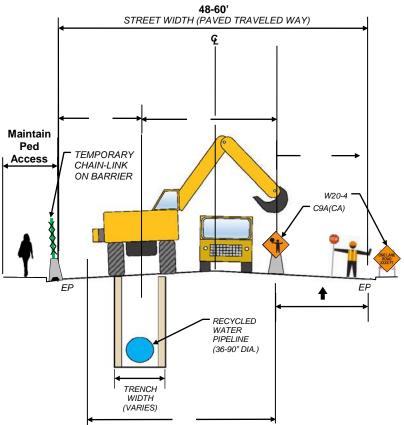
C17(CA)(25)	C17(CA)(30)	HEHTLARE CLORED AHEAD C20(CA)	LEFI LATE 1.5.B 44E-4 C20A(CA)	20/A 2 C20B(CA)	CLOSED C30(CA)	SHOULDER CLOSED C30A(CA)	ROAD WO3K NEXT _ MILES G20-1	END ROAD WORK G20-2
R3-1(L) / R3-2	R3-4	NLY R3-5(R)	RIGHT LANE MUST TURN RIGHT R3-7	LEFT LANE MUST TURN LEFT R3-7(L)	R3-18	R4-7	R4-8	DO NOT STOP ON TRACKS R8-8
W1-4(L)	W1-6	W1-6(R)	25 W3-5(25)	¥30 30 ¥3-5(30)	W4-2	W4-2(L)	ROAD NARBOWS W5-1	W6-3
STEEL FLATE AHEAD W8-24	(510) W11-1	W12-1	SHARE THE ROAD W16-1P	адар Фолк АНЕ А.D W20-1	ЦЕТ Ц.::ED Ч.::ED ЖИК П W20-5(MOD)	EKE LANE LUSED AFEAD W20-5(BIKE)	SHOULDER WORK W21-5	W24-1
W24-1(L)	RIGHT LANE TURNS: HIGHT AHEAJ W73A(CA)	TRAU TRAFFIC URRCE LET W74(CA)	THEU TAFFIC MERCE ROHT W74(CA)(R)	M4-9a	M4-9a(R)	BIKE LANE CLOSED SC11(CA)(MOD)		

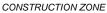


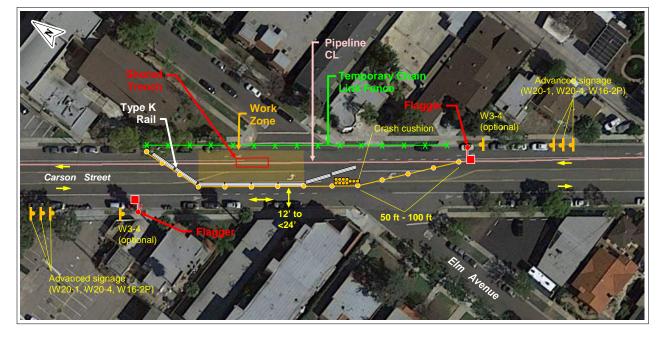


Traffic Control Configuration #3 (one-way traffic alongside work work)

Closure of one side for all roadways 48-60' wide. Pipeline offset from street centerline with < 24' available on one side of the work zone. Implement one-way closure with detour or two-way flagger station (shown below)





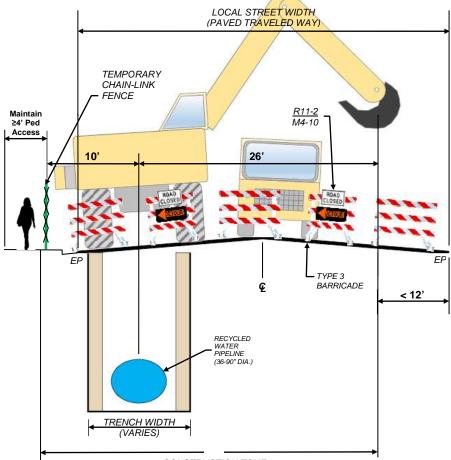






Traffic Control Configuration #4 (closed to through traffic)

Full street closure for local roads and city-approved collector streets. Available lane width for through traffic outside of the work zone < 12' on both sides of the construction area



CONSTRUCTION ZONE

2A.4 <u>Roadway Traffic Control Cost Estimate</u>. Minagar & Associates, Inc. developed four basic temporary traffic control cost estimates to correspond to each of the above four configurations. Cost estimates were developed using a method-based specification based on the types of devices which might to be used (signs, barricades, channelizing devices, etc.), their locations and quantities in advance of and through the work zone construction area.

TC Configuration #1 Cost Estimate (two-way traffic, both sides of work zone):

- 600' work zone @ 25 mph reduced speed
 - o Direction 1 Transition: 125' Right Merge
 - Assumed 750' two-way TTC transition zone (not including advanced signage)
- Traffic Control Quantities:
 - K-Rail, Direction 1: (600 LF) / (20 ft per railing) = 30 ct Type K Rail
 - K-Rail, Direction 2: (600 LF) / (20 ft per railing) = 30 ct Type K Rail





- Construction Signs: 10 ct (approx..)
- Temporary Crash Cushions (unidirectional): 2 ct
- Flashing Arrow Boards: 2 ct
- If far-side lane width ≥ 24 ft, add: 1,000 LF remove lane striping and install temporary lane markings
- TTC Cost Estimate:
 - \$64,100 per 750 ft. "rolling work zone"
 - + \$8/LF temporary lane marking removals/installations (2-way)

TC Configuration #2 Cost Estimate (two-way traffic, one side of work zone):

- 600' work zone @ 25 mph reduced speed
 - Direction 1 Transition: 125' Merge + 100' Tangent + 63' Shift + 100' Tangent + 63' Shift = 451'
 - o Direction 2 Transition: 125' Right Merge
 - Assumed 1,200' two-way TTC transition zone (not including advanced signage)
- Traffic Control Quantities:
 - K-Rail, Direction 1: (600 LF) / (20' ft per railing) = 30 ct Type K Rail
 - o Install temporary chain link fence: 600 LF
 - Construction Signs: 10 ct (approx..)
 - Temporary Crash Cushions (unidirectional): 1 ct
 - Flashing Arrow Boards: 2 ct
 - Remove lane striping: 1,000 LF
 - Install delineators: [(1,000 LF)/(20 ft spacing)] x 2 rows = 100 delineators
- TTC Cost Estimate:
 - \$63,800 per 1,200 ft. "rolling work zone"
 + \$8/LF temporary lane marking removals/installations (2-way)

TC Configuration #3 (one traffic lane alongside the work zone)

- 600' work zone @ 25 mph reduced speed
 - Direction 1 Transition: 125' Merge
 - Direction 2 Transition: 63' Shift
 - Assumed 800' two-way TTC transition zone (not including advanced signage)
- Traffic Control Quantities:
 - K-Rail, Direction 1: (600 LF) / (20' ft per railing) = 30 ct Type K Rail
 - Install temporary chain link fence: 600 LF
 - Construction Signs: 10 ct (approx..)
 - Temporary Crash Cushions (unidirectional): 1 ct
 - Remove lane striping: 1,000 LF
 - Flagger: 2 ct
- TTC Cost Estimate:
 - \$65,380 per 800 ft. "rolling work zone"

TC Configuration #4 (closed to through traffic)

- Traffic Control Quantities:
 - Install temporary chain link fence: (Length of segment, LF)





- Type III Barricade (4-8'): 20 ct
- Construction Signs: 20 ct (approx..)
- Detour Signs: 10 ct (approx.)
- Traffic Signal Modification: (Varies)
- Modify lane striping at signal: (Varies)
- TTC Cost Estimate:
 - \$1,200 per street closure +
 - + \$4/LF temporary chain link fence
 - + traffic signal modification (if needed, per Attachment 2)

Per-segment cost estimates are provided in Attachments 1A and 1B. It should be noted that the temporary traffic control costs are independent from one another and should not be considered cumulatively. All segments will not be under construction simultaneously, nor are they expected to be completed by the same contractor; thus, traffic control cost estimates will be affected by lump sum bids and varying mobilization costs, depending on the scope of each contract.

2B Intersections

2B.1 Intersection Designation and Definitions. Minagar & Associates, Inc. has identified, listed and described all of the signalized intersections through which the proposed pipeline alignments, segments and alternatives, would cross. The proposed construction method for each signalized intersection (either Open Trench or Tunnel) was considered by weighing the degree to which local and sub-regional traffic would be affected with other factors such as jurisdictional requirements and the potential for various underground and/or overhead utilities within the intersection. With open trenching methods, the crossing street perpendicular to the project alignment would be closed to through traffic at the intersection since the work zone would continue through the intersection in both directions upstream and downstream.

In general, where the project alignment crosses a multi-lane arterial highway or major collector roadway at an intersection, and/or provides protected left-turn signal phasing on all four intersection approaches, is a designated regional truck route, or serves multiple municipal fixed bus routes, Minagar & Associates, Inc. has considered the intersection to be a "Major Intersection". Conversely, where the project alignment intersects a cross street at a signalized intersection that operates on a two-phase signal, is not a designated truck route, or does not serve local bus routes, Minagar has considered the intersection to be a "Minor Intersection".

For the majority of major signalized intersections, it is recommended that standard trenching methods be used in the absence of any known jurisdictional requirements prohibiting it (e.g., railroad tracks, rivers, bridges, Caltrans facilities). Open trenching construction would likely occur at a much slower rate across these intersections and more significantly impact vehicle traffic and mobility. For all minor signalized intersections listed, shored trenching methods would be allowed with the concurrence of the local agency, to permit closing of the intersection to through traffic on the crossing street while the intersection is under construction.





- 2B.2 <u>Intersection List</u>. A list of the signalized intersections through which project alignment will traverse, and require temporary traffic control, is provided under *Attachment 2A*. The list of Perferred Alignment signalized intersections also includes a probable cost to implement the proposed traffic control method. A truncated list of impacted signalized intersections along the current preferred alternative project routing is provided under *Attachment 2B*.
- 2B.3 <u>Intersection Traffic Control Types and Descriptions</u>. At roadway intersections, the traffic control configuration would be set-up as one of two general variations:
 - For tunneling, at major intersections (**TC Configuration #5**)
 - For intersection half-closure set-up (TC Configuration #6)

Conceptual layouts of the above generalized traffic control patterns are shown in the figures below. For shored trench methods, jersey barriers of K-Rail (Caltrans type) would be used along both sides of the work zone in parallel with the pipeline alignment through the intersection. Traffic movements approaching the construction site from side streets at the intersection would be prohibited from crossing the street or turning left.

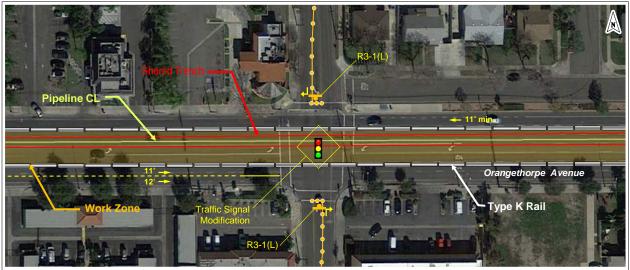
Such movements would be directed to make Right Turns Only with appropriate detour signage installed as needed downstream from the intersection. In addition, manual traffic signal timing and/or detector setting modifications would be implemented at each signalized intersection to ensure that proper signal operations are maintained during the construction period.

For trenchless (tunneling) construction methods, the intersection would be kept clear for traffic to pass in each direction. On the primary street where the pipeline is being constructed, the work zone width would taper off on one side as it approaches the crosswalk or limit line at each signalized intersection to provide the needed space for left turns onto the crossing street. On streets where there are marked bike lanes which must be narrowed or temporarily overtaken for the use of vehicle traffic, the traffic control plan will include appropriate warning signage notifying vehicles to share the roadway space with bicyclists.

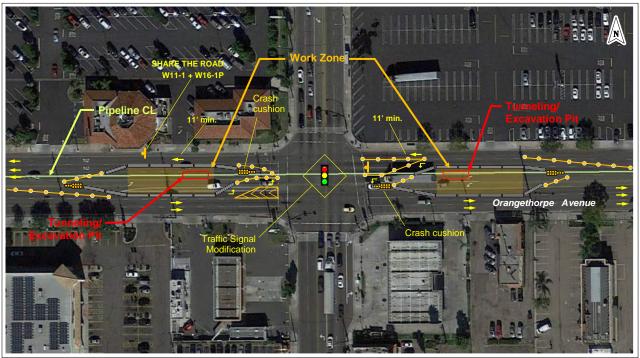




Revised Preliminary Traffic Control Assessment for the Metropolitan Water District of Southern California's Potential Regional Recycled Water Supply Program (RRWSP) Feasibility Studies, Preferred Alignment



Traffic Control Configuration #5 – Half Signalized Intersection Closure (Open Trench Construction)

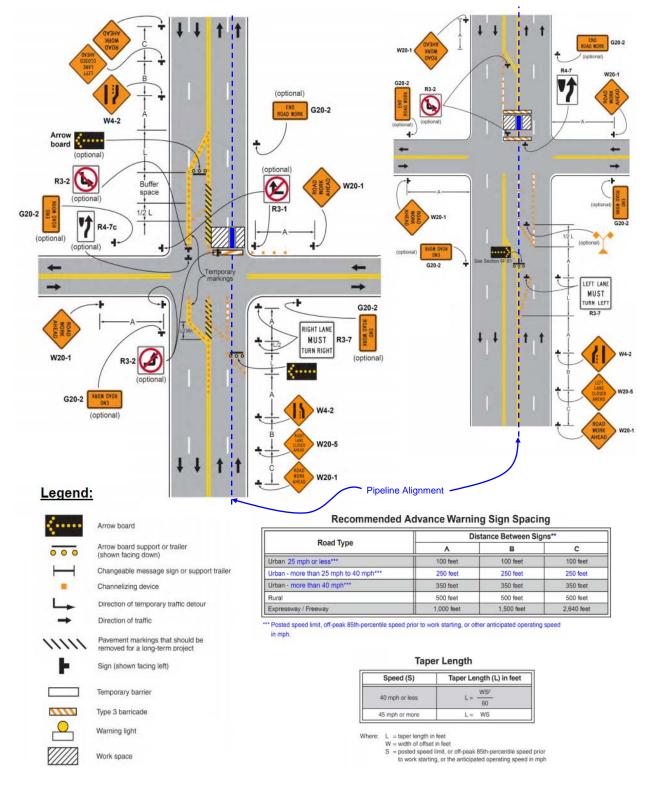


Traffic Control Configuration #6 – Interior Lanes Closure at Signalized Intersection (Trenchless Construction)



Revised Preliminary Traffic Control Assessment for the Metropolitan Water District of Southern California's Potential Regional Recycled Water Supply Program (RRWSP) Feasibility Studies, Preferred Alignment

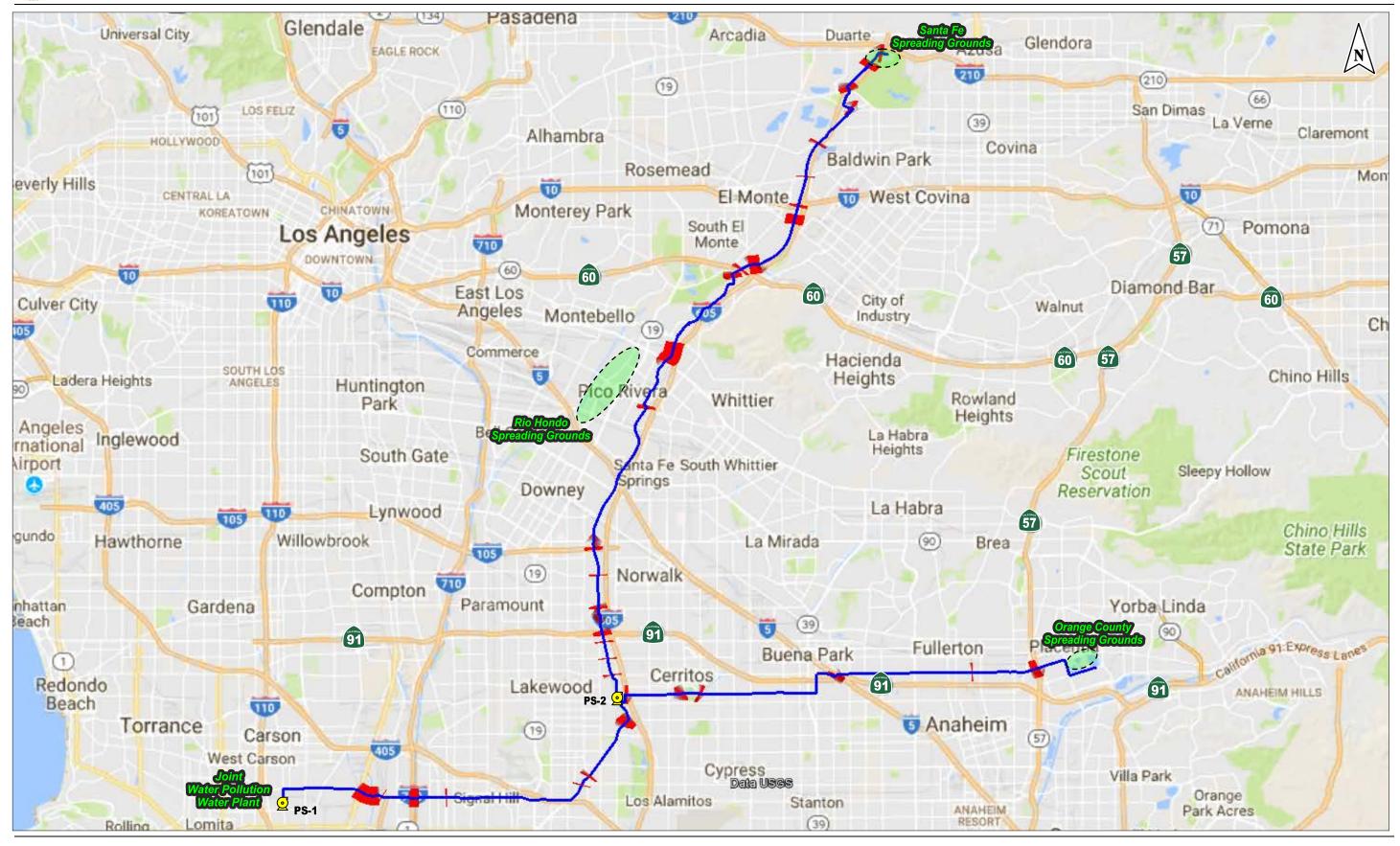
Typical Applications for Trenching at Major Intersections Multiple Lane Closures at an Intersection (Left) & Half Road Closure, Far Side of the Intersection (Right)







Revised Preliminary Traffic Control Assessment for the Metropolitan Water District of Southern California's Potential Regional Recycled Water Supply Program (RRWSP) Feasibility Studies, Base Base and Alternative Alignments



ATTACHMENT 1B. Traffic Control Assessment for Public Highway Segments Along Preferred Alignment - as of 8/10/18

Key:	Roadway S	egment	RM: Width of existing raised/curbed center median (value=0 if no raised median exists, or is flush with the pavement)	LW _{AVAIL} : Ro	adway width available o/s of work zone for 2-way traffic (near-side curb far-side curb), including any raised median
Algnmt	Length (miles)	Length (feet)	W: Width of the traveled way (between edge of pavements)	Color	Recommend minor alignment modification to allow for two (2), 12-foot traffic lanes.
No.	N Lanes RM W	Pipe CL LW _{AVAIL}	PIPE CL: Offset of proposed RRWSP pipeline centerline with respect to the nearest edge-of-pavement	key:	Sufficient space for no more than one (1) 12-foot traffic lane. Candidate roadway for full street closure.

			Main S	St.					Sepuly	eda Blvd	./Willow St.			
4	TC Cor	nfig.	TC-1	Co	ost Est	\$75	,000	TC Co	onfig.	TC-2	Cost Es	t \$91	,000,	
	0.	327 miles	6		1,727	feet		C	0.648 mile	s	3,42	l feet		
	N= 4	RM: 14'	W= 78'	26' c	off E.	16'	26'	N= 4	RM: 16'	W= 80'	10' off S	0'	44'	
														_

			Willow	St.			
F	TC Co	onfig.	TC-2	Cost Est	\$152	2,000	
5		2.09 mile	S	11,035	feet		
	N= 6	RM: 15'	W= 75'	17' off S.	7'	32'	

			Willow	St.					L	os Coyote	s Di	a.		
5A	TC Con	nfig.	TC-2	C	Cost Est	\$172	2,000	TC Co	onfig.	TC-2	(Cost Est	\$169	,000,
JA	2	.56 miles	6		13,517	feet			2.5 mile	s		13,200	feet	
	N= 6	RM: 18'	W= 89'	18'	off S.	8'	45'	N= 4	RM: ()'	W= 62'	8'	off W.	-2'	28'

	Los Coyote	es Dia.	Off-street (under Sa	an Gabriel River)	Off-street (at Ryr	ierson Park)	Studebake	er Rd.	Studebaker Rd	. (off-street)	Del Amo	Blvd.
	TC Config. TC-2	Cost Est \$108,000	TC Config	Cost Est -	TC Config	Cost Est -	TC Config. TC-2	Cost Est \$85,000	TC Config	Cost Est -	TC Config. TC-2	Cost Est \$67,000
	1.04 miles 5,491 feet 0.133 miles 702 feet V= 3 RM: 0' W= 74' 20' off E. 10' 28' Tunnel under SG River			0.204 miles	1,077 feet	0.496 miles	2,619 feet	0.089 miles	470 feet	0.082 miles	433 feet	
	N= 3 RM: 0' W= 74'	20' off E. 10' 28'	Tunnel under	SG River	Trench through Ry	nerson Park	N= 4 RM: 0' W= 75'	13' off E. 3' 36'	Trench through S	CE easement	N= 4 RM: 16' W= 76'	13' off N. 3' 37'
10A					_							
	State Rd. (of	f-street)	State Rd. (d	off-street)								
	TC Config	Cost Est -	TC Config	Cost Est -								
	0.173 miles	913 feet	0.051 miles	269 feet								
	Trench through Ed	lison property	Trench through E	dison property								

			Stanton /	Ave.		
17	TC Co	onfig.	TC-3	Cost Est	\$65,	000
17	C	.596 mile	es	3,147	feet	
	N= 4	RM: ()'	W= 60'	11' off W.	1'	23'

	Orangethorpe	e Ave. (Star	nton-Kass/I-5 Fwy.)		(off-stre	et)	Orange	ethorpe Ave.	(under I-5 Fwy.)	Orangethorpe Ave. (e/c	o I-5 FwyMagnolia)	Orange	thorpe Ave. (I	Magnolia-57 Fwy.)	Orangethorpe Ave. (u	under SR-57 Fwy.)
	TC Config.	TC-2	Cost Est \$76,000	TC Config.	-	Cost Est -	TC Config.	-	Cost Est -	TC Config	Cost Est -	TC Config.	TC-1	Cost Est \$298,000	TC Config	Cost Est -
	0.3 miles	IS	1,584 feet	0.251 r	niles	1,325 feet	0.109 r	niles	576 feet	0.361 miles	1,906 feet	5.6	miles	29,568 feet	0.14 miles	739 feet
	N= 4 RM: 0'	W= 81'	15' off S. 5' 40'	Trenc	h between Ka	ss Dr./I-5 Fwy.	Tu	nnel under Ca	altrans R/W	Trench through Rides	hare Parking Lot	N= 6 RM:	0' W= 77'	25' off S. 15' 26'	Tunnel under Ca	altrans R/W
18																
	Orangethor	rpe Ave. (5	7 FwyKraemer)		Kraemer I	Blvd.		Miraloma	Ave.							
	TC Config.	TC-2	Cost Est \$99,000	TC Config.	TC-2	Cost Est \$85,000	TC Config.	TC-3	Cost Est \$65,000							
	0.826 miles	IS	4,361 feet	0.5 r	niles	2,640 feet	0.844 r	niles	4,456 feet							
	N= 4 RM: 0'	W= 61'	11' off S. 1' 24'	N= 4 RM: ()' W= 82'	20' off W. 10' 36'	N= 4 RM: ()' W= 60'	16' off S. 6' 18'							

		Studebaker Rd. (D	Del Amo-195th)	Stude	baker Rd. (19	95th-1,100' n'ly)	SG River (Liberty Par	k - Firestone Blvd.)
20	, I	TC Config. TC-2	Cost Est \$85,000	TC Config.	TC-2	Cost Est \$102,000	TC Config	Cost Est -
20	,	0.493 miles	2,603 feet	0.9 r	niles	4,752 feet	5.517 miles	29,130 feet
		N= 4 RM: 14' W= 77'	19' off W. 9' 32'	N= 4 RM: 1	5' W= 76'	9' off W1' 41'	Segments 20.2-20.9, 20).15 and 20.11-20.14

		Whittier E	Blvd.		Durfee A	Ave.	Beverly	Blvd. (Durfee	-SG River Pkwy.)	Beverly Blv	d. (SGR Pkw	ryE. side SG River)		SG River	Pkwy.		Sheparc	l St.
	TC Config.	TC-2	Cost Est \$81,000	TC Config.	TC-4	Cost Est \$16,000	TC Config.	TC-2	Cost Est \$78,000	TC Config.	TC-3	Cost Est \$65,000	TC Config.	TC-1	Cost Est \$86,000	TC Config.	TC-4	Cost Est \$2,000
	0.417 n	niles	2,202 feet	0.682	miles	3,601 feet	0.335	miles	1,769 feet	0.095 m	iles	502 feet	0.572	miles	3,020 feet	0.061 r	niles	322 feet
	N= 6 RM: 1	7' W= 80'	14' off N. 4' 40'	N= 2 RM:	0' W= 35'	9' off W1' 0'	N= 6 RM:	16' W= 74'	4' off S6' 44'	N= 4 RM: 0	W= 48'	5' off S5' 17'	N= 4 RM:	16' W= 96'	8' off W2' 62'	N= 2 RM: ()' W= 32'	7' off E3' -1'
38																		
		Rose Hills	s Rd.	Wo	orkman Mill R	d./Peck Rd.	Pelli	ssier PI/Work	man Mill Rd.		Workman N	Aill Rd.		Puente /	Ave.		Merced /	Ave.
	TC Config.	TC-3	Cost Est \$65,000	TC Config.	TC-2	Cost Est \$107,00	TC Config.	TC-2	Cost Est \$121,000	TC Config.	TC-1	Cost Est \$130,000	TC Config.	TC-2	Cost Est \$167,000	TC Config.	TC-2	Cost Est \$136,000
	0.413 n	niles	2,181 feet	1.027	miles	5,423 feet	1.345	miles	7,102 feet	1.622 m	iles	8,564 feet	2.439	miles	12,878 feet	1.709 r	niles	9,024 feet
	N= 4 RM: 0	' W= 56'	16' off W. 6' 14'	N= 4 RM:	15' W= 80'	18' off E. 8' 36	N= 4 RM:	0' W= 55'	8' off E2' 21'	N= 4 RM: 1	4' W= 82'	24' off S. 14' 32'	N= 4 RM:	16' W= 76'	18' off E. 8' 32'	N= 4 RM: ()' W= 56'	9' off E1' 21'

ATTACHMENT 1B. Traffic Control Assessment for Public Highway Segments Along Preferred Alignment - as of 8/10/18

Key:	Roadway S	egment	RM: Width of existing raised/curbed center median (value=0 if no raised median exists, or is flush with the pavement)	LW _{AVAIL} : R	Roadway width available o/s of work zone for 2-way traffic (near-side curb far-side curb), including any raised median
Algnmt	Length (miles)	Length (feet)	W: Width of the traveled way (between edge of pavements)	Color	Recommend minor alignment modification to allow for two (2), 12-foot traffic lanes.
NO.	/V Lanes RM W	Pipe CL LW _{AVAIL}	PIPE CL: Offset of proposed RRWSP pipeline centerline with respect to the nearest edge-of-pavement	кеу:	Sufficient space for no more than one (1) 12-foot traffic lane. Candidate roadway for full street closure.

		E. side SC	River
38A		TC Config	Cost Est -
304		0.861 miles	4,546 feet
	Г	Tunnel under	SG River

							Across SG	B River
52/60	TC Config.	TC-4	Cost Est \$15,000	TC Config.	TC-3	Cost Est \$65,000	TC Config	Cost Est -
52/60							0.114 miles	602 feet
							Tunnel undernea	ath SG River

	Live Oak	Ave.
56	TC Config. TC-2	Cost Est \$72,000
50	0.205 miles	1,082 feet
	N= 4 RM: 15' W= 73'	11' off N. 1' 36'



Alian	ment ID No.	Leng	th	Roadway/Route		Limits		-Jurisdiction(e)				
Alight	nent id no.	LF	mi.	noauway/noule	en	d/from	end/to	Junsaiction	5)				
	1	25,064	4 75	Main Street	S	,	N Sepulveda Blvd.	Carson	Los	Long Beach			
	•	23,004	4.75	Sepulveda Bl./Willow St.	W	Main St.	E E. side L.A. River	Carson	Angeles	Long Deach			
Facility	Location						Roadway or Intersection Description			-	Prop. Const	r. Method	Probable TTC
raciiity	Location					Street Classification and Width	Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	Special Route?	Open Trench	Tunnel	Cost
Rdwy Seg	Main - 1,650' s/o S	Sepulveda	to Sep	pulveda		84' (34'/dir) Major Highway	2 lanes/direction + raised median	No	No	CMP- No			
Intersection				Sepulveda Blvd. @ Main St. (alignment turn)			ted LT Signals; TT Bus Stops @ WNW, SSW & E	SE Corners			1		\$78,500
Rdwy Seg	Sepulveda/Willow	- Main to I	L.A. Ri			84' (32-34'/dir) Maj. Hwy (CAR)/Boulevard(LB)	2 lanes/direction + raised median	Yes	No	CMP-No Truck-Yes			
Intersection	ı			Sepulveda Blvd. @ Dolores St.		2 Proi	ected-Permissive LT Signals; TT Bus Stop @ ES	E Corner			1		\$78,500
Intersection	1			Sepulveda Blvd. @ Marbella Ave.			T-Intersection; Protected LT Phase on Sepulved	la			1		\$78,500
Intersection	1			Sepulveda Blvd. @ Panama Ave.		2	Phase Signal; TT Bus Stops @ WNW & ESE Con	rners			1		\$78,500
Intersection	1			Sepulveda Blvd. @ Avalon Blvd.		4 Protected LT S	ignals; MTA Bus Stop @ NNW Corner; TT Bus S	top @ WSW Corn	er		1		\$78,500
Intersection	1			Sepulveda Blvd. @ Banning Blvd.			2-Phase Signal				1		\$78,500
Intersection	1			Sepulveda Blvd. @ Wilmington Ave.			4 Protected LT Signals				1		\$78,500
Intersection	1			Sepulveda Blvd. @ Tesoro/Phillips 66	i		2-Phase Signal				1		\$78,500
Intersection	1			Sepulveda Blvd. @ Alameda Connector		2 Protected I	T Signals on Sepulveda; Split phasing on Alame	da St. connector			1		\$78,500
Intersection	1			Sepulveda Blvd. @ Intermodal Wy			2 Protected LT Signals				1		\$78,500
Intersection	1			Sepulveda Blvd. @ R/R Xing	I		R/R Signal				1		\$78,500
Intersection	1			Sepulveda Blvd. @ ICTF			4 Protected LT Signals					1	\$12,500
Intersection	1			Sepulveda Blvd. @ Middle Rd.			2 Protected LT Signals				1		\$78,500
Intersection	1			Sepulveda Blvd. @ CA-103 terminus	;	Freew	ay On/Off-Ramp; 3 Protected LT Signals and RT	Overlaps			1		\$78,500
Intersection	1			Sepulveda Blvd. @ Regway Ave			2-Phase Signal				1		\$78,500
Intersection	1			Sepulveda Blvd. @ Santa Fe Ave		4 Pro	ected LT Signals; LBT Bus Stops @ SSW & NNE	Corners			1		\$78,500
Intersection	1			Sepulveda Blvd. @ Easy Ave		2-Phase	Signal; LBT Bus Stops @ NNE, WNW, ESE & SS	SW Corners			1		\$78,500
				•						TOTALS	: 16	1	\$1,268,500

Alignn	nent ID No.	Length LF mi.	Roadway/Route	0.00	Limits	00	d#2	Jurisdiction(s)				
	5		Willow Street	W	E. side L.A. River		d/to Cherry Ave.	Long Beach	Signal Hill				
Facility	Location				•	· · · ·	Roadway or Intersection Description		•		Prop. Const	r. Method	Probable TTC
Facility	Location				Street Classification and Width		Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	Special Route?	Open Trench	Tunnel	Cost
Rdwy Seg	Willow - L.A. River	to Cherry Ave.			76-80' (32-36'/dir) Boulevard		4-6 lanes/direction + raised median	No	No	CMP-No Truck-Yes			
Intersection			Willow @ Golden Ave.			2-Ph	ase Signal; LBT Bus Stop east of ENE Corn	er			1		\$78,500
Intersection			Willow @ Magnolia Ave.			1 Prot	ected LT Signal; LBT Bus Stop @ NNE Corr	ner			1		\$78,500
Intersection			Willow @ Pacific Ave.		2 Pro	otected	d LT Signals; LBT Bus Stop @ NNE & ESE (Corners			1		\$78,500
Intersection			Willow @ Earl Ave.				2 Protected LT Signals				1		\$78,500
Intersection			Willow @ Long Beach Blvd.		4 Protected LT Signals; MTA Blue	Line I	runs N/S through the intersection; LBT Bus S	Stop @ NNE, WN	N & WSW Corners			1	\$12,500
Intersection			Willow @ Atlantic Ave.		4 Protect	ed LT	Signals; LBT Bus Stops @ WNW, SSW & N	NE Corners			1		\$78,500
Intersection			Willow @ California Ave.		2-	Phase	Signal; LBT Bus Stops @ WNW & ESE Con	rners			1		\$78,500
Intersection			Willow @ Orange Ave.		4 Prote	ected I	LT Signals; LBT Bus Stops @ WNW & WSW	Corners			1		\$78,500
Intersection			Willow @ Walnut Ave.		2	Protec	cted LT Signals; LBT Bus Stops @ WNW Co	orner			1		\$78,500
Intersection			Willow @ Town Center		2	Prote	cted LT Signals; LBT Bus Stop @ WSW Co	rner			1		\$78,500
Intersection			Willow @ Cherry Ave. (alignment turn)		4 Protecte	d LT S	Signals; LBT Bus Stops @ WNW, NNE and	ESE Corners				1	\$12,500
										TOTALS:	9	2	\$731,500

Alignr	nent ID No.	Lengtl	h mi.	Roadway/Route	000	Limits		d/to	-Jurisdiction(s)				
	5A	26,728 5		E. Willow Street Los Coyotes Diagonal	W	Cherry Ave. E. Willow St.	Е		Signal Hill	Long Beach	Lakewood			
	1				3	E: WIIIOW St.		Roadway or Intersection Description				Prop. Const	r. Method	Probable TTC
Facility	Location					Street Classification and Width		Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	Special Route?	Open Trench	Tunnel	Cost
Rdwy Seg	E. Willow - Cherry	Ave. to Los	s Coy	otes Diagonal		98' (36'/dir)		3/direction + raised median	No	No				
Intersection	1		E	. Willow @ Cherry Ave continued from !		4 Protect	ed LT S	Signals; LBT Bus Stops @ WNW, NNE and	ESE Corners			1		\$78,500
Intersection	1			E. Willow @ Dawson Ave. / Town Center E				2 Protected LT Signals on Willow				1		\$78,500
Intersection	1	E. Willow @ Junipero Av				2 Protected	I LT Sig	nals on Willow; LBT Bus Stops @ WNW ar	nd ESE Corners			1		\$78,500
Intersection	1	E. Willow @ Temple A				2-	phase	Signal; LBT Bus Stops @ WNW and ESE C	Corners			1		\$78,500
Intersection	1	E. Willow @ Temple A E. Willow @ Redondo A				4 Protec	ted LT	Signals; LBT Bus Stops @ NNE, ENE and	ESE Corners			1		\$78,500
Intersection	1			E. Willow @ Grand Avenue)	2 Pro	tected	LT Signals on Willow; LBT Bus Stop @ WN	IW Corner			1		\$78,500
Intersection	1			E. Willow @ Lakewood Boulevan	i	4 Protected	LT Sigr	nals; LBT Bus Stops @ NNE, WNW, ESE a	nd SSW Corners			1		\$78,500
Intersection	1			E. Willow @ Clark Avenue)		4 Prote	ected LT Signals; LBT Bus Stop @ NNE Co	orner			1		\$78,500
Intersection	1			E. Willow @ Bellflower Boulevan	i			4 Protected LT Signals				1		\$78,500
Intersection		E. \	Willow	w @ N. Los Coyotes Diagonal (alignment turn)	2 Pro	otected	LT Signals on Willow; LBT Bus Stop @ EN	IE Corner			1		\$78,500
Rdwy Seg	Los Coyotes Dia.	- E. Willow	to Car	rson		74-88' (32-36'/dir.)		2 lanes/dir + TWLTL	Spring-P.Verde	Yes				
Intersection				Los Coyotes Dia. @ Spring S				Signals on Los Coyotes; LBT Bus Stop @				1		\$78,500
Intersection				Los Coyotes Dia. @ Woodruff Ave		2 Protect	ted LT	Signals on Los Coyotes; LBT bus stop @ V	WNW Corner			1		\$78,500

Intersection	Los Coyotes Dia. @ Wardlow Rd.	2-phase Signal	1		\$78,500
Intersection	Los Coyotes Dia. @ Palo Verde Ave.	2-phase Signal; LBT Bus Stops @ NNE and SSW Corners (on Palo Verde)	1		\$78,500
Intersection	Los Coyotes Dia. @ Studebaker Rd. / Parkcrest St.	Combined signal at "Y" Junction; LBT Bus Stop @ NE Corner	1		\$78,500
Intersection	Los Coyotes Dia. @ Carson St. — continues to 10A.1(a)	2 Protected LT Signals on Carson; LBT Bus Stops @ ESE Corner	1		\$78,500
		ΤΟΤΑΙ	.S: 16	0	\$1,256,000

Aliann	nent ID No.	Leng		Roadway/Route		Limits			Jurisdiction(s	.)				
Alighti		LF	mi.	noadway/noute	enc	d/from	er	d/to	Junsuiction(s	·)				
				10A.1(a) - Los Coyotes Dia.	S	Carson St.	Ν	E. of San Gabriel River						
				10A.1(b) - Studebaker Rd.	S	E. of San Gabriel River	Ν	SCE easement						
	10A	13,111	2 / 8	10A.2 - Studebaker (off-street)	S	SCE easement	Ν	Del Amo Blvd.	Lakewood	Cerritos				
	IUA	13,111	2.40	10A.3 - Del Amo Blvd.	W	Studebaker Rd.	Е	350' w/o State Rd.	Lakewoou	Centos				
				10A.4 - State Rd. (off-street)	S	150' n/o Del Amo Blvd.	Ν	150' n/o cul-de-sac	T					
				10A.5 - State Rd. (off-street)	S	150' n/o cul-de-sac	Ν	350' n/o cul-de-sac						
Facility	Location							Roadway or Intersection Description				Prop. Cons	tr. Method	Probable TTC
raciiity	Location					Street Classification and Width		Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	CMP or Truck Rte?	Open Trench	Tunnel	Cost
Seg 10A.1(a)	Los Coyotes - Car	rson to E. s	side o	f SG River		116' (36'/dir.)		2 lanes/direction + striped median	Yes	No				
Intersection		Los	Coyo	tes Diagonal @ Carson — continued from 5A		2	Prot	ected LT Signals; LBT Bus Stops @ ESE Co	rner			1		\$78,500
Seg 10A.1(b)	Studebaker Rd	Centralia S	St. to 3	350' s/o Del Amo Blvd.		80' (32'/dir.)		2 lanes/direction + striped median	No	No				
Seg 10A.2	Studebaker Rd. (d	off-street) -	Del A	Amo Blvd. from 350' s'ly		80' (32'/dir.)		2 lanes/direction + raised median	No	Yes				
Intersection		S	Studet	baker @ Del Amo — continued from 10A.1(b)				4 Protected LT Signals				1		\$78,500
Seg 10A.3	Del Amo - Studeb	aker to 35	0' w/o	State Rd.		80' (32'/dir.)		2 lanes/direction + striped median	No	No				
Seg 10A.4	State Road (off-st	reet) - 150)' n/o [Del Amo to 150' n/o cul-de-sac		-		-	-	-	-			
Seg 10A.5	150' n/o State Rd.	50' n/o State Rd. cul-de-sac to 350' n/o cul-de-sac		50' n/o cul-de-sac		-		-	-	-	-			
											TOTALS:	2	0	\$157,000

	Alianmo	ent ID No.	Leng	lth	Roadway/Route		Limits	i		-Jurisdiction(s	.)				
, in the second s	Alightine	ent id No.	LF	mi.	noadway/noute	enc	l/from	en	id/to	Junsuiction(s	>)				
	1	11	17,497	3.31	Pub. Utility Easement - 11.1(a), 11.1(b), 11.2, 11.3(a), 11.3(b)	w	I-605 Freeway	Е	Valley View St.	La Palma	Buena Park				
Facil	Facility Location								Roadway or Intersection Description				Prop. Const	r. Method	Probable Cost
Facil	iiity L	Location					Street Classification and Width		Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	Special Route?	Open Trench	Tunnel	Probable Cost
Not locate	ed on publi	ic roadway.											n/a	n/a	
												TOTALS:	n/a	n/a	\$0

A1	ignment ID No.	Leng	gth	Roadway/Route		Limits			Jurisdiction(c)				
A		LF	mi.	noadway/noute	end	d/from	en	d/to	Junsuiction	5)				
	16 13,33		2.53	Pub. Utility Easement	w	Walker St.	Е	Stanton Ave.	La Palma	Buena Park				
Facility	Facility Location					•		Roadway or Intersection Description				Prop. Const	. Method	Probable Cost
Facility	Location					Street Classification and Width		Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	Special Route?	Open Trench	Tunnel	Probable Cost
Not located	on public roadway. 1,150' s	egment throu	gh Mov	ieland/Raddison Hotel Parking Lots west and east of Bea	ch Bou	llevard						n/a	n/a	
											TOTALS:	n/a	n/a	\$0

٨١	anmo	ent ID No.	Leng	gth	Roadway/Route		Limits			Jurisdiction(s)	`				
Alių	ynne	ent id No.	LF	mi.	Hoadway/Houle	end	d/from	en	d/to	Junsaiction(S)				
	17		3,149	0.60	Stanton Avenue	s	Pub. Utility Easement	Ν	Orangethorpe Ave.	Buena Park					
Facility	Facility Location					•		Roadway or Intersection Description				Prop. Const	r. Method	Probable TTC	
Facility						Street Classification and Width		Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	Special Route?	Open Trench	Tunnel	Cost	
Rdwy Seg	C	Drangethorpe - 1,4	00' n/o L	a Paln.	na Ave. to Orangethorpe Ave.		64' (26'/dir) Secondary Highway		2 lanes/direction + TWLTL	No	No	CMP- No			
Intersec	ntersection Orangethorpe @ Pa			Orangethorpe @ Page St.		41	Protect	ed-Permissive/Shared-Protected Only LT Si	ignals			1		\$78,500	
												TOTALS:	1	0	\$78,500

Aliana	nent ID No.	Leng		Roadway/Route		Limits			-Jurisdiction(s	\ \				
Angin		LF	mi.	noadway/noate	enc	d/from	en	d/to	ourisalisation(s	/				
				Orangethorpe Avenue	W	Stanton Ave.	Е	Kraemer Blvd.	Buena					
	18	47,453	8.99	Kraemer Boulevard	Ν	Orangethorpe Ave.	S	Miraloma Ave.	Park	Fullerton	Anaheim	Placentia		
				Miraloma Avenue	W	Kraemer Blvd.	Е	4,000' e/o Kraemer	Taix					
Facility	Location							Roadway or Intersection Description				Prop. Const	r. Method	Probable TTC
raciiity	Location				Street Classification and Width		Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	Special Route?	Open Trench	Tunnel	Cost	
Rdwy Seg	Orangethorpe - St	thorpe - Stanton Ave. to Kraemer Ave.				-80' (26-34'/dir) Sec. Hwy. (BP), Maj. Arterial (F,P)		2-3 lanes/direction + TWLTL	No	Yes	CMP Route			
Intersection				Orangethorpe @ Auto Center Dr.		2 Shared Protecte	d-Only	LT Signals (side street); OCTA Bus Stops (@ ENE & ESE Com	ers		1		\$78,500
Intersection				Orangethorpe @ Magnolia Ave.		4 Protected LT Signals; C	CTA E	us Stops @ NNW & ESE Corner; OCTA/Me	etro Bus Stop @ WS	W Corner		1		\$78,500
Intersection		Orangethorpe @ Magho Orangethorpe @ Gilber				2-	Phase	Signal; OCTA Bus Stops @ ESE & ENE Co	orners			1		\$78,500
Intersection		Orangethorpe @ Brookhurs				4 Protected/Protecte	d-Perr	nissive LT Signals; OCTA Bus Stops @ NN	W, WNW & ESE Co	rners		1		\$78,500
Intersection		Orangethorpe @ Pacific						2-Phase Signal				1		\$78,500



						TOTALS:	24	2	\$1,777,000		
Intersection	Mira Loma @ Miller St.	2.	Phase Signal; OCTA Bus Stops @ WSW & ESE (Corners			1		\$78,500		
dwy Seg	Mira Loma - Kraemer St. to MWD	86' (36'/dir) Primary Arterial	2 lanes/direction + TWLTL	Yes	No	CMP- No					
Intersection		4 Protected/Prot	ected-Permissive LT Signals; OCTA Bus Stops @	NNE & SSW Corne	ers		1		\$12,500		
Intersection	Kraemer @ La Jolla St.	2 Protected	Permissive LT Signals; OCTA Bus Stops @ NNE	& SSW Corners			1		\$12,500		
dwy Seg	Kraemer - Orangethorpe Ave. to Miraloma Ave.	86' (36'/dir) Primary Arterial	2 lanes/direction + TWLTL	Yes	No	CMP- No					
Intersection	* * *		ed LT Signals; OCTA Bus Stops @ WNW, SSW 8				1		\$78,500		
Intersection			ted LT Signals; OCTA Bus Stops @ SSW, ESE &				1		\$78,500		
Intersection	0 1 0		hase Signal; 1 Protected LT Signal; N/S legs one	·				1	\$12,500		
Intersection			ed LT Signals; N/S split phase; OCTA Bus Stop @					1	\$12,500		
Intersection			ed LT Signals; OCTA Bus Stops @ WNW, ESE &				1		\$78,500 \$78,500		
Intersection	0 1 -		CMP Intersection— 4 Protected-Permissive LT Signals; OCTA Bus Stops @ WNW, SSW, SSE & ESE Corners								
Intersection			2-Phase Signal; OCTA Bus Stops @ WNW & ESE Corners								
Intersection	5 1 5 5	4 Protected/Prot	cted-Permissive LT Signals; OCTA Bus Stops @	WNW & ESE Corne	ers		. 1		\$78,500		
Intersection			R/R Signal				. 1		\$78,500		
Intersection		411000001100	2-Phase Signal		0.0		. 1		\$78,500		
Intersection		4 Protected/Prot	cted-Permissive LT Signals; OCTA Bus Stops @	WNW & ESE Com	ers		. 1		\$78,500		
Intersection	0 1 0		2-Phase Signal	55, 252 û ENE (1		\$78,500		
Intersection			Protected LT Signals; OCTA Bus Stops @ NNE,		Corners		1		\$78,500		
Intersection			Permissive LT Signals; OCTA Bus Stops @ WWW & ESE				1		\$78,500		
Intersection	ů 1 -		Phase Signal; OCTA Bus Stops @ WNW & ESE (Phase Signal; OCTA Bus Stops @ WNW & ESE (1		\$78,500		
Intersection			Permissive LT Signals; OCTA Bus Stops @ WNV Phase Signal; OCTA Bus Stops @ WNW & ESE (Comers		1		\$78,500		
Intersection			Permissive LT Signals; OCTA Bus Stops @ WNV Permissive LT Signals; OCTA Bus Stops @ WNV		Cornera		1		\$78,500 \$78,500		

Aligner	ment ID No.	Leng	th	Roadway/Route		Limits	;	-Jurisdiction(a)				
Alighi	nent id No.	LF	mi.	Roadway/Roule	end	//from	end/to	Junsaiction	5)				
				20.1(a) - Studebaker Rd.	S	200' n/o Del Amo Blvd.	N 195th St.						
	20	36,466	6.91	20.1(b) - Studebaker Rd.	S	195th St.	N 1,100' n'ly	Cerritos	Bellflower	Downey	Norwalk		
	San Gabriel River			San Gabriel River	S	Pub. Utility Easement	N Firestone Blvd. OC						
Facility	Location						Roadway or Intersection Description				Prop. Const	tr. Method	Probable TTC
raciiity	Location					Street Classification and Width	Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	Special Route?	Open Trench	Tunnel	Cost
Seg 20.1(a)	Studebaker - 200' r	n/o Del Ar	no to	195th Street									
Intersection	1			Studebaker @ 195th Street		2 Protected-Pe	ermissive LT Signals on Studebaker; CoW Bus S	Stop @ NNE Corner			1		\$78,500
Seg 20.1(b)	Studebaker - 200' r	n/o Del Ar	no to	195th Street									
Segments 20.2 th	rough 20.15 located off-s	street; Tunn	eling w	//o traffic control required across South Street (20.2), 183r	d Stree	t (20.5), Artesia Blvd. and SR-91 Fwy. (20.7), Alondra	ra Blvd. (20.9), I-105 (20.12),						
Imperial Hwy. and	d Firestone Blvd. (20.14)	and Rosect	rans Av	ve. (20.15). 5,000' segment north and south of Rosecrans	Avenue	e located along alleyways through Riverview Parking	g residential community and an				n/a	n/a	
industrial park in the City of Bellflower. 2,600' segment traverses the Cerritos Auto Square between South Street and Allington Street.													
										TOTALS	: 1	0	\$78,500

Alian	ment ID No.	Length	Roadway/Route	Limits		-Jurisdiction('e)				
Angn		LF mi.	noadway/noale	end/from	end/to	ounsaletion	3)				
	22	19.969 3.78	22.1 - San Gabriel River	S Firestone Blvd. OC	N 1,200' n'ly	Downey	Pico Rivera				
	22	19,909 3.70	22.2 - San Gabriel River	S 1,200' n/o Firestone Blvd.OC	N Washington Blvd. OC	Downey	FICO NIVEIA				
Facility	Location				Roadway or Intersection Description				Prop. Const	tr. Method	Probable TTC
raciiity	Location			Street Classification and Width	Travel Lanes, Center Division	On-Street Pkg.?	P Bike lanes?	Special Route?	Open Trench	Tunnel	Cost
Seg 22.1	SG River - Firestor	ne OC to 1,200	' n'ly	No signalized intersection crossings.							
Seg 22.2	SG River - 1,200' n	/o Firestone O	C to Washington OC	No signalized intersection crossings.							
								TOTALS	: 0	0	\$0

Alian	ment ID No.	Len	gth	Roadway/Route		Limits			Jurisdiction(s)					
Aligh		LF	mi.	Hoadway/Houle	ene	d/from	e	nd/to	Junsaiction(s)					
	36	4,265	0.81	W. side of San Gabriel River	S	65' north of Washington Blvd.	Ν	Mines Ave.	Pico Rivera					
Facility	Lagation					·		Roadway or Intersection Description				Prop. Const	r. Method	Probable TTC
Facility	Location					Street Classification and Width		Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	Special Route?	Open Trench	Tunnel	Cost
Rdwy Seg	W. side of SG Riv	er - 65' no	orth of	Washington to Mines	No si	gnalized intersection crossings.								
											TOTALS:	0	0	\$0

Alignment ID No.	Leng	th	Roadway/Route		Limits			Jurisdiction(s	۸.	
Alighiment ib No.	LF	mi.	noauway/noule	enc	d/from	en	d/to	Junsaiction(s	·)	
			38.1 - W. side of SG River	S	Mines Ave.	Ν	Whittier Blvd.			
			38.2(a) - Whittier Blvd.	Е	E. side of San Gabriel River	W	Durfee Ave.			

		1	1	- Durfee Ave.	2	Whittier Blvd.	N	Beverly Blvd.	Ī					
				- Beverly Blvd.	-	Durfee Ave.	F	SG River Pkwy. / Manning Rd.	1					
				38.2(b) - Beverly Blvd.		SG River Pkwy. / Manning Rd.	E	E. side of San Gabriel River	4					
				38.3 - E. side of SG River		Beverly Blvd.	N	San Gabriel River Pkwy.	1					
1	38	07 070	F 00	38.4(a) - SG River Pkwy	S	E. side of San Gabriel River	N	300' south of I-605 SB On-Ramp		Inductor		Delduin Ded		
(r	modified)	27,870	5.20	38.5 - Sheperd St.	S	300' south of I-605 NB Off-Ramp	N	Rose Hills Rd.	Pico Rivera	Industry	L.A. County	Baldwin Park		
,	<i>'</i>			38.6 - Rose Hills Rd.	W	Sheperd St.	E	Workman Mill Rd.	1					
				38.7 - Workman Mill Rd./Peck Rd.	S	Rose Hills Rd.	N	Pellissier Pl	Ī					
				38.8 - Pellissier Pl.	W	Peck Rd.	E	SR-60 UC / Workman Mill Rd.	Ī					
				38.9 - Workman Mill Rd.	W	SR-60 UC / Pellissier Pl.	E	Future UC/Grade Sep. @ Valley	Ţ.					
				38.10 - Puente Ave.	W	Future UC/Grade Sep. @ Valley	E	Merced Ave.	Ţ.					
				38.11 - Merced Ave.	S	Puente Ave.	N	Palm Ave.	Ţ.					
Facility	Location							Roadway or Intersection Description				Prop. Const	tr. Method	Probable TT
Facility	Location					Street Classification and Width		Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	CMP or Truck Rte?	Open Trench	Tunnel	Cost
Seg 38.1	W. side of SG Rive	er - Mines	to Wh	nittier	No sig	gnalized intersection crossings. Tunneling w/o TTC	potent	ially required at N. end of segment under Wh	ittier Blvd.					
Seg 38.3	E. side of SG Rive	r - Beverl	y Blvd	. to San Gabriel River	No sig	gnalized intersection crossings.								
Seg 38.4	SG River Pkwy - E. side of SG River to 300' south of I-605 SB On-Ramp				No sig	gnalized intersection crossings.								
											TOTALS	: 0	0	\$0

Alian	nment ID No.	Leng	gth	Roadway/Route		Limits			Jurisdiction(s)					
Aligi		LF	mi.	Hoadway/Houle	enc	d/from	en	d/to	Junsuiction(s)					
	38A	4,545	0.86	E. side of San Gabriel River	S	Whittier Blvd.	Ν	Beverly Blvd.	Pico Rivera					
Facility	ity Location					·		Roadway or Intersection Description				Prop. Const	r. Method	Probable TTC
Facility	Location					Street Classification and Width		Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	Special Route?	Open Trench	Tunnel	Cost
Rdwy Seg	E. side of SG Rive	r - Whittie	er to B	everly	No si	gnalized intersection crossings. Tunneling w/o TTC p	otentia	ally required under Beverly Blvd., Whittier Blv	vd. and UPRR Railw	ay				
											TOTALS:	0	0	\$0

Aliana	ment ID No.	Leng	jth	Roadway/Route		Limits			-Jurisdiction(s	->				
Alight	ment ID No.	LF	mi.	Roadway/Roule	end	l/from	er	d/to	Jurisalction(s	5)				
				44.1 - San Gabriel River Trl.	S	Peck Rd.	Ν	N. side of SR-60 Fwy.						
				44.2(a) - W/E of SG River	S	N. side of SR-60 Fwy.	Ν	1,500' n/o SG River-SJ Crk Jct.		South		Baldwin		
	44	28,891	5.47	44.2(b) - E. side of SG River	S	1,500' n/o SG River-SJ Crk Jct.	Ν	Ramona Blvd.		El Monte		Park	Irwindale	
				44.3(a) - E. side of SG River	S	Ramona Blvd.	Ν	Lower Azusa Rd.		LIMONIE		raik		
	Facility Lesstin			44.3(b) - E. side of SG River	S	Lower Azusa Rd.	Ν	Rivergrade Rd.						
Facility	Location							Roadway or Intersection Description				Prop. Cons	str. Method	Probable TTC
raciiity						Street Classification and Width		Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	CMP or Truck Rte?	Open Trench	Tunnel	Cost
	SG River Trl Pec				No si	nalized intersection crossings. Tunneling w/o TTC p	otenti	ally required under Peck Rd. and SR-60 Fw	у.					
Seg 44.2(a)	W/E of SG River -	N. of 60 F	=wy. to	o 1,500' n/o SG River-SJ Crk Jct.	No si	nalized intersection crossings.								
Seg 44.2(b)	E. side of SG River	r - 1,500'	n/o S0	GR-SJ Crk Jct. to Ramona	No si	nalized intersection crossings. Tunneling w/o TTC p	otenti	ally required under Valley Blvd., Ramona Bl	vd. and I-10 Fwy.					
Seg 44.3(a)	E. side of SG River	r - Ramor	na to L	ower Azusa	No si	nalized intersection crossings.								
Seg 44.3(b) E. side of SG River - Lower Azusa to Rivergrade No signalized intersection crossings. Tunneling w/o TTC potentially required under Los Angeles St.														
											TOTALS:	0	0	\$0

Alia	nment ID No.	Length	Roadway/Route	Limits	;	-Jurisdiction	(c)				
Ally		LF mi.	noauway/noute	end/from	end/to	Julisaiction	(5)				
	52	2,604 0.49	9 52.1(a) - Rivergrade Rd.	S 0.25 mi. n/o Lower Azusa Rd.	N 125' s/o Brooks Dr.	Irwindale	Baldwin Park				
Facility	Location				Roadway or Intersection Description				Prop. Const	r. Method	Probable TTC
Facility	Location			Street Classification and Width	Travel Lanes, Center Division	On-Street Pkg.	? Bike lanes?	CMP or Truck Rte?	Open Trench	Tunnel	Cost
Seg 52.1(a)	Rivergrade - 0.25	mi. n/o Lower	Azusa to 125' s/o Brooks Dr.	No signalized intersection crossings. Tunneling w/o TTC p	otentially required under I-605						
								TOTALS:	0	0	\$0

Aliann	nent ID No.	Leng		Roadway/Route			Limits			-Jurisdiction(s	`				
Alighti	nent id No.	LF	mi.	nuauway/nuule		end	//from	en	d/to	Julisaiction(s)				
	56 1,080 0.20 Live Oak /			Live Oak Ave.		Е	W. side of San Gabriel River	w	Graham Rd.	Irwindale					
E a allitar	Location								Roadway or Intersection Description				Prop. Const	r. Method	Probable TTC
Facility	Location						Street Classification and Width		Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	Special Route?	Open Trench	Tunnel	Cost
Rdwy Seg	Live Oak - W. side	of SG Ri	ver to	Graham											
Intersection	ction Live Oak @								T-intersection; 2-Phase Signal				1		\$78,500
												TOTALS:	1	0	\$78,500

Alignment ID No.	Leng	th	Roadway/Route		Limits			Jurisdiction(s)
Alighment ib No.	LF	mi.	noauway/noule	enc	l/from	en	d/to	Jurisalction(s)
			58.1 - (off st) n/o Live Oak Ave.	S	Graham Rd.	Ν	E. Side of I-605 (1,700' n'ly)	
58	3,350	0.63	58.2(a) - (off street)	S	Live Oak @ 220' s/o Arrow Hwy.	Ν	650' n/o I-605/Arrow IC	Irwindale
	50 3,350 0		58.2(b) - (off street)	W	700' SW of Live Oak Ln.	Е	Live Oak Ln.	

Facility	Location		Roadway or Intersection Description				Prop. Const	r. Method	Probable TTC
raciiity	Eccation	Street Classification and Width	Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	Special Route?	Open Trench	Tunnel	Cost
Seg 58.1	(off st) n/o Live Oak - Graham to E. Side of I-605 (1,700' n'ly)	No signalized intersection crossings. Tunneling w/o TTC po	tentially required at the south end of segment u	nder Live Oak Ave.					
Seg 58.2(a)	(off street) - Live Oak @ 220' s/o Arrow to 650' n/o I-605/Arrow IC	No signalized intersection crossings. Tunneling w/o TTC po	otentially required under Arrow Hwy., Live Oak I	.n. and I-605 n/o Arrow	Ι.				
Seg 58.2(b)	(off street) - 700' SW of Live Oak to Live Oak	No signalized intersection crossings.							
						TOTALS:	0	0	

Alian	ment ID No.	Leng	gth	Roadway/Route		Limits			Jurisdiction(s)					
Alight	intent id No.	LF	mi.	noauway/noute	ene	d/from	er	id/to	Junsuiction(s)					
	59	9,246	1.75	59 - W. side of I-605	s	650' n/o I-605/Arrow IC		1,450' SW of I-605/I-210 IC	Irwindale					
Facility	ility Location							Roadway or Intersection Description				Prop. Const	r. Method	Probable TTC
Facility	liity Location					Street Classification and Width		Travel Lanes, Center Division	On-Street Pkg.?	Bike lanes?	Special Route?	Open Trench	Tunnel	Cost
Rdwy Seg	W. side of I-605 - 6	650' n/o l-	-605/A	rrow IC to 1,450' SW of I-605/I-210 IC	No si	gnalized intersection crossings. Tunneling w/o TTC p	otenti	ally required at north end of segment under	I-605 s/o I-210					
											TOTALS:	0	0	\$0

Align	nent ID No.	Length	Roadway/Rou	ito		Lim	its			risdiction(s)					
Aligin	LF mi.		end/from end/to		ou	Julisuiciton(s)									
	60	4,875 0.92	2 52.1(a) - Rive	grade Rd.	S 150' s/o Brooks E	Dr.	N	150' n/o Live Oak Ave.	Irw	<i>i</i> indale					
Facility	ty Location -					Roadway or Intersection Description	ion				Prop. Const	tr. Method	Probable TTC		
Facility			Street Classific	ation and Width		Travel Lanes, Center Division	On	n-Street Pkg.?	Bike lanes?	CMP or Truck Rte?	Open Trench	Tunnel	Cost		
Seg 60	Rivergrade - 150' s	/o Brooks Dr.	to 150' n/o Live C	ak Ave.											
Intersection				Rivergrade @ Brooks Dr.				T-intersection; 2-Phase Signal					1		\$78,500
Seg 52.4(b)	Rivergrade - 400' n	/o Brooks to L	ive Oak Ave.												
Intersection				Rivergrade @ Live Oak Ave.				4 Protected LT Signal					1		\$78,500
Seg 52.2	Across SG River -	Rivergrade to	SG River Trail												
												TOTALS:	2	0	\$157,000

Notes:

Bus stop locations shown in **bold** indicate bus stop is located on the street of the project route.



APPENDIX H – AWP FACILITY DATA NEEDS

Phase 1 AWT Implementation 115 MGD Capacity

DATA	NEEDS MATRIX	ζ
		•

		DATA NEEDS MATRIX	DATA SOURCE/ CITATION (document/ page)	NEEDED BY
		GENERAL PROJECT INFORMATION		
1.		former location of the Fletcher Oil and Refinery Company (FORCO). This 36 acres of property is immediate east of the Warren Facility's	Description Summary in CPSR Sct 1.3, pages 1-15, 16, and Section 4	12/6/2021
			Presentation October 28, 2020 – "A New Source of Water", Southern California Water Dialogue.	
2.		The proposed AWT would provide additional treatment to the HPOAS effluent resulting in a highly treated water compliant with established water quality standards consistent with indirect potable reuse. The new AWT facility would include, but not be limited to the following components: fine screening, micro/ultrafiltration, membrane bioreactor (MBR), reverse osmosis (RO) and ultraviolet irradiation with advanced oxidation processes to provide IPR level treatment. For DPR level treatment, ozone, BAC and/or MF would be added to the process train. RO brine would be discharged to the Warren Facility's ocean outfall directly. See Appendix A for the process flow diagram.	CPSR page 1-16, Figure 1.8	12/6/2021
3.	Site configuration - acres/dimensions (site plan for major operating components, including heights/depths)		From Stantec's BIM model	1/3/2022
4.	equalization, centrate treatment, source control, brine handling, etc.)	There may be modifications to the HPOAS reactors to provide nitrogen reduction (NDN) within the secondary treatment system. Portions of existing secondary clarifiers may be used for flow equalization. Centrate treatment is under consideration as well to provide nitrogen reduction in return sidestreams. The soil excavation amount for centrate treatment is included and is currently assumed to be at the solids processing facilities site (outside the FORCO site) at the Warren Facility. RO brine would be discharged directly to the Warren Facility's ocean outfall.	Conversation with LACSD staff	1/3/2022
5.		Primary + Secondary effluent + Fine Screening + NdN Secondary MBR + RO + UV/AOP + Stabilization (See Appendix A – Process Flow Diagram). RO brine will be discharged directly to the ocean outfall of the Warren Facility. Ozone followed by BAC may be incorporated into this treatment train immediately following the MBR to achieve DPR levels of treatment. MF may follow the BAC as well to reduce the potential for solids carryover. Current assumption is that ozone will be generated using the oxygen supplied from the Warren Facility's existing infrastructure.		7/1/2022
6.		Boron concentrations in the Warren Facility effluent are 0.88 and 1.1 mg/L, median and maximum, respectively. The largest contribution of boron to the Warren Facility has been attributed to industrial discharges in the collection system, specifically waste discharges from oilfields.	CPSR Appendix E Section 1.0	1/3/2022

Phase 1 AWT Data Needs Matrix Populated 01082024.docx

7.	Phasing of improvements (for delivery quantities, meeting OC Basin nitrate requirements, meeting DPR requirements, etc.)	The presence of boron in the secondary effluent from the Warren Facility at levels exceeding the Main San Gabriel groundwater basin plan limit of 0.5 mg/L may require either source control or treatment for boron removal at the AWT Facility. Treatment can be accomplished using ion-exchange processes. Options exist relative to the resin employed. The current approach is to assess the basin's assimilative capacity compared to boron levels in the recycled water. The preliminary findings are that no separate treatment is required. There will be 2 phases for the planned improvements. • Phase 1: 115 mgd of IPR AWT capacity and associated conveyance systems (pumping stations and pipelines) from the Warren Facility		12/01/2023
	(Metropolitan to review and update)	 (Joint Plant Site - FORCO) to the Santa Fe spreading basins with diversion feeders to transport product water to the Rio Hondo spreading basins. 25 MGD of IPR treated water will be further treated to DPR level at either Weymouth WTP or a satellite facility. Phase 2: Additional 35 mgd of IPR and 150 MGD of DPR-level treatment at the Joint Plant Site. See Appendix C for AWTP construction phasing site plan and Appendix H for AWPF Construction Schedule. 		
8.	Variation in plant operations to accommodate varying basin capacity (rain events, maintenance?)	Spreading basin routine maintenance is not expected to impact AWT operations. The basins will be on a rotation such that the capacity for infiltration is kept at a nearly constant rate. During rain events, if the spreading basins are unavailable, product water flow will be diverted to a gravel pit for storage and groundwater recharge via spreading or injection. Excess flow will be pumped back into the system when spreading capacity becomes available.		1/3/2022
9.	New/modified upstream treatment facilities?	LACSD is considering modifying a portion of their bioreactor modules at the Warren Facility to nitrifying-denitrifying process modules and adding sidestream centrate treatment in future. (see #4)		12/6/2021
10.	Project Operational Year(s)	Phase 1 – 2032 (115 MGD) Phase 2 – 2036 (150 MGD-total)		1/3/2022
		CONSTRUCTION PHASE		
11.	Will there be pile driving? If so, where and for what duration?		Available LACSD geotech reports reviewed	1/3/2022
12.	Depth/quantities of excavation/fill Hazardous waste topsoil removal FORCO Update : Metropolitan met with LACSD to get an update on FORCO site activities. Psomas completed a survey. Additional geotechnical and surveying services may not be needed. Assuming 110,000 cubic yard of earth volume may need to be disposed to landfill; disposal cost estimated at \$17M. Contour map is also available. Weekly status meeting notes – 12/14/21	 also permits the siting of facilities to balance the cut and fill to an extent and thereby minimize import or export of soils. There would be the importation of aggregate base materials for all structures. Quantities of excavation and aggregate importation are: Excavation for structures (estimate from Stantec's BIM model) 552,000 cubic yards; (includes construction quantities related to oil well abandonments at the Joint Plant Site; see Appendix J) 	Quantity take-offs from Stantec's Environmental Planning BIM model and LACSD's input for contaminated soil volume	12/01/2023
13.	Hazardous materials remediation plan	This will be part of the design process whether by Metropolitan or by LACSD.		7/1/2022
14.	Utility relocation needs, if any (CPSR p. 4-7)	An 8" gas line will be abandoned.	From Stantec's BIM	12/01/2023

			model	
15.	Estimated number of construction workers per day	Average estimated workers per day including Contractor mgmt. staff, trade craftsman, CM staff, Designer & Owner staff – 250 to 300 /day. Peak will be 560 – 620 / day. The construction activities are expected to continue for the remaining 85 MGD of capacity while the first 30 MGD worth of infrastructure is being commissioned (see Attachment H - Construction Schedule)	Carollo CM SME	1/3/2022
16.	Estimated number of construction worker vehicle trips per day	590 - 680 trips / day* - Typical worker ride share Will depend on greater carpooling needs due to timing of 2028 Olympics.	Carollo CM SME	1/3/2022
	Will there be weekend or nighttime construction? If nighttime or weekend requirements, type of expected construction.	Yes, the typical weekend work limited to concrete sandblasting to prepare for adjacent pours, materials movements to prepare for Monday work tasks. Nighttime work limited to "tie-ins" only.	Carollo CM SME	1/3/2022
18.	Construction staging area and storage location(s)	Staging area should include areas for Field Offices – all parties, immediate Contractor mgmt. staff parking, CM staff parking, Designer & Owner staff parking.	Carollo CM SME	12/01/2023
		Storage area for "ConEx" boxes for every trade, "heavy machinery", major materials deliveries (wood, steel, electrical cable, piping, valves, misc. metals, process equipment, electrical gear, etc.), tools & supplies storage		
		Plus – Day Staging areas immediately adjacent to structures for materials & tools storage for each trade.		
		Location: There are approximately 5 acres available for staging and storage at the southwest corner of the site where future DPR facilities will be located; see Appendix B for the site layout.		
19.	Construction worker vehicle parking	Additional area for worker parking - rental of off-site parking areas such as local church parking lots or other interim use facilities. There is an area immediate north of the proposed site just beyond the railroad tracks owned by LACSD that may be a candidate site.	Carollo CM SME	1/3/2022
20.	Power Supply (generators?)	Power supply from existing adjacent plant switchyard could provide power for the Field Office complex provided by Owner. Separate power supply / distribution systems will be required for the Construction Temporary Power. A Contractor distribution system will be required for construction through-out project site by Contractor.	Carollo CM SME	1/3/2022
	Temporary Lighting (main-powered or generator- powered)	Temporary lighting provided by Contractor from Construction Temporary Power distribution system required for construction throughout project site.	Carollo CM SME	1/3/2022
22.	Water Supply (hydrants? water trucks?)	Water Supply systems – potential separate potable and recycle water systems. Potable water distribution systems for the Field Office complex provided by Owner initially - Construction Temp. For environmental assessment assume a new, separate connection to the nearest potable supply for AWT. Non-potable water distribution system required for construction through-out project site by Contractor in purple pipe for dust control during excavations, grading, trenching and backfill operations. Non-potable water provided by Owner, free or at cost.	Carollo CM SME	1/3/2022
	Maximum number of daily one-way haul truck trips due to material transportation (e.g., off-haul/disposal, supplies, material); type of trucks; estimated distance, clear delineation of daily maximum trips separated by demolition waste and clean excavation disposal materials types.	25 one-way haul trips minimum, up to 50 trips on concrete pour days. Does not include demolition or excavation trips. Type of trucks – commercial, 20 ' long bed, flat bed Type of trucks – concrete delivery trucks Distance – TBD nearest concrete plant	Carollo CM SME	1/3/2022
	Volume of any material imported/exported, including demolition waste (asphalt/concrete, soils, hazardous soils, slurry, steel/metals) and clean construction materials (concrete, pipeline segments, rebar, base material/sand/gravel, etc.).	 Per Stantec's BIM model, Volume of mass excavation is 552,000 cy. Volume of structural excavation is 99,000 cy. 	Carollo CM SME	12/01/2023
25.	Plans for recycling of materials as applicable (need % diverted), otherwise we use state default	Soil volume to be used in structural backfill is approx. 155,000 cy, as explained in row 12.	Carollo CM SME	12/01/2023

20	l1 s tl	ocations for ingress to/egress from construction site. f any temporary changes to the local street striping/traffic flow will be implemented, describe hose (description can be general for program-level analysis).	Total of six entry/e	xit points to the site: five on Main St. and one on Lomita Bly	/d.; see Appendix C .			7/1/2022
27	7. C	Disposal location for construction debris	Scholl Canyon Lar	ndfill or others of contractor's choice				1/3/2022
		Construction Phase	Start and End Dates (or number of days/ weeks/months)		Haul or Material Truck Loads (in cy or truckloads)	Truck Travel Distance (in miles)		
28	F P D S	Demolition of Existing LACSD Warehouse Bldg. with Storm Detention Basin and Pilot Testing facility. Existing adjacent research area to remain and subject to	21 working days	Model CAT 320 Excavator @ 160 hp x 21 days Model CAT 980G Loader @ 300 hp x 21 days 10 CY End Dump Materials Truck x 21 days x 8 hrs. Model CAT 320 Excavator @ 160 hp x 21 days Model CAT 980G Loader @ 300 hp x 21 days 10 CY End Dump Materials Truck x 21 days x 8 hrs. day	Materials: 4 trips /day x 10 cy / trip x 25 trucks = 1,000 cy / day Haul off Demo Materials: 4 trips /day x 10 cy / trip x 4 trucks = 160 cy / day	60 miles / trip assume Scholl Canyon landfill 20 miles / 1-way or 40 miles / trip assume Scholl	Carollo CM SME	12/01/2023
29). L s r	Enhancements Utility relocation: Assume potential unidentified subsurface structures or utilities are found requiring emoval and/relocation. Removal & capping back to POC @ property line of any such subsurface nterferences. (21 days)	36 working days for tie-in	Model CAT 320 Skid Loader w/ bucket @ 75 hp 8 hrs. / day	No Haul – dig & backfill same trench	None	Carollo CM SME	12/01/2023
30	C - -	Clear and grub of entire remaining site - The general site area is 56 acres Half of site requires clear & grub of 1 foot depth = ,220,000 sf of area = 45,185 cy		Model CAT 933 Track Loader @ 70 hp x 42 days Model CAT 320 Excavator @ 160 hp x 42 days Model CAT 980G Loader @ 300 hp x 42 days 10 CY End Dump Materials Truck x 42 days x 8 hrs.	Materials: 4 trips /day x 10 cy / trip x 25 trucks = 1,000 cy / day	30 miles / 1-way or 60 miles / trip assume Scholl Canyon landfill	Carollo CM SME	12/01/2023

		Foundation and below grade infrastructure for Phase 1 Mass Excavation & Haul Off: Assume 552,000 cy of excavation / haul off @ rate of 1880 cy / day for Phase 1. (Amount remaining onsite is 552,000 – 110,000 = 442,000 cy). Stantec performed soil cut-fill balance to eliminate the need to haul off any excess non- contaminated soil (442,000 cy) from the site. This soil will still need to be moved within the site i.e. to fill some areas with the soil excavated from the other area.		 (3) Model CAT 420 Excavators @ 128 hp x 154 days (2) Model CAT 631E Scrappers @ 490hp x 154days (2) Model 980G Loader @ 300 hp x 154 days (4) 4,000-Gal Water Truck @ 300 hp x 8 hrs / day 10 CY End Dump Materials Truck x 154 days x 8 hrs. 	Materials: 40 trips /day x 10 cy / trip x 8 trucks = 3,200 cy / day	Assuming longest drive on site is 0.5 miles, at a speed of 5 mph to keep dust down, should take 12 minutes per round trip of 1 mile. This allows 40 trips per day.	Carollo CM SME	12/01/2023
	,	Assume 20% requires Class II landfill disposal Kettleman Hills Hazardous Waste Facility 200 miles/1 way (110,000 cy.) 400 miles/round trip (rt)	154-50+128 = 232 workings days @ 8 hrs/day	Model CAT CS-323C Compactor @ 80hp x 8hrs / day Model CAT 426 Backhoe @ 84 hp x 154 days Model CAT 135 Motor Grader @ 155 hp @ 102 days 4,000-Gal Water Tuck @ 300 hp x 8 hrs / day	Landfill disposal 1 trip/day x 10 cy / trip 47 trucks = 470 cy / day	xAssuming that with the 400 mile round trip, only one trip can be made per day.		
-		Structural Excavation and Foundation Preparation after mass excavation for Phase 1.	@ 8 hrs./ day	Model CAT CS-323C Compactor @ 80hp x 8hrs / day Model CAT 426 Backhoe @ 84 hp x 140 days Model CAT 135 Motor Grader @ 155 hp @ 140 days 4,000-Gal Water Tuck @ 300 hp x 8 hrs / day				12/01/2023
	33.	Yard Piping (Dig/Lay/Backfill) for Phase 1	Assume 195 days @ 8 hrs./ day	Model CAT 320 Excavator @ 160 hp x 8 hrs. Model CAT 980G Loader @ 300 hp x 8 hrs. (2) 10 CY End Dump Materials Truck x 8 hrs. day				12/01/2023

34.	Process Equipment Set and Above-grade AWT facilities/equipment and site improvements for Phase 1		Model CAT 320 Excavator @ 160 hp x 8 hrs.		
	(rough grading _ north to south)	days @ 0 ms./ day	(2) Model CAT 980G Loader @ 300 hp x 8 hrs.		
		Note: duration is	(4) 10 CY End Dump Materials Truck x 8 hrs. day		
		split in several activities in	(2) Model CAT CS-323C Compactor @ 80hp x 200 days x 8hrs / day		
		schedule such as	Model CAT 426 Backhoe @ 84 hp x 300 days		
		concrete	(3) Model CAT TH63 Telescopic Handlers @ 101 hp X 400 days x 8 hrs / day		
		structures, process equipment & electrical gear	Model Link-Belt 60 Ton RTC-8065 Wheel Crane @ 225hp x 400 days x 8 hrs / day		
			Model Manitowoc MLC650 400Ton Crawler Crane @ 600hp x 300 days x 8 hrs /day		
			(4) 4,000-Gal Water Tuck @ 300 hp x 8 hrs / day		
35.	Paving – 420,000 sf for 30 MGD			Asphalt delivery to site	
		day = 120 days @ 8 hrs. / day	Model CAT AP1000B Asphalt Paver @ 225 hp @ 120 days	Materials delivery 4 trips/day x 10	
		o ms. / day	(2) Model CAT CS-323C compactors @ 80 hp x 120 days	cy/trip x 10 trucks	
			10 CY End Dump Materials Truck x 120 days x 8 hrs. / day.		
			4,000-Gal Water Tuck @ 300 hp x 8 hrs / day		
36.	Paving – 40,000 sf for 85 MGD			Asphalt delivery to site	
		1110. / uuy	Model CAT AP1000B Asphalt Paver @ 225 hp @ 40 days	Materials delivery: 4 trips/day x 10	
			(2) Model CS-323C compactors @ 80 hp x 40 days	cy/trip x 10 trucks	
			10 CY End Dump Materials Truck x 40 days x 8 hrs. / day.		
			4,000-Gal Water Tuck @ 300 hp x 8 hrs / day		
37.	Architectural coatings (Roofing and Exterior Cladding) for Phase 1		Model Link-Belt 60 Ton RTC-8065 Wheel Crane @ 225hp x 400 days x 8 hrs / day		
			Model CAT TH63 Telescopic Handlers @ 101 hp x 400 days x 8 hrs / day		
38.	Power substation	Assume 356 days	Model CAT 320 Excavator @ 160 hp x 356 days x 8 hrs.		
		@ 8 hrs./ day	Model CAT 426 Backhoe @ 84 hp x 356 days		
			Model CAT TH63 Telescopic Handlers @ 101 hp X 200 days X 8 hrs / day		
			Model Link-Belt 60 Ton RTC-8065 Wheel Crane @ 225hp x 200 days x 8 hrs / day		
			4,000 Gal Water Tuck @ 300 hp x 8 hrs / day		
			OPERATIONS PHASE	· · · · · · · · · · · · · · · · · · ·	
39.	Height and materials of structures	Dimensions provid	led in Appendix D .		

From Stantec's BIM 12/01/2023 model		
model From Stantec's BIM T2/01/2023 T2/01/2023 T2/01/2023 T2/01/2023 T2/01/2023		12/01/2023
model		12/01/2023
		12/01/2023
		12/01/2023
7/1/2022		12/01/2023
7/1/2022		
		7/1/2022

40.	General design characteristics (architecture/coatings, lighting, landscaping/screening)	Typical of industrial design, neutral coatings, controlled lighting and fully landscaped at perimeter.		7/1/2022
41.	Preferred site access- employee parking and emergency vehicle access	AWTP will have six entrances/exits (see Appendix C). The preferred employee site access will be from Main St and the emergency exit is on Lomita Blvd. Parking Spaces P1 and P3 are for Metropolitan staff and P2 will be shared by Metropolitan staff and visitors.		12/01/2023
42.	Total footprint/acreage of new paved/impervious areas	30.2 acres	From Stantec's BIM model	1/3/2022
43.	Measures for detention/treatment of stormwater runoff	Stormwater runoff will be captured and recycled to the Warren Facility for treatment. BMPs for capture and initial storage to be employed. See Appendix I – Stormwater Runoff Quantities TM		1/3/2022
44.	AWT equipment types with typical operating data/characteristics	See Appendix E	From Stantec's BIM model	1/27/2023
45.	Estimated number of operations employees	See Appendix G for the basis of staffing estimates.	Reference Plant with adjustment (OC GWRS) –	1/27/2023
			Pro-rated *Lab per MWD	
46.	Employee shifts per day when plant is in operation	See Appendix G.	Reference Plant with adjustment (OC GWRS)	1/27/2023
47.	Number of employees per shift	See Appendix G.		1/27/2023
48.	Estimated number of vehicle trips per day/week/month (project operation)	Worst case – each employee (127 staff - work commute) + 10 visitors= 137 round-trips/day (x's 5 per week / x's 20 per month)		1/27/2023
	Average trip distance (miles) for employees (project operation)	Employee work commute: 9.1 miles time 2 (each way) = 18.2 miles/per employee	SCAG LA County 2012 - 2016	1/3/2022
50.	Deliveries of materials, supplies or equipment (quantities, frequency)	Summary of chemical deliveries attached (Appendix F).		1/27/2023
	Will chemicals delivery occur on a 24/7 basis or weekday daytime only?	/Assume 24/7 – worst case for noise relative to neighbors Assume 8 am to 5 pm – worst case for travel disruption	Worst case	1/3/2022
	Standby Generator(s) (expected sizing, fuel types, and locations) - Please provide frequency of testing and how often it will be used on a yearly basis.	Seven 4-MW diesel engine generators Operate - 1 hr/wk		1/3/2022
53.	Methane CoGen systems (size, number, location)?	There is no methane generated by these facilities.		1/3/2022
	Grid intertie power substation requirements and location(s)	To be determined during design.		1/3/2022

55.	Other operating equipment that generates emissions	No equipment with combustion emissions are planned.		1/27/2023
		The biological processes will emit carbon and nitrogen compounds.		
56.	HVAC equipment requirements and locations	See Appendix K.	Footprints based on input from Metropolitan/LACSD and as incorporated in the Stantec's BIM model	
57.	Air handling systems size and location for treatment	See Appendix K.	Based on building volumes and occupancy	12/01/2023
58.	Treatment systems for odor emissions (if applicable)	If the FORCO site is used for secondary treatment (e.g., sMBR) plus AWT, the primary effluent pump station and aeration tanks are to be covered and off-gas treated	LACSD's JTAP Reports	1/3/2022
		PE pump station – 430,000 scfm – bio trickling filter + activated carbon adsorption		
		Bioreactors – 262,000 scfm – activated carbon adsorption		
		The potential for release and treatment of other gaseous emissions including toxics and GHGs to be assessed.		
59.	Please provide annual electricity for pumps and facility.	See Appendix E		1/27/2023
60.	Any alternative energy generation (e.g., solar)?	1.5 MW of onsite solar power generation using approximately 11 acres of PV panels (buildings, parking, etc.).		12/01/2023
61.	Flares for excess methane emission disposal and estimates for usage of flares (if applicable)	Not applicable.		1/3/2022
62.	Annual natural gas use	Not applicable		1/3/2022
63.	Maintenance/replacement activities and frequency	 Major system replacement items and interval PROCESS – INTERVAL - NUMBER MBR membranes – 10 yrs – 40,250 elements MF modules – 10 years – 3,530 modules RO cartridge filter – 0.5 years – 589 cartridges RO elements (Stage 1 & 2) – 5 years – 16,490 elements RO elements (Stage 3) – 1 year – 5,370 elements UV lamps – 1.6 years – 3,140 lamps UV ballasts – 5 years – 1,610 ballasts 	Based on updated estimates	1/27/2023
64.	List of chemicals to be used, quantities to be stored, delivery methods, and BMPs for transportation/storage/handling/disposal	See Appendix D – Chemical Quantities and Deliveries		1/27/2023
65.	Disposal of waste materials (rough quantities of hazardous/non-hazardous, disposal location)	Two 30-gallon drums of laboratory waste per month to be disposed per regulations.		1/3/2022
66.	Please indicate what SCAQMD air pollutant permits are required for project components.	Pending report from LACSD.		1/3/2022

67.	Overall throughput, amount of water to be injected into the ground and available for direct potable reuse.	115 MGD of IPR	Input from Metropolitan staff	1/27/2023
68.	SCAQMD Rule 402 prohibits public nuisances related to odors. Please describe if the emergency storage basin would result in a public nuisance related to odors.	Emergency storage would be for product water. The quality of this water is equivalent to fresh potable supplies. No odor related issues envisioned.		1/3/2022
		TECHNICAL INFORMATION		
69.	Geology/Soils Report	Existing reports available from LACSD; new geotechnical report currently under development and will be available by mid-August.		7/1/2022
70.	Hazardous Materials (Phase 1 ESA, Phase 2, Remedial Action Plan, etc.)	To be developed during design.		7/1/2022
71.	Conceptual grading/site plan/water quality BMPs	The site grading will provide for the capture of all site runoff associated with rainfall. Collected runoff from the process area will be pumped to the Warren Facility for treatment and rest can be infiltrated/reused, if desired. See Appendix I for stormwater runoff quantities.		1/27/2023
72.	Municipal Water Demand and Supply	Potable water to be provided for consumption, safety showers, sprinklers, and fire hydrants. Lab, warehouse, and maintenance shop will also require potable water service.		1/3/2022
73.	Wastewater Generation	 Waste sidestream generated will be returned to the Warren Facility. These include: Waste activated sludge RO concentrate Waste chemicals (associated with biological treatment, membrane cleaning and product water conditioning) 		1/3/2022
74.	Solid Waste Generation and Disposal	1,100 lbs./day	CalRecyle – Industrial 8.93 Ibs./day/employee	1/3/2022
75.	Data Network/Communication Backbone	Communication infrastructure to be constructed connecting plant and conveyance to Metropolitan's network and SCADA system. Also, separate communication system to be installed for coordination with LACFCD to provide the means for monitoring/reporting related to groundwater recharge status.		7/1/2022

* Typical construction equipment may include backhoe, dozers, scrapers, compactors, track hoe, trencher, loader, roller, cranes, heavy trucks

Appendices

- A: Process Flow Diagram
- B: Site Plan
- C: AWTP Construction Phasing Site Plan
- D: Structures Dimensions
- E: AWTP Equipment Electrical Load List
- F: Chemical Quantities and Delivery
- G: Basis for O&M Staffing Estimates
- H: Construction Sequencing Schedule
- I: Stormwater Runoff Quantities TM
- J: Joint Plant Site Oil wells Well Abandonment Considerations TM
- K: HVAC Power Requirements for Different Structures at the AWPF

Phase 2 AWT Implementation 35 MGD Additional IPR + 150 MGD DPR Capacity

DATA NEEDS MATRIX

N/C	GENERAL PROJECT INFORMATION				
	Site Location-FORCO or alternate site?	N/C			
2.	Summary of major operating components	N/C			
	Site configuration - acres/dimensions (site plan for major operating components, including heights/depths)	See Appendices B, C and D			
	Improvements needed at Warren Facility (flow equalization, centrate treatment, source control, brine handling, etc.)	N/C			
5.	Treatment train description	N/C			
	Boron management approach (CPSR p. 4-5); treatment at Warren Facility site or satellite treatment facility (CPSR p. 9-5)	N/C			
	Phasing of improvements (for delivery quantities, meeting OC Basin nitrate requirements, meeting DPR requirements, etc.)	N/C			
	Variation in plant operations to accommodate varying basin capacity (rain events, maintenance?)	N/C			
9.	New/modified upstream treatment facilities?	N/C			
10.	Project Operational Year(s)	N/C			
	CONSTRUCTION PHASE				
	Will there be pile driving? If so, where and for what duration?	N/C			

Phase 2 AWT Data Needs Matrix Populated 01082024.docx

DATA SOURCE/ CITATION	NEEDED BY	
(document/ page)		
	12/6/2021	
	12/6/2021	
From Stantec's BIM model	1/3/2022	
	1/3/2022	
	7/1/2022	
	1/3/2022	
	1/3/2022	
	1/3/2022	
	12/6/2021	
	1/3/2022	
Available LACSD geotech reports reviewed	1/3/2022	

12.	Depth/quantities of excavation/fill Hazardous waste topsoil removal FORCO Update : Metropolitan met with LACSD to ge an update on FORCO site activities. Psomas completed a survey. Additional geotechnical and surveying services may not be needed. Assuming 31,000 cubic yard of earth volume may need to be disposed to landfill; disposal cost estimated at \$3.0M. Contour map is also available. Weekly status meeting notes – 12/14/21	 There is pumping to and from the AWT allowing for flexibility in the establishment of the hydraulic grade line through the processes. This also permits the siting of facilities to balance the cut and fill to an extent and thereby minimize import or export of soils. There would be the importation of aggregate base materials for all structures. Quantities of excavation and aggregate importation are: Excavation for structures (estimate from Stantec's BIM model) 154,000 cubic yards Aggregate base materials – 7,000 tons (7,000 cubic yards x 1 ton/cubic yard) [The depth of excavation is generally assumed to be one (1) foot below the depth of structures as shown on structural dimensions, with greatest depth at approximately 30 feet below grade surface(bgs). The approximate quantity of mass excavation is 149,000 cy., of which an estimated 20% (31,000 cy.) is assumed to be contaminated and is to be disposed of at a Class II landfill such as Kettleman Hills Hazardous Waste Facility. Of the soil remaining after this disposal, 35% (43,000cy.) is to be used as structural backfill. 	Quantity take-offs from Stantec's Environmental Planning BIM model and LACSD's input for contaminated soil volume	12/01/2023
13.	Hazardous materials remediation plan	N/C		7/1/2022
14.	Utility relocation needs, if any (CPSR p. 4-7)	One major utility will require relocation prior to development of the FORCO site: The 10' x 12' concrete box stormwater drain will be relocated to the south end of the site (see layout) paralleling the property boundary thereby avoid bisecting of the proposed site.	From Stantec's BIM model	12/01/2023
15.	Estimated number of construction workers per day		Carollo CM SME	1/3/2022
	Estimated number of construction worker vehicle trips per day	320 - 390 trips / day* - Typical worker ride share Dependent if greater carpooling is required due to timing of 2028 Olympics.	Carollo CM SME	1/3/2022
17.	Will there be weekend or nighttime construction? If nighttime or weekend requirements, type of expected construction.	N/C	Carollo CM SME	1/3/2022
18.	Construction staging area and storage location(s)	N/C	Carollo CM SME	1/3/2022
19.	Construction worker vehicle parking	N/C	Carollo CM SME	1/3/2022
20.	Power Supply (generators?)	N/C	Carollo CM SME	1/3/2022
21.	Temporary Lighting (main-powered or generator- powered)	N/C	Carollo CM SME	1/3/2022
22.	Water Supply (hydrants? water trucks?)	N/C	Carollo CM SME	1/3/2022
	Maximum number of daily one-way haul truck trips due to material transportation (e.g., off- haul/disposal, supplies, material); type of trucks; estimated distance, clear delineation of daily maximum trips separated by demolition waste and clean excavation disposal materials types.	N/C	Carollo CM SME	1/3/2022
24.	Volume of any material imported/exported, including demolition waste (asphalt/concrete, soils, hazardous soils, slurry, steel/metals) and clean construction materials (concrete, pipeline segments, rebar, base material/sand/gravel, etc.).	 Per Stantec's BIM model, Volume of mass excavation is 154,000 cy Volume of structural excavation is 28,000 cy. 	Carollo CM SME	12/01/2023
25.	Plans for recycling of materials as applicable (need % diverted), otherwise we use state default	Volume of structural backfill is approx. 43,000 cy, 35% of total exported materials	Carollo CM SME	12/01/2023

26.	cations for ingress to/egress from construction e. If any temporary changes to the local street iping/traffic flow will be implemented, describe ose (description can be general for program- /el analysis).						7/1/2022
27.	Disposal location for construction debris Scholl Canyon Landfill or others of contractor's choice				1/3/2022		
	Construction Phase	Start and End Dates (or number of days/ weeks/months)	Equipment Used (Types and Quantities, incl. hp and hours/day) *	Haul or Material Truck Loads (in cy or truckloads)	Truck Travel Distance (in miles)		
28.	Work Items are not applicable in the Phase 2 Demolition / Removal of existing site features? Paving: The general site area is 56 acres (max)					Carollo CM SME	02/17/2023
29.	Utility relocation Storm Drain diversion and connection (15 days)					Carollo CM SME	02/17/2023
30.	Work Items are not applicable in Phase 2 Remediation/site preparation – Clear and grub of entire remaining site					Carollo CM SME	02/17/2023
31.	Structural Ex. & Haul Off & Foundation Prep Mass Excavation & Haul Off: Amount needing to be moved within site 154,000 - 31,000 = 123,000 cy over 165 days. Assume 20% requires Class II landfill disposal Kettleman Hills Hazardous Waste Facility 200 miles/1 way (31,000 cy.) 400 miles/round trip (rt)	Assume 165 working days @ 8 hrs. / day Assume 32 + 60 = 92 working days @ 8 hrs / day	Model CAT CS-323C Compactor @ 80hp x 8hrs / day Model CAT 426 Backhoe @ 84 hp x 165 days Model CAT 135 Motor Grader @ 155 hp @ 165 days 4,000-Gal Water Tuck @ 300 hp x 8 hrs. / day	Materials: 40 trips /day x 10 cy / truckload x 2 trucks = 800 cy / day Landfill disposal 1 trip/day x 10 cy / trip x 34 trucks = 340 cy / day	Assuming longest drive on site is 0.5 miles, at a speed of 5 mph to keep dust down, should take 12 minutes per round trip of 1 mile. This allows 40 trips per day. Assuming that with the 400 mile round trip, only one trip can be made per day.		12/01/2023
32.	Yard Piping	Assume 140 days @ 8 hrs./ day	Model CAT 320 Excavator @ 160 hp x 140 days x 8 hrs. Model CAT 980G Loader @ 300 hp x 140 days x 8 hrs. 10 CY End Dump Materials Truck x 140 days x 8 hrs. day				12/01/2023

33.	Process Equipment Set & Above-grade Process Piping Installation	© 9 hrs / day	Model CAT 320 Excavator @ 160 hp x 8 hrs.		12/01/2023
		@ 0 mis./ day	(1) Model CAT 980G Loader @ 300 hp x 8 hrs.		
			(2) 10 CY End Dump Materials Truck x 8 hrs. day		
			(1) Model CAT CS-323C Compactor @ 80hp x 240 days x 8hrs / day		
			Model CAT 426 Backhoe @ 84 hp x 300 days		
			(1) Model CAT TH63 Telescopic Handlers @ 101 hp X 240 days x 8 hrs. / day		
			Model Link-Belt 60 Ton RTC-8065 Wheel Crane @ 225 hp x 240 days x 8 hrs. / day		
			(1) 4,000-Gal Water Tuck @ 300 hp x 8 hrs. / day		
34.	Paving – 58,000 sf		Model CAT 135H Motor Grader@155 hp x 20 days Asphalt delivery to site	From Stantec's BIM	12/01/2023
		= 20 days @ 8 hrs. / day	Model CAT AP1000B Asphalt Paver @ 225 hp @ 20 days Materials delivery 4 trips/day x 10	model	
			(2) Model CAT CS-323C compactors @ 80 hp x 20 days		
			10 CY End Dump Materials Truck x 20 days x 8 hrs. / day.		
			4,000-Gal Water Tuck @ 300 hp x 8 hrs. / day		
35.	Architectural coatings (Roofing and Exterior	Assume 60 days @ 8 hrs./ day	Model Link-Belt 60 Ton RTC-8065 Wheel Crane @ 225 hp		12/01/2023
	Cladding)	8 hrs./ day	x 60 days x 8 hrs. / day		
			Model CAT TH63 Telescopic Handlers @ 101 hp X 8 hrs. / day		
36.	Power substation - Constructed in Phase 1 (during				02/17/2023
	the first 30 MGD construction)				
			OPERATIONS PHASE		
37.	Height and materials of structures	See Appendix D			7/1/2022
38.	General design characteristics (architecture/coatings, lighting, landscaping/screening)	N/C			7/1/2022
39.	Preferred site access- employee parking and emergency vehicle access	N/C			1/3/2022
40.	Total footprint/acreage of new paved/impervious areas	N/C		From Stantec's BIM model	1/3/2022
41.	Measures for detention/treatment of stormwater runoff	N/C			1/3/2022
42.	AWT equipment types with typical operating data/characteristics	See Appendix E		From Stantec's BIM model	1/3/2022

43.	Estimated number of operations employees (additional employees for Phase 2 on top of Phase 1)		Reference Plant with adjustment (OC GWRS) – Pro-rated *Lab per MWD	1/3/2022
44.	Employee shifts per day when plant is in operation		Reference Plant with adjustment (OCWD's GWRS)	1/3/2022
45.	Number of employees per shift (additional employees on top of Phase 1)	See Appendix G.		1/27/2023
46.	Estimated number of vehicle trips per day/week/month (project operation) – Additional trips on top of Phase 1	Worst case – each employee (67 staff - work commute) = 67 round-trips/day (x's 5 per week / x's 20 per month)		1/3/2022
47.	Average trip distance (miles) for employees (project operation)		SCAG LA County 2012 - 2016	1/3/2022
48.	Deliveries of materials, supplies or equipment (quantities, frequency)	Summary of deliveries attached (Appendix F).		1/3/2022
49.	Will chemicals delivery occur on a 24/7 basis or weekday daytime only?	Assume 24/7 – worst case for noise relative to neighbors Assume 8 am to 5 pm – worst case for travel disruption	Worst case	1/3/2022
50.	Standby Generator(s) (expected sizing, fuel types, and locations) - Please provide frequency of testing and how often it will be used on a yearly basis.	One additional 4-MW generator for Phase 2.		1/3/2022
51.	Methane Cogen systems (size, number, location)?	N/C		1/3/2022
52.	Grid intertie power substation requirements and location(s)	N/C		1/3/2022
53.	Other operating equipment that generates emissions	N/C		1/3/2022
54.	HVAC equipment requirements and locations	N/C		1/3/2022
55.	Air handling systems size and location for treatment		Based on building volumes and occupancy	1/3/2022
56.	Treatment systems for odor emissions (if applicable)		LACSD's JTAP Reports	1/3/2022
57.	Please provide annual electricity for pumps and facility.	See appendix for equipment and loads (Appendix E)		1/3/2022
58.	Any alternative energy generation (e.g., solar)?	N/C		1/3/2022

59.	Flares for excess methane emission disposal and estimates for usage of flares (if applicable)	Not applicable.		1/3/2022
60.	Annual natural gas use	Not applicable		1/3/2022
61.	Maintenance/replacement activities and frequency		Brand on updated estimates	1/27/2023
		• UV ballasts – 5 years – 490 ballasts		
62.	List of chemicals to be used, quantities to be stored, delivery methods, and BMPs for transportation/storage/handling/disposal	See Appendix D – Chemical Quantities and Delivery		1/27/2023
63.	Disposal of waste materials (rough quantities of hazardous/non-hazardous, disposal location)	No additional waste expected on top of Phase 1.		1/3/2022
64.	Please indicate what SCAQMD air pollutant permits are required for project components.	Pending report from LACSD		1/3/2022
65.	Overall throughput, amount of water to be injected into the ground and available for direct potable reuse.	Additional 35 MGD of IPR and 150 MGD of DPR	Input from Metropolitan staff	1/26/2023
66.	SCAQMD Rule 402 prohibits public nuisances related to odors. Please describe if the emergency storage basin would result in a public nuisance related to odors.	Emergency storage would be for product water. The quality of this water is equivalent to fresh potable supplies. No odor related issues envisioned.		1/3/2022
		TECHNICAL INFORMATION		
67.	Geology/Soils Report			7/1/2022
68.	Hazardous Materials (Phase 1 ESA, Phase 2, Remedial Action Plan, etc.)			7/1/2022
69.	Conceptual grading/site plan/water quality BMPs	N/C		1/3/2022
70.	Municipal Water Demand and Supply	N/C		1/3/2022
71.	Wastewater Generation	N/C		1/3/2022
72.	Solid Waste Generation and Disposal	1,150 lbs./day	CalRecyle – Industrial 8.93 Ibs./day/employee	1/3/2022

73.	Communication infrastructure to be constructed connecting plant and conveyance to Metropolitan's network and SCADA system separate communication system to be installed for coordination with LACFCD to provide the means for monitoring/reporting rela groundwater recharge status.

* Typical construction equipment may include backhoe, dozers, scrapers, compactors, track hoe, trencher, loader, roller, cranes, heavy trucks

Appendices

- A: Process Flow Diagram
- B: Site Plan
- C: AWTP Construction Phasing Site Plan
- D: Structures Dimensions
- E: AWTP Equipment Electrical Load List
- F: Chemical Quantities and Delivery
- G: Basis for O&M Staffing Estimates
- H: Construction Schedule
- I: Stormwater Runoff Quantities TM
- J: Joint Plant Site Oil wells Well Abandonment Considerations TM
- K: HVAC Power Requirements for Different Structures at the AWPF

n. Also, ated to	7/1/2022



APPENDIX I – AWP FACILITY CONSTRUCTION SCHEDULE

1 A	WPF PH1 + PH2 150 2937 day	rs Mon	Finish Predecessors Resource Names 2024 Tue 2/3/37	2025 2026 2027 2028 2029 2000 2011 2012 2013 2014 2025 2026 2027 2018 AWP 6PH 1 + PH 2 15 MOD DR & D PR & D PR	
N	GD IPR & DPR	11/3/25		2937 days	
2	AWPF PH1 115 1684 day MGD SUMMARY	rs Mon 11/3/25	Thu 4/15/32	AWPF PH1 115 MGD SUMMARY	
3	AWPF 30 MGD 1330 day	rs Mon 11/3/25	Fri 12/6/30	1684 days AWPF 30 MGD SUMMARY	
4	NTD (see			1330 days	
4	NTP for 0 days Construction Phase I	Mon 11/3/25	Mon 11/3/25	NTP for Construction Phase I 11/3 11/3	
5	Oil Well 60 days Abandon and Closure	Mon 11/3/25	Fri 1/23/26 4	Oil Well Abardon and Closure	
6	Mobilization, 30 days Staging, and Laydown	Mon 11/3/25	Fri 12/12/25 4	Mobilization, Staging, and Laydown 30 days	
7	Clear & Grub, 110 days Utility Relo, Shop Demo & Waste Haul Off	Mon 12/15/25	Fri 5/15/26 6	Clear & Grub, Utility Relo, Shop Demo & Waste Haul Off 110 days	
8	Hazardous 128 days Soils Removal	Tue 3/3/26	Thu 8/27/26 755+56 days	Hazardous Soils Removal 128 days	
9	Mass 154 days Excavation & Haul Off	Tue 5/12/26	Fri 12/11/26 855+50 days	Mass Excavation & Haul Off	
10	Structural 210 days Excavation and Foundation Prep.	Thu 10/29/26	Wed 955+122 days 8/18/27	210 days	
11	Yard Pipe - 195 days Dig/Lay/Bfill	Wed 6/9/27	Tue 3/7/28 105S+42 days	Yard Pipe - Dig/Lay/Bfill 195 days	
12	Elec. 300 days Ductbanks and Cable Pull - Plantwide	Wed 6/9/27	Tue 8/1/28 1155	Elec. Ductbanks and Cable Pull - Plantwide	
13	Backfill 410 days Structures	Wed 6/9/27	Tue 1/2/29 1155	410 days	
14	Conc. 573 days Structures	Thu 8/19/27	Mon 10 10/29/29	Conc. Structures	
15	Power 356 days Substation	Thu 8/19/27	Thu 10 12/28/28	Power Substation 356 days	
16	Structural 355 days Steel	Fri 11/19/27	Thu 3/29/29 1455+66 days	355 days	
17	Process 225 days Equipment Set	Thu 5/11/28	Wed 14SS+190 days 3/21/29	Process Equipment Set	
18	A/G Process 225 days Pipe Installation	Thu 8/3/28	Wed 175S+60 days 6/13/29	225 days	
19	Electrical 225 days Gear, Trays & Conduits	Thu 10/26/28	Wed 9/5/29 185S+60 days	Electrical Gear, Trays & Conduits	
20	Electrical 225 days Cable, Wires & Fiber Optic	Mon 2/19/29	Fri 12/28/29 1955+82 days	Electrical Cable, Wires & Fiber Optic	
21	Roofing & 300 days Exterior Cladding	Fri 12/31/27	Thu 2/22/29 165S+30 days	300 days	
22	Sitework & 132 days Grading	Fri 3/30/29	Mon 16 10/1/29	Sitework & Grading	
23	Paving & 120 days Striping	Tue 10/2/29	Mon 22 3/18/30	Paving & Striping 120 days	
24	Testing, 264 days Startup & Commissioning	Mon 10/15/29	Thu 20SS+170 days 10/17/30	Testing, Startup & Countisideing)	
25	AWPF 85 MGD 820 days SUMMARY	Fri 2/23/29	Thu 4/15/32	AMPF 85 MGD SUMMARY 1 820 days	
26	Process 285 days Equipment Set	Thu 3/22/29	Wed 17 4/24/30	283 days	
27	A/G Process 295 days Pipe Installation		Wed 18 7/31/30	295 plays A/G Process Pipe Installation	
28	Electrical 305 days Gear, Trays & Conduits		Wed 19 11/6/30	305 days	
29	Electrical 325 days Cable, Wires & Fiber Optic	Mon 12/31/29	Fri 3/28/31 20	325 days	

0	Roofing & Exterior Cladding					100 days
	Sitework & Grading	80 days	Fri 7/13/29	Thu 11/1/29	30	Sitework & Grading
	Paving & Striping	40 days	Mon 4/22/30	Fri 6/14/30	31	Paving & Striping 40 days
	Testing, Startup & Commissioning		Fri 10/18/30) Thu 12/11/31	24	300 days
1			Fri 12/12/31	L Thu 4/15/32	33	Project Closeout 90 days
5	Storm Drain Culvert Relocation	411 days	Tue 2/4/31	Tue 8/31/32		Storm Drain Culver Relocation 411 days
6	NTP Storm Drain Culvert Relocation	0 days	Tue 2/4/31	Tue 2/4/31		NTP Storm Drain Culvert Relocation
7	Mobilization, Staging, and Laydown	30 days		Mon 3/17/31	36	Mobilization, Staging, and Laydown 30 days
38	Storm Drain Culvert Relocation	351 days	Tue 3/18/31	Tue 7/20/32	37	351 days
19		30 days	Wed 7/21/32	Tue 8/31/32	38	Closeout 30 days
10	ADDITIONAL 35 MGD OF IPR + 150 MGD OF	1120 days	Wed 9/1/32	Tue 12/16/36		ADDITIONAL 35 MGD OF IPR + 150 MGD OF DPR
11	Construction	0 days	Wed 9/1/32	Wed 9/1/32		NTP for Construction Phase II
42	Phase II Mobilization, Staging & Laydown	44 days	Wed 9/1/32	Mon 11/1/32	41	Mobilization, Staging & Laydown 44 days
13	Hazardous Soils Removal	60 days	Tue 11/2/32	Mon 1/24/33	42	44 days
14	Mass Excavation & Haul Off	62 days	Tue 12/14/32	Wed 3/9/33	43SS+30 days	→ and Mass Excavation & Haul Off E2 days
45	Structural Ex. & Haul Off & Foundation	165 days	Tue 2/8/33	Mon 9/26/33	4455+40 days	Structural Ex. & Haul Off & Foundation Prep. 165 days
46	Prep. Yard Piping	140 days	Tue 7/12/33	Mon 1/23/34	4555+80 days	Yard Piping
47	Backfill Structures	100 days	Tue 7/12/33	Mon 11/28/33	4655	140 days Image: Second Secon
18	Conc. Structures	110 days	Tue 10/18/33	Mon 3/20/34	4655+70 days	100 days Conc. Structures
19	Structural Steel	80 days	Wed 1/18/34	Tue 5/9/34	4855+66 days	110 days Structural Steel 80 days
iO	Process Equipment Set	150 days	Wed 5/10/34	Tue 12/5/34	49	Process Equipment Set
51	A/G Process Piping Installation	150 days	Wed 9/13/34	Tue 4/10/35	505S+90 days	A/G Process Piping Installation 150 days
12	Electrical Gear & Conduit		1/17/35		5155+90 days	Electrical Gear & Conduit 210 days
53	Electrical Cable, Wire & Fiber Optic, I&C	210 days	Wed 5/9/35	Tue 2/26/36	52SS+80 days	Electrical Cable, Wire & Fiber Optic, I&C 210 days
54	Roofing & Exterior Cladding	60 days	Wed 3/1/34	Tue 5/23/34	4955+30 days	Roofing & Exterior Cladding 60 days
55	Sitework/gradi		5/24/34	Tue 9/12/34	54	Sitework/grading 80 days
i6		20 days	9/13/34	10/10/34	55	≝ Paving 20 days
57	Test, Start Up, and Commissioning		Wed 8/29/35	Tue 12/9/36	53SS+80 days	335 days
58	Closeout	40 days	Wed 12/10/36	Tue 2/3/37	57	Loseout 40 days



APPENDIX J – AWP FACILITY ADT AND VMT CALCULATIONS

Assumed Construction Duration

What is the entire construction duration for each phase? Is there overlap between construction phases?

	Phase 1		
row #	Construction Phase	days	years
28	Demolition/removal of existing site features		
	Paving the general site area	21	
	Demolition of existing LACSD warehouse building	21	
29	Utility relocation	36	
30	Clear and grub of entire remaining site	42	
31	Foundation and below grade infrastructure for phase 1		
	Mass excavation & haul off	154	
	Class II landfill disposal hazardous waste facility	232	
32	Structural excavation and foundation preparation	210	
33	Yard piping (dig/lay/backfill) for phase 1	195	
34	Process equipment set and above-grade AWT facilities	1120	
35	Paving 420 TSF for 30 MGD	120	
36	Paving 40 TSF for 85 MGD	40	
37	Architectural coatings	400	
38	Power substation	356	
TOTAL	Assumed Construction Duration (All Phases)	2947	8.1

	Phase 2		
row #	Construction Phase	days	years
29	Utility relocation	15	
31	Structural excavation, haul off, foundation prep		
	Mass excavation & haul off	165	
	Class II landfill disposal hazardous waste facility	92	
32	Yard piping	140	
33	Process equipment set & above-grade piping installation	300	
34	Paving 58 TSF	20	
35	Architectural coatings	60	
TOTAL	Assumed Construction Duration (All Phases)	792	2.2

Reference (Row) 10 Phase 1 (2032) 115 MGD

	Trip Distance Assumptions (one-way)		
SCAG	Avg. Worker Commute Distance	19.66	miles
31	To Class II landfill - Kettleman Hills Hazardous Waste Facility	200	miles
VMT V4	To regular landfill - Scholl Canyon Landfill	32	miles
survey of area Google Maps	To nearest concrete/asphalt plant (base materials)	10	miles
	Avg. trip for construction equipment traveling to work site	30	miles
	Chemical Deliveries (operations phase)	30	miles

Construction Phase AWT Construction Schedule 12 Assumed Construction Duration (AWT Construction Schedule 12222

16

All phases except Testing, Startup & Commissioning and Project Close Out 4/15/2032 3/28/2031 274 Excavation and Base Materials Mass Excavation To Regular Landfill Structural Backfill 552,000 CY 287,040 CY 35% of remaining non haz excavation 154,560 CY 20% of excavation 110,400 CY 12 12 12 To Landfill= Total-Backfill-Hazardous 57.408 # of 10CY truck trips 40.72 one-way trips/day 12 Contaminated Soil (to Class II Haz Waste Landfill) 22,080 # of 10CY truck trips 15.66 one-way trips/day 19,800 # of 10CY truck trips 14,400 # of 10CY truck trips **113,688 # of 10CY truck trips** (to and from site) Structural Excavation Aggregate Base Materials Excavation and Base Materials Subtotal 99,000 CY 72,000 CY x 1 ton/CY 568,440 CY 14.05 one-way trips/day 10.21 one-way trips/day 80.65 one-way trips/day (to and from site) 24 12 Hual Truck Trips (Off-haul/disposal, supplies, material) minimum maximum 23 25 one-way trips 50 one-way trips not including demo/excavation trips Construction Workers Construction Workers per day average peak 15

1410 days

250-300 560-620 workers/day workers/day Est. Num of Construction Wokers vehicle trips per day average 590-680

one-way trips/day (assuming carpooling) 635 avg. one-way trips/day (assuming carpooling) (to and from site)

3.9 years

		Construction Phase and Duration	Equipment			Haul & Delivery
28		Demolition /Removal of Existing Site Features				
	Paving the general an		1 320 Excavator	21 days	Materials Haul Off	4 trips/day
		days	1 980G Loader	21 days		10 CY/trip
			1 10CY Dump Truck	21 days		25 trucks
						1,000 CY/day
						8520 CY to haul off
	Demolition of Existing	21	1 320 Excavator	21 days	Materials Haul Off	4 trips/day
		days	1 980G Loader	21 days		10 CY/trip
			1 10CY Dump Truck	21 days		4 trucks
						160 CY/day
29		Utility relocation	1 320 Skid Loader	36 days		
		36	_			
		days				
30		Clear and grub of entire remaining site				
		42	1 933 Track Loader	42 days		4 trips/day
		days	1 320 Excavator	42 days		10 CY/trip
			1 980G Loader	42 days		25 trucks
			1 10CY Dump Truck	42 days		1,000 CY/day
						45,185 CY to haul off
31		Foundation and below grade infrastructure				
	Mass Excavation & Ha		3 420 Excavators	154 days	Materials Haul Off	40 trips/day
		days	2 631E Scrappers 2 980G Loader	154 days		10 CY/trip
			2 980G Loader 4 4,000 Gal Water Truck	154 days		8 trucks 3,200 CY/day
			10 10CY Dump Truck	154 days 154 days		5,200 C1/day
	Class II landfill dispos		1 CS-323C Compactor	232 days		552,000 CY to haul off
		days	1 426 Backhoe	154 days		20% hazardous waste
			1 135 Motor Grader	102 days		
			1 4,000 Gal Water Truck	232 days		
32		Structural Excavation and Foundation Preparation	1 CS-323C Compactor	210 days		
		210	1 426 Backhoe	140 days		
		days	1 135 Motor Grader	140 days		
			1 4,000 Gal Water Truck	210 days		
33		Yard Piping	1 320 Excavator	195 days		
		195	1 980G Loader	195 days		
		days	2 10CY Dump Truck	195 days		
34		Process Equipment Set and Above-grade AWT facilities/equipment	1 320 Excavator	1120 days		
		1120	2 980G Loader	1120 days		
		days	4 10CY Dump Truck	1120 days		
		split with: foundation prep, concrete structures, process equipment	2 CS-323C Compactor	200 days		
			1 426 Backhoe	300 days		
			3 TH63 Telescopic Handlers	400 days		
			1 60 Ton RTC-8065 Crane	400 days		
			1 Manitowoc MLC650 Crane 4 4,000 Gal Water Truck	300 days		
			4 4,000 Gai Water ITUCK	1120 days		
35		Paving - 420,000 sf for 30 MGD	1 135H Motor Graders	120 days	Asphalt Delivery	4 trips/day
		120	1 AP100B Asphalt Paver	120 days		10 CY/trip
		days	2 CS-323C Compactor	120 days		10 trucks
			1 10CY Dump Truck 1 4,000 Gal Water Truck	120 days 120 days		400 CY/day
			1 4,000 Gal Water Huck			
36		Paving - 40,000 sf for 85 MGD	1 135H Motor Graders	40 days	Asphalt Delivery	4 trips/day
		40	1 AP100B Asphalt Paver	40 days		10 CY/trip
		days	2 CS-323C Compactor 1 10CY Dump Truck	40 days 40 days		10 trucks 400 CY/day
			1 4,000 Gal Water Truck	40 days 40 days		400 Ci/day
37		Architectural coatings	1 60 ton RTC Crane	400 days		
		400 days	1 TH63 Telescopic Handlers	400 days		
38		Power substation	1 320 Excavator	356 days		
		356	1 426 Backhoe	356 days		
		days	1 TH63 Telescopic Handlers 1 60 ton RTC Crane	200 days 200 days		
			1 4,000 Gal Water Truck	356 days		
		ALL CONSTRUCTION PHASES	29 unique equipment		is to and from the work site	

29 unique equipment each piece of equipment travels to and from the work site once

	TRUCTION PHASE One-Way Trips	Miles/Trip	VMT	
Regular Landfill Haul Trips Entire Construction Period	77,208.00	31.50	2,432,052.00	
Per Day Hazardous Landfill Haul Trips Entire Construction Period	54.77 22,080.00	31.50 200.00	1,725.21 4,416,000.00	
Per Day Base Materials Haul Trips Entire Construction Period	15.66	200.00	3,132.55	
Per Day Construction Workers Entire Construction Period	10.21 895,168.57	10.00	102.15	
Per Day Construction Equipment Traveling To/From Work Site	635.00	19.66	12,483.43	
Entire Construction Period Per Day All Items	58.00 0.04	30.00 30.00	1,740.00 1.23	
Entire Construction Period Per Day	1,008,914.57 715.69		24,591,864.71 17,444.57	
CONSTRUCTION P	HASE - By Trip Type and I One-Way Trips	LV/HV	VMT	
Construction Workers + Non-Haul Truck Entire Construction Period				
LV HV	895,168.57 58.00		17,598,072.71 1,740.00	
Per Day LV HV	635.00 0.04		12,483.43 1.23	
Haul Truck Entire Construction Period LV				
HV Per Day	113,688.00		6,992,052.00	
LV HV All Items	- 80.65		- 4,959.91	
Entire Construction Period LV HV	895,168.57 113,746.00		17,598,072.71 6,993,792.00	
Per Day LV HV	635.00 80.69		12,483.43 4,961.14	
	E - By Roadway Type PER	R DAY ADT	4,501.14]
Regular Landfill Haul Trips HV	Arterial	Collector	Local	Assumptions 100% to/from I-110 NB Ramp at S
Hazardous Landfill Haul Trips HV	54.77			100% to/from I-110 NB Ramp at S
Base Materials Haul Trips HV	9.30	0.92	-	45% travel on E/W arterials; 45%
Construction Workers LV Construction Equipment Traveling To/From Work Site	615.95	19.05	-	20% travel on E/W arterials; 10% 30% travel on E/W arterials; 10%
HV All Items	0.04	0.00	-	ADT to
LV HV Total	615.95 79.77 695.72	19.05 0.92 19.97	-	LV HV Total
	ASE - By Land Use PER D.			, , , , , , , , , , , , , , , , , , ,
Regular Landfill Haul Trips	Industrial	Commercial	Residential	Assumptions 100% to/from I-110 NB Ramp at S
HV Hazardous Landfill Haul Trips HV	43.81	2.35	0.78	100% to/from I-110 NB Ramp at S
Base Materials Haul Trips HV	2.66	1.53	6.03	45% travel on E/W arterials; 45%
Construction Workers LV	393.70	98.43	142.88	20% travel on E/W arterials; 10% 30% travel on E/W arterials; 10%
Construction Equipment Traveling To/From Work Site HV All Items	0.02	0.01	0.01	30% davel on c/ w arterials; 10%
LV HV	393.70 59.02 452.72	98.43 12.10 110.53	142.88 9.56 152.43	
Total CONSTRUCTION PH	452.72 ASE - By Land Use PER D/		152.43	1
Regular Landfill Haul Trips	Industrial	Commercial	Residential	miles/trip Assump 100% to
HV Hazardous Landfill Haul Trips HV	2,506.04	258.78	86.26	31.50 100% tr 200.00
Base Materials Haul Trips HV	2,506.04	469.88	60.27	45% tro 10.00
Construction Workers LV Construction Equipment Traveling To/From Work Site	7,739.73	1,934.93	2,808.77	20% tra 19.66 30% tra
HV All Items	0.69	0.20	0.35	30% tro
LV HV Total	7,739.73 3,913.46 11,653.18	1,934.93 744.18 2,679.12	2,808.77 303.50 3,112.27	
				1
ltem Employees (Attachment G)	Quantity 127	Unit		
Operations Staff Operations (24 hour coverage, 12 hr/shift, 8+1 persons/shift)	36	based on ratio from previou	version (32 ops staff (out of 114 employees from old Attachment G
Non-Operations Staff Non-Opeations (40 hrs/week, 5 weekdays)	91			
Est. # vehicle trips per day/week/month		employees		
	137 274	visitors round-trips/day one-way trips/day		
Chemical Deliveries (Attachment F) Total Chemical Deliveries		(to and from site) deliveries/day	based on ratio of # of	f deliveries and MGD capacity from previous v
	39.1	one-way trips/day (to and from site)		ies for 100 MGD capacity, now 115 MGD cap
				I
ОРЕ	RATIONS PHASE			
Employee + Visitor Trips (LV)	One-Way Trips	Miles/Trip	VMT	
		Miles/Trip 19.66 30.00	VMT 5,386.55 1,173.00	

100% to/from I-110 NB Ramp at Sepulveda Blvd. 100% to/from I-110 NB Ramp at Sepulveda Blvd.

45% travel on E/W arterials; 45% on N/S arterials, 10% to/from I-110

20% travel on E/W arterials; 10% on N/S arterials, 70% to/from I-110

30% travel on E/W arterials; 10% on N/S arterials, 60% to/from I-110

ADT to/from freeway	ADT E/W arterials or N/S arterials

LV	431.17	203.84	
HV	71.38	9.30	
Total	502.55	213.14	

Assumptions 100% to/from I-110 NB Ramp at Sepulveda Blvd.

100% to/from I-110 NB Ramp at Sepulveda Blvd.

45% travel on E/W arterials; 45% on N/S arterials, 10% to/from I-110 20% travel on E/W arterials; 10% on N/S arterials, 70% to/from I-110

30% travel on E/W arterials; 10% on N/S arterials, 60% to/from I-110

CONSTRUCTION PHASE - By Land Use PER DAY VMT								
Industrial Commercial Residential								
ar Landfill Haul Trips								
IV	1,380.17	258.78	86.26					
dous Landfill Haul Trips								
IV .	2,506.04	469.88	156.63					
Materials Haul Trips								
IV .	26.56	15.32	60.27					
ruction Workers								
v	7,739.73	1,934.93	2,808.77					
ruction Equipment Traveling To/From Work Site								
IV	0.69	0.20	0.35					
ms								
v	7,739.73	1,934.93	2,808.77					
IV	3,913.46	744.18	303.50					
	11.003.10	2 (70 12	2 112 27					

Operations P

48 46

48

50

Employees (Attachment G)	12	7
Operations Staff	3	5 based on ratio from previous version (32 ops
Operations (24 hour coverage, 12 hr/shift, 8+1 persons/shift)		
Non-Operations Staff	9:	1
Non-Opeations (40 hrs/week, 5 weekdays)		
Est. # vehicle trips per day/week/month	12	7 employees
	10	0 visitors
	13	7 round-trips/day
	274	1 one-way trips/day
		(to and from site)
Chaminal Dalivasias (Attacker and 5)		

VMT
66 5,386.55
00 1,173.00
6,559.55

miles/trip	Assumptions 100% to/from I-110 NB Ramp at Sepulveda Blvd.
31.50	
	100% to/from I-110 NB Ramp at Sepulveda Blvd.
200.00	
	45% travel on E/W arterials; 45% on N/S arterials, 10% to/from I-110
10.00	
	20% travel on E/W arterials; 10% on N/S arterials, 70% to/from I-110

19.66	
	30% travel on E/W arterials; 10% on N/S arterials, 60% to/from I-110
30.00	
50.00	

CONSTR	UCTION PHASE - By Roadway Type PER DA	Y ADT	
	Arterial	Collector	Local
Employee + Visitor Trips			
LV	265.78	8.22	-
Chemical Deliveries Trips			
HV	37.54	1.56	
All Items			
Total	303.32	9.78	-
CONS	TRUCTION PHASE - By Land Use PER DAY A	ADT	
	Industrial	Commercial	Residential
Employee + Visitor Trips			
LV	169.88	42.47	61.65
Chemical Deliveries Trips			
HV	21.90	6.26	10.95
All Items			
Total	191.78	48.73	72.60
CONS	TRUCTION PHASE - By Land Use PER DAY V	MT	
	Industrial	Commercial	Residential
Construction Workers			
LV	3,339.66	834.92	1,211.97
Chemical Deliveries Trips			
HV	656.88	187.68	328.44
All Items			
Total	3,996.54	1,022.60	1.540.41

Assumptions 20% travel on E/W arterials; 10% on N/S arterials, 70% to/from I-110 30% travel on E/W arterials; 10% on N/S arterials, 60% to/from I-110

Assumptions 20% travel on E/W arterials; 10% on N/S arterials, 70% to/from I-110 30% travel on E/W arterials; 10% on N/S arterials, 60% to/from I-110

 miles/trip
 Assumptions

 20% travel on E/W arterials; 10% on N/S arterials, 70% to/from I-110

 19
 6

 30% travel on E/W arterials; 10% on N/S arterials, 60% to/from I-110

 30.00

Reference (Row) 10 Phase 2 (2036) 150 MGD Total (additional 35 MGD from Phase 1)

	Trip Distance Assumptions (one-way)			
SCAG	Avg. Worker Commute Distance	19.66	miles	
31	To Class II landfill - Kettleman Hills Hazardous Waste Facility	200	miles	
VMT V4	To regular landfill - Scholl Canyon Landfill	32	miles	
survey of area Google Maps	To nearest concrete/asphalt plant (base materials)	10	miles	
	Avg. trip for construction equipment traveling to work site	30	miles	
	Chemical Deliveries (operations phase)	30	miles	

Construction Phase		_							
AWI Construction Schedule 3	2 Assumed Construction Duration (AWT Construction Schedule 1222	2	875 days	2.4 years			All phases except Testing, Star 2/3/2037	rtup & Commissioning an 2/26/2036	245
12	Excavation and Base Materials Mass Excavation		54,000 CY				To Landfill= Total-Backfill-Hazi		
12	To Regular Landfill		54,000 CY 30.080 CY	16,016 # of 10	CV truck trips	18.30 one-way trips/day	To Landfill= Total-Backfill-Haz	ardous	
12	Structural Backfill	2		16,016 # 07 10	LY truck trips	18.30 One-way trips/day			
12	Structural Backfill		35% of remaining non haz excavation 3.120 CY						
12	Contraction of Cold (An Oliver Matter Matter And Matter	4							
12	Contaminated Soil (to Class II Haz Waste Landfill)		20% of excavation 0,800 CY	6,160 # of 10	and the second second	7.04			
		3	0,800 CY	6,160 # OT 10	LY truck trips	7.04 one-way trips/day			
24	Structural Excavation	2	28,000 CY	5,600 # of 10	CY truck trips	6.40 one-way trips/day			
12	Aggregate Base Materials		7,000 CY x 1 ton/CY	1,400 # of 10		1.60 one-way trips/day			
	Excavation and Base Materials Subtotal		5,880 CY	29,176 # of 10		33.34 one-way trips/day			
					from site)	(to and from site)			
	Construction Workers								
15	Construction Workers per day								
	average	150-200	workers/day						
	peak	220-260	workers/day						
16	Est. Num of Construction Wokers vehicle trips per day								
	average	320-390	one-way trips/day (assuming carpo						
			355 avg. one-way trips/day (assuming	carpooling)					
			(to and from site)						
			F			Haul & Delivery			
	Construction Phase and Duration		Equipment			Haul & Delivery			
29	Utility relocation								
	15								
	days								
31	Structural Ex. & Haul Off & Foundation Prep								
Mass Excavation & H	: 165		1 CS-323C Compactor	165 days	Materials	40 trips/day			
	days		1 426 Backhoe	165 days		10 CY/trip			
			1 135 Motor Grader	165 days		2 trucks			
			1 4,000 Gal Water Truck	165 days		800 CY/day			
Class II landfill dispo					Landfill disposal	1 trip/day			
	days					10 CY/trip			
						34 trucks			
						340 CY/day			
32	Mandalata		1 320 Excavator	440 1					
32	Yard piping 140		1 980G Loader	140 days 140 days					
			1 10CY Dump Truck	140 days 140 days					
	days		1 10CF Dump Truck	140 days					
33	Process Equipment Set & Above-grade Process Piping Installation		1 320 Excavator	300 days					
	300		1 980G Loader	300 days					
	days		2 10CY Dump Truck	300 days					
			1 CS-323C Compactor	240 days					
			1 426 Backhoe	300 days					
			1 TH63 Telescopic Handlers	240 days					
			1 60 Ton RTC-8065 Crane	240 days					
			1 4,000 Gal Water Truck	300 days					
34	Paving - 58 TSF		1 135H Motor Graders	20 days	Asphalt Delivery	4 trips/day			
	20		1 AP1000B Asphalt Paver	20 days		10 CY/trip			
	days		2 CS-323C Compactor	20 days		10 trucks			
			1 10CY Dump Truck	20 days		400 CY/day			
			1 4,000 Gal Water Truck	20 days					
35	Architectural continue		1 60 Tee PTC 8065 Crees	60 da -					
30	Architectural coatings 60		1 60 Ton RTC-8065 Crane 1 TH63 Telescopic Handlers	60 days 60 days					
	60 days		1 Ino3 Telescopic Handlers	ьо дауз					
	uays								
	ALL CONSTRUCTION PHASES								
			11 unique equipment		travels to and from the work sit				

11 unique equipment each piece of equipment travels to and from the work site once

CONSTRUCTION PHASE							
	Viles/Trip	VMT					
Regular Landfill Haul Trips							
Entire Construction Period	21,616.00	31.50	680,904.00				
Per Day	24.70	31.50	778.18				
Hazardous Landfill Haul Trips							
Entire Construction Period	6,160.00	200.00	1,232,000.00				
Per Day	7.04	200.00	1,408.00				
Base Materials Haul Trips							
Entire Construction Period	1,400.00	10.00	14,000.00				
Per Day	1.60	10.00	16.00				
Construction Workers							
Entire Construction Period	310,625.00	19.66	6,106,560.83				
Per Day	355.00	19.66	6,978.93				
Construction Equipment Traveling To/From Work Site							
Entire Construction Period	22.00	30.00	660.00				
Per Day	0.03	30.00	0.75				
All Items							
Entire Construction Period	339,823.00		8,034,124.83				
Per Day	388.37		9,181.86				
CONSTRUCTION PH	ASE - By Trip Type and LV/						
	One-Way Trips		VMT				
Construction Workers + Non-Haul Truck							
Entire Construction Period							
LV	310,625.00		6,106,560.83				
	22.00		660.00				
Per Day							
LV	355.00		6,978.93				
HV Haul Truck	0.03		0.75				
Haul Truck Entire Construction Period							
LV							
LV HV	- 29,176.00		- 1,926,904.00				
Per Dav	29,176.00		1,928,904.00				
LV							
HV	- 33.34		- 2,202.18				
All Items	55.54		2,202.18				
All Items Entire Construction Period							
LV	310,625.00		6,106,560.83				
HV	29,198.00		1,927,564.00				
Per Dav	29,198.00		1,527,564.00				
IV	355.00		6.978.93				
HV	33.37		2,202.93				

CONSTRUCTION PHASE - By Roadway Type PER DAY ADT								
	Arterial	Collector	Local					
Regular Landfill Haul Trips								
HV	24.70	-	-					
Hazardous Landfill Haul Trips								
HV	7.04		-					
Base Materials Haul Trips								
HV Construction Workers	1.46	0.14	-					
LV	344.35	10.65						
Construction Equipment Traveling To/From Work Site	344.33	10.05	-					
ну	0.02	0.00						
All Items								
LV	344.35	10.65						
HV	33.22	0.15	-					
Total	377.57	10.80	-					
CONSTRUCTION PHASE - By Land Use PER DAY ADT								
	Industrial	Commercial	Residential					
Regular Landfill Haul Trips								
HV	19.76	3.71	1.24					
Hazardous Landfill Haul Trips								
HV	5.63	1.06	0.35					
Base Materials Haul Trips	0.42							
HV Construction Workers	0.42	0.24	0.94					
LV	220.10	55.03	79.88					
Construction Equipment Traveling To/From Work Site	220.10	55.05	/9.00					
HV	0.01	0.00	0.01					
All Items	0.01	0.00	0.01					
LV	220.10	55.03	79.88					
HV	25.83	5.01	2.54					
Total	245.93	60.03	82.41					
•								
CONSTRUCTION PHASE	- By Land Use PER DAY VN	IT						
	Industrial	Commercial	Residential					
Regular Landfill Haul Trips								
HV	622.54	116.73	38.91					
Hazardous Landfill Haul Trips			70 (7					
HV	1,126.40	211.20	70.40					
Base Materials Haul Trips HV	4.10	2.40	0.44					
HV Construction Workers	4.16	2.40	9.44					
LV	4,326.93	1,081.73	1,570.26					
Construction Equipment Traveling To/From Work Site	4,320.55	1,001.75	1,370.20					
HV	0.42	0.12	0.21					
All Items	/*	0.11						
LV	4,326.93	1,081.73	1,570.26					
HV	1,753.52	330.45	118.96					
Total	6,080.46	1,412.18	1,689.22					

Quantity

Assumptions 100% to/from I-110 NB Ramp at Sepulveda Blvd.

100% to/from I-110 NB Ramp at Sepulveda Blvd.

45% travel on E/W arterials; 45% on N/S arterials, 10% to/from I-110 20% travel on E/W arterials; 10% on N/S arterials, 70% to/from I-110

30% travel on E/W arterials; 10% on N/S arterials, 60% to/from I-110

	ADT to/from freeway	ADT E/W arterials or N/S arte	rials
LV	241.05	113.96	
HV	31.90	1.47	
Total	272.95	115.42	

Assumptions 100% to/from I-110 NB Ramp at Sepulveda Blvd.

100% to/from I-110 NB Ramp at Sepulveda Blvd.

45% travel on E/W arterials; 45% on N/S arterials, 10% to/from I-110

20% travel on E/W arterials: 10% on N/S arterials, 70% to/from I-110

30% travel on E/W arterials; 10% on N/S arterials, 60% to/from I-110

miles/trip	Assumptions

rip Assumptions 100% to/from I-110 NB Ramp at Sepulveda Blvd. 31.50

31.50 100% to/from I-110 NB Ramp at Sepulveda Blvd. 200.00

200.00 45% travel on E/W arterials; 45% on N/S arterials, 10% to/from I-110 10.00 20% travel on E/W arterials; 10% on N/S arterials, 70% to/from I-110 19.66

19.66 30% travel on E/W arterials; 10% on N/S arterials; 60% to/from I-110 30.00

Operations Phase 46

44

Employees (Attachment G)
Operations Staff Operations (24 hour coverage, 12 hr/shift)
Non-Operations Staff Non-Opeations (40 hrs/week, 5 weekdays)
Est. # vehicle trips per day/week/month

18 based on ratio from previous version (36 ops staff out of 129 employees from old Attachment G) now Phase 1 and 2 combined 127+67=194 employees

67 employees
0 visitors
67 round-trips/day
134 one-way trips/day

Unit 67

49

Chemical Deliveries (Attachment F) Total Chemical Deliveries 48

10 deliveries/day 20 one-way trips/day

based on ratio of # of deliveries and MGD capacity from previous version previously 14 deliveries for additonal 50 MGD capacity, now additional 35 MGD capacity

OPERATIONS PHASE										
	One-Way Trips Miles/Trip VI									
Employee + Visitor Trips										
Per Day	134.00	19.66	2,634.30							
Chemical Deliveries Trips										
Per Day	19.60	30.00	588.00							
All Iterms										
Per Day	153.60	r	3,222.30							
C	CONSTRUCTION PHASE - By Roadway Type PER DAY ADT									
	Arterial	Collector	Local							
Employee + Visitor Trips										
LV	129.98	4.02	-							
Chemical Deliveries Trips										
HV	18.82	0.78								
All Items										
Total	148.80	4.80	-							
	CONSTRUCTION PHASE - By Land Use PER DA									
	Industrial	Commercial	Residential							
Employee + Visitor Trips										
LV	83.08	20.77	30.15							
Chemical Deliveries Trips										
HV	10.98	3.14	5.49							
All Items										
Total	94.06	23.91	35.64							
	CONSTRUCTION PHASE - By Land Use PER DA									
	Industrial	Commercial	Residential							
Construction Workers										
LV	1,633.27	408.32	592.72							
Chemical Deliveries Trips										
HV	329.28	94.08	164.64							
All Items	1.962.55	502.40	757.36							
Total										

Assumptions 20% travel on E/W arterials; 10% on N/S arterials, 70% to/from I-110 30% travel on E/W arterials; 10% on N/S arterials, 60% to/from I-110

Assumptions 20% travel on E/W arterials; 10% on N/S arterials, 70% to/from I-110

30% travel on E/W arterials; 10% on N/S arterials, 60% to/from I-110

miles/trip

Assumptions 20% travel on E/W arterials; 10% on N/S arterials, 70% to/from I-110 19.66 30% travel on E/W arterials; 10% on N/S arterials, 60% to/from I-110 30.00 19.66

Summary - Daily ADT (Average Daily Throughout the Construction Schedule)				Summary - Daily VMT (Aver	erage Daily Throughout the Construction Schedule)				
		Phase 1	Phase 2	Total			Phase 1	Phase 2	Total
Construction Worker and Non-Haul	Light Vehicle	635	355	990	Construction Worker and Non-Haul Truck	Light Vehicle	12,483	6,979	19,462
Truck ADT Per Day	Heavy Vehicle	0	VMT	Heavy Vehicle	1	1	2		
ITUCK ADT PET Day	Total	635	355	990	VIVII	Total	12,485	6,980	19,464
	Light Vehicle	-			114 Haul Truck Trips VMT	Light Vehicle	-		-
Haul Truck Trips ADT Per Day	Heavy Vehicle	81	33	114		Heavy Vehicle	4,960	2,202	7,162
	Total	81	33	114		Total	4,960	2,202	7,162
	Light Vehicle	635	355	990		Light Vehicle	12,483	6,979	19,462
Total ADT Per Day	Heavy Vehicle	81	33	114	Total VMT	Heavy Vehicle	4,961	2,203	7,164
	Total	716	388	1,104		Total	17,445	9,182	26,626

Summary - Construction Schedule # of Days Phase 1 Phase 2 Number of Construction Days 1,410 875

Summary - AD	T (Throughout the Cor	struction Schedule)]	Summary - VMT (Throughout the Const	ruction Schedule)		
		Phase 1	Phase 2	Total			Phase 1	Phase 2	Total
Construction Worker and Non-Haul	Light Vehicle	895,169	310,625	1,205,794	Construction Worker and Non-Haul Truck	Light Vehicle	17,598,073	6,106,561	23,704,634
Truck ADT Per Day	Heavy Vehicle	58	22	80	VMT	Heavy Vehicle	1,740	660	2,400
Truck ADT Per Day	Total	895,227	310,647	1,205,874	VIVII	Total	17,599,813	6,107,221	23,707,034
	Light Vehicle			-		Light Vehicle			-
Haul Truck Trips ADT Per Day	Heavy Vehicle	113,688	29,176	142,864	-	Heavy Vehicle	6,992,052	1,926,904	8,918,956
	Total	113,688	29,176	142,864		Total	6,992,052	1,926,904	8,918,956
	Light Vehicle	895,169	310,625	1,205,794		Light Vehicle	17,598,073	6,106,561	23,704,634
Total ADT Per Day	Heavy Vehicle	113,746	29,198	142,944	Total VMT	Heavy Vehicle	6,993,792	1,927,564	8,921,356
	Total	1,008,915	339,823	1,348,738		Total	24,591,865	8,034,125	32,625,990

			ps ADT by Roadway C				Daily Project Trips ADT on Route to Freeway			
	Vehicle Type	Roadway Class	Phase 1	Phase 2	Total		Vehicle Type	Roadway Class	Phase 1	Phase 2
		Arterial	603	337	941			Arterial	431	241
	Light Vehicle	Collector	12	7	19		Light Vehicle			
		Local	20	11	30					
		Arterial	78	33	111			Arterial	71	32
	Heavy Vehicle	Collector	2	0	2		Heavy Vehicle			
		Local	1	0	1					
		Arterial	681	370	1051			Arterial	503	273
	Total	Collector	14	7	21		Total			
		Local	20	11	31	1				
Daily	<u> </u>	dway Classification - V	Vithin 5 miles buffer of					DT per link on Route to F		
Scenario	Vehicle Type	Roadway Class	Phase 1	Phase 2	Total	Scenario	Vehicle Type	Roadway Class	Phase 1	Phase 2
		Arterial	1,329	1,329	2,658		TruckADT	Arterial	1,710	1,710
	TruckADT	Collector	424	424	849	NP				
NP		Local	177	177	354					
		Arterial	19,877	19,877	39,754			Arterial	39,257	39,257
	All ADT	Collector	1,741	1,741	3,481		All ADT			
		Local	2,279	2,279	4,557	1				
		Arterial	78	33	111			Arterial	71	32
	TruckADT	Collector	2	0	2		TruckADT			
		Local	1	0	1					
Project Trips		Arterial	681	370	1.051	Project Trips		Arterial	503	273
	All ADT	Collector	14	7	21		All ADT			
		Local	20	11	31					
		Arterial	1,407	1,362	2,769			Arterial	1,781	1,742
	TruckADT	Collector	426	425	851	1	TruckADT			
NP + Project		Local	178	177	355	NP + Project				
Trips		Arterial	20,558	20,247	40,805	Trips		Arterial	39,760	39,530
	All ADT	Collector	1,755	1,748	3,503	1	All ADT			
		Local	2,299	2,290	4,589	1				
		Arterial	6%	2%	4%			Arterial	4%	2%
	TruckADT	Collector	0%	0%	0%	1	TruckADT			
% Change (NP +		Local	0%	0%	0%	% Change (NP +				
Project Trips) -		Arterial	3%	2%	3%	Project Trips) -		Arterial	1%	1%
(NP)	All ADT	Collector	1%	0%	1%	(NP)	All ADT			
	1	Local	1%	0%	1%	1				



PURE WATER SOUTHERN CALIFORNIA | FEBRUARY 2025 TRAFFIC ANALYSIS REPORT – TECHNICAL APPENDICES | DRAFT

APPENDIX K – AWP FACILITY EMPLOYEE REQUIREMENTS

Appendix G – Operations & Maintenance (O&M) Staffing Estimates

BASIS: Orange County (OC) Groundwater Replenishment System (GWRS) **Adjustments Staffing Levels**: pro-rate per flow

- OC GWRS 100 mgd
- MWD
 - Phase 1: 100 mgd
 - Phase 2: additional 50 mgd 150 mgd total
- Consider Phase flow (150 mgd) and adjust for Phase 1 (100 mgd)
- Adjustment: Phase 2 Total = 150 mgd / GWRS Staff x 1.5 = MWD staff
- Complexity: RRWP will have more processes and greater capacity 1.5 factor should compensate for both capacity and complexity.

OC GWRS Total Staff:

- Reference: Water Production/Groundwater Replenishment System org chart dated April 2021
- Staff Positions and Numbers
 - Exec Director + Sr Admin = 2
 - Process Controls = 17
 - Maintenance = 19
 - Operations = 23
 - Chemist = 1*
 - TOTAL = 62

Staffing for Ultimate Capacity (150 MGD)

Estimated MWD RRWP Staff (rounded)

- Exec Director + Sr Admins = 3
- Process Controls = 25
- Maintenance = 25
- Operations = 36
- Chemist = 40
- TOTAL = 129

Work Schedule:

- All except Operations
 - Monday to Friday
 - 40 hrs/week
- Operations
 - 4 operating shifts
 - 8 persons per shift + 1 floater
 - Shifts
 - First Half of Week
 - Shift 1 7 AM to 7 PM
 - Shift 2 7 PM to 7 AM

- Second Half of Week
 - Shift 3 7 AM to 7 PM
 - Shift 4 7 PM to 7 AM

* Note: MWD indicated 40 staff for sampling and analysis - lab

Staffing for Phase 1 (100 MGD)

	Phase 2 – 150 mgd Staffing	Phase 1 – 100 mgd Staffing	Adjustment Basis
Exec Director + Sr Admins	3	3	Same staff
Process Controls	25	21	Some reduction
Maintenance	25	22	Some reduction
Operations	36	32	Some reduction
Chemist	40	36	Some reduction
TOTAL	129	114	

Work Schedule:

- All except Operations
 - Monday to Friday
 - 40 hrs/week
- Operations
 - 4 operating shifts
 - 7 persons per shift + 1 floater
 - Shifts
 - First Half of Week
 - Shift 1 7 AM to 7 PM
 - Shift 2 7 PM to 7 AM
 - Second Half of Week
 - Shift 3 7 AM to 7 PM
 - Shift 4 7 PM to 7 AM

Phase 1 AWT Implementation 115 MGD Capacity

DATA	NEEDS MATRIX	ζ
		•

		DATA NEEDS MATRIX	DATA SOURCE/ CITATION (document/ page)	NEEDED BY
		GENERAL PROJECT INFORMATION		
1.		former location of the Fletcher Oil and Refinery Company (FORCO). This 36 acres of property is immediate east of the Warren Facility's	Description Summary in CPSR Sct 1.3, pages 1-15, 16, and Section 4	12/6/2021
			Presentation October 28, 2020 – "A New Source of Water", Southern California Water Dialogue.	
2.		The proposed AWT would provide additional treatment to the HPOAS effluent resulting in a highly treated water compliant with established water quality standards consistent with indirect potable reuse. The new AWT facility would include, but not be limited to the following components: fine screening, micro/ultrafiltration, membrane bioreactor (MBR), reverse osmosis (RO) and ultraviolet irradiation with advanced oxidation processes to provide IPR level treatment. For DPR level treatment, ozone, BAC and/or MF would be added to the process train. RO brine would be discharged to the Warren Facility's ocean outfall directly. See Appendix A for the process flow diagram.	CPSR page 1-16, Figure 1.8	12/6/2021
3.	Site configuration - acres/dimensions (site plan for major operating components, including heights/depths)		From Stantec's BIM model	1/3/2022
4.	equalization, centrate treatment, source control, brine handling, etc.)	There may be modifications to the HPOAS reactors to provide nitrogen reduction (NDN) within the secondary treatment system. Portions of existing secondary clarifiers may be used for flow equalization. Centrate treatment is under consideration as well to provide nitrogen reduction in return sidestreams. The soil excavation amount for centrate treatment is included and is currently assumed to be at the solids processing facilities site (outside the FORCO site) at the Warren Facility. RO brine would be discharged directly to the Warren Facility's ocean outfall.	Conversation with LACSD staff	1/3/2022
5.		Primary + Secondary effluent + Fine Screening + NdN Secondary MBR + RO + UV/AOP + Stabilization (See Appendix A – Process Flow Diagram). RO brine will be discharged directly to the ocean outfall of the Warren Facility. Ozone followed by BAC may be incorporated into this treatment train immediately following the MBR to achieve DPR levels of treatment. MF may follow the BAC as well to reduce the potential for solids carryover. Current assumption is that ozone will be generated using the oxygen supplied from the Warren Facility's existing infrastructure.		7/1/2022
6.		Boron concentrations in the Warren Facility effluent are 0.88 and 1.1 mg/L, median and maximum, respectively. The largest contribution of boron to the Warren Facility has been attributed to industrial discharges in the collection system, specifically waste discharges from oilfields.	CPSR Appendix E Section 1.0	1/3/2022

Phase 1 AWT Data Needs Matrix Populated 01082024.docx

7.	Phasing of improvements (for delivery quantities, meeting OC Basin nitrate requirements, meeting DPR requirements, etc.)	The presence of boron in the secondary effluent from the Warren Facility at levels exceeding the Main San Gabriel groundwater basin plan limit of 0.5 mg/L may require either source control or treatment for boron removal at the AWT Facility. Treatment can be accomplished using ion-exchange processes. Options exist relative to the resin employed. The current approach is to assess the basin's assimilative capacity compared to boron levels in the recycled water. The preliminary findings are that no separate treatment is required. There will be 2 phases for the planned improvements. • Phase 1: 115 mgd of IPR AWT capacity and associated conveyance systems (pumping stations and pipelines) from the Warren Facility		12/01/2023
	(Metropolitan to review and update)	 (Joint Plant Site - FORCO) to the Santa Fe spreading basins with diversion feeders to transport product water to the Rio Hondo spreading basins. 25 MGD of IPR treated water will be further treated to DPR level at either Weymouth WTP or a satellite facility. Phase 2: Additional 35 mgd of IPR and 150 MGD of DPR-level treatment at the Joint Plant Site. See Appendix C for AWTP construction phasing site plan and Appendix H for AWPF Construction Schedule. 		
8.	Variation in plant operations to accommodate varying basin capacity (rain events, maintenance?)	Spreading basin routine maintenance is not expected to impact AWT operations. The basins will be on a rotation such that the capacity for infiltration is kept at a nearly constant rate. During rain events, if the spreading basins are unavailable, product water flow will be diverted to a gravel pit for storage and groundwater recharge via spreading or injection. Excess flow will be pumped back into the system when spreading capacity becomes available.		1/3/2022
9.	New/modified upstream treatment facilities?	LACSD is considering modifying a portion of their bioreactor modules at the Warren Facility to nitrifying-denitrifying process modules and adding sidestream centrate treatment in future. (see #4)		12/6/2021
10.	Project Operational Year(s)	Phase 1 – 2032 (115 MGD) Phase 2 – 2036 (150 MGD-total)		1/3/2022
		CONSTRUCTION PHASE		
11.	Will there be pile driving? If so, where and for what duration?		Available LACSD geotech reports reviewed	1/3/2022
12.	Depth/quantities of excavation/fill Hazardous waste topsoil removal FORCO Update : Metropolitan met with LACSD to get an update on FORCO site activities. Psomas completed a survey. Additional geotechnical and surveying services may not be needed. Assuming 110,000 cubic yard of earth volume may need to be disposed to landfill; disposal cost estimated at \$17M. Contour map is also available. Weekly status meeting notes – 12/14/21	 also permits the siting of facilities to balance the cut and fill to an extent and thereby minimize import or export of soils. There would be the importation of aggregate base materials for all structures. Quantities of excavation and aggregate importation are: Excavation for structures (estimate from Stantec's BIM model) 552,000 cubic yards; (includes construction quantities related to oil well abandonments at the Joint Plant Site; see Appendix J) 	Quantity take-offs from Stantec's Environmental Planning BIM model and LACSD's input for contaminated soil volume	12/01/2023
13.	Hazardous materials remediation plan	This will be part of the design process whether by Metropolitan or by LACSD.		7/1/2022
14.	Utility relocation needs, if any (CPSR p. 4-7)	An 8" gas line will be abandoned.	From Stantec's BIM	12/01/2023

			model	
15.	Estimated number of construction workers per day	Average estimated workers per day including Contractor mgmt. staff, trade craftsman, CM staff, Designer & Owner staff – 250 to 300 /day. Peak will be 560 – 620 / day. The construction activities are expected to continue for the remaining 85 MGD of capacity while the first 30 MGD worth of infrastructure is being commissioned (see Attachment H - Construction Schedule)	Carollo CM SME	1/3/2022
16.	Estimated number of construction worker vehicle trips per day	590 - 680 trips / day* - Typical worker ride share Will depend on greater carpooling needs due to timing of 2028 Olympics.	Carollo CM SME	1/3/2022
	Will there be weekend or nighttime construction? If nighttime or weekend requirements, type of expected construction.	Yes, the typical weekend work limited to concrete sandblasting to prepare for adjacent pours, materials movements to prepare for Monday work tasks. Nighttime work limited to "tie-ins" only.	Carollo CM SME	1/3/2022
18.	Construction staging area and storage location(s)	Staging area should include areas for Field Offices – all parties, immediate Contractor mgmt. staff parking, CM staff parking, Designer & Owner staff parking.	Carollo CM SME	12/01/2023
		Storage area for "ConEx" boxes for every trade, "heavy machinery", major materials deliveries (wood, steel, electrical cable, piping, valves, misc. metals, process equipment, electrical gear, etc.), tools & supplies storage		
		Plus – Day Staging areas immediately adjacent to structures for materials & tools storage for each trade.		
		Location: There are approximately 5 acres available for staging and storage at the southwest corner of the site where future DPR facilities will be located; see Appendix B for the site layout.		
19.	Construction worker vehicle parking	Additional area for worker parking - rental of off-site parking areas such as local church parking lots or other interim use facilities. There is an area immediate north of the proposed site just beyond the railroad tracks owned by LACSD that may be a candidate site.	Carollo CM SME	1/3/2022
20.	Power Supply (generators?)	Power supply from existing adjacent plant switchyard could provide power for the Field Office complex provided by Owner. Separate power supply / distribution systems will be required for the Construction Temporary Power. A Contractor distribution system will be required for construction through-out project site by Contractor.	Carollo CM SME	1/3/2022
	Temporary Lighting (main-powered or generator- powered)	Temporary lighting provided by Contractor from Construction Temporary Power distribution system required for construction throughout project site.	Carollo CM SME	1/3/2022
22.	Water Supply (hydrants? water trucks?)	Water Supply systems – potential separate potable and recycle water systems. Potable water distribution systems for the Field Office complex provided by Owner initially - Construction Temp. For environmental assessment assume a new, separate connection to the nearest potable supply for AWT. Non-potable water distribution system required for construction through-out project site by Contractor in purple pipe for dust control during excavations, grading, trenching and backfill operations. Non-potable water provided by Owner, free or at cost.	Carollo CM SME	1/3/2022
	Maximum number of daily one-way haul truck trips due to material transportation (e.g., off-haul/disposal, supplies, material); type of trucks; estimated distance, clear delineation of daily maximum trips separated by demolition waste and clean excavation disposal materials types.	25 one-way haul trips minimum, up to 50 trips on concrete pour days. Does not include demolition or excavation trips. Type of trucks – commercial, 20 ' long bed, flat bed Type of trucks – concrete delivery trucks Distance – TBD nearest concrete plant	Carollo CM SME	1/3/2022
	Volume of any material imported/exported, including demolition waste (asphalt/concrete, soils, hazardous soils, slurry, steel/metals) and clean construction materials (concrete, pipeline segments, rebar, base material/sand/gravel, etc.).	 Per Stantec's BIM model, Volume of mass excavation is 552,000 cy. Volume of structural excavation is 99,000 cy. 	Carollo CM SME	12/01/2023
25.	Plans for recycling of materials as applicable (need % diverted), otherwise we use state default	Soil volume to be used in structural backfill is approx. 155,000 cy, as explained in row 12.	Carollo CM SME	12/01/2023

20	l1 s tl	ocations for ingress to/egress from construction site. f any temporary changes to the local street striping/traffic flow will be implemented, describe hose (description can be general for program-level analysis).	Total of six entry/e	xit points to the site: five on Main St. and one on Lomita Bly	/d.; see Appendix C .			7/1/2022
27	7. C	Disposal location for construction debris	Scholl Canyon Lar	ndfill or others of contractor's choice				1/3/2022
		Construction Phase	Start and End Dates (or number of days/ weeks/months)		Haul or Material Truck Loads (in cy or truckloads)	Truck Travel Distance (in miles)		
28	F P D S	Demolition of Existing LACSD Warehouse Bldg. with Storm Detention Basin and Pilot Testing facility. Existing adjacent research area to remain and subject to	21 working days	Model CAT 320 Excavator @ 160 hp x 21 days Model CAT 980G Loader @ 300 hp x 21 days 10 CY End Dump Materials Truck x 21 days x 8 hrs. Model CAT 320 Excavator @ 160 hp x 21 days Model CAT 980G Loader @ 300 hp x 21 days 10 CY End Dump Materials Truck x 21 days x 8 hrs. day	Materials: 4 trips /day x 10 cy / trip x 25 trucks = 1,000 cy / day Haul off Demo Materials: 4 trips /day x 10 cy / trip x 4 trucks = 160 cy / day	60 miles / trip assume Scholl Canyon landfill 20 miles / 1-way or 40 miles / trip assume Scholl	Carollo CM SME	12/01/2023
29). L s r	Enhancements Utility relocation: Assume potential unidentified subsurface structures or utilities are found requiring emoval and/relocation. Removal & capping back to POC @ property line of any such subsurface nterferences. (21 days)	36 working days for tie-in	Model CAT 320 Skid Loader w/ bucket @ 75 hp 8 hrs. / day	No Haul – dig & backfill same trench	None	Carollo CM SME	12/01/2023
30	C - -	Clear and grub of entire remaining site - The general site area is 56 acres Half of site requires clear & grub of 1 foot depth = ,220,000 sf of area = 45,185 cy		Model CAT 933 Track Loader @ 70 hp x 42 days Model CAT 320 Excavator @ 160 hp x 42 days Model CAT 980G Loader @ 300 hp x 42 days 10 CY End Dump Materials Truck x 42 days x 8 hrs.	Materials: 4 trips /day x 10 cy / trip x 25 trucks = 1,000 cy / day	30 miles / 1-way or 60 miles / trip assume Scholl Canyon landfill	Carollo CM SME	12/01/2023

		Foundation and below grade infrastructure for Phase 1 Mass Excavation & Haul Off: Assume 552,000 cy of excavation / haul off @ rate of 1880 cy / day for Phase 1. (Amount remaining onsite is 552,000 – 110,000 = 442,000 cy). Stantec performed soil cut-fill balance to eliminate the need to haul off any excess non- contaminated soil (442,000 cy) from the site. This soil will still need to be moved within the site i.e. to fill some areas with the soil excavated from the other area.		 (3) Model CAT 420 Excavators @ 128 hp x 154 days (2) Model CAT 631E Scrappers @ 490hp x 154days (2) Model 980G Loader @ 300 hp x 154 days (4) 4,000-Gal Water Truck @ 300 hp x 8 hrs / day 10 CY End Dump Materials Truck x 154 days x 8 hrs. 	Materials: 40 trips /day x 10 cy / trip x 8 trucks = 3,200 cy / day	Assuming longest drive on site is 0.5 miles, at a speed of 5 mph to keep dust down, should take 12 minutes per round trip of 1 mile. This allows 40 trips per day.	Carollo CM SME	12/01/2023
	,	Assume 20% requires Class II landfill disposal Kettleman Hills Hazardous Waste Facility 200 miles/1 way (110,000 cy.) 400 miles/round trip (rt)	154-50+128 = 232 workings days @ 8 hrs/day	Model CAT CS-323C Compactor @ 80hp x 8hrs / day Model CAT 426 Backhoe @ 84 hp x 154 days Model CAT 135 Motor Grader @ 155 hp @ 102 days 4,000-Gal Water Tuck @ 300 hp x 8 hrs / day	Landfill disposal 1 trip/day x 10 cy / trip 47 trucks = 470 cy / day	xAssuming that with the 400 mile round trip, only one trip can be made per day.		
-		Structural Excavation and Foundation Preparation after mass excavation for Phase 1.	@ 8 hrs./ day	Model CAT CS-323C Compactor @ 80hp x 8hrs / day Model CAT 426 Backhoe @ 84 hp x 140 days Model CAT 135 Motor Grader @ 155 hp @ 140 days 4,000-Gal Water Tuck @ 300 hp x 8 hrs / day				12/01/2023
	33.	Yard Piping (Dig/Lay/Backfill) for Phase 1	Assume 195 days @ 8 hrs./ day	Model CAT 320 Excavator @ 160 hp x 8 hrs. Model CAT 980G Loader @ 300 hp x 8 hrs. (2) 10 CY End Dump Materials Truck x 8 hrs. day				12/01/2023

34.	Process Equipment Set and Above-grade AWT facilities/equipment and site improvements for Phase 1		Model CAT 320 Excavator @ 160 hp x 8 hrs.	
	(rough grading _ north to south)	days @ 0 ms./ day	(2) Model CAT 980G Loader @ 300 hp x 8 hrs.	
		Note: duration is	(4) 10 CY End Dump Materials Truck x 8 hrs. day	
		split in several activities in	(2) Model CAT CS-323C Compactor @ 80hp x 200 days x 8hrs / day	
		schedule such as	Model CAT 426 Backhoe @ 84 hp x 300 days	
		concrete	(3) Model CAT TH63 Telescopic Handlers @ 101 hp X 400 days x 8 hrs / day	
		structures, process equipment & electrical gear	Model Link-Belt 60 Ton RTC-8065 Wheel Crane @ 225hp x 400 days x 8 hrs / day	
			Model Manitowoc MLC650 400Ton Crawler Crane @ 600hp x 300 days x 8 hrs /day	
			(4) 4,000-Gal Water Tuck @ 300 hp x 8 hrs / day	
35.	Paving – 420,000 sf for 30 MGD			Asphalt delivery to site
		day = 120 days @ 8 hrs. / day	Model CAT AP1000B Asphalt Paver @ 225 hp @ 120 days	Materials delivery 4 trips/day x 10
		o ms. / day	(2) Model CAT CS-323C compactors @ 80 hp x 120 days	cy/trip x 10 trucks
			10 CY End Dump Materials Truck x 120 days x 8 hrs. / day.	
			4,000-Gal Water Tuck @ 300 hp x 8 hrs / day	
36.	Paving – 40,000 sf for 85 MGD			Asphalt delivery to site
		day = 40 days @ 8	Model CAT AP1000B Asphalt Paver @ 225 hp @ 40 days	Materials delivery: 4 trips/day x 10
		hrs. / day	(2) Model CS-323C compactors @ 80 hp x 40 days	cy/trip x 10 trucks
			10 CY End Dump Materials Truck x 40 days x 8 hrs. / day.	
			4,000-Gal Water Tuck @ 300 hp x 8 hrs / day	
37.	Architectural coatings (Roofing and Exterior Cladding) for Phase 1		Model Link-Belt 60 Ton RTC-8065 Wheel Crane @ 225hp x 400 days x 8 hrs / day	
			Model CAT TH63 Telescopic Handlers @ 101 hp x 400 days x 8 hrs / day	
38.	Power substation	Assume 356 days	Model CAT 320 Excavator @ 160 hp x 356 days x 8 hrs.	
		@ 8 hrs./ day	Model CAT 426 Backhoe @ 84 hp x 356 days	
			Model CAT TH63 Telescopic Handlers @ 101 hp X 200 days X 8 hrs / day	
			Model Link-Belt 60 Ton RTC-8065 Wheel Crane @ 225hp x 200 days x 8 hrs / day	
			4,000 Gal Water Tuck @ 300 hp x 8 hrs / day	
			OPERATIONS PHASE	· · · · · · · · · · · · · · · · · · ·
39.	Height and materials of structures	Dimensions provid	led in Appendix D .	

From Stantec's BIM 12/01/2023 model		
model From Stantec's BIM T2/01/2023 T2/01/2023 T2/01/2023 T2/01/2023 T2/01/2023		12/01/2023
model		12/01/2023
		12/01/2023
		12/01/2023
7/1/2022		12/01/2023
7/1/2022		
		7/1/2022

40.	General design characteristics (architecture/coatings, lighting, landscaping/screening)	Typical of industrial design, neutral coatings, controlled lighting and fully landscaped at perimeter.		7/1/2022
41.	Preferred site access- employee parking and emergency vehicle access	AWTP will have six entrances/exits (see Appendix C). The preferred employee site access will be from Main St and the emergency exit is on Lomita Blvd. Parking Spaces P1 and P3 are for Metropolitan staff and P2 will be shared by Metropolitan staff and visitors.		12/01/2023
42.	Total footprint/acreage of new paved/impervious areas	30.2 acres	From Stantec's BIM model	1/3/2022
43.	Measures for detention/treatment of stormwater runoff	Stormwater runoff will be captured and recycled to the Warren Facility for treatment. BMPs for capture and initial storage to be employed. See Appendix I – Stormwater Runoff Quantities TM		1/3/2022
44.	AWT equipment types with typical operating data/characteristics	See Appendix E	From Stantec's BIM model	1/27/2023
45.	Estimated number of operations employees	See Appendix G for the basis of staffing estimates.	Reference Plant with adjustment (OC GWRS) –	1/27/2023
			Pro-rated *Lab per MWD	
46.	Employee shifts per day when plant is in operation	See Appendix G.	Reference Plant with adjustment (OC GWRS)	1/27/2023
47.	Number of employees per shift	See Appendix G.		1/27/2023
<mark>48.</mark>	Estimated number of vehicle trips per day/week/month (project operation)	Worst case – each employee (127 staff - work commute) + 10 visitors= 137 round-trips/day (x's 5 per week / x's 20 per month)		<mark>1/27/2023</mark>
49.	Average trip distance (miles) for employees (project operation)	Employee work commute: 9.1 miles time 2 (each way) = 18.2 miles/per employee	SCAG LA County 2012 - 2016	1/3/2022
50.	Deliveries of materials, supplies or equipment (quantities, frequency)	Summary of chemical deliveries attached (Appendix F).		1/27/2023
51.	Will chemicals delivery occur on a 24/7 basis or weekday daytime only?	Assume 24/7 – worst case for noise relative to neighbors Assume 8 am to 5 pm – worst case for travel disruption	Worst case	1/3/2022
52.	Standby Generator(s) (expected sizing, fuel types, and locations) - Please provide frequency of testing and how often it will be used on a yearly basis.	Seven 4-MW diesel engine generators Operate - 1 hr/wk		1/3/2022
53.	Methane CoGen systems (size, number, location)?	There is no methane generated by these facilities.		1/3/2022
54.	Grid intertie power substation requirements and location(s)	To be determined during design.		1/3/2022

55.	Other operating equipment that generates emissions	No equipment with combustion emissions are planned.		1/27/2023
		The biological processes will emit carbon and nitrogen compounds.		
56.	HVAC equipment requirements and locations	See Appendix K.	Footprints based on input from Metropolitan/LACSD and as incorporated in the Stantec's BIM model	
57.	Air handling systems size and location for treatment	See Appendix K.	Based on building volumes and occupancy	12/01/2023
58.	Treatment systems for odor emissions (if applicable)	If the FORCO site is used for secondary treatment (e.g., sMBR) plus AWT, the primary effluent pump station and aeration tanks are to be covered and off-gas treated	LACSD's JTAP Reports	1/3/2022
		PE pump station – 430,000 scfm – bio trickling filter + activated carbon adsorption		
		Bioreactors – 262,000 scfm – activated carbon adsorption		
		The potential for release and treatment of other gaseous emissions including toxics and GHGs to be assessed.		
59.	Please provide annual electricity for pumps and facility.	See Appendix E		1/27/2023
60.	Any alternative energy generation (e.g., solar)?	1.5 MW of onsite solar power generation using approximately 11 acres of PV panels (buildings, parking, etc.).		12/01/2023
61.	Flares for excess methane emission disposal and estimates for usage of flares (if applicable)	Not applicable.		1/3/2022
62.	Annual natural gas use	Not applicable		1/3/2022
63.	Maintenance/replacement activities and frequency	 Major system replacement items and interval PROCESS – INTERVAL - NUMBER MBR membranes – 10 yrs – 40,250 elements MF modules – 10 years – 3,530 modules RO cartridge filter – 0.5 years – 589 cartridges RO elements (Stage 1 & 2) – 5 years – 16,490 elements RO elements (Stage 3) – 1 year – 5,370 elements UV lamps – 1.6 years – 3,140 lamps UV ballasts – 5 years – 1,610 ballasts 	Based on updated estimates	1/27/2023
64.	List of chemicals to be used, quantities to be stored, delivery methods, and BMPs for transportation/storage/handling/disposal	See Appendix D – Chemical Quantities and Deliveries		1/27/2023
65.	Disposal of waste materials (rough quantities of hazardous/non-hazardous, disposal location)	Two 30-gallon drums of laboratory waste per month to be disposed per regulations.		1/3/2022
66.	Please indicate what SCAQMD air pollutant permits are required for project components.	Pending report from LACSD.		1/3/2022

67.	Overall throughput, amount of water to be injected into the ground and available for direct potable reuse.	115 MGD of IPR	nput from Metropolitan staff	1/27/2023
68.	SCAQMD Rule 402 prohibits public nuisances related to odors. Please describe if the emergency storage basin would result in a public nuisance related to odors.	Emergency storage would be for product water. The quality of this water is equivalent to fresh potable supplies. No odor related issues envisioned.		1/3/2022
		TECHNICAL INFORMATION		
69.	Geology/Soils Report	Existing reports available from LACSD; new geotechnical report currently under development and will be available by mid-August.		7/1/2022
70.	Hazardous Materials (Phase 1 ESA, Phase 2, Remedial Action Plan, etc.)	To be developed during design.		7/1/2022
71.	Conceptual grading/site plan/water quality BMPs	The site grading will provide for the capture of all site runoff associated with rainfall. Collected runoff from the process area will be pumped to the Warren Facility for treatment and rest can be infiltrated/reused, if desired. See Appendix I for stormwater runoff quantities.		1/27/2023
72.	Municipal Water Demand and Supply	Potable water to be provided for consumption, safety showers, sprinklers, and fire hydrants. Lab, warehouse, and maintenance shop will also require potable water service.		1/3/2022
73.	Wastewater Generation	 Waste sidestream generated will be returned to the Warren Facility. These include: Waste activated sludge RO concentrate Waste chemicals (associated with biological treatment, membrane cleaning and product water conditioning) 		1/3/2022
74.	Solid Waste Generation and Disposal	1,100 lbs./day	CalRecyle – Industrial 8.93 Ibs./day/employee	1/3/2022
75.	Data Network/Communication Backbone	Communication infrastructure to be constructed connecting plant and conveyance to Metropolitan's network and SCADA system. Also, separate communication system to be installed for coordination with LACFCD to provide the means for monitoring/reporting related to groundwater recharge status.		7/1/2022

* Typical construction equipment may include backhoe, dozers, scrapers, compactors, track hoe, trencher, loader, roller, cranes, heavy trucks

Appendices

- A: Process Flow Diagram
- B: Site Plan
- C: AWTP Construction Phasing Site Plan
- D: Structures Dimensions
- E: AWTP Equipment Electrical Load List
- F: Chemical Quantities and Delivery
- G: Basis for O&M Staffing Estimates
- H: Construction Sequencing Schedule
- I: Stormwater Runoff Quantities TM
- J: Joint Plant Site Oil wells Well Abandonment Considerations TM
- K: HVAC Power Requirements for Different Structures at the AWPF

Phase 2 AWT Implementation 35 MGD Additional IPR + 150 MGD DPR Capacity

DATA NEEDS MATRIX

N/C		GENERAL PROJECT INFORMATION
	Site Location-FORCO or alternate site?	N/C
2.	Summary of major operating components	N/C
	Site configuration - acres/dimensions (site plan for major operating components, including heights/depths)	See Appendices B, C and D
	Improvements needed at Warren Facility (flow equalization, centrate treatment, source control, brine handling, etc.)	N/C
5.	Treatment train description	N/C
	Boron management approach (CPSR p. 4-5); treatment at Warren Facility site or satellite treatment facility (CPSR p. 9-5)	N/C
	Phasing of improvements (for delivery quantities, meeting OC Basin nitrate requirements, meeting DPR requirements, etc.)	N/C
	Variation in plant operations to accommodate varying basin capacity (rain events, maintenance?)	N/C
9.	New/modified upstream treatment facilities?	N/C
10.	Project Operational Year(s)	N/C
		CONSTRUCTION PHASE
	Will there be pile driving? If so, where and for what duration?	N/C

Phase 2 AWT Data Needs Matrix Populated 01082024.docx

DATA SOURCE/ CITATION	NEEDED BY
(document/ page)	
	12/6/2021
	12/6/2021
From Stantec's BIM model	1/3/2022
	1/3/2022
	7/1/2022
	1/3/2022
	1/3/2022
	1/3/2022
	12/6/2021
	1/3/2022
Available LACSD geotech reports reviewed	1/3/2022

12.	Depth/quantities of excavation/fill Hazardous waste topsoil removal FORCO Update : Metropolitan met with LACSD to ge an update on FORCO site activities. Psomas completed a survey. Additional geotechnical and surveying services may not be needed. Assuming 31,000 cubic yard of earth volume may need to be disposed to landfill; disposal cost estimated at \$3.0M. Contour map is also available. Weekly status meeting notes – 12/14/21	 There is pumping to and from the AWT allowing for flexibility in the establishment of the hydraulic grade line through the processes. This also permits the siting of facilities to balance the cut and fill to an extent and thereby minimize import or export of soils. There would be the importation of aggregate base materials for all structures. Quantities of excavation and aggregate importation are: Excavation for structures (estimate from Stantec's BIM model) 154,000 cubic yards Aggregate base materials – 7,000 tons (7,000 cubic yards x 1 ton/cubic yard) [The depth of excavation is generally assumed to be one (1) foot below the depth of structures as shown on structural dimensions, with greatest depth at approximately 30 feet below grade surface(bgs). The approximate quantity of mass excavation is 149,000 cy., of which an estimated 20% (31,000 cy.) is assumed to be contaminated and is to be disposed of at a Class II landfill such as Kettleman Hills Hazardous Waste Facility. Of the soil remaining after this disposal, 35% (43,000cy.) is to be used as structural backfill. 	Quantity take-offs from Stantec's Environmental Planning BIM model and LACSD's input for contaminated soil volume	12/01/2023
13.	Hazardous materials remediation plan	N/C		7/1/2022
14.	Utility relocation needs, if any (CPSR p. 4-7)	One major utility will require relocation prior to development of the FORCO site: The 10' x 12' concrete box stormwater drain will be relocated to the south end of the site (see layout) paralleling the property boundary thereby avoid bisecting of the proposed site.	From Stantec's BIM model	12/01/2023
15.	Estimated number of construction workers per day		Carollo CM SME	1/3/2022
	Estimated number of construction worker vehicle trips per day	320 - 390 trips / day* - Typical worker ride share Dependent if greater carpooling is required due to timing of 2028 Olympics.	Carollo CM SME	1/3/2022
17.	Will there be weekend or nighttime construction? If nighttime or weekend requirements, type of expected construction.	N/C	Carollo CM SME	1/3/2022
18.	Construction staging area and storage location(s)	N/C	Carollo CM SME	1/3/2022
19.	Construction worker vehicle parking	N/C	Carollo CM SME	1/3/2022
20.	Power Supply (generators?)	N/C	Carollo CM SME	1/3/2022
21.	Temporary Lighting (main-powered or generator- powered)	N/C	Carollo CM SME	1/3/2022
22.	Water Supply (hydrants? water trucks?)	N/C	Carollo CM SME	1/3/2022
	Maximum number of daily one-way haul truck trips due to material transportation (e.g., off- haul/disposal, supplies, material); type of trucks; estimated distance, clear delineation of daily maximum trips separated by demolition waste and clean excavation disposal materials types.	N/C	Carollo CM SME	1/3/2022
24.	Volume of any material imported/exported, including demolition waste (asphalt/concrete, soils, hazardous soils, slurry, steel/metals) and clean construction materials (concrete, pipeline segments, rebar, base material/sand/gravel, etc.).	 Per Stantec's BIM model, Volume of mass excavation is 154,000 cy Volume of structural excavation is 28,000 cy. 	Carollo CM SME	12/01/2023
25.	Plans for recycling of materials as applicable (need % diverted), otherwise we use state default	Volume of structural backfill is approx. 43,000 cy, 35% of total exported materials	Carollo CM SME	12/01/2023

26.	Locations for ingress to/egress from construction site. If any temporary changes to the local street striping/traffic flow will be implemented, describe those (description can be general for program- level analysis).	N/C					7/1/2022
27.	Disposal location for construction debris	Scholl Canyon Lan	dfill or others of contractor's choice				1/3/2022
	Construction Phase	Start and End Dates (or number of days/ weeks/months)	Equipment Used (Types and Quantities, incl. hp and hours/day) *	Haul pr Material Truck Loads (in cy or truckloads)	Truck Travel Distance (in miles)		
28.	Work Items are not applicable in the Phase 2 Demolition / Removal of existing site features? Paving: The general site area is 56 acres (max)					Carollo CM SME	02/17/2023
29.	Utility relocation Storm Drain diversion and connection (15 days)					Carollo CM SME	02/17/2023
30.	Work Items are not applicable in Phase 2 Remediation/site preparation – Clear and grub of entire remaining site					Carollo CM SME	02/17/2023
31.	Structural Ex. & Haul Off & Foundation Prep Mass Excavation & Haul Off: Amount needing to be moved within site 154,000 - 31,000 = 123,000 cy over 165 days. Assume 20% requires Class II landfill disposal Kettleman Hills Hazardous Waste Facility 200 miles/1 way (31,000 cy.) 400 miles/round trip (rt)	Assume 165 working days @ 8 hrs. / day Assume 32 + 60 = 92 working days @ 8 hrs / day	Model CAT CS-323C Compactor @ 80hp x 8hrs / day Model CAT 426 Backhoe @ 84 hp x 165 days Model CAT 135 Motor Grader @ 155 hp @ 165 days 4,000-Gal Water Tuck @ 300 hp x 8 hrs. / day	Materials: 40 trips /day x 10 cy / truckload x 2 trucks = 800 cy / day Landfill disposal 1 trip/day x 10 cy / trip x 34 trucks = 340 cy / day	Assuming longest drive on site is 0.5 miles, at a speed of 5 mph to keep dust down, should take 12 minutes per round trip of 1 mile. This allows 40 trips per day. Assuming that with the 400 mile round trip, only one trip can be made per day.		12/01/2023
32.	Yard Piping	Assume 140 days @ 8 hrs./ day	Model CAT 320 Excavator @ 160 hp x 140 days x 8 hrs. Model CAT 980G Loader @ 300 hp x 140 days x 8 hrs. 10 CY End Dump Materials Truck x 140 days x 8 hrs. day				12/01/2023

33.		@ 8 hrs./ day	Model CAT 320 Excavator @ 160 hp x 8 hrs.		12/01/2023
			(1) Model CAT 980G Loader @ 300 hp x 8 hrs.		
			(2) 10 CY End Dump Materials Truck x 8 hrs. day		
			(1) Model CAT CS-323C Compactor @ 80hp x 240 days x 8hrs / day		
			Model CAT 426 Backhoe @ 84 hp x 300 days		
			(1) Model CAT TH63 Telescopic Handlers @ 101 hp X 240 days x 8 hrs. / day		
			Model Link-Belt 60 Ton RTC-8065 Wheel Crane @ 225 hp x 240 days x 8 hrs. / day		
			(1) 4,000-Gal Water Tuck @ 300 hp x 8 hrs. / day		
34.	Paving – 58,000 sf		Model CAT 135H Motor Grader@155 hp x 20 days Asphalt delivery to site	From Stantec's BIM model	12/01/2023
		/ day	Model CAT AP1000B Asphalt Paver @ 225 hp @ 20 days Materials delivery 4 trips/day x 10		
			(2) Model CAT CO-525C compactors @ 60 mp x 20 days		
			10 CY End Dump Materials Truck x 20 days x 8 hrs. / day.		
			4,000-Gal Water Tuck @ 300 hp x 8 hrs. / day		
35.	Architectural coatings (Roofing and Exterior Cladding)	Assume 60 days @ 8 hrs./ day	Model Link-Belt 60 Ton RTC-8065 Wheel Crane @ 225 hp x 60 days x 8 hrs. / day		12/01/2023
	(adding)	o mo./ day	Model CAT TH63 Telescopic Handlers @ 101 hp X 8 hrs. /		
			day		
36.	Power substation - Constructed in Phase 1 (during				02/17/2023
	the first 30 MGD construction)				
		_	OPERATIONS PHASE		
37.	Height and materials of structures	See Appendix D	e Appendix D		7/1/2022
38.	General design characteristics (architecture/coatings, lighting, landscaping/screening)	N/C			7/1/2022
39.	Preferred site access- employee parking and emergency vehicle access	N/C			1/3/2022
40.	Total footprint/acreage of new paved/impervious areas	N/C		From Stantec's BIM model	1/3/2022
41.	Measures for detention/treatment of stormwater runoff	N/C			1/3/2022
42.	AWT equipment types with typical operating data/characteristics	See Appendix E		From Stantec's BIM model	1/3/2022

43.	(additional employees for Phase 2 on top of Phase 1)		Reference Plant with adjustment (OC GWRS) – Pro-rated *Lab per MWD	1/3/2022
44.	Employee shifts per day when plant is in operation		Reference Plant with adjustment (OCWD's GWRS)	1/3/2022
45.	Number of employees per shift (additional employees on top of Phase 1)	See Appendix G.		1/27/2023
<mark>46</mark> .	Estimated number of vehicle trips per day/week/month (project operation) – Additional trips on top of Phase 1	Worst case – each employee (67 staff - work commute) = 67 round-trips/day (x's 5 per week / x's 20 per month)		<mark>1/3/2022</mark>
47.	Average trip distance (miles) for employees (project operation)		SCAG LA County 2012 - 2016	1/3/2022
48.	Deliveries of materials, supplies or equipment (quantities, frequency)	Summary of deliveries attached (Appendix F).		1/3/2022
49.	weekdev devtime enly?	Assume 24/7 – worst case for noise relative to neighbors Assume 8 am to 5 pm – worst case for travel disruption	Worst case	1/3/2022
50.	Standby Generator(s) (expected sizing, fuel types, and locations) - Please provide frequency of testing and how often it will be used on a yearly basis.	One additional 4-MW generator for Phase 2.		1/3/2022
51.	Methane Cogen systems (size, number, location)?	N/C		1/3/2022
52.	Grid intertie power substation requirements and location(s)	N/C		1/3/2022
53.	Other operating equipment that generates emissions	N/C		1/3/2022
54.	HVAC equipment requirements and locations	N/C		1/3/2022
55.	Air handling systems size and location for treatment		Based on building volumes and occupancy	1/3/2022
56.	Treatment systems for odor emissions (if applicable)		LACSD's JTAP Reports	1/3/2022
57.	Please provide annual electricity for pumps and facility.	See appendix for equipment and loads (Appendix E)		1/3/2022
58.	Any alternative energy generation (e.g., solar)?	N/C		1/3/2022

59.	Flares for excess methane emission disposal and estimates for usage of flares (if applicable)	Not applicable.		1/3/2022
60.	Annual natural gas use	Not applicable		1/3/2022
61.	Maintenance/replacement activities and frequency		Brand on updated estimates	1/27/2023
		• UV ballasts – 5 years – 490 ballasts		
62.	List of chemicals to be used, quantities to be stored, delivery methods, and BMPs for transportation/storage/handling/disposal	See Appendix D – Chemical Quantities and Delivery		1/27/2023
63.	Disposal of waste materials (rough quantities of hazardous/non-hazardous, disposal location)	No additional waste expected on top of Phase 1.		1/3/2022
64.	Please indicate what SCAQMD air pollutant permits are required for project components.	Pending report from LACSD		1/3/2022
65.	Overall throughput, amount of water to be injected into the ground and available for direct potable reuse.	e ground and available for direct potable		1/26/2023
66.	SCAQMD Rule 402 prohibits public nuisances related to odors. Please describe if the emergency storage basin would result in a public nuisance related to odors.	Emergency storage would be for product water. The quality of this water is equivalent to fresh potable supplies. No odor related issues envisioned.		1/3/2022
		TECHNICAL INFORMATION		
67.	Geology/Soils Report			7/1/2022
68.	Hazardous Materials (Phase 1 ESA, Phase 2, Remedial Action Plan, etc.)			7/1/2022
69.	Conceptual grading/site plan/water quality BMPs	N/C		1/3/2022
70.	Municipal Water Demand and Supply	N/C		1/3/2022
71.	Wastewater Generation	N/C		1/3/2022
72.	Solid Waste Generation and Disposal	1,150 lbs./day	CalRecyle – Industrial 8.93 Ibs./day/employee	1/3/2022

73.	Communication infrastructure to be constructed connecting plant and conveyance to Metropolitan's network and SCADA system separate communication system to be installed for coordination with LACFCD to provide the means for monitoring/reporting rela groundwater recharge status.

* Typical construction equipment may include backhoe, dozers, scrapers, compactors, track hoe, trencher, loader, roller, cranes, heavy trucks

Appendices

- A: Process Flow Diagram
- B: Site Plan
- C: AWTP Construction Phasing Site Plan
- D: Structures Dimensions
- E: AWTP Equipment Electrical Load List
- F: Chemical Quantities and Delivery
- G: Basis for O&M Staffing Estimates
- H: Construction Schedule
- I: Stormwater Runoff Quantities TM
- J: Joint Plant Site Oil wells Well Abandonment Considerations TM
- K: HVAC Power Requirements for Different Structures at the AWPF

n. Also, ated to	7/1/2022



APPENDIX L – CITY OF CARSON VMT THRESHOLD GUIDELINES

CITY OF CARSON

PLANNING COMMISSION

RESOLUTION NO. 22-XXXX

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF CARSON, CALIFORNIA, RECOMMENDING THE CITY COUNCIL ADOPT "VEHICLE MILES TRAVELED" THRESHOLDS OF SIGNIFICANCE FOR PURPOSES OF ANALYZING TRANSPORTATION IMPACTS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) AND FIND THAT THE ACTION IS EXEMPT FROM CEQA

WHEREAS, the California Environmental Quality Act Guidelines ("CEQA Guidelines") encourage public agencies to develop and publish generally applicable "thresholds of significance" to be used in determining the significance of a project's environmental effects; and

WHEREAS, CEQA Guidelines section 15064.7(a) defines a threshold of significance as "an identifiable quantitative, qualitative or performance level of a particular environmental effect, noncompliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant"; and

WHEREAS, CEQA Guidelines section 15064.7(b) provides that thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule, or regulations, developed through a public review process, and be supported by substantial evidence; and

WHEREAS, pursuant to CEQA Guidelines section 15064.7(c), when adopting thresholds of significance, a lead agency may consider thresholds of significance adopted or recommended by other public agencies provided that the decision of the lead agency to adopt such thresholds is supported by substantial evidence; and

WHEREAS, Senate Bill 743, enacted in 2013 and codified in Public Resources Code section 21099, required changes to the CEQA Guidelines regarding the criteria for determining the significance of transportation impacts of projects; and

WHEREAS, in 2018, the Governor's Office of Planning and Research ("OPR") proposed, and the California Natural Resources Agency certified and adopted, new CEQA Guidelines section 15064.3 that identifies vehicle miles traveled ("VMT") – meaning the amount and distance of automobile travel attributable to a project – as the most appropriate metric to evaluate a project's transportation impacts under CEQA. CEQA Guidelines section 15064.3 went into effect on July 1, 2020; and

WHEREAS, as a result, automobile delay, as measured by "level of service" and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA; and

EXHIBIT NO. 1

WHEREAS, on October 11, 2022, the Planning Commission conducted a duly noticed public hearing to consider the proposed VMT thresholds of significance attached hereto as Exhibit "A."

WHEREAS, having done so, the Planning Commission finds that proposed VMT thresholds of significance, are supported by substantial evidence. The proposed thresholds are consistent with OPR guidance. The process utilized the SCAG model, reflecting City baseline land use and transportation network to develop the VMT thresholds. This was largely completed through technical analysis using the model and spreadsheets and translated into transportation study guidelines; and

WHEREAS, the City's project review process will retain "level of service" analysis to ensure consistency with the General Plan.

NOW, THEREFORE, THE PLANNING COMMISSION OF THE CITY OF CARSON, CALIFORNIA, HEREBY RESOLVES AS FOLLOWS:

Section 1. The foregoing recitals are true and correct, and are incorporated herein as findings of fact.

<u>Section 2.</u> The adoption of new local CEQA VMT thresholds of significance for transportation impacts will not have a significant environmental impact and is exempt from the CEQA pursuant to Section 15308 of Title 14 of the California Code of Regulations because the action is undertaken by the City for the protection of the environment. The revised CEQA thresholds will be compliant with State law (SB 743) and will be used in a regulatory process (CEQA process) that involves procedures for the protection of the environment. Accordingly, the action is exempt from the environmental review requirements of CEQA pursuant to Section 15308 of Title 14 of the California Code of Regulations.

Section 3. The Planning Commission of the City of Carson hereby recommends that the City Council adopt the VMT thresholds of significance attached hereto as Exhibit "A."

Section 4. This decision of the Planning Commission shall become effective and final 15 days from the date of the action, in accordance with Section 9173.33 of the Zoning Ordinance, unless an appeal is filed within that time in accordance with Section 9173.4 of the Zoning Ordinance.

Section 5. The Secretary of the Planning Commission shall certify to the adoption of this Resolution.

APPROVED and **ADOPTED** this 11th day of October 2022.

ATTEST:

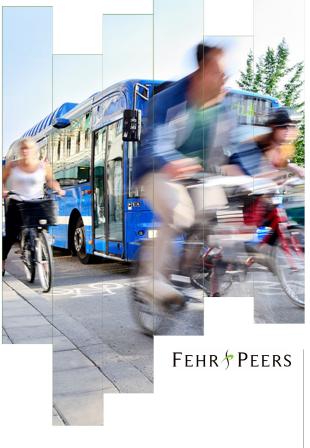
CHAIRPERSON

SECRETARY

EXHIBIT "A"

City of Carson VMT Baselines and Thresholds of Significance

[to be attached]



City of Carson SB 743 Implementation

Goals of SB 743

Shift in focus to better align with the following State goals:

- Reducing greenhouse gas (GHG) emissions
- Encouraging infill development
- Improving public health through increased active transportation

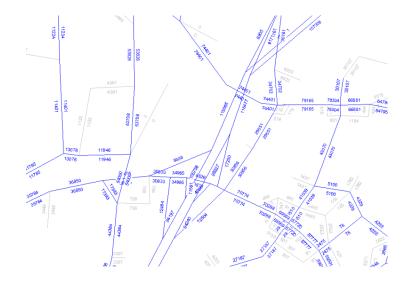
New criteria should promote:

- Development of multimodal transportation networks
- Diversity of land uses
- Ensure that the environmental impacts of traffic such as noise, air pollution, and safety concerns continue to be addressed and mitigated through CEQA

Implementation Decisions

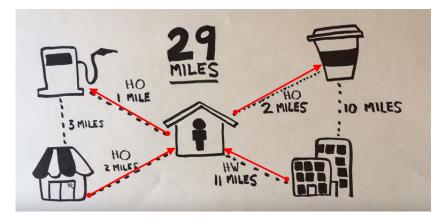
VMT Screening	 OPR screening options Project size, low VMT, TPA 	
VMT Methodology	• SCAG RTP/SCS Model • VMT per capita, or per employee	
VMT Impact Thresholds	• OPR guidance is 15% below regional average	
VMT Mitigation	Land use mix and densitiesTDM mitigation options	
Transportation Study Guidelines	• Does the City still want to study LOS or other metrics?	

New VMT Methodology

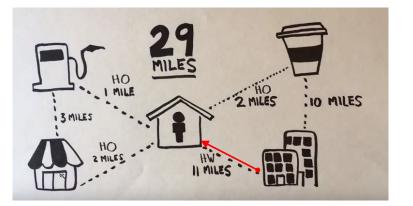


- •VMT = Volume x Distance or Trips x Trip Length
- •VMT data can be derived from the regional 2016 SCAG RTP/SCS Travel Demand Model

What is VMT? What VMT counts?

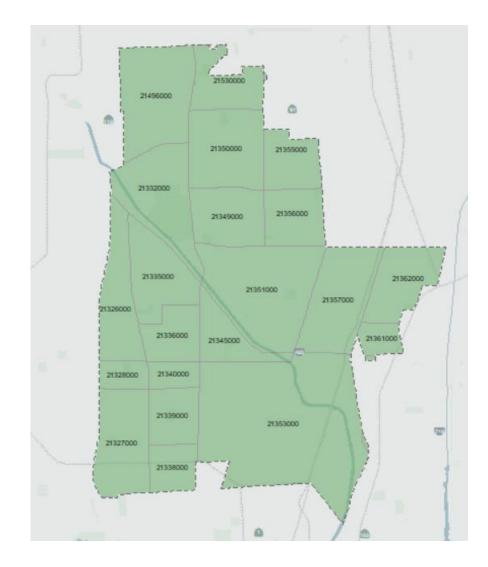


Residential Home-Based Generated VMT

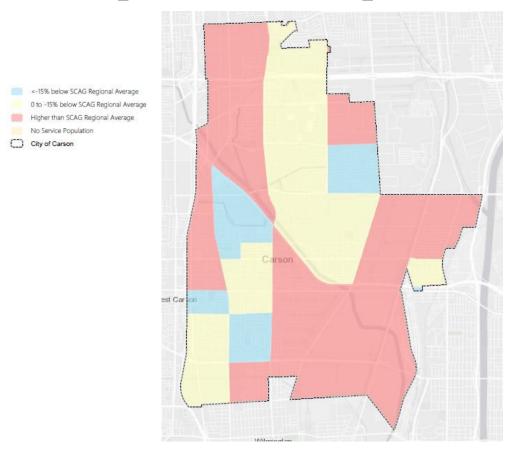


Office Home-Based Work Generated VMT

SCAG Model: Transportation Analysis Zones

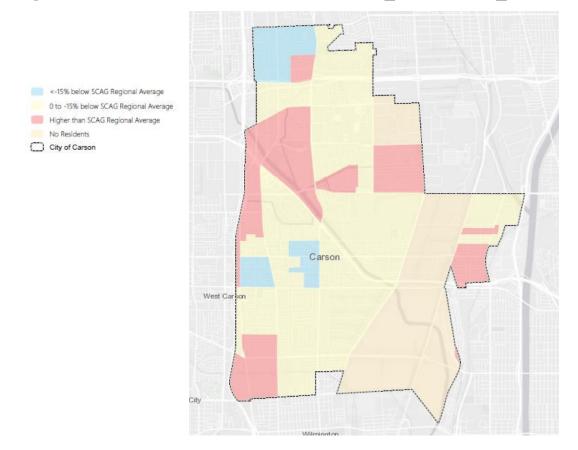


VMT Metrics Comparison to SCAG Average: Daily VMT per Service Population

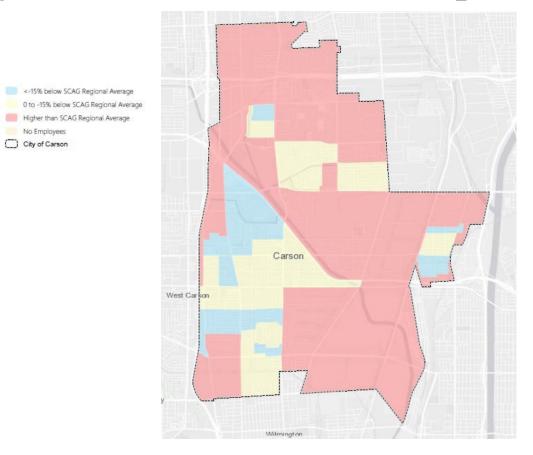


Includes Trucks

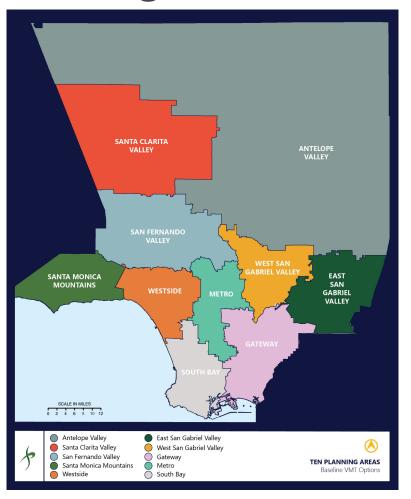
VMT Metrics Comparison to SCAG Average: Daily Home-Based VMT per Capita



VMT Metrics Comparison to SCAG Average: Daily Home-Based Work VMT per Employee



LA County Planning Areas



Baseline VMT Metrics – Comparison to SCAG

VMT Metrics		SCAG Region/ Carson VMT	
	SCAG	Avg Regional VMT per Service Pop	35.0
Total VMT	Carson	Avg City VMT per Service Pop	37.9
	Change	% Difference	8%
	SCAG	Avg Regional Home-Based VMT per Capita	15.3
Home-Based VMT	Carson	Avg City Home-Based VMT per Capita	14.4
	Change	% Difference	-6%
	SCAG	Avg Regional Home-Based Work VMT per Worker	18.6
Home-Based Work VMT	Carson	Avg City Home-Based Work VMT per Worker	19.6
	Change	% Difference	5%

Baseline VMT Metrics – Comparison to South Bay Planning Area

	VMT Metrics		South Bay/Carson VMT
	South Bay	Avg Planning Area VMT per Service Pop	32.4
Total VMT	Carson	Avg City VMT per Service Pop	37.9
	Change	% Difference	17%
	South Bay	Avg Planning Area Home-Based VMT per Capita	13.4
Home-Based VMT	Carson	Avg City Home-Based VMT per Capita	14.4
	Change	% Difference	8%
	South Bay	Avg Planning Area Home-Based Work VMT per Worker	18.2
Home-Based Work VMT	Carson	Avg City Home-Based Work VMT per Worker	19.6
	Change	% Difference	8%

Carson Context

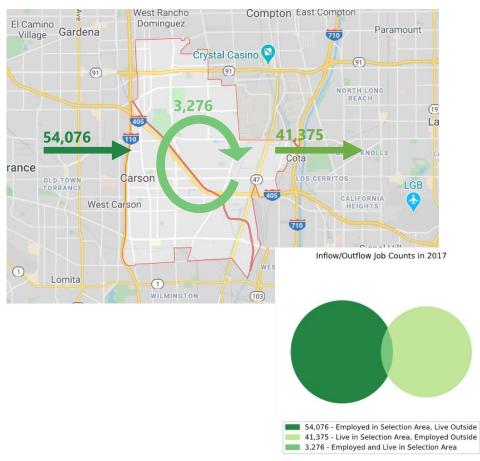
Commute distance for people who live in Carson

Jobs by Distance - Home Cens Census Bloc		to Work	
	201	2017	
	Count	Share	
Total All Jobs	44,651	100.0%	
Less than 10 miles	21,635	48.5%	
10 to 24 miles	15,110	33.8%	
25 to 50 miles	3,969	8.9%	
Greater than 50 miles	3,937	8.8%	

Commute distance for people who work in Carson

Jobs by Distance - Work Ce Census Blo		o Home	
	201	2017	
	Count	Share	
Total All Jobs	57,352	100.0%	
Less than 10 miles	27,573	48.1%	
10 to 24 miles	15,270	26.6%	
25 to 50 miles	6,205	10.8%	
Greater than 50 miles	8,304	14.5%	

Daily commute inflow and outflow



Source: 2017 US Census Center for Economic Studies Longitudinal Employer-Household Dynamics, onthemap.ces.census.gov

Carson Context

Commuter Transportation

MOST COMMON METHOD OF TRAVEL

- 1. Drove Alone 79.8%
- 2. Carpooled
- 3. Public Transit 3.59%

In 2017, the most common method of travel for workers in Carson, CA was Drove Alone (79.8%), followed by those who Carpooled (10.1%) and those who Public Transit (3.59%).

Public Transit Options











Source: 2017 US Census 5-Year Estimates, https://datausa.io



iteris

1700 Carnegie Avenue, Suite 100 Santa Ana, CA 92705

iteris.com

© 2025 Iteris, Inc. All rights reserved.

Moving smarter, together.