Appendix 5.15 BIG-1: Barstow International Gateway CEQA Assessment – Transportation Analysis

September 2025

Prepared by:

Kimley-Horn and Associates, Inc.
401 B Street, Suite 600
San Diego, CA 92101
Contact: Naomi (Willis) Germain, PE, TE
619.744.010

Kimley»Horn
Expect More. Experience Better.

TABLE OF CONTENTS

TABLE OF CONTENTS I

TABLES IV

FIGURES VI

APPENDICES VIII

ACRONYMS AND ABBREVIATIONS IX

1.0 EXECUTIVE SUMMARY 1
- 1.1 Introduction 1
- 1.2 "At-A-Glance" Summary 1
- 1.3 BIG Summary 2
- 1.4 BIG Transportation Improvements 6
- 1.5 Thresholds of Significance 16
- 1.6 Vehicle Miles Traveled (VMT) Impact Evaluation 16
  - Temporary Construction Period 16
  - Operations 16
- 1.7 Additional Analysis 18
  - Circulation System Conflict Evaluation 18
  - Hazards Impact Evaluation 19
  - Emergency Access Impact Evaluation 19
- 1.8 Truck Miles Traveled (TMT) 20

2.0 INTRODUCTION 22

3.0 PROJECT SUMMARY 23
- 3.1 Project Location and Setting 23
- 3.2 Project Components 30
  - Rail Yard 30
  - On-site Circulation Improvements 37
  - Off-site Improvements 38
  - Right-of-Way Vacations 41
  - Maintenance Activities 41
- 3.3 Project Construction Activities and Phasing 42
  - Demolition and Grading 42
  - Construction of Rail Yard (Intermodal Facility and Block Swap Yard) 43
  - Solar Farm Construction 44
  - Construction of Transload Warehouse Center 44
  - Construction of On-site Bridges and Roadway Improvements 44
  - Construction of Off-Site Rail Improvements 44
  - Construction of Off-Site Non-Rail Improvements 44

4.0 ENVIRONMENTAL SETTING 46
- 4.1 City and County Jurisdictional Areas 46

4.2 Roadway Network 48
Existing Major Freeways and State Routes 48
Existing Roadway Network....48
County and City Roadway Network Maps 51
4.3 Nonmotorized Transportation 55
4.4 Transit 63
4.5 Goods Movement....66
4.6 Emergency Services 66
Fire Protection....66
Police Protection 66

5.0 LAWS, ORDINANCES, REGULATIONS AND STANDARDS....71
5.1 Federal 71
Federal Transportation Improvement Program....71
5.2 State....71
State Greenhouse Gas Reduction Goals 71
California Government Code § 65080 72
California Streets and Highways Code § 1 et seq. 72
Senate Bill 743 and State CEQA Guidelines § 15064.3 72
Title 13, California Code of Regulations § 2014 and § 2015 72
California Transportation Plan 2050....73
Assembly Bill 1358, Complete Streets Act 73
Assembly Bill 32, Global Warming Solutions Act....73
Senate Bill 375, Sustainable Communities and Climate Protection Act 74
5.3 Local....74
Connect SoCal 2024....74
County of San Bernardino Countywide Plan....75
Codified Ordinances of the County of San Bernardino....76
San Bernardino County Congestion Management Program....77
Measure I Strategic Plan 77
San Bernardino Countywide Transportation Plan....78
Codified Ordinances of the County of San Bernardino Municipal Code....79
San Bernardino County Long-Range Transit Plan....79
SBCTA Development Mitigation Nexus Study....79
San Bernardino County Transportation Impact Study Guidelines....79
San Bernardino County Local Road Safety Plan 79
San Bernardino County Non-Motorized Transportation Plan....80
City of Barstow 2015 – 2020 Barstow General Plan....81
City of Barstow Active Transportation Plan 82
Code of the City of Barstow 82
City of Barstow VMT Resolution....84
City of Barstow Engineering Standards....84

6.0 METHODS FOR EVALUATING IMPACTS....86
6.1 Thresholds of Significance....86

6.2 Analysis Scenarios....89
6.3 Methodology for Impact Analysis....90
Vehicle Miles Traveled Methodology....90
Circulation System Conflict Evaluation Methodology....94
Transportation Hazards Methodology....94
Emergency Access Methodology....94

7.0 CEQA IMPACT EVALUATION....95
7.1 Vehicle Miles Traveled Impact Evaluation....95
Temporary Construction Period....95
Operations....95
7.2 Circulation System Conflict Evaluation....96
Temporary Construction Period....96
Operations....97
7.3 Hazards Impact Evaluation....126
Temporary Construction Period....126
Operations....126
7.4 Emergency Access Impact Evaluation....126
Temporary Construction Period....126
Operations....129

8.0 ADDITIONAL ANALYSIS....130
8.1 Truck Miles Traveled....130
8.2 Construction Trip Generation....146
Construction Worker Trip Generation....146
Construction Truck Trip Generation....146
Highest Construction Trip Generation....147

9.0 REFERENCES....152

10.0 PREPARER QUALIFICATIONS....155

APPENDICES....I

TABLES

Table 1: BIG VMT Effects 17
Table 2: Summary of Annual Truck Miles Traveled 20
Table 3: Existing Land Uses 23
Table 4: BIG Intermodal Facility Structures 31
Table 5: BIG Construction Schedule 42
Table 6: Existing Roadway Network 49
Table 7: Fire Protection Facilities 66
Table 8: Connect SoCal 2024 Regional Planning Policies Relevant Goals 74
Table 9: CWP Policy Plan Relevant Goals and Policies –Transportation 75
Table 10: Codified Ordinances of the County of San Bernardino 76
Table 11: San Bernardino County Congestion Management Program 77
Table 12: Measure I Strategic Plan 78
Table 13: San Bernardino Countywide Transportation Plan: Interim 2021 Update 78
Table 14: San Bernardino County Local Road Safety Plan 80
Table 15: San Bernardino County Non-Motorized Transportation Plan Goals and Policies 80
Table 16: 2015 General Plan Relevant Goals and Policies 81
Table 17: Code of the City of Barstow Relevant Regulations 82
Table 18: City of Barstow VMT Resolution 84
Table 19: City of Barstow VMT Impact Thresholds 87
Table 20: BIG VMT Thresholds of Significance 89
Table 21: BIG VMT Effects Summary 95
Table 22: BIG VMT Detail 96
Table 23: City Proposed General Plan Circulation Map Conflict Evaluation 98
Table 24: City and County Circulation Map Conflict Evaluation 99
Table 25: Connect SoCal 2024 Conflict Evaluation 104
Table 26: CWP Conflict Evaluation 106
Table 27: Codified Ordinances of the County of San Bernardino Conflict Evaluation 108
Table 28: San Bernardino County Congestion Management Program Conflict Evaluation 108
Table 29: Measure I Strategic Plan Conflict Evaluation 109
Table 30: San Bernardino Countywide Transportation Plan Conflict Evaluation 110
Table 31: San Bernardino County Local Road Safety Plan Conflict Evaluation 112
Table 32: San Bernardino County Non-Motorized Transportation Plan Conflict Evaluation 114
Table 33: Barstow Proposed General Plan Conflict Evaluation 115
Table 34: City of Barstow Active Transportation Plan Conflict Evaluation 120
Table 35: Code of the City of Barstow Conflict Evaluation 122
Table 36: Transload TMT: Ports to Nationwide Destinations Assumptions 133

Table 37: Transload TMT: Inland Empire Assumptions 135
Table 38: Transload Warehouse Truck Miles Traveled Variables 135
Table 39: Transload Warehouse Center Truck Miles Traveled Summary 137
Table 40: IMF Truck Miles Traveled Assumptions and Variables 139
Table 41: IMF Truck Miles Traveled Summary 141
Table 42: BIG Truck Miles Traveled Summary 141
Table 43: BIG Heavy-Duty Truck Miles Traveled Changes 145
Table 44: Highest BIG Construction Traffic Generation Sequence (Month 9) 151

FIGURES

Figure 1: On-Site Circulation Improvements 3
Figure 2: BIG Access Improvements 4
Figure 3: BIG Transportation Modifications....5
Figure 4: BIG Transportation Modification Details....11
Figure 5: Main Street at Lenwood Channel Bridge Reconstruction - BIG....14
Figure 6: BIG Street Vacations 15
Figure 7: Regional Vicinity Map....25
Figure 8: Local Vicinity Map 26
Figure 9: Barstow International Gateway Conceptual Site Plan 27
Figure 10: BIG Off-Site Improvements, West....28
Figure 11: BIG Off-Site Improvements, East 29
Figure 12: Map of Existing Jurisdictional Areas....47
Figure 13: San Bernardino County Roadway Network – North Desert Region....52
Figure 14: City Circulation Map 2015 General Plan 53
Figure 15: City 2015 General Plan and County CWP Roadway Classification Map 54
Figure 16: San Bernardino County Non-Motorized Transportation Plan Update – Existing and Planned Bicycle Facilities....57
Figure 17: San Bernardino County – Future Bicycle Facilities Map....58
Figure 18: City Planned Pedestrian Paths, Bicycle Routes, and Park and Ride Facilities....59
Figure 19: City of Barstow – Active Transportation Plan Proposed Pedestrian Network 60
Figure 20: City of Barstow – Active Transportation Plan Proposed Bicycle Network 61
Figure 21: City and County Planned Pedestrian Paths and Bike Lanes 62
Figure 22: Victor Valley Transit Map 64
Figure 23: San Bernardino County – Transit Network....65
Figure 24: City Existing Truck and Rail Routes 68
Figure 25: San Bernardino County – Goods Movement....69
Figure 26: Caltrans District 8 – National Network Truck Routes....70
Figure 27: SBTAM+ City and Sphere of Influence (SOI) SBTAM+ Traffic Analysis Zones 93
Figure 28: City Proposed Draft Roadway Classification Map....101
Figure 29: City Proposed Draft Truck Routes Map 102
Figure 30: City Proposed Draft Bicycle Network Map 103
Figure 31: Emergency Access (Fire Service) to Hinkley Road Area 128
Figure 32: BIG Truck Path and Truck Miles Traveled Changes – Opening Year 2028....142
Figure 33: BIG Truck Path and Truck Miles Traveled Changes – Interim Year 2033 143
Figure 34: BIG Truck Path and Truck Miles Traveled Changes – Horizon Year 2048....144
Figure 35: Number of Construction Worker Trips per Day by Month....148

Figure 36: Number of Construction Truck Trips per Day by Month 149
Figure 37: Total Construction Trips (PCE) per Day by Month 150

APPENDICES

Appendix A: City of Barstow VMT Resolution

Appendix B: Traffic Impact Analysis and Vehicle Miles Traveled VMT and Threshold Information

Appendix C: TMT Calculations

Appendix D: Construction Trip Generation

ACRONYMS AND ABBREVIATIONS

AB	(California) Assembly Bill
ADT	average daily traffic
BFPD	Barstow Fire Protection District
BIG	Barstow International Gateway
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
City	City of Barstow
CMA	Congestion Management Agency
CMP	Congestion Management Program
Connect SoCal 2024	2024-2050 Regional Transportation Plan/Sustainable Communities Strategy
County	San Bernardino County
CTP	Countywide Transportation Plan
CWP	Countywide Plan
EIR	Environmental Impact Report
FSTIP	Federal Statewide Transportation Improvement Program
GHG	Greenhouse Gas Emissions
IMF	intermodal facility
LOS	Level of Service
LRSP	Local Road Safety Plan
LRTP	Long-Range Transit Plan
MPO	Metropolitan Planning Organization
MU	mixed use
NMTP	Non-Motorized Transportation Plan
OPR	Office of Planning and Research
PA	production/attraction
PCE	passenger car equivalent
Ports	Port of Los Angeles and Port of Long Beach
RTG	rubber-tired gantry cranes
RTP	Regional Transportation Plan
SANBAG	San Bernardino Associated Governments
SB	(California) Senate Bill, southbound
SBCSD	San Bernardino County Sheriff's Department
SBCTA	San Bernardino County Transportation Authority
SBTAM	San Bernardino Transportation Analysis Model
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SOI	sphere of influence
SP	service population
SR	State Route
STIP	Statewide Transportation Improvement Program
TAZ	traffic analysis zone
TCP	traffic control plan

TIA	Traffic Impact Analysis
TM	Transportation Modification
TMT	truck miles traveled
TRU	transport refrigeration units
TRUCRS	Truck Regulation Upload, Compliance, and Reporting System
VMT	Vehicle Miles Traveled
VVTA	Victor Valley Transit Authority

1.0 EXECUTIVE SUMMARY

1.1 Introduction

This technical report was prepared to meet the California Environmental Quality Act (CEQA) requirements ("CEQA Assessment"), for BNSF Railway's (BNSF's) Barstow International Gateway Specific Plan (BIG). The CEQA Assessment is consistent with the methodology discussed in the "BNSF Barstow International Gateway Project – Traffic Study Scoping" Memorandum ("*Traffic Scoping Memo*") (Kimley-Horn and Associates, Inc., May 13, 2025a) to the City of Barstow (City). Pursuant to the State CEQA Guidelines, this CEQA Assessment includes analyses of vehicle miles traveled (VMT), circulation system conflicts, transportation hazards, and emergency access. The City will serve as the lead agency under CEQA, and therefore the VMT assessment is completed pursuant to City of Barstow City Council Resolution No. 5219-2025 ("City VMT Resolution") (City of Barstow, 2025a).

A Level of Service (LOS) Assessment for consistency with the planning-level LOS standards outlined in the City of Barstow proposed General Plan, San Bernardino County Transportation Impact Study Guidelines (County of San Bernardino, 2019), and the San Bernardino Congestion Management Program (CMP) 2016 Update (County of San Bernardino, 2016) is included in a separate report **Appendix 5.15 BIG-2: Level of Service Assessment – Transportation Analysis** ("*Level of Service Assessment*") (Kimley-Horn and Associates, Inc., 2025b). Automobile delay, as measured by LOS or other similar metrics noted in the *Level of Service Assessment*, does not constitute a significant environmental effect under CEQA (Pub. Resources Code, § 21099, subdivision (b)(3)).

1.2 "At-A-Glance" Summary

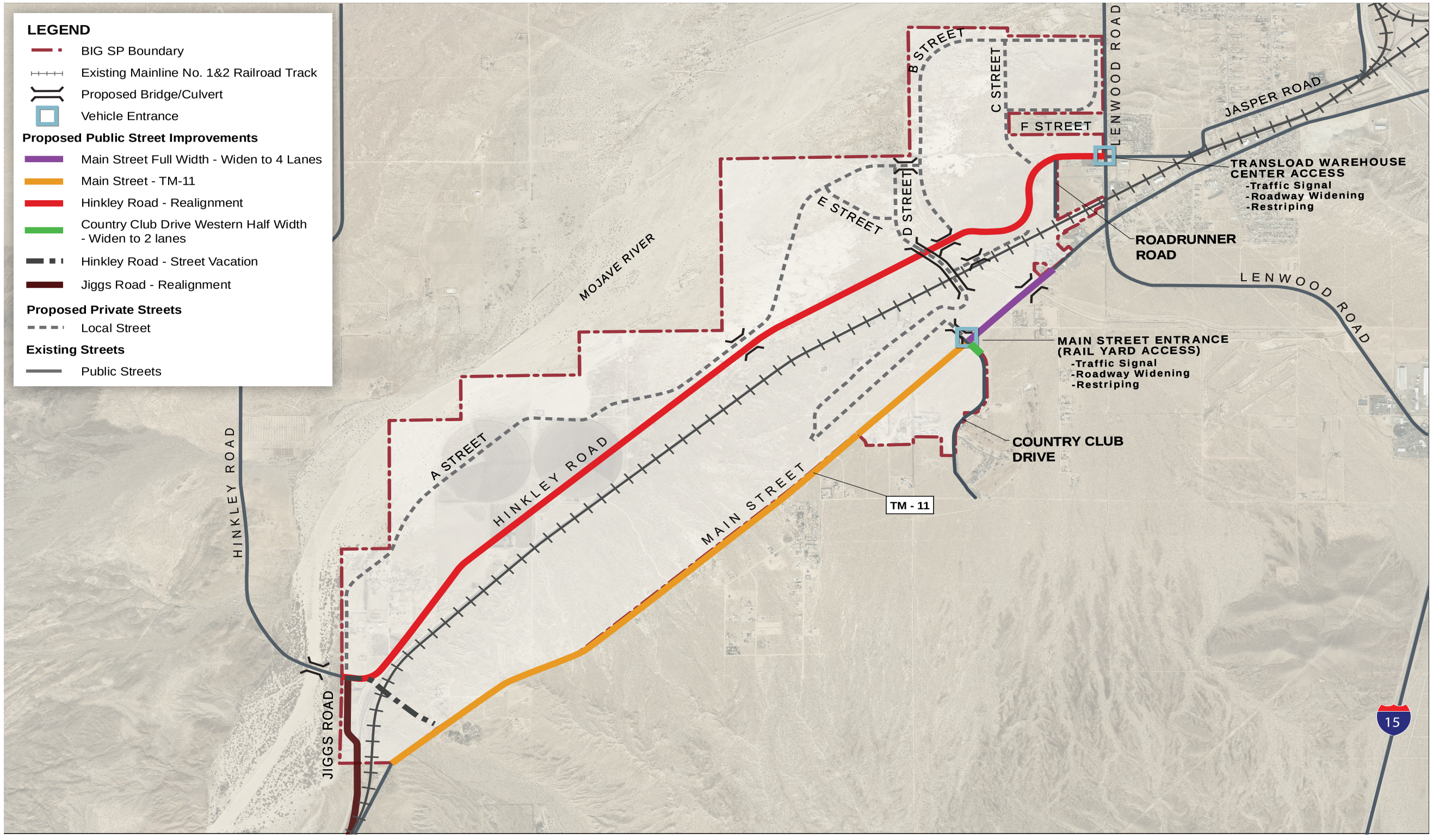
This section provides an "at-a-glance" summary of the key findings presented in this CEQA Assessment. Please refer to the remainder of the report for additional detail and context.

- Circulation System Conflicts:
  - BIG's construction activities and operations would not conflict with a program, plan, ordinance, or policy related to the circulation system.
  - Impact: Less than significant
- VMT:
  - BIG's operations would be consistent with State CEQA Guidelines § 15064.3(b), which focuses on reducing VMT.
  - Impact: Less than significant
- Transportation Hazards:
  - BIG's construction activities and operations would not substantially increase hazards due to a geometric design feature or incompatible uses.
  - Impact: Less than significant
- Emergency Access:
  - BIG's construction activities and operations would not result in inadequate emergency access.
  - Impact: Less than significant

1.3 BIG Summary

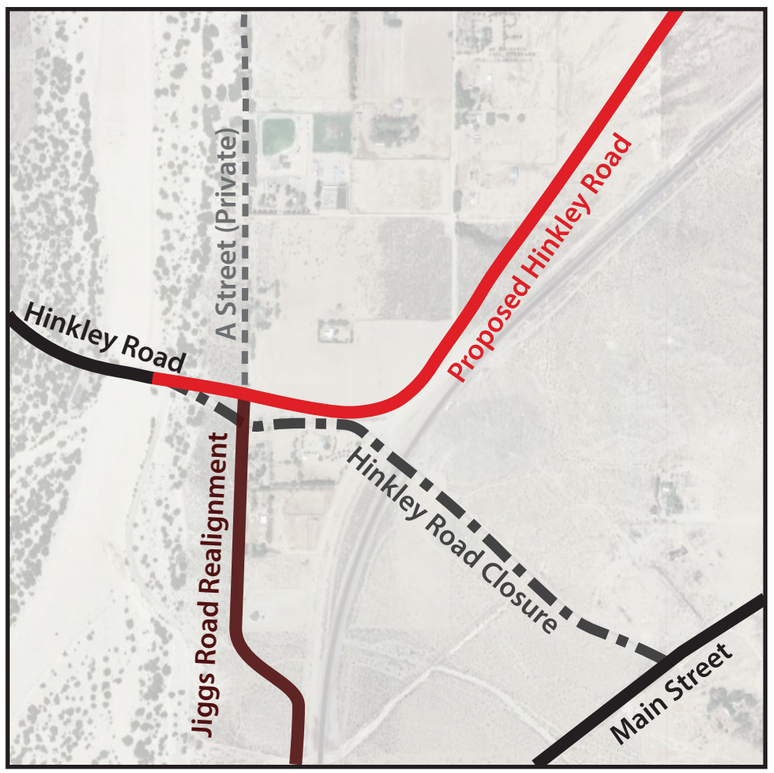
BNSF proposes BIG in the City of Barstow and in unincorporated areas in the County of San Bernardino (County), California. BIG consists of a rail yard with an intermodal facility (IMF) and "block swap" facility, a transload warehouse center, and a solar farm. BIG's proposed on-site circulation improvements (i.e., within the BIG Specific Plan area) are identified in **Figure 1: On-Site Circulation Improvements** and access improvements are shown in more detail in **Figure 2: BIG Access Improvements.**

Additionally, to serve the proposed rail yard and transload warehouse center, BNSF proposes off-site rail improvements (including lead track extensions), and off-site non-rail improvements (including stormwater drainage, utility, and circulation/roadways). BIG also proposes Transportation Modifications (TMs) to improve traffic operations and safety, as discussed below and in more detail in the *Level of Service Assessment*. BIG's proposed TMs are identified in **Figure 3: BIG Transportation Modifications** and illustrated in **Figure 4: BIG Transportation Modification Details**.



Note: TM-11, Main Street between western BIG site limit and Country Club Drive: As part of BIG's frontage improvements, repaint the north edge-line and centerline with 6" retroreflective lane markings and install rumble strips and pavement reflectors on the north edge-line and centerline. On Main Street between Castle Court and Country Club Drive, also repaint the south edge-line with 6" retroreflective lane markings and install rumble strips and pavement reflectors.

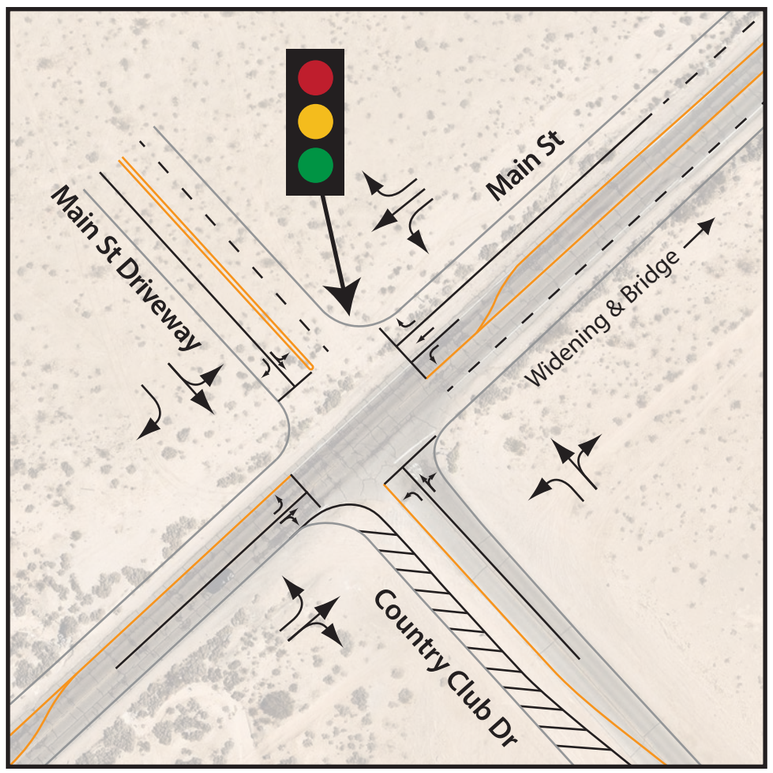
Figure 1: On-Site Circulation Improvements



Hinkley Road Vacation and Realignment and Jiggs Road Realignment

Vacate Hinkley Road from south side of Mojave River bridge crossing to Main Street. Realign Hinkley Road to run east-west through the transload warehouse center.

Realign Jiggs Road.

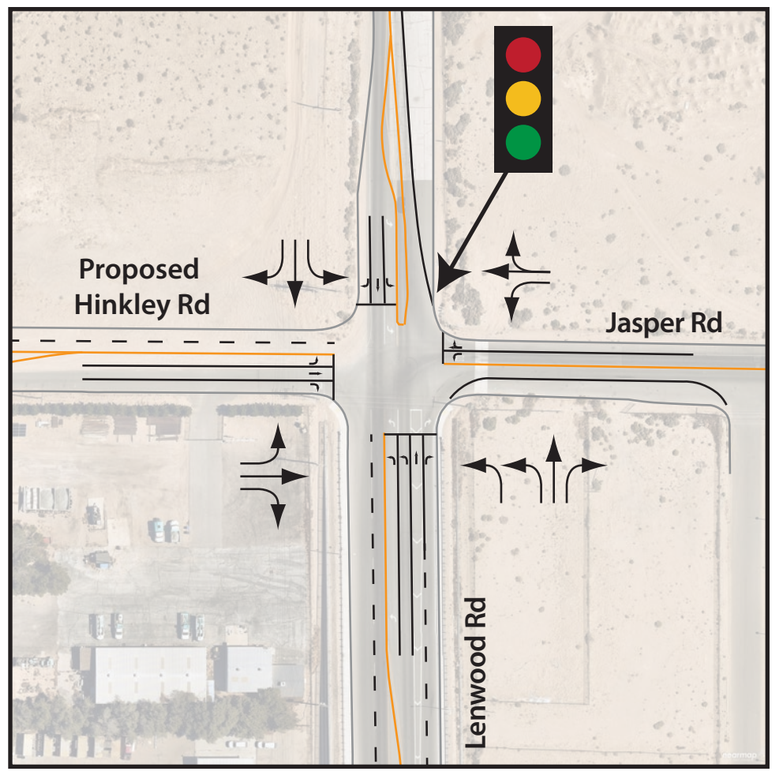


Rail Yard Access, Main Street Widening, and Country Club Drive Widening

Construct signalized project driveway and turn pockets at the existing intersection of Main Street and Country Club Drive to provide rail yard access.

Widen Main Street to include two lanes in each direction for approximately 0.5-mile east of Country Club Drive. Replace the Lenwood Channel Bridge.

Widen Country Club Drive between Main Street and Sweeten Lane.



Transload Warehouse Center Access

Install traffic signal, roadway widening, and restriping at the proposed Hinkley Road/Jasper Road/Lenwood Road intersection to provide transload warehouse center access.

NOT TO SCALE

Figure 2: BIG Access Improvements

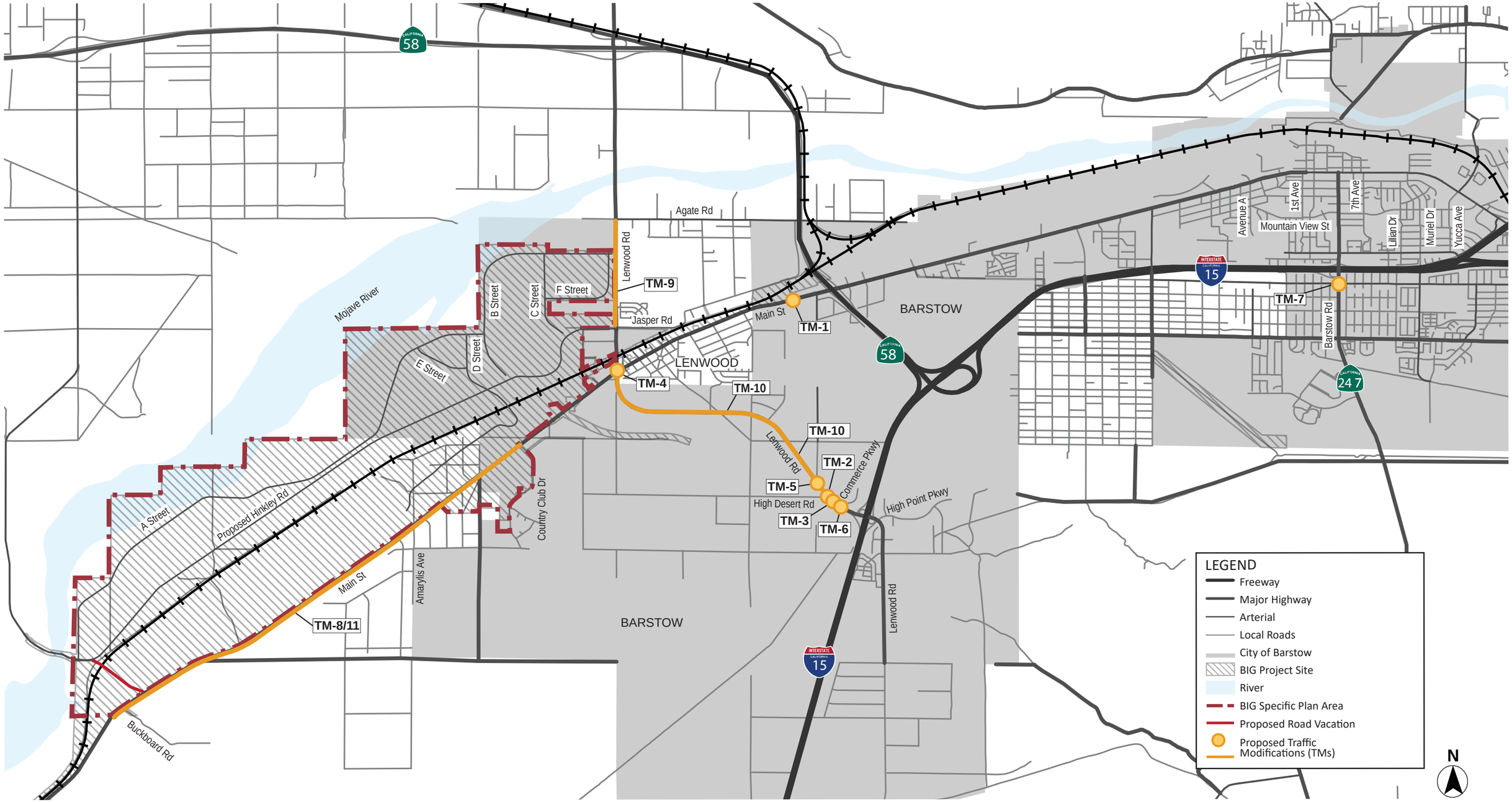


Figure 3: BIG Transportation Modifications

1.4 BIG Transportation Improvements

The improvements listed below and depicted on **Figure 1: On-Site Circulation Improvements** and **Figure 2: BIG Access Improvements** are circulation improvements that BIG proposes and are included in the analysis of Plus BIG conditions:

- **Hinkley Road.** BIG would vacate Hinkley Road between the south side of the Mojave River bridge crossing and Main Street, closing the existing at-grade rail crossing. Hinkley Road would be realigned to run east-west through the transload warehouse center from the south side of the Mojave River bridge crossing to the Jasper Road/Lenwood Road intersection. BIG proposes to reconstruct the existing Hinkley Road bridge over the Mojave River to conform to current federal and State standards. BIG also proposes to construct a bridge for the proposed Hinkley Road to cross the Lenwood Channel.
- **Transload Warehouse Center Access (from Lenwood Road).** Transload warehouse center employees and heavy-duty trucks[1] accessing the transload warehouse center would enter BIG from the proposed Hinkley Road/Jasper Road/Lenwood Road intersection. To facilitate access to the proposed transload warehouse center, BIG proposes to install a traffic signal, roadway widening, and restriping at the proposed Hinkley Road/Jasper Road/Lenwood Road intersection, as depicted in **Figure 2: BIG Access Improvements**.
- **Rail Yard Access (from Main Street).** Rail yard employees and heavy-duty trucks would access the rail yard from a new driveway proposed on Main Street across from Country Club Drive. Rail yard employees would enter an employee parking lot near the proposed rail yard administration buildings. Heavy-duty trucks dropping off or picking up containers at the IMF would enter through a gate system into the IMF. To facilitate access to the proposed rail yard, BIG proposes to install a traffic signal, roadway widening, and restriping at the intersection, as depicted in **Figure 2: BIG Access Improvements**.
- **Main Street Roadway Widening/Lenwood Channel Bridge.** Main Street would be widened from two lanes to four lanes for approximately 0.5-mile east of Country Club Drive, resulting in a consistent four-lane roadway width through Barstow. Additionally, the existing two-lane Main Street over Lenwood Channel low water crossing would be replaced with a new four-lane bridge that accommodates the 100-year flood condition. Main Street would be raised over Lenwood channel, modifying the vertical alignment of Main Street for approximately 0.8-mile. A temporary bypass would be constructed to facilitate the Main Street at Lenwood Channel bridge reconstruction, as shown on **Figure 5: Main Street at Lenwood Channel Bridge Reconstruction - BIG**. The temporary bypass would maintain through traffic and access to private driveways for nearby land uses and would be open for the approximately 18-month bridge reconstruction period.

[1] "Heavy-duty trucks" (also referred to as "trucks" in this document) are conventional highway trucks that travel on public roads and carry containers intra- and inter-state. As used in this document, the terms "heavy-duty trucks" and "trucks" do not include electric hostlers that are proposed to run on internal roads within the BIG Specific Plan area.

- **Country Club Drive**: Country Club Drive would be widened along the solar farm frontage for approximately 400 feet to the proposed realignment of Sweeten Lane. A new stop-controlled intersection is proposed at the Country Club Drive at Sweeten Lane intersection.
- **Jiggs Road.** BIG proposes to realign Jiggs Road (a gravel and dirt road also referred to as Holcomb Ranch Road/Lords Road/Link Road) north of its existing location from Hinkley Road to the western limit of the BIG footprint (between Holcomb Ranch Road and Indian Trail). The Jiggs Road realignment would provide a 24-foot gravel road and maintain access to the adjacent land uses and emergency access from Indian Trails to Hinkley Road. Consistent with existing conditions, traffic volumes on the realigned Jiggs Road are expected to be minimal.
- **Sweeten Lane**: Sweeten Lane would be vacated and realigned to eliminate the existing unimproved intersection with Main Street. A new paved access will extend from Country Club east approximately 1,000 and connect to the unimproved Sweeten Lane.

Additionally, the following off-site Transportation Modifications (TMs) are proposed to improve traffic operations and safety, as identified in **Figure 3: BIG Transportation Modifications** and illustrated in **Figure 4: BIG Transportation Modification Details** and discussed in the *Level of Service Assessment*. These improvements would also include restriping and refreshed pavement where needed:

- **TM-1: Main Street & Petit Road intersection:**
  - *2033*: Install traffic signal.
  - *2048*: Same improvement as 2033.
- **TM-2: Lenwood Road & High Desert Road intersection:**
  - *2033*: Install traffic signal. Install fiber-optic interconnect system between High Desert Road and Commerce Parkway and optimize signal timing for corridor.
  - *2048*: Same improvements as 2033 and optimize signal timing for corridor under 2048 conditions.
- **TM-3: Lenwood Road & Truck Freightliner Service Point Driveway intersection:**
  - *2033*: Install traffic signal and cluster the intersection with the existing signal at Commerce Parkway so they function as a combined system with a single controller. This configuration is recommended due to the close proximity of the intersections, which supports synchronized signal operations and improved traffic flow. Install fiber-optic interconnect system between High Desert Road and Commerce Parkway and optimize signal timing for corridor.
  - *2048*: Same improvements as 2033 and optimize signal timing for corridor under 2048 conditions.
- **TM-4: Lenwood Road & Main Street intersection:**
  - *2048*: Restripe southbound approach to provide a second southbound left-turn lane. Restripe southbound right-turn lane into a through-right lane. Reconfigure traffic island to provide space for additional southbound through movement. Restripe northbound approach to provide a second northbound left-turn lane.
- **TM-5: Lenwood Road & Love's Travel Stop Driveway intersection:**
  - *2048*: Install traffic signal. Install fiber-optic interconnect system between Love's Travel Stop Driveway and Commerce Parkway and optimize signal timing for corridor.

- **TM-6: Lenwood Road & Commerce Parkway intersection:**
  - *2048*: Restripe existing southbound middle through-left lane to an exclusive through lane. Add northbound and southbound protected left phase. Install fiber-optic interconnect system between Love's Travel Stop Driveway and Commerce Parkway and optimize signal timing for corridor.
- **TM-7: Barstow Road & Armory Road intersection:**
  - *2048*: Restripe westbound right-turn lane from through-right to right turn only and add westbound right turn overlap phase.
- **TM-8: Main Street between Vacated Hinkley Road and Country Club Drive**:
  - *2048*: Provide 4.04% fair share of the costs for widening the roadway to four lanes.
- **TM-9: Lenwood Road between Agate Road and Jasper Road**:
  - *2048*: Provide 35.59% fair share of the costs for widening the roadway to four lanes.
- **TM-10: Lenwood Road between Main Street and High Desert Road**:
  - *2048*: Provide 33.13% fair share of the costs for widening the roadway to four lanes.
- **TM-11: Main Street between western BIG site limit and Country Club Drive:** As part of BIG's frontage improvements, repaint the north edge-line and centerline with 6" retroreflective lane markings and install rumble strips and pavement reflectors on the north edge-line and centerline. On Main Street between Castle Court and Country Club Drive, also repaint the south edge-line with 6" retroreflective lane markings and install rumble strips and pavement reflectors.

BIG proposes striped Class II bike lanes in each direction along Main Street between Country Club Drive and Lenwood Road.

To accommodate BIG, various public rights-of-way would need to be fully or partially vacated as described below. The proposed street vacations are listed in **Table 1: BIG Street Vacations and Dedications** and shown in **Figure 6: BIG Street Vacations**. The vast majority of these rights-of-way are unpaved dirt roads, or in some cases "paper roads," where the land is dedicated but is not graded or paved for use. As applicable, these roads would be modified to provide access to the remaining land uses.

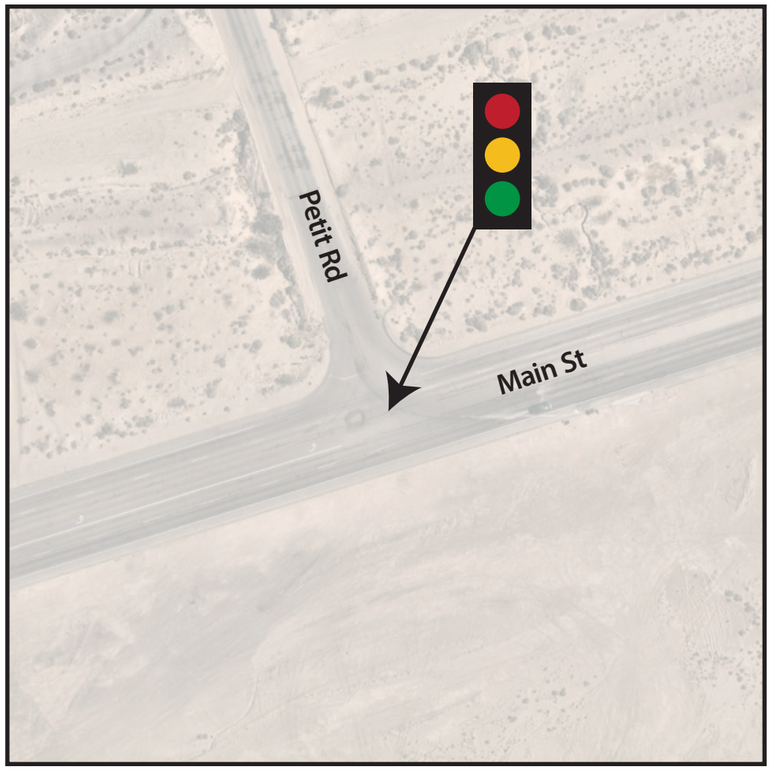
Table 1: BIG Street Vacations and Dedications

Street	Vacation/Dedication	Within Specific Plan?	County	City
Amarylis Street	Partial vacation	Yes	X*	
Anson Avenue	Full vacation	Yes	X*	
Barker Road	Full vacation	Yes		X
Belvoir Street	Full vacation	Yes	X*	
Botero Road	Full vacation	Yes	X*	
Camino Road (also known as Youngs Drive)	Full vacation	Yes	X*	
Cannae Road	Full vacation	Yes	X*	
Country Club Drive	Dedication	Yes		X
Cuzco Road	Full vacation	Yes	X*	
Delaney Road (also known as Waverly Avenue)	Partial vacation	Yes	X*	X

Table 1: BIG Street Vacations and Dedications				
Street	**Vacation/Dedication**	**Within Specific Plan?**	**County**	**City**
Dundee Street	Full vacation	Yes	X*	
Dunkirk Street	Full vacation	Yes	X*	
Fairview Road	Full vacation	Yes	X*	
Frank Street	Partial vacation	No	X	
Gazana Street	Partial vacation	Yes	X*	
Glencoe Street	Full vacation	Yes	X*	
Hannan Street	Partial vacation	No	X	
Henry Road	Full vacation	Yes	X	
Hinkley Road over the Mojave River	Partial vacation and dedication/realignment	No	X	
Hinkley Road	Partial vacation and dedication/realignment	Yes	X*	X
Holland Street	Dedication (cul-de-sac)	No	X	
Jiggs Road	Partial vacation and dedication/realignment	Yes	X*	
Jiggs Road/Holcomb Ranch Road/Lords Road	Partial vacation and dedication/realignment; see description further below	No	X	
Lenwood Road	Dedication of ROW and vacation of excess ROW	Yes		X
Main Street	Dedication of ROW and vacation of excess ROW	Yes	X*	X
Mockingbird Street	Full vacation	Yes	X*	
Mockingbird Way	Full vacation	Yes	X*	
Navarino Avenue	Full vacation	Yes	X*	
Norfolk Road	Full vacation	Yes	X	
Oak Grove Road	Full vacation	Yes	X*	
Old Lenwood Road (also known as Lenwood Street, an access road adjacent to BNSF right-of-way, east of Lenwood Road)	Full vacation	No	X	
Outer Highway 66 North	Full vacation	Yes	X	
Orleans Drive	Full vacation	Yes	X*	
Phillips Street	Partial vacation	No	X	
Roadrunner Road	Dedication	Yes		X
Robin Court	Full vacation	Yes	X*	
Seymour Avenue	Partial vacation	Yes	X*	

Table 1: BIG Street Vacations and Dedications				
Street	**Vacation/Dedication**	**Within Specific Plan?**	**County**	**City**
Sun Valley Drive	Partial vacation	No		X
Sweeten Lane	Partial vacation and dedication/realignment	Portion within, portion outside	X*	X
Townsend Street	Partial vacation	No	X	
Unnamed cul-de-sac north of Main Street	Full vacation	No		X
U.S. Public Road **	Full Vacation	Yes	X*	
Viejo Court	Partial vacation	Yes		X
Woods Avenue	Partial vacation	No	X	

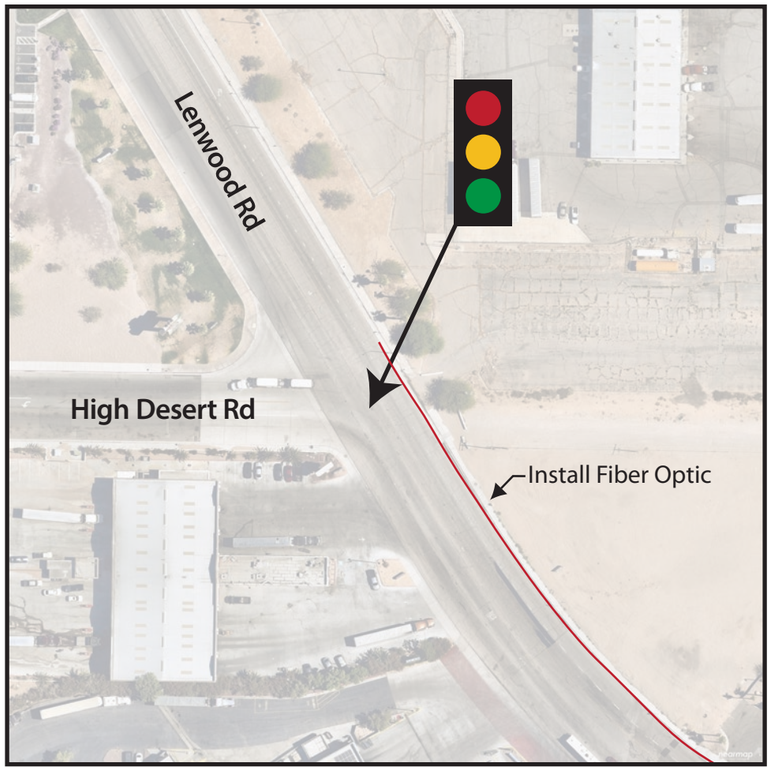
* Upon annexation, the right-of-way would be within City limits and vacated by the City.
** U.S. Public Road is an easement for access between two parcels formerly managed by the BLM. These parcels are no longer managed by the BLM.
Note: Some of the roadways noted may not be formally dedicated as public roadways in fee or as easements. In those instances, a formal street vacation process will not be required if public right of way records cannot be located.



TM-1

Intersection 14: Main St & Petit Rd

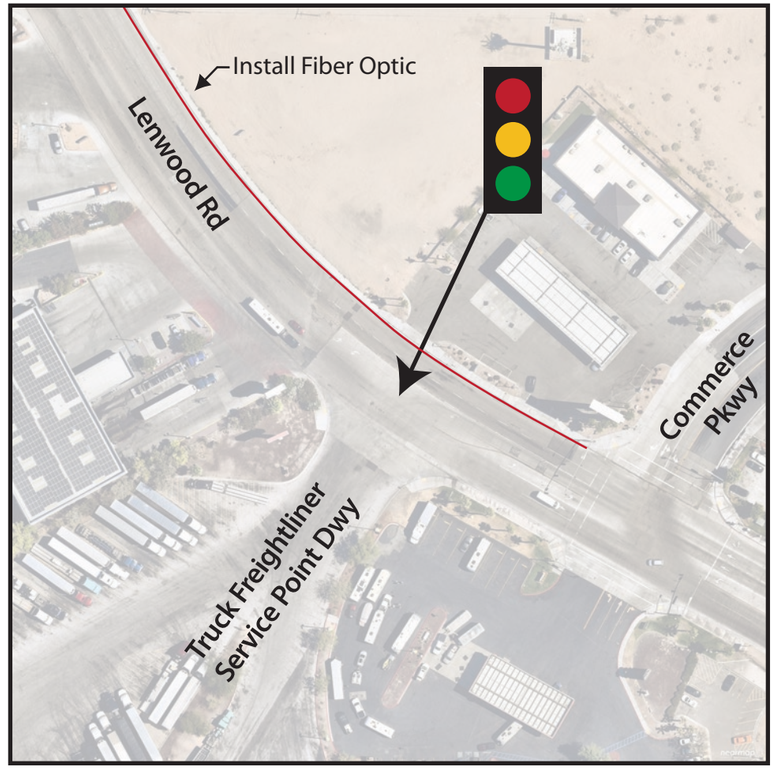
2028: No improvements proposed.
2033: Install Traffic Signal.
2048: Same improvements as 2033.



TM-2

Intersection 18: Lenwood Rd & High Desert Rd

2028: No improvements proposed.
2033: Install Traffic Signal. Install fiber optic interconnect system between High Desert Rd & Commerce Pkwy and optimize signal timing for corridor.
2048: Same improvements as 2033 and optimize signal timing for corridor under 2048 conditions.



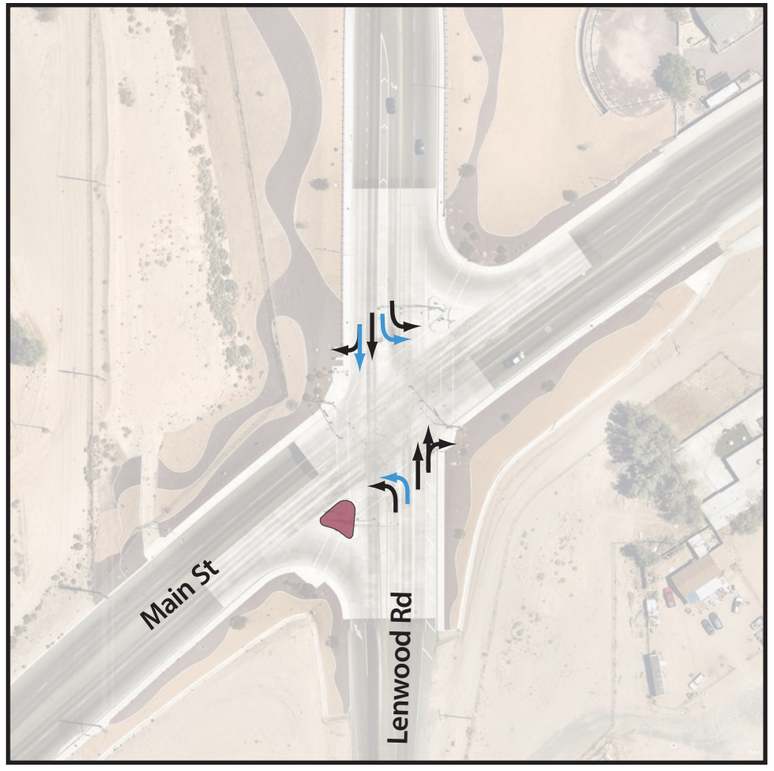
TM-3

Intersection 19: Lenwood Rd & Truck Freightliner Service Point Driveway

2028: No improvements proposed.
2033: Install traffic signal and cluster the intersection with the existing signal at Commerce Pkwy so they function as a combined system with a single controller. This configuration is recommended due to the close proximity of the intersections, which supports synchronized signal operations and improved traffic flow. Install fiber optic interconnect system between High Desert Rd & Commerce Pkwy and optimize signal timing for corridor.
2048: Optimize signal timing for 2048 conditions.

NOT TO SCALE

Figure 4: BIG Transportation Modification Details
(Page 1/3)



TM-4

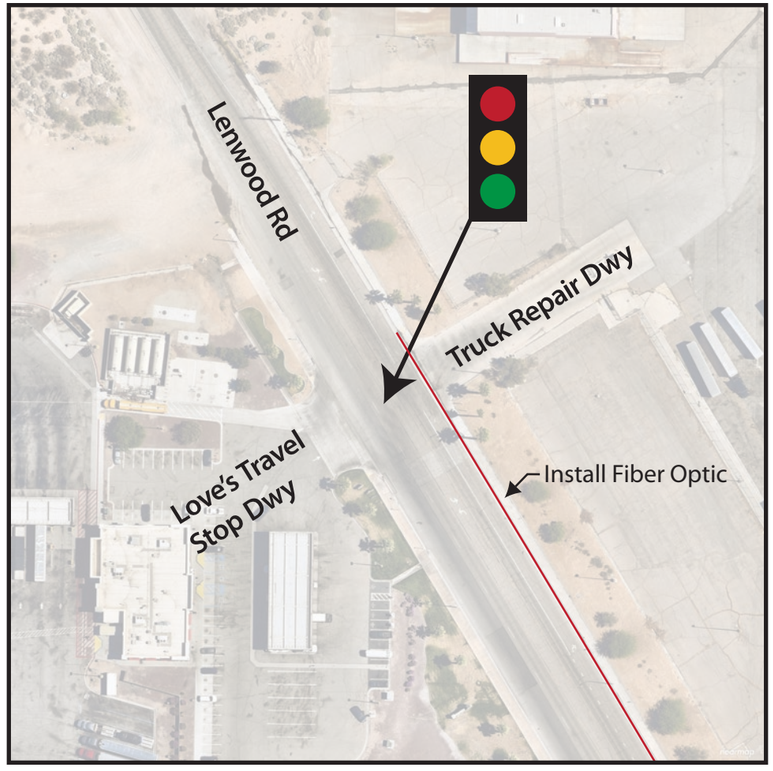
Intersection 3: Lenwood Rd & Main St

2028: No improvements proposed.

2033: No improvements proposed.

2048: Restripe southbound approach to provide a second southbound left-turn lane. Restripe southbound right-turn lane into a through-right lane. Reconfigure traffic island to provide space for additional southbound through movement. Restripe northbound approach to provide a second northbound left-turn lane.

NOT TO SCALE



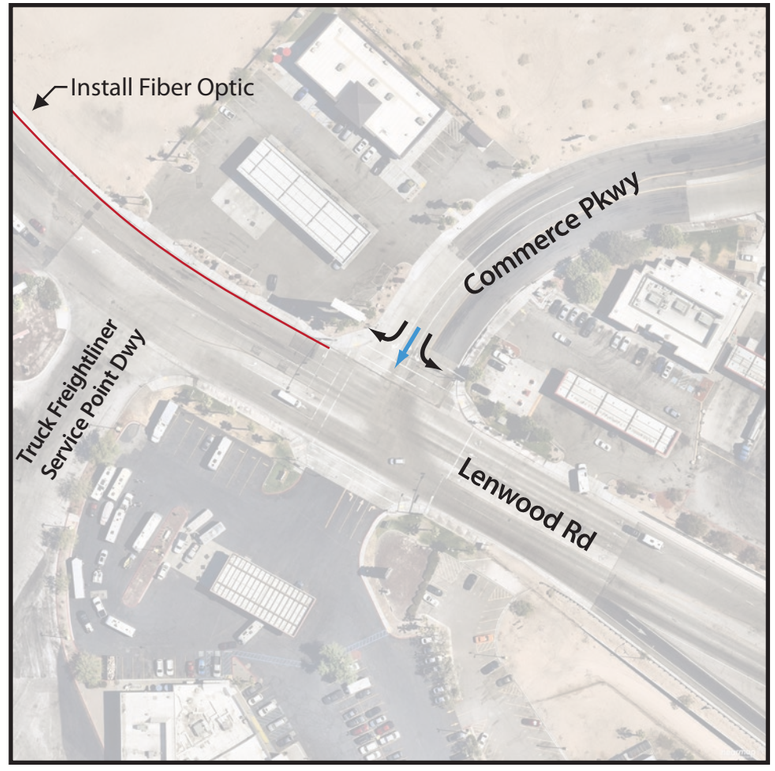
TM-5

Intersection 17: Lenwood Rd & Love's Travel Stop Driveway

2028: No improvements proposed.

2033: No improvements proposed.

2048: Install Traffic Signal. Install fiber optic interconnect system between intersections Love's Travel Stop Driveway and Commerce Pkwy and optimize signal timing for corridor.



TM-6

Intersection 20: Lenwood Rd & Commerce Pkwy

2028: No improvements proposed.

2033: No improvements proposed.

2048: Restripe existing southbound middle through-left lane to an exclusive through lane. Add northbound and southbound protected left phase. Install fiber optic interconnect system between Love's Travel Stop Driveway and Commerce Pkwy and optimize signal timing for corridor.

Figure 4: BIG Transportation Modification Details
(Page 2/3)



TM-7

Intersection 37: Barstow Rd & Armory Rd

2028: No improvements proposed.

2033: No improvements proposed.

2048: Restripe westbound right-turn lane from through-right to right turn only and add westbound right turn overlap phase.

NOT TO SCALE

Figure 4: BIG Transportation Modification Details
(Page 3/3)

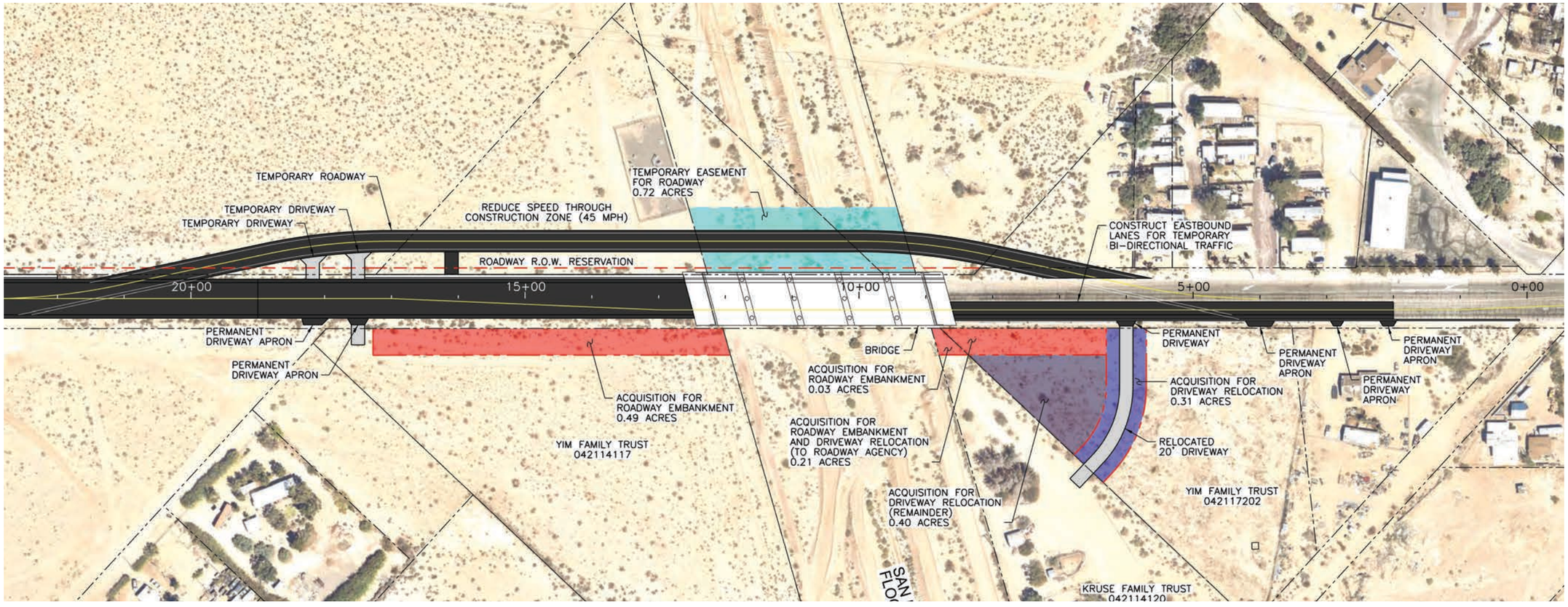
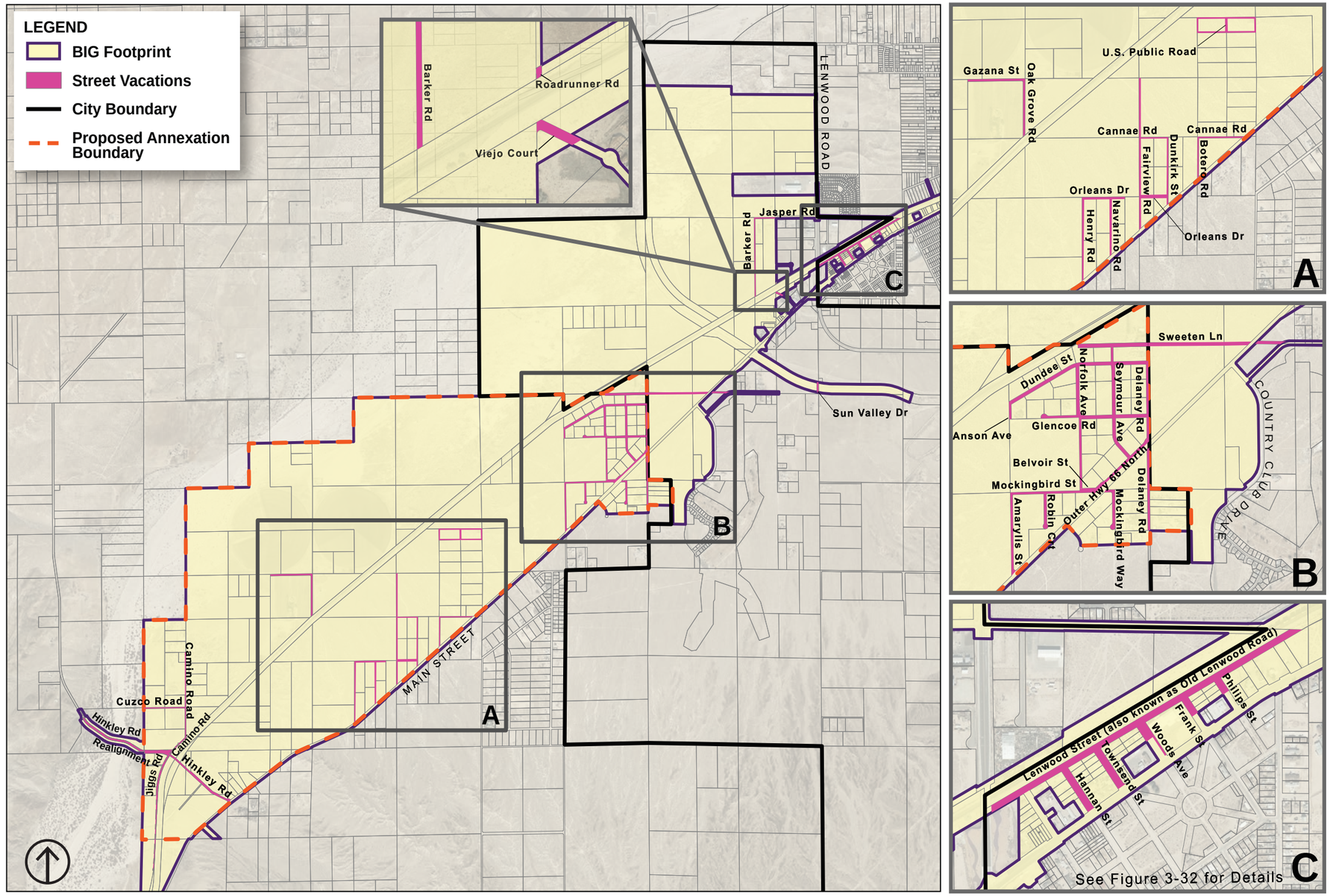


Figure 5: Main Street at Lenwood Channel Bridge Reconstruction - BIG

Source: TranSystems, 2024



Note: For Jiggs Road/Holcomb Ranch Road/Lords Road vacation and realignment/dedication (offiste in the County of San Bernardino), see figures 3-34 and 3-35 in Section 3.0 Project Description.
Along the Project Frontage on Main Street and Lenwood Road, dedication of right-of-way and vacation of excess right-of-way will occur as shown on the Tentative Map.

Figure 6: BIG Street Vacations

1.5 Thresholds of Significance

State CEQA Guidelines Appendix G: Environmental Checklist Form includes questions concerning transportation. The issues presented in the Environmental Checklist Form have been used to formulate thresholds of significance in this Section. Accordingly, BIG would have a significant effect on the environment if it would:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
- Conflict or be inconsistent with State CEQA Guidelines § 15064.3, subdivision (b), which provides that, for land use projects, "vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact."
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.

1.6 Vehicle Miles Traveled (VMT) Impact Evaluation

This section summarizes the VMT related discussion and evaluation in **Sections 6.1 Thresholds of Significance, 6.3 Methodology for Impact Analysis**, and **7.1 Vehicle Miles Traveled Impact Evaluation**.

Temporary Construction Period

Vehicle trips used for construction purposes would be temporary, and generated VMT would generally be limited to construction equipment and construction workers. VMT is typically analyzed in the horizon year because it provides a long-term perspective of the effects of projects and plans, but construction activities would not result in long-term trip generation. Additionally, BIG would transport construction materials using the BNSF rail line to the extent practicable. Further, neither the City, County, nor State provide thresholds specific to construction VMT. Therefore, BIG construction would result in a less than significant impact concerning VMT.

Operations

As previously noted, the City VMT Resolution was used as the basis of methodology for the operational VMT analysis. The City VMT Resolution specifies that the San Bernardino County Traffic Analysis Model (SBTAM) is the preferred methodology for VMT analysis. The latest version of SBTAM, SBTAM Plus (SBTAM+) has a base year of 2019 and a forecast year of 2050. As part of the City's proposed General Plan efforts, the City refined SBTAM+ inputs for roadway network and land use data to more accurately reflect existing 2023 land use, residential, and employment data within the City and it's unincorporated sphere of influence (SOI). The City also revised the future year model to represent the "Cumulative Year 2048 Conditions" under the proposed General Plan (referred to as the Horizon Year 2048 Plus BIG scenario in this CEQA Assessment). BIG's VMT analysis was completed using this most current, available version of SBTAM+ provided by the City (2025), inclusive of these modifications.

The City VMT Resolution identifies three types of projects which may require VMT analysis: land use plans (such as General Plans and Specific Plans); land use projects; and transportation projects. BNSF proposes

the BIG Specific Plan to establish a land use plan, site-specific zoning regulations, and development standards for the Specific Plan area. Therefore, the "land use plan" (i.e., Specific Plan) project type is the most relevant of the three project types provided in the City VMT Resolution. It is noted that the significance thresholds for the "land use plan" and "land use project" types are effectively the same. For each type of project, the VMT Resolution identifies a Project Threshold and a Cumulative Threshold.

BIG's operational VMT analysis is conducted under Horizon Year 2048 conditions, consistent with the City VMT Resolution. VMT is typically analyzed in the horizon year because it provides a long-term perspective of the effects of projects and plans. The City of Barstow evaluates VMT impacts using a metric known as VMT per service population (VMT/SP), with "service population" reflecting the combined number of residents and employees in the study area. VMT/SP can be calculated using multiple efficiency metrics (e.g., Total VMT/SP, Home Based VMT per Resident, or Home Based Work VMT per Worker).

For BIG's analysis under the Project Threshold, the Home Based Work VMT per Worker metric is used because this metric is most applicable to BIG's industrial-related Specific Plan. It measures the average VMT by workers commuting to and from home, specifically for employees associated with the BIG Specific Plan area. The VMT efficiency of the BIG Specific Plan area is then compared to the citywide[2] average. A significant project impact would occur if BIG's Home Based Work VMT per Worker is higher than the citywide average Home Based Work VMT per Worker under Horizon Year 2048 conditions.

For BIG's analysis under the Cumulative Threshold, the Total VMT Per Service Population metric is used to quantify VMT/SP, consistent with the City VMT Resolution. For this analysis, the City is evaluated as a whole, both without and with BIG. This differs from the Project Threshold, which compares only BIG to the citywide average. A significant cumulative impact would occur if BIG's implementation causes the citywide Total VMT per Service Population to be higher than the No BIG Baseline under the Horizon Year 2048 conditions.

As noted in **Table 2: BIG VMT Effects** BIG's Home Based Work VMT per Worker is forecast to be less than the citywide average Home Based Work VMT per Worker under Horizon Year 2048 conditions. Therefore, BIG would have a less than significant VMT impact according to the City's Project Threshold. Additionally, the citywide Total VMT per Service Population is forecast to be lower with BIG than the No BIG Baseline under Horizon Year 2048 conditions. Therefore, BIG would have a less than significant cumulative VMT impact according to the City's Cumulative Threshold. Therefore, BIG would result in a less than significant impact concerning VMT.

Table 2: BIG VMT Effects

Project Threshold			
Metric	**Horizon Year 2048 No BIG Baseline – City of Barstow and SOI**	**Horizon Year 2048 Plus BIG – BIG Specific Plan Area**	**Significant Impact?**
Home Based Work VMT per Employee (PA Method) (Horizon Year)	15.7	13.6	No
Cumulative Threshold			
Metric	**Horizon Year 2048 No BIG Baseline– City of Barstow and SOI**	**Horizon Year 2048 Plus BIG – City of Barstow and SOI**	**Significant Impact?**

[2] "Citywide" refers to the City of Barstow and its unincorporated SOI.

Total Daily VMT per Service Population (Boundary Method) (Horizon Year)	37.3	35.4	No
Notes: PA = production-attraction; refer to Section **6.3 Methodology for Impact Analysis** VMT = vehicle miles traveled SOI = sphere of influence. City VMT results include City of Barstow and unincorporated areas within the City's sphere of influence, such as Lenwood and nearby areas; refer to **Section 7.0 CEQA Impact Evaluation**.			
Source: SBTAM. (2025).			

1.7 Additional Analysis

This section summarizes the discussion and evaluation in **Sections 7.2 Circulation System Conflict Evaluation**, **7.3 Hazards Impact Evaluation**, and **7.4 Emergency Access Impact Evaluation**.

This CEQA Assessment also evaluates BIG's effects under CEQA concerning BIG's potential to: conflict with a program, plan, ordinance, or policy addressing the circulation system (i.e., transit, roadway, bicycle, and pedestrian facilities); substantially increase hazards due to a geometric design feature or incompatible uses; and result in inadequate emergency access.

Circulation System Conflict Evaluation

Temporary Construction Period

BIG's construction activities would result in increased heavy-duty truck traffic within the study area and may result in temporary lane or roadway closures. Consistent with City standards and construction best practices, the contractor would prepare a detailed Traffic Control Plan (TCP) pursuant to City of Barstow Standard Plan 138 requirements to minimize the impact of construction activities and construction traffic on adjoining and nearby roadways and land uses. A TCP is required for any work in the public right-of-way and would show how to safely manage vehicles, bicyclists, and pedestrians through or around construction zones.

The TCP would require provisions to minimize access disruption to residents, businesses, customers, delivery vehicles, and buses to the extent practicable (and where road closures are required during construction, limit to the hours that are least disruptive to access for the adjacent land uses), provisions for 24-hour access by emergency vehicles, and safe vehicular and pedestrian access to local businesses and residences during construction. Therefore, BIG construction activities would not conflict with a program, ordinance, or policy addressing transit, roadway, bicycle, or pedestrian facilities. BIG construction would result in a less than significant impact concerning the circulation system.

Operations

An analysis of BIG's potential to conflict with each relevant policy, plan, ordinance, and program is provided in **Section 7.2 Circulation System Conflict Evaluation**. BIG would not conflict with programs, plans, ordinances, or policies addressing transit, roadway, bicycle, and pedestrian facilities. Therefore, BIG would result in a less than significant impact concerning the circulation system.

Hazards Impact Evaluation

Temporary Construction Period

BIG construction activities would not substantially increase hazards due to geometric design features or incompatible uses. BIG's construction activities would be temporary and would occur mostly within the BIG footprint. Additionally, the construction plans and specifications would be designed to meet relevant design standards (City, County, Caltrans, etc.) and sight distance requirements. Therefore, BIG construction activities would not increase hazards due to geometric design features or incompatible uses. BIG construction would result in a less than significant impact concerning hazards and incompatible uses.

Operations

BIG would not substantially increase hazards due to geometric design features or incompatible uses. The proposed roadway and intersection improvements would be designed to meet relevant design standards (City, County, Caltrans, etc.) and sight distance requirements. BIG does not propose any incompatible uses. Therefore, BIG would result in a less than significant impact concerning hazards and incompatible uses.

Emergency Access Impact Evaluation

Temporary Construction Period

The contractor would prepare a detailed TCP, which would minimize the impact of construction and construction traffic on adjoining and nearby roadways in close consultation with the City, local law enforcement, and Fire District officials.

Emergency vehicle access would be maintained at all times to the BIG construction site and adjacent land uses, and to and from fire stations, hospitals, and medical facilities near the construction site and along the truck routes. A temporary bypass would be constructed to facilitate access through the corridor throughout the Main Street at Lenwood Channel bridge reconstruction.

BIG proposes to vacate the southern portion of Hinkley Road for approximately 0.6-mile (i.e., between the south side of the Mojave River bridge crossing and Main Street), closing the existing at-grade rail crossing and removing access to Hinkley Road via Main Street. BIG also proposes to realign Jiggs Road slightly north/west to align with realigned Hinkley Road. During BIG's construction phase, emergency access to the Hinkley Road area north of the Mojave River Bridge crossing would be provided from the northeast via SR-58 to Hinkley Road. Emergency access would be provided from Hinkley Fire Station 56 and Helendale Fire Station 4, in addition to emergency response assistance (e.g., from Barstow Fire Protection District Headquarters Fire Station 366 and other jurisdiction resources) when needed through the mutual aid agreements. Construction-related access interruptions are temporary, and the TCP would minimize the impact of BIG's construction activities (e.g., road and lane closures) and construction traffic on nearby land uses. Therefore, BIG's impacts concerning emergency access during the construction phase would be less than significant.

Operations

BIG would maintain adequate emergency access at all times. Proposed roadway, intersection, and access improvements would be designed to meet relevant design standards (City, County, Caltrans). BIG proposes to vacate select roads to allow for BIG construction; as applicable, BIG also proposes to acquire and vacate the existing parcels adjacent to the vacated roadways to eliminate the need for vehicle access to these parcels. The proposed site design would also allow for adequate emergency access to the BIG Specific Plan area. Internal and off-site roadways and transportation improvements would be designed to meet City Code, including Fire Code, and County Code (as applicable).

BIG also proposes to realign Jiggs Road north of its existing location to maintain access, including emergency access, to Hinkley Road from the west. With this, access is provided from the east via Main Street, the north via Hinkley Road and Lenwood Road, and the west via Jiggs Road. Therefore, BIG would not result in inadequate emergency access.

Therefore, BIG would result in a less than significant impact concerning emergency access.

1.8 Truck Miles Traveled (TMT)

Pursuant to guidance from the State of California Governors' Office of Land Use and Climate Innovation (formerly the Office of Planning and Research (OPR)) in the Technical Advisory on Evaluating Transportation Impacts in CEQA ("Technical Advisory") (Governor's Office of Planning and Research, 2018), heavy-duty trucks are not required to be considered when calculating VMT impacts under CEQA; however, truck miles traveled (TMT) can inform other BIG environmental analyses (e.g., Air Quality, Greenhouse Gas (GHG) Emissions, Energy, and Noise), and is therefore provided in this document for informational purposes. BIG is anticipated to reduce TMT by 1) increasing the use of trains for cargo transportation leaving the Port of Los Angeles and Port of Long Beach (Ports)[3]; and 2) providing an IMF closer to container origins and destinations than existing BNSF IMFs. **Table 3: Summary of Annual Truck Miles Traveled** summarizes the forecast net TMT reduction as a result of BIG. BIG is projected to reduce annual heavy-duty truck miles traveled by hundreds of millions of miles. TMT only includes heavy-duty truck trips, as defined previously in this report.

Table 3: Summary of Annual Truck Miles Traveled

Scenario	Annual Truck Miles Traveled		
	Opening Year 2028	Interim Year 2033	Horizon Year 2048
No BIG Baseline – IMF	22,708,000	28,739,000	35,564,000
No BIG Baseline – Transload Warehouse Center	211,907,000	278,885,000	323,777,000
No BIG Baseline (Total)	***234,616,000***	***307,625,000***	***359,342,000***
Plus BIG – IMF	11,784,000	14,717,000	18,562,000
Plus BIG – Transload	5,007,000	6,596,000	7,657,000

[3] i.e., heavy-duty truck transport would be reduced, to the extent that it would be replaced by cross-dock intermodal rail operations between the Ports' on-dock facilities and the proposed BIG IMF, and the electric hostlers that would be used to transfer containers between the IMF and BIG's proposed transload warehouse center (and vice versa), entirely on private roads internal to the BIG footprint. Electric hostlers are trucks driven by workers used for moving trailers and containers short distances within warehouses, freight terminals and rail yards. Electric hostlers would not use public roadways outside of the BIG footprint.

Warehouse Center			
Plus BIG (Total)	***16,791,000***	***21,312,000***	***26,218,000***
Net Truck Miles Traveled Reduction	**-217,825,000**	**-286,312,000**	**-333,123,000**

Source: Author Compilation[4]. (2025).
Note: Estimates rounded to the nearest thousand.

[4] The term "Author Compilation" throughout this report denotes information or data that is not directly referenced from a source. These values are synthesized from several sources and are the result of processing or calculations. Analysis methodology, sources, and processes are typically discussed in the sections preceding or following the table.

2.0 INTRODUCTION

This technical report was prepared to meet the California Environmental Quality Act (CEQA) requirements ("CEQA Assessment"), for BNSF Railway's (BNSF's) proposed Barstow International Gateway Project (BIG). The CEQA Assessment is consistent with the methodology discussed in the "BNSF Barstow International Gateway Project – Traffic Study Scoping" Memorandum ("*Traffic Scoping Memo")* (Kimley-Horn and Associates, Inc., May 13, 2025a) to the City of Barstow (City) and includes analysis of VMT, circulation system conflicts, transportation hazards, and emergency access. The City will serve as lead agency under CEQA, and therefore the VMT assessment is completed pursuant to City of Barstow City Council Resolution No. 5219-2025 ("City VMT Resolution") (City of Barstow, 2025a). Evaluation of circulation system conflicts, transportation hazards, and emergency access is completed pursuant to CEQA requirements.

A Level of Service (LOS) Assessment for consistency with the planning-level LOS standards outlined in the City of Barstow proposed General Plan, San Bernardino County Transportation Impact Study Guidelines (County of San Bernardino, 2019), and the San Bernardino Congestion Management Program (CMP) 2016 Update (County of San Bernardino, 2016) is included in a separate report **Appendix 5.15 BIG-2: Level of Service Assessment – Transportation Analysis** ("*Level of Service Assessment*") (Kimley-Horn and Associates, Inc., 2025b). Automobile delay, as measured by LOS or other similar metrics noted in the *Level of Service Assessment*, does not constitute a significant environmental effect under CEQA (Pub. Resources Code, § 21099, subdivision (b)(3)).

3.0 PROJECT SUMMARY

This Report has been prepared to analyze the proposed Barstow International Gateway (BIG) and associated off-site improvements. BIG is located in the City of Barstow (City) and in unincorporated areas in the County of San Bernardino (County), California (see **Figure 7: Regional Vicinity Map** and **Figure 8: Local Vicinity Map**). BIG consists of a rail yard with an intermodal facility[5] and "block swap" facility[6], a transload warehouse center[7], and a solar farm.

Additionally, to serve the proposed rail yard and transload warehouse center, BNSF Railway Company (BNSF) proposes off-site rail improvements (including lead track extensions), and off-site non-rail improvements (including drainage, utilities, and circulation/roadways).

BIG's proposed components are depicted on **Figure 9: Barstow International Gateway Conceptual Site Plan** and **Figure 10: BIG Off-Site Improvements, West**, and off-site improvements are depicted on **Figure 11: BIG Off-Site Improvements, East**.

3.1 Project Location and Setting

BIG totals approximately 5,000 acres[8], and includes approximately 680 acres which would remain ungraded/undisturbed ("Mojave River buffer area"). BIG's Specific Plan area totals approximately 4,300 acres and is generally bounded by the Mojave River to the north, Main Street (also referred to as National Trails Highway or Route 66) to the south, Lenwood Road to the east, and Hinkley Road to the west.

Most of the BIG footprint is within unincorporated County lands, while the remainder is within Barstow City limits. The BIG footprint is generally flat and gradually slopes north to the Mojave River. Off-site improvements are generally within existing BNSF rail and City/County street rights-of-way. The BIG footprint is primarily vacant undeveloped land, which is traversed by an existing BNSF railroad, and which contains scattered residential, commercial, and industrial land uses. This area is mostly devoid of tall vegetation and trees, with structures and other elements of the built environment scattered throughout. Existing land uses within BIG's footprint are listed in **Table 4: Existing Land Uses**. There are approximately 108 dwelling units and approximately 94,000 square feet of non-residential land uses (i.e., commercial and industrial) within the BIG footprint. Additionally, a private airstrip (Depue Airport) is within BIG's proposed solar farm footprint. Under BIG, this private airstrip would be demolished and replaced with the proposed solar farm.

Table 4: Existing Land Uses

Description	Residential (DU)	Commercial (SF)	Industrial (SF)	TOTAL (DU)	TOTAL (SF)

[5] "Intermodal facility" refers to a rail yard where containerized goods are transferred between trains and trucks. Trucks arrive to either pick up containers from arriving trains or deliver containers for departing trains. However, unlike traditional intermodal facilities, at BIG the majority of containers would arrive by train and be transferred to and from electric hostlers.

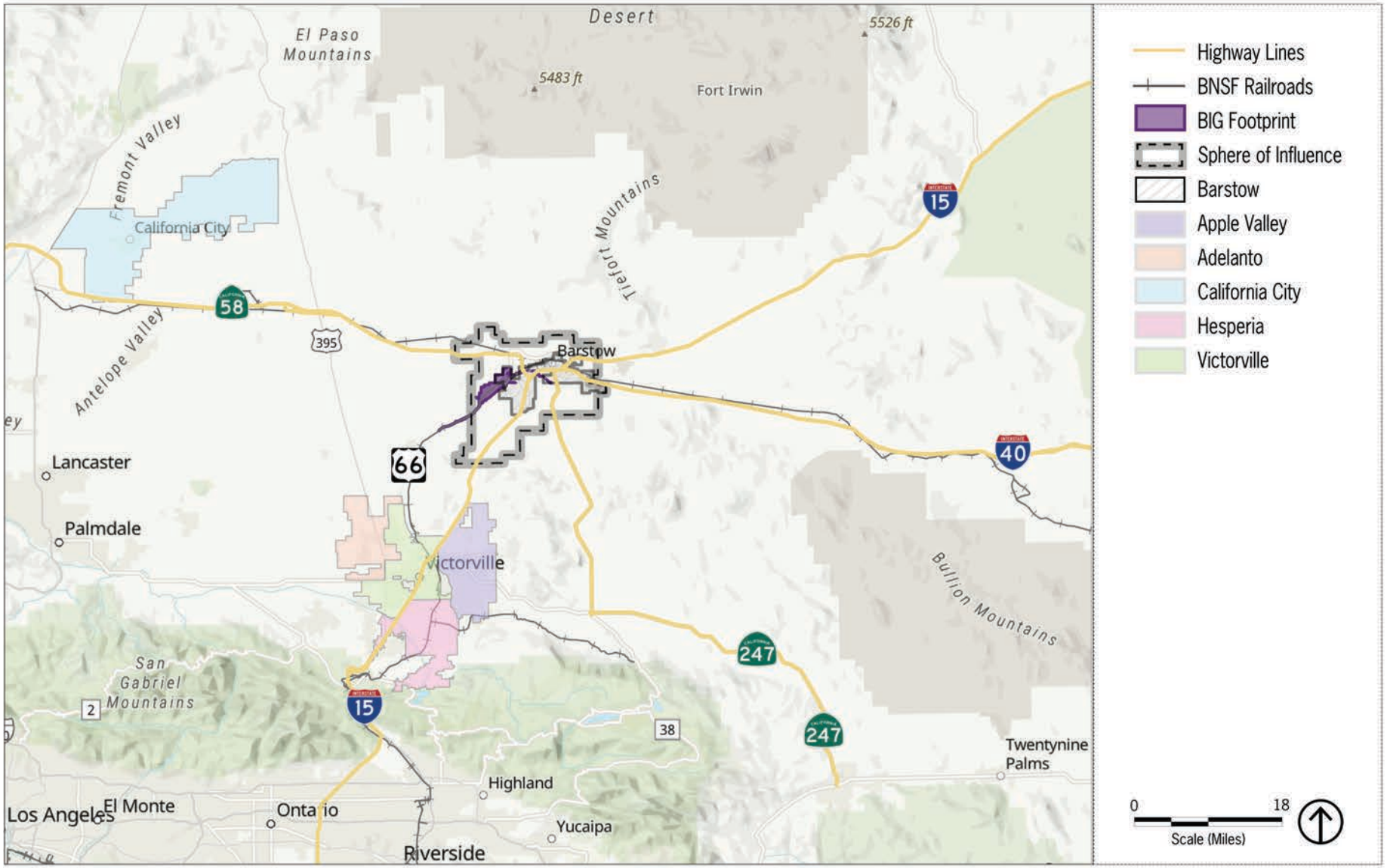
[6] "Block Swap" refers to transferring a block of intermodal train cars between trains. In effect, the entire block of cars remains coupled together and is moved en masse to another train.

[7] "Transload" refers to the transfer of goods from one container to another. In this document, it specifically refers to the transfer of goods from 40-foot international containers to 53-foot domestic containers. The transload warehouse center at the BIG is designed to serve goods transported to and from the intermodal facility by rail.

[8] Although the BIG Specific Plan acreage is 4,335 acres, throughout this technical report, the BIG Specific Plan acreage is referred to as 4,300 acres. Note: all acreages in this report are preliminary and based on GIS data. Acreages will be refined with site survey.

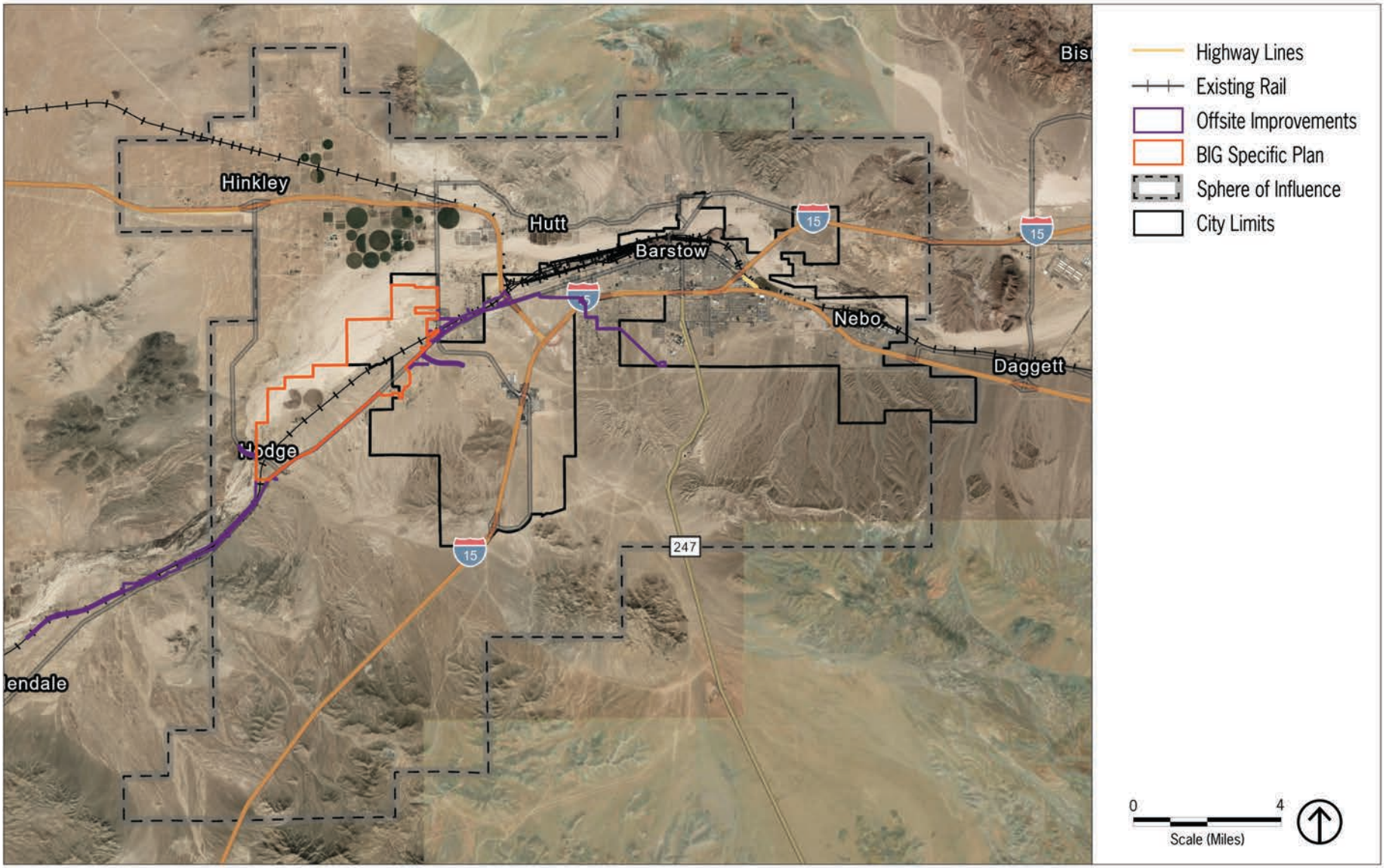
Existing Land Use	108	85,887	7,837	108	93,724

Regional vehicular access to BIG is provided by Main Street from the south, I-15 from the southeast, and SR-58 from the east. Local access to BIG is primarily provided by Lenwood Road and Hinkley Road from the east and west, respectively, in addition to various unpaved roads along Main Street. Regional rail access is provided from the north by BNSF's Mojave subdivision, from the west by BNSF's Cajon subdivision, and from the east by BNSF's Needles subdivision.



Sources: City of Barstow, 2024
County of San Bernardino, 2023

Figure 7: Regional Vicinity Map



Sources: City of Barstow, 2024
County of San Bernardino, 2023

Figure 8: Local Vicinity Map

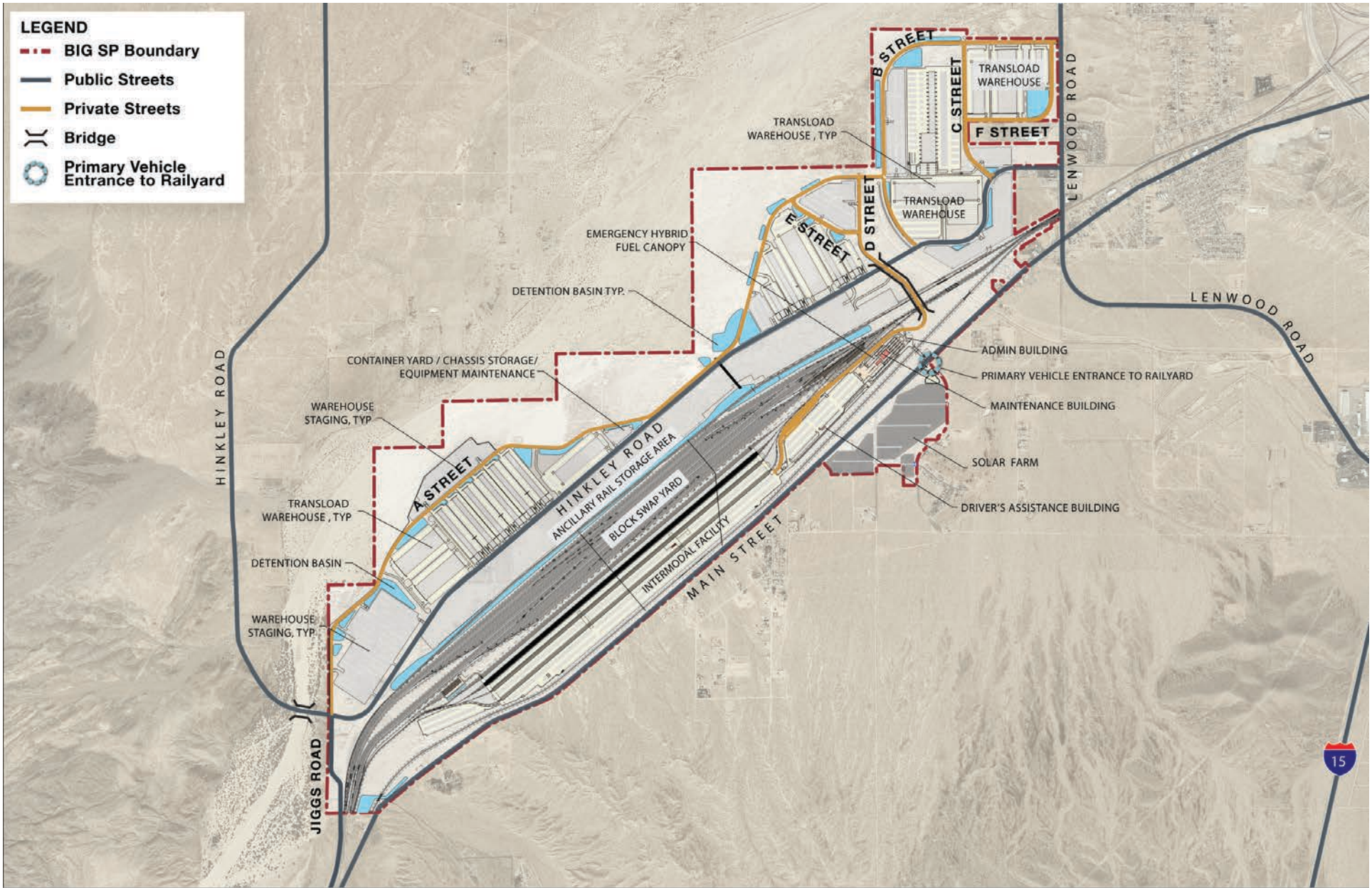
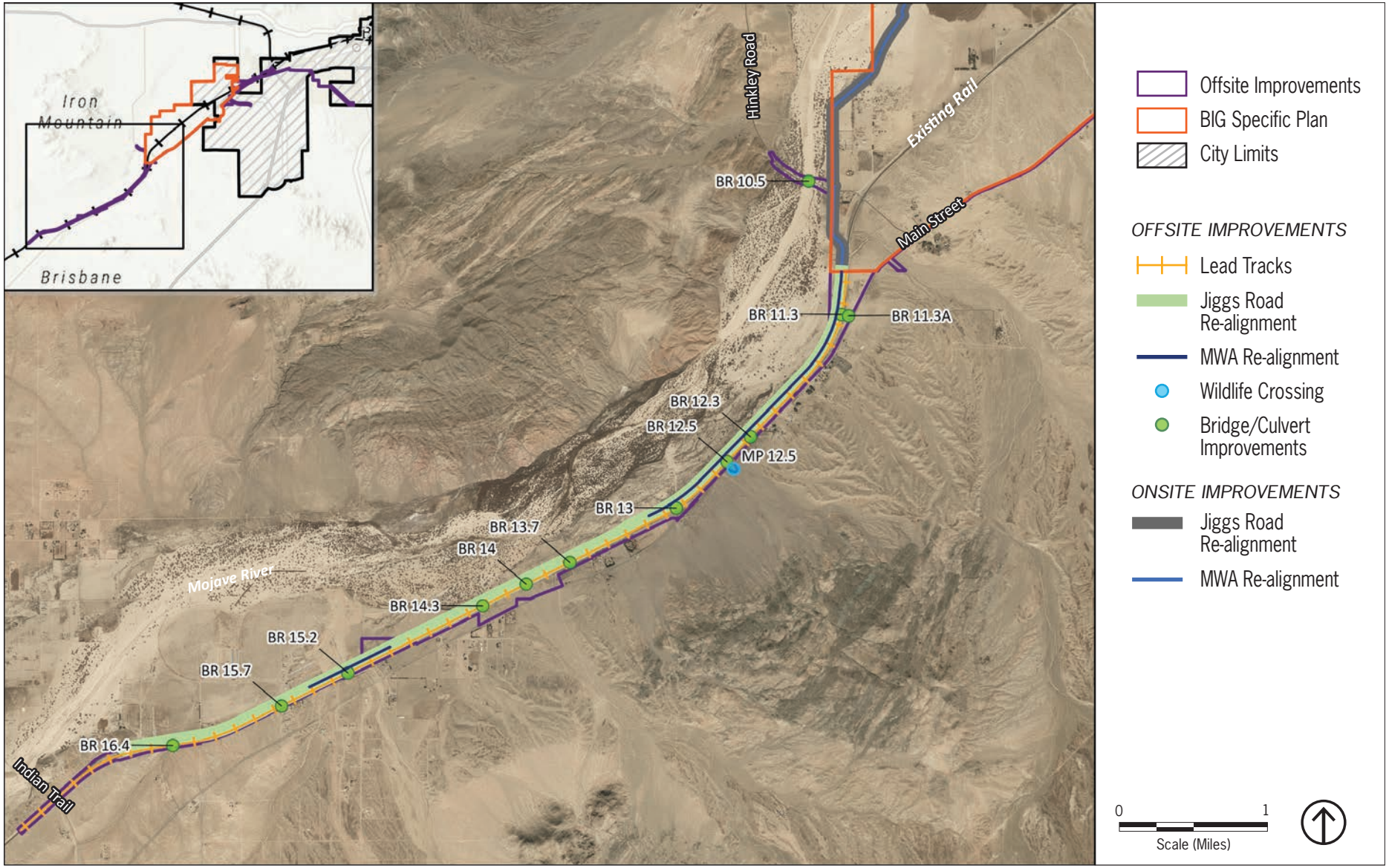
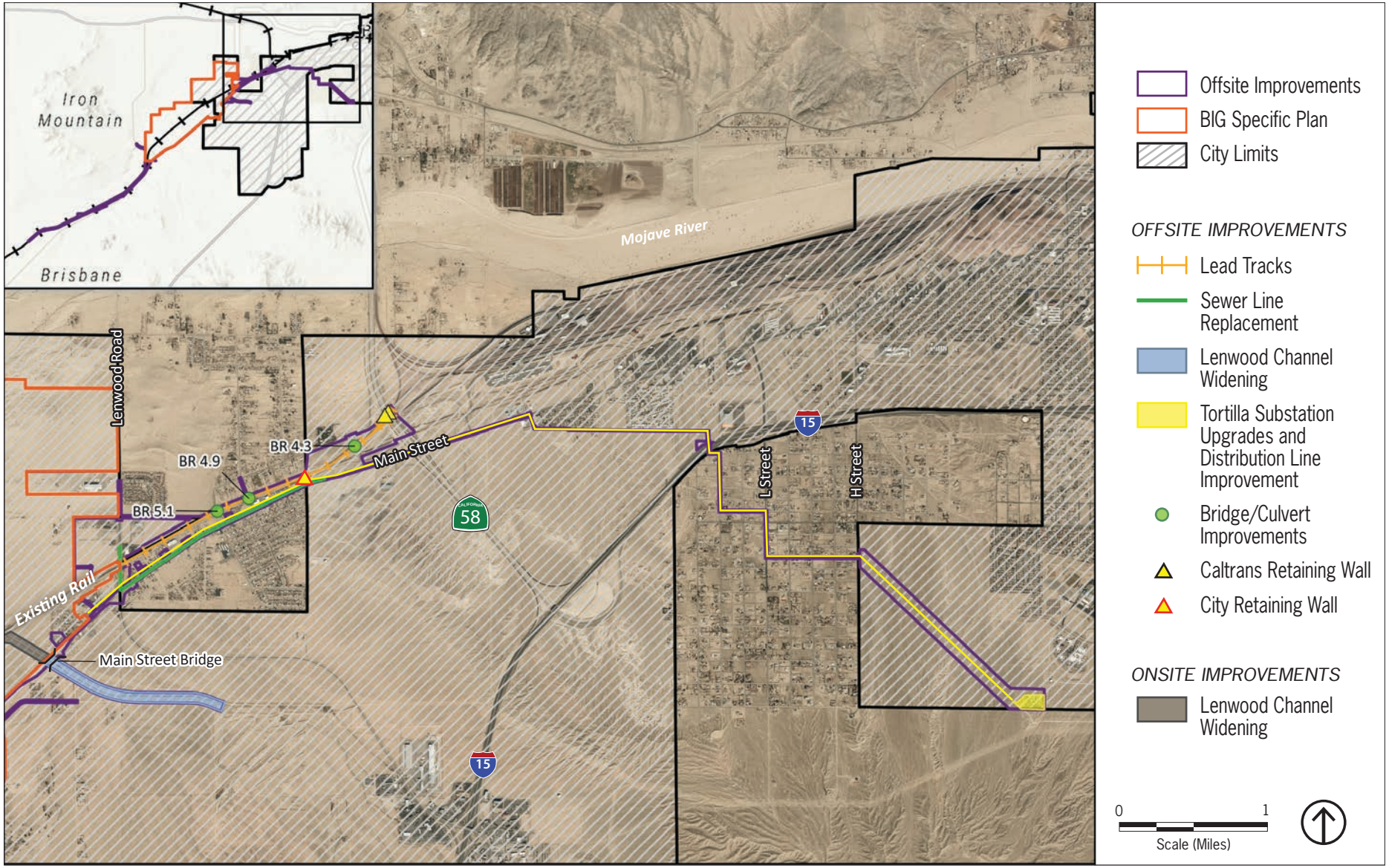


Figure 9: Barstow International Gateway Conceptual Site Plan



Source: TranSystems, 2025

Figure 10: BIG Off-Site Improvements, West



Source: TranSystems, 2025

Figure 11: BIG Off-Site Improvements, East

3.2 Project Components

Rail Yard

Overview

The rail yard would be generally bounded by the existing mainline to the north, Main Street to the south, Lenwood Road to the east, and Hinkley Road to the west. The rail yard would consist of an intermodal facility (i.e., where cross-dock intermodal operations and other intermodal facility operations would occur and where support intermodal facility uses would be located), a block swap yard, and ancillary rail areas (i.e., container yard, chassis storage, and ancillary rail storage area), as described below.

BIG's proposed rail yard would operate 24 hours per day, 365 days per year. The rail yard would have approximately 860 employees during Opening Year (2028), 1,010 employees in Interim Year (2033), and 1,125 employees during Horizon Year (2048)[9], which would accommodate both the block swap yard and intermodal facility operations. Employees would be split evenly between three shifts.

While the block swap yard would change the number of trains that would arrive or depart BIG by optimizing for end destinations, it would not increase the number of containers. BIG's intermodal facility would, through the cross-dock intermodal operation, add a new volume to the BNSF network, totaling approximately 3.2 trains per day on average in 2028, approximately 4.3 trains per day on average in 2033, and approximately 4.9 trains per day on average in 2048. These train counts include eastbound and westbound trains, and as described elsewhere, trains between the Ports and the BIG intermodal facility would be comprised of dedicated Tier 4 locomotives.

Intermodal Facility

BIG's intermodal facility is proposed at the southern extent of the BIG Specific Plan area, and its operations would consist of two types: cross-dock intermodal and "other" operations. BIG's intermodal facility would operate differently than typical intermodal facilities in that most of the containers processed at BIG intermodal facility would not arrive or leave externally by heavy-duty trucks. Instead, almost all of the containers would arrive or leave by train and be processed via BIG's unique "cross-dock intermodal" operation. The intermodal facility's primary purpose would be to transfer containers between railcars and electric hostlers[10] for cross-dock movements at the on-site proposed transload warehouse center, and vice versa, though a small portion would arrive by heavy-duty truck. The electric hostlers would be used to transport containers within the rail yard, and between the rail yard and transload warehouse center. The electric hostlers would be zero-emission and would not leave BIG. This differs from the operations at a traditional intermodal facility where the primary purpose is to transfer containers from heavy-duty trucks[11] to railcars, and vice versa (defined as "other" operations). BIG also includes a dedicated fleet of Tier 4 linehaul locomotives[12] to move containers between the Ports and the BIG intermodal facility.

[9] A "Horizon Year" is the last year of analysis. BIG's Horizon Year is 20 years after opening.
[10] Electric hostlers are trucks used for moving trailers and containers short distances within freight terminals, rail yards, and warehouses. Electric holsters would not use public roadways outside of BIG footprint.
[11] "Heavy-duty" trucks are conventional highway trucks that travel on public roads and carry containers intra- and inter-state.
[12] "Tier" refers to emissions standards set by regulatory agencies for engine emissions, with Tier 0 referring to the oldest and having the highest emissions, while Tier 4 is the latest, more stringent standard with the fewest emissions.

BIG's intermodal facility would be composed of various components including railroad tracks, cargo handling equipment, an automated gate system, circulation roadways, yard equipment parking, container parking, stormwater detention ponds, electric vehicle charging stations, and buildings and ancillary rail facilities. Containers would be stored in parking spaces and low stacks at the intermodal facility, along with the ancillary rail area, and transload warehouse center (each described further below). Although electric lift equipment would be utilized to the extent commercially feasible within BIG's intermodal facility, a small 5,000-square-foot fuel canopy would be constructed in the electric hostler maintenance area to accommodate fueling of hybrid equipment. Hybrid and diesel equipment would include rubber-tired gantry cranes (RTGs), seven air compressors, welders, railcar wheel change machines, and heavy-duty truck transport refrigeration units (TRUs). The fuel canopy would be served by a 10,000-gallon unleaded fuel aboveground storage tank and a 20,000-gallon diesel fuel aboveground storage tank, with both controlled by an electronic fuel control system. In addition, starting in BIG opening year 2028, BNSF would increase the renewable diesel composition within their existing southern California fueling sites, including the existing fueling sites at the Ports and Barstow classification yard from 1 percent to 10 percent, a 900 percentage point increase in renewable diesel. This would improve the emissions of all BNSF trains fueling at the Ports, including those BNSF trains that would not stop at BIG.

BIG's intermodal facility proposes approximately 134,000 square feet of support buildings and structures, as detailed in Table **5: BIG Intermodal Facility Structures**. As described below, final building sizes may vary slightly, this EIR conservatively analyzes up to 150,000 square feet of support buildings and structures.

Table 5: BIG Intermodal Facility Structures

Building/Canopy	Square Footage
Administration Building	23,000
Electric Hostler Employee and Maintenance Building	39,000
Drivers Assist Building	5,000
Crane Maintenance Employee and Storage Building	5,000
Crane Maintenance Canopies	22,500
Container Safe Haven Canopies	2,500
Quick Repair Canopy	10,000
AGS Kiosk Canopies	20,000
AGS Portals	2,000
Emergency Fuel Station Canopy for Hybrid Vehicles	5,000
Total	*134,000*
Assumed Building Total for Final Design	*150,000*

Note:
The square footage described is an estimate and may vary up to 10% from 134,000 depending on the final engineering, therefore, the total square footage for planning purposes is estimated at approximately 150,000 Square Feet.

Block Swap Yard

The block swap yard is proposed within the middle portion of the BIG Specific Plan area, on approximately 410 acres of the rail yard's total approximately 1,950 acres. The proposed block swap yard would allow for the transfer of multiple railcars, or "blocks" of intermodal rail cars between trains via Tier 4 switcher locomotives. A block is defined as rail cars of a similar type moving to a similar destination that are already

connected and can be combined with other blocks intended for similar destinations to produce more efficient train movements. The entire block of rail cars would remain coupled together and be moved en-masse, permitting the synchronizing of blocks to their destinations, so that each train would be compiled of rail car blocks traveling to similar destinations. Blocks could be assembled from inbound trains or trains processed at the intermodal facility carrying containers processed at the transload warehouse center. Certain train blocks may stage at the block swap yard until another train arrives with similar destination. The block swap yard would facilitate switching and transfer of lengthy rail car blocks between tracks for assembling departing trains. Thus, by synchronizing trains to their destinations, the block swap yard would improve train efficiency eastbound and westbound. The rail car blocks within the block swap yard would include containers from BIG's intermodal facility and containers processed at the transload warehouse center, combining as needed based on their destination.

The block swap yard's function is unique compared to a typical classification yard, such as the existing Barstow classification yard. Classification yards are where trains being processed are made up of non-intermodal railcars (i.e., individual boxcars, gondolas, open and closed hopper cars, automobile railcars, and tank cars), rather than intermodal railcars. BNSF designates these types of trains with a different train identification than those that would be processed at BIG. Further, BNSF uses different equipment to process these trains than would be used at BIG. While there is a small intermodal facility component adjacent to the existing Barstow classification yard, that intermodal facility is only used to process overflow from other BNSF intermodal facilities. By contrast, BIG's block swap yard would disassemble and assemble lengthy blocks of railcars with intermodal containers to similar destinations utilizing Tier 4 switcher locomotives. The existing Barstow classification yard also utilizes switcher locomotives as part of its operations, although they are currently Tier 0/0+/1+ switchers. Starting in BIG opening year 2028, BNSF will voluntarily retire all existing Tier 0/0+/1+ switcher locomotives at the unrelated existing Barstow classification yard, and in their place add six Tier 4 switcher locomotives.

Ancillary Rail Area

The ancillary rail storage area is an approximately 400-acre area north of the existing mainline and would be graded and covered with aggregate to be used for numerous purposes, including a container yard, truck chassis storage, and storage of maintenance equipment. A container yard would support the storage of empty containers awaiting loading while chassis storage would be used to provide parking for empty chassis awaiting use for loading, unloading, or draying of containers. The ancillary rail storage area would also be used for storage of spare parts and equipment for track maintenance, including rail, ties, turnouts, and other track material.

Mainline Improvements

BIG would retain the existing two rail mainlines ("north mainlines") within their current alignments, except at bridge crossings, which would be upgraded. BIG also proposes to construct two new mainlines ("south mainlines"), which would traverse the proposed rail yard in an east-west orientation, extending from Lenwood Road on the east to Hinkley Road on the west. During the construction phase, the south mainlines would be used to divert train traffic from the existing mainlines while they are upgraded. During BIG operations, half of the trains which would bypass BIG would use the north mainlines and half would use the south mainlines to balance train counts between the mainlines. BIG would also upgrade various bridge crossings including replacement of the crossing at Lenwood Channel to accommodate the

proposed Lenwood Channel widening; removal of existing culverts[13] to accommodate proposed culverts for the overall rail yard; and replacement of two structures to meet BNSF standards regarding 50- and 100-year flood conditions.

Transload Warehouse Center

The transload warehouse center is proposed at the northern extent of the BIG Specific Plan area, on approximately 1,330 acres of BIG SP's total approximately 4,300 acres. The transload warehouses would be designed to process the contents of containers from cross-dock intermodal operations, with a small percentage dedicated to processing the contents of containers that have a portion destined for the Inland Empire (the remainder of the container's contents would be placed on trains destined eastward). A small percentage of containers processed at the transload warehouse center would arrive/leave by heavy-duty trucks, primarily from/to the Inland Empire. The transload warehouse center would process most of the containers within an on-site "closed loop" operation between BIG's intermodal facility and the transload warehouse center. The transload warehouse center would include approximately 9.0 million square feet of transload warehouses. The transload warehouse center would be fully built during construction, but operations would gradually increase as customers relocate to BIG. Transload warehouse center operations would include approximately 2,767 employees in Opening Year, approximately 3,660 employees in Interim Year, and 4,248 employees in Horizon Year.

The transload warehouse center would be composed of multiple buildings of various configurations and sizes, depending on tenant needs. As such, **Figure 9: Barstow International Gateway Conceptual Site Plan** provides a conceptual site plan for illustrative purposes showing potential transload warehouse buildings, locations, and sizes. Final transload warehouse buildings, locations, and sizes may differ from those proposed and would be processed with the City, as development occurs. Each transload warehouse would include container parking/storage areas, employee parking, stormwater/hydrology improvements, and landscaping. Finally, emergency generators are proposed throughout the transload warehouse center to provide electric power in the event of a power outage.

There would also be several areas distributed around the transload warehouse center, adding up to approximately 275 acres, for staging/overflow parking of containers accessing the transload warehouse center. These warehouse staging areas would be for truck containers only; truck "hoteling"[14] would not occur, as electric hostlers would transfer containers to/from these areas, thus, heavy-duty truck trailers would not enter or exit these areas.

Hydrology/Stormwater Drainage Improvements

BIG would construct various infiltration basins and drainage outlets to the Mojave River that would be designed for 100-year flood events. Preliminarily, BIG proposes detention ponds of various sizes throughout BIG footprint totaling approximately 165 acre-feet of storage volume, which would accommodate the 100-year flood conditions.

In addition to various ephemeral washes throughout BIG footprint, three other primary hydrologic features traverse BIG footprint, as detailed below.

[13] Culverts are drainage features, typically a pipe or arch, used to convey water under a road or rail tracks.
[14] Truck "hoteling" refers to when a heavy-duty truck parks for the driver to rest within the cab.

Unnamed Stream (Milepost 10.9): This feature is a dry wash from Main Street to the Mojave River that includes a sharp western bend. This feature would be realigned to accommodate track mains, sidings, and support tracks and improved with a combination of bridges and box culverts spanning the channel (Bridge 10.9a and Bridge 11.2, respectively).

Hinkley Road Bridge at Mojave River (Milepost 10.5): The existing Hinkley Road Bridge, which the County owns and maintains, is at a narrow section of the Mojave River and crosses via a concrete pier structure. Based on discussions with the County, the existing Hinkley Road Bridge over the Mojave River is experiencing structural issues and is at risk of being over-topped by seasonal flooding. Hydrology and hydraulic analyses have indicated the existing bridge is undersized. To maintain a roadway connection to Hinkley Road from the transload warehouse center, BIG proposes replacing the existing bridge with a longer structure to better match the channel width of the Mojave River at that location. The channel beneath, and immediately adjacent to, the existing bridge would be excavated and widened to match the natural channel width more closely. Portions of Hinkley Road immediately east and west of the bridge would be raised to reduce exposure to Mojave River flood events. These proposed improvements at Hinkley Road Bridge would reduce flooding compared to existing conditions. As part of the improvements, the existing at-grade railroad crossing would be abandoned, and vehicles would instead utilize the proposed Hinkley Road extension through the transload warehouse center.

Lenwood Channel (Milepost 6.5): A portion of the BIG footprint along Lenwood Channel is currently within the FEMA 100-year flood zone due to existing flooding concerns. Lenwood Channel is a north-south earthen channel used to convey water from the southeast to the Mojave River and maintained by San Bernardino County Flood District. Lenwood Channel would be widened by approximately 60 to 100 feet throughout the Specific Plan area for a length of 1.1 miles, continuing off-site south of Main Street, for an additional 1 mile. The widened channel would improve flooding compared to existing conditions. Preliminary BIG design requires the Lenwood Channel to be spanned at three locations for additional track east leads, mains, and sidings, as well as three roadway crossings: Main Street, Hinkley Road, and the private road between the intermodal facility and transload warehouse center.

Utility Improvements

To accommodate the proposed rail yard and transload warehouse center, BIG would require both relocation of existing facilities and construction of new/expanded facilities (i.e., water, wastewater, electric power, natural gas, and telecommunications). The utility improvements proposed within BIG's footprint are discussed below.

Water

BIG's construction phase water demand includes non-potable water for construction activities and potable water for on-site construction workers. To provide non-potable water during the construction phase, up to eight new private on-site temporary groundwater wells would be constructed within BIG's transload warehouse center portion.

Temporary aboveground connections from Golden State Water Company existing mains within Main Street to BIG would be constructed to supply potable water to the construction sites. Additionally, Mojave Water Agency owns and operates a 48-inch recharge water line that crosses the BIG Specific Plan area.

BIG proposes relocating this existing line to the north to avoid conflict with rail yard and transload warehouse center improvements.

Operational potable water and fire flow water would be provided by directly connecting to facilities owned and operated by the Golden State Water Company. Fire flow would be supplemented by on-site water tanks and fire pumps if necessary to meet the fire flow requirements. Power to water tanks and fire pumps would be supported by the transload warehouse diesel backup generators in the case of an emergency. Water tanks would be placed entirely within the BIG footprint. The transload warehouse center would connect to an existing water main on Jasper Road on the east end of the BIG Specific Plan area. The rail yard would connect to an existing water main on the east end of the BIG Specific Plan area near Lenwood Road on the south side of Main Street. A new public 12- to 16-inch looped water main would be constructed from the existing connection in Main Street, extending west to the edge of rail yard, north to Hinkley Road, and then continue east in Hinkley Road to the existing connection point near Lenwood Road. A second connection from the looped water main would be provided at the northeast corner of the Specific Plan at Lenwood Road. The new on-site public water mains total approximately 10 miles in length.

Wastewater

BIG's construction-related wastewater generation would be from construction workers. Temporary portable facilities (i.e., portable restrooms and portable handwash stations) would be utilized during the construction phase.

BIG's operational wastewater generation would be from transload warehouse center and rail yard employees, and the rail yard wash bays and track pans. Wastewater generated by BIG would discharge to the City's existing wastewater system at three connection points. The transload warehouse center would discharge to the proposed new sewer main in Hinkley Road. A new 8-inch wastewater line is proposed within the Hinkley Road extension from the west end of the transload warehouse center to the northeast end of the transload warehouse center and would connect to the existing sewer main in Lenwood Road. Within the transload warehouse center, west of the Lenwood Channel, 8-inch lines would extend north in C Street to serve the transload warehouses connecting to Lenwood Road via B Street. The rail yard would include new wastewater lines and force mains at the southern portion of the rail yard, conveying wastewater to the east and connecting to the existing sanitary sewer main in Main Street near Country Club Drive. BIG's wastewater would be conveyed by gravity flow to and treated at the Barstow Regional Wastewater Treatment Facility, which is owned and operated by the City. Wastewater conveyance and treatment would be coordinated with the City.

Electrical Power

BIG construction activities would generate temporary electric power demand from construction equipment, tools, lighting, and other necessary facilities (e.g., temporary offices). The electric power for construction activities would be supplied through connections to existing Southern California Edison (SCE) facilities.

BIG operations would generate permanent electric power demand from the transload warehouse center (lighting, electric vehicle charging for material handling, and forklifts) and rail yard (lighting, buildings, cranes, and electric hostlers (used to move containers between the rail yard and the transload warehouse

center). BIG operational electric power demand would be met through connecting to the SCE Tortilla Substation and supplemented with on-site electrical generation (i.e., an approximately 140-acre, approximately 21 megawatts solar power generation facility (i.e., solar farm), which is described further below. BIG proposes to construct the following on-site electric power facilities to serve BIG:

- Three substations: two substations at the eastern and western extents of the rail yard; and one substation within the solar farm.
- Additional 33kV distribution lines connecting via underground duct banks in a loop around the west end of the intermodal facility and north end of the transload warehouse center. These proposed 33KV distribution lines would total 23 miles of ductbank within the BIG Specific Plan area.
- An approximately 140-acre solar farm is proposed south of BIG rail yard, at the southwest corner of the Main Street at Country Club Drive intersection. The solar farm is estimated to generate approximately 21 megawatts to serve BIG. The solar farm would include a battery electric storage system and a new substation at the northwest corner to route power from the solar farm to BIG rail yard. The solar farm would be fenced to prevent trespass and would include internal roadways for maintenance vehicles. The solar farm would require minimal grading to level the site as existing topography is utilized wherever possible and excavation limited primarily to stormwater detention to capture runoff. Additionally, BIG would comply with CalGreen regulations requiring that rooftop solar generation be installed on the industrial warehouse rooftops (Title 24, Section 140.10). Based on 9.0 MSF of transload warehouse, BIG would include approximately 6.4 megawatts of rooftop solar generation for Title 24 compliance.
- Emergency diesel generators are proposed at various locations across the rail yard and transload warehouse center to provide backup power in the event of Tortilla Substation service interruptions. Rail yard generators would only be used if a power outage were to occur at nighttime, as the proposed solar farm would provide sufficient power during daytime in the event of a power outage. The rail yard would include up to 10 generators at the far western extent, while the transload warehouse center would include up to 29 generators dispersed throughout. Generators would require up to 50 hours of testing and maintenance operations per year.

Solar farm maintenance would consist of cleaning, inspecting, and replacing solar panels, equipment, and other system components. Maintenance trips associated with these activities would be limited to trucks transporting materials, equipment, and supplies to and from the farm. To maintain uninterrupted power generation for BIG, maintenance activities would occur incrementally. The solar farm would also require vegetative maintenance (e.g., mowing and weeding, and other grass control measures). No grading would occur during solar farm maintenance.

Natural Gas

BIG construction activities would not require construction of new natural gas facilities, although protection in place or relocation of existing natural gas facilities would be required to accommodate BIG.

Stormwater

To collect stormwater runoff, BIG proposes stormwater basins that would detain any stormwater in excess of predevelopment flows then discharge to existing drainageways through stormwater best management practices. BIG would include various outlets to the Mojave River. Exact sizing and locations of transload warehouse center basins would be dependent on final transload warehouse location, layout, and sizing. In addition, Lenwood Channel would be modified as discussed above.

Solid Waste

BIG would result in solid waste generation from construction (demolition debris, broken or excess materials, packaging, and other construction waste), as well as during operations from the rail yard and transload warehouse center. BIG's solid waste would be collected within on-site trash bins and be disposed of at the Barstow Sanitary Landfill, with 65 percent being recycled (for instance, demolished concrete foundations can be crushed and re-used on-site as aggregate).

Telecommunications

Telecommunication lines cross BIG footprint along Lenwood Road and along the southern edge of the existing tracks. Underground utilities may also be present. All underground communication facilities are assumed to have shallow depths except those crossing under existing features such as underpasses and creeks. Lines within BIG footprint may be relocated adjacent to/within existing and proposed rights of way or abandoned. In addition, BNSF Telecommunications would install approximately 12 communication towers with heights generally between 100 - 120 feet, though two communication towers would be 160 feet tall. Additionally, various existing telecommunications lines owned by Frontier Communications and Lumen would be removed from within BIG footprint, and, in their place, new communications line would be run beginning at the Jasper Road at Lenwood Road intersection, running to the western extent of the BIG Specific Plan area, and then running eastward back to Lenwood Road in a "loop."

On-site Circulation Improvements

BIG would include various on-site circulation improvements as discussed below.

Hinkley Road Realignment: BIG would vacate Hinkley Road between the south side of the Mojave River bridge crossing and Main Street, closing the existing at-grade rail crossing. Hinkley Road would be realigned beginning at the north side of the Mojave River bridge crossing to connect through the transload warehouse center to the Jasper Road/Lenwood Road intersection. Transload warehouse center employees and heavy-duty trucks destined for the transload warehouse center would enter from the Lenwood Road/Hinkley Road /Jasper Road intersection.

Internal private roadways: In addition to the realigned public Hinkley Road (discussed above), BIG would include four dedicated internal private roadways for electric hostlers (private streets A, B, D, and E), and two internal private roadways for employee, visitor, and truck access (private streets C and F).

Country Club Drive: Country Club Drive would be widened along the solar farm frontage for approximately 400 feet to the proposed realignment of Sweeten Lane. A new stop-controlled intersection is proposed at the Country Club Drive at Sweeten Lane intersection.

Main Street: Rail yard employees and heavy-duty trucks destined for the intermodal facility would enter BIG's rail yard from a new driveway on Main Street across from Country Club Drive. Main Street would be widened from two lanes to four lanes for approximately 0.5 mile east of Country Club, resulting in a consistent four-lane roadway width through Barstow. Additionally, the existing two-lane Main Street over Lenwood Channel low water crossing would be replaced with a new four-lane bridge that accommodates the 100-year flood condition, substantially reducing the existing flood conditions. Main Street would be raised over Lenwood channel, modifying the vertical alignment of Main Street for approximately 0.8 mile. The intent of this design is to keep flood waters contained in Lenwood Channel and convey the flow to the Mojave River under the bridge at MP 6.5, avoiding the overflow of the bank that can occur under existing conditions.

To accommodate BIG, various on-site public rights-of-way within the City and unincorporated San Bernardino County would also need to be vacated.

Off-site Improvements

In addition to the on-site improvements described above, BIG also proposes off-site rail and non-rail improvements, as discussed below:

Off-site Rail Improvements

BIG proposes lead track extensions to the east of approximately two miles and lead track extensions to the west of approximately seven miles ("east lead track" and "west lead track"). These off-site rail improvements would be primarily within existing BNSF right-of-way. These improvements would enable trains to safely enter and exit the mainline at mainline speeds, rather than slower "yard" speeds and risk fouling the track.[15] BIG east and west lead tracks would require modifications to existing culverts within the footprint; see also *Stormwater Drainage* discussion below.

Off-site Non-Rail Improvements

BIG proposes ancillary and related stormwater drainage, utility (i.e., water, sewer, electric power, natural gas, and telecommunications), and circulation/roadway improvements and modifications, described below.

Water. North of transload warehouse center, an existing Mojave Water Agency 48-inch recharge line would be relocated. The relocated line would stretch along the north side of the transload warehouse center to the west end of the BIG Specific Plan area, then continue along the north side of the mainline and lead tracks for a total of 8.3 miles.

Wastewater. An existing approximately 27-inch sanitary sewer line is within existing BNSF ROW for approximately 1.6 miles between Lenwood Road and Pettit Road. This line includes multiple north/south lateral connections to serve the land uses between Main Street and the existing BNSF tracks. BIG would relocate this line at Phillips Street south to within Main Street. Additionally, the transload warehouse

[15] "Fouling the track" means the placement of an individual or an item of equipment in such proximity to a track that the individual or equipment could be struck by a moving train or on-track equipment, or in any case is within four feet of the field side of the near running rail (49 CFR Part 214). When a rail network becomes congested, trains can foul the track by moving slower than a train behind them.

center will connect to City sewer via a new 27-inch sewer line within Jasper Road extending to north of Paris Avenue.

Electric Power. Electrical demand would be handled through connecting to the Southern California Edison Tortilla Substation, located approximately 0.4 mile south of the Veterans Parkway at Diamond Avenue intersection. Three underground duct banks with electrical conductors would connect BIG to the Tortilla Substation utilizing existing franchise agreements with the City and County on a route following Main Street, Sunrise Road, N Street, and Bonanza Road before utilizing existing easements between Bonanza Road and the substation. This proposed 33KV distribution route would extend approximately 7.1 miles underground from the Tortilla Substation to the intermodal facility's eastern extent at Country Club Drive, then continue overhead approximately 3.5 miles from Country Club Drive to approximately Hinkley Road. For the 33kv line segment from Tortilla Substation to BIG, the 33kv circuits would be in underground utility lines resulting in an approximately 30-foot-wide disturbance to account for construction access and temporary spoils. From Tortilla substation to H Street (approximately 1.2 miles), the 33kv conduit could occur within a 450-foot-wide corridor, inclusive of the existing 150-foot wide SCE easement along Bonanza Road. However, the exact alignment is presently unknown and is being coordinated with SCE. Therefore, this EIR analyzes an approximately 30-foot wide disturbance within the 450-feet wide corridor ("33kv distribution corridor"). This EIR analyzes the "worst-case" environmental impacts within the 33kv distribution corridor. SCE would make modifications, which include constructing new feeders and new power distribution lines. Within the Tortilla Substation's existing fence line, SCE would also make modifications to supply the new feeders from their existing 115kV-33kV transformers. Various off-site existing electric power lines could be relocated, modified, or extended to accommodate BIG improvements.

Natural Gas. Various off-site existing natural gas lines could be relocated to accommodate BIG improvements.

Telecommunications. No off-site telecommunications improvements are proposed. Various minor existing telecommunications lines would be relocated toward the eastern end of the lead track improvements. Existing telecommunications lines passing through the intermodal facility and block swap yard would be relocated to the north side of the Main Street ROW.

Stormwater Drainage. As described above, the Lenwood Channel widening would continue off-site, south of Main Street. It would be widened by approximately 60 to 100 feet for a total of approximately 2.1 miles (of which 1 mile would be off-site) to improve flooding compared to existing conditions. At the Main Street crossing at Lenwood Channel, BIG would replace 0.8-mile of the existing Main Street low water crossing of Lenwood Channel with a bridge and raise and widen the road through this stretch west to the new intermodal facility entrance. These improvements accommodate the City/County master plan and improve flooding compared to existing conditions.

Other. To accommodate wildlife crossings from south of Main Street to the Mojave River without potential conflict with vehicular or train traffic, BIG proposes an underground wildlife crossing under Main Street west of the existing Hinkley Road.

Circulation/Roadway. Jiggs Road would be realigned generally from just east of Indian Trail to Hinkley Road to maintain emergency access from Indian Trails to Hinkley Road. In addition, a maintenance road would be constructed alongside the mainline to provide maintenance access to the tracks, generally from

just east of Indian Trail to Hinkley Road. Various circulation and roadway improvements and modifications are proposed outside the BIG Specific Plan area. All circulation improvements would be permanent, except a temporary Main Street bypass. The temporary bypass would be constructed to maintain access along Main Street during Lenwood Channel Bridge reconstruction. To maintain access for adjacent residents, the temporary Main Street bypass would include private driveways for adjacent residential uses and would be open for the approximately 18-month bridge reconstruction period. Once the Lenwood Channel Bridge reconstruction is complete, the bypass would be removed and the site restored to its original condition. Additionally, construction of additional lead tracks over Pettit Road (approximately 1,100 feet west of SR-58) would require the road to be lowered by approximately 2.0 feet. BIG would also vacate various ROW within the City and County. Finally, Sweeten Lane would be vacated and realigned to eliminate the existing unimproved intersection with Main Street. A new paved access would extend from Country Club east approximately 1,000 feet and connect to the unimproved Sweeten Lane.

Additionally, the following off-site Transportation Modifications (TMs) are proposed to improve traffic operations, as identified in **Figure 3: BIG Transportation Modifications** and illustrated in **Figure 4: BIG Transportation Modification Details** and discussed in the *Level of Service Assessment*. These improvements would also include restriping and refreshed pavement where needed:

- **TM-1: Main Street & Petit Road intersection:**
  - *2033*: Install traffic signal.
  - *2048*: Same improvement as 2033.
- **TM-2: Lenwood Road & High Desert Road intersection:**
  - *2033*: Install traffic signal. Install fiber-optic interconnect system between High Dessert Road and Commerce Parkway and optimize signal timing for corridor.
  - *2048*: Same improvements as 2033 and optimize signal timing for corridor under 2048 conditions.
- **TM-3: Lenwood Road & Truck Freightliner Service Point Driveway intersection:**
  - *2033*: Install traffic signal. Install fiber-optic interconnect system between High Dessert Road and Commerce Parkway and optimize signal timing for corridor.
  - *2048*: Same improvements as 2033 and optimize signal timing for corridor under 2048 conditions.
- **TM-4: Lenwood Road & Main Street intersection:**
  - *2048*: Restripe southbound approach to provide a second southbound left-turn lane. Restripe southbound right-turn lane into a through-right lane. Reconfigure traffic island to provide space for additional southbound through movement. Restripe northbound approach to provide a second northbound left-turn lane.
- **TM-5: Lenwood Road & Love's Travel Stop Driveway intersection:**
  - *2048*: Install traffic signal. Install fiber-optic interconnect system between Love's Travel Stop Driveway and Commerce Parkway and optimize signal timing for corridor.
- **TM-6: Lenwood Road & Commerce Parkway intersection:**
  - *2048*: Restripe existing southbound middle through-left lane to an exclusive through lane. Add northbound and southbound protected left phase. Install fiber-optic interconnect system between Love's Travel Stop Driveway and Commerce Parkway and optimize signal timing for corridor.
- **TM-7: Barstow Road & Armory Road intersection:**

  - *2048*: Restripe westbound right-turn lane from through-right to right turn only and add westbound right turn overlap phase.
- **TM-8: Main Street between Hinkley Road and Country Club Drive**:
  - *2048*: Provide 4.04% fair share of the costs for widening the roadway to four lanes (two lanes in each direction).
- **TM-9: Lenwood Road between Agate Road and Jasper Road**:
  - *2048*: Provide 35.59% fair share of the costs for widening the roadway to four lanes (two lanes in each direction).
- **TM-10: Lenwood Road between Main Street and High Desert Road**:
  - *2048*: Provide 33.13% fair share of the costs for widening the roadway to four lanes (two lanes in each direction).
- **TM-11: Main Street between western BIG site limit and Country Club Drive:** As part of BIG's frontage improvements, repaint the north edge-line and centerline with 6" retroreflective lane markings and install rumble strips and pavement reflectors on the north edge-line and centerline. On Main Street between Castle Court and Country Club Drive, also repaint the south edge-line with 6" retroreflective lane markings and install rumble strips and pavement reflectors.

BIG proposes striped Class II bike lanes in each direction along Main Street between Country Club Drive and Lenwood Road.

Right-of-Way Vacations

To facilitate BIG, various public rights-of-way would need to be vacated as described in **Table 1: BIG Street Vacations and Dedications** and shown in **Figure 6: BIG Street Vacations**. The vast majority of these rights-of-way are unpaved dirt roads, or in some cases "paper roads," where the land is dedicated but is not graded or paved for use. As applicable, these roads would be modified to provide access to the remaining land uses.

Maintenance Activities

While "light maintenance activities" [16] could occur at BIG, major maintenance activities[17] would still occur at the existing Barstow classification yard, thus, requiring short-distance trips via BNSF's existing mainline to and from the existing Barstow classification yard for heavy maintenance. Locomotive trips associated with maintenance activities would be based on the number of linehaul locomotives needed to move trains between the Ports and BIG intermodal facility, and the number of switcher locomotives needed to haul rail cars within BIG intermodal facility and block swap yard. All switcher locomotives at BIG would be Tier 4 locomotives, and BNSF would also retire all existing Tier 0/0+/1+ locomotives at the unrelated existing Barstow yard and, in their stead, add six Tier 4 switcher locomotives.

[16] "Light maintenance activities" means routine locomotive servicing (e.g., window washing, fueling, inspecting fluid levels and topping off fluids, stocking cabins with crew equipment such as water and trash bags, toilet servicing) and minor railcar servicing (e.g., wheel changes, brake and friction shoes, and loose or missing bolts)
[17] "Major maintenance activities" means repair of railing and platform, railcar suspension, hitches, engine, etc.

3.3 Project Construction Activities and Phasing

For analysis purposes, construction is anticipated to occur over approximately 34 months beginning in the third quarter of 2025 and ending in the third quarter of 2028. The entirety of BIG's construction activities, including off-site improvements, are analyzed in this report and described below. The anticipated construction phase timing is shown in **Table 6: BIG Construction Schedule**. However, the current construction schedule anticipates that BIG construction would begin approximately August 2026, and end approximately July 2029, for an approximate 13-month shift from the schedule shown in **Table 3: BIG Construction Schedule** and analyzed in this technical report. However, construction duration (34 months) would remain unchanged. Further, given fleet turnover and compliance with increased regulatory requirements, construction and operational air quality emissions would improve over time as is reflected in CalEEMod, the California Air Resource Board's air quality emissions modeling platform.

During peak construction periods, work would be under way at several locations within BIG footprint simultaneously, with overlapping construction of various elements. Construction working hours and the number of workers present at any time would vary depending on the activities being performed. BIG construction would require approximately 8,177 construction workers per year.[18]

Table 6: BIG Construction Schedule

Phase	Start Date	End Date
South Mainlines	8/7/2025	10/2/2026
Intermodal Facility	8/7/2025	1/4/2027
Block Swap Yard	1/22/2026	6/8/2028
North Mainlines	5/27/2027	6/8/2028
Transload Warehouse	2/5/2026	12/6/2027
33 kV Distribution Undergrounding	9/13/2025	5/7/2027
Solar Site	3/20/2026	2/27/2027

Nighttime construction could occur throughout the BIG footprint except where within 300 feet of sensitive receptors (along the 33kv distribution line). To avoid potential noise and vibration impacts from pile driving, BIG proposes to establish a buffer of 1,800 feet for nighttime pile driving and 500 feet for daytime pile driving from sensitive receptors. Additionally, nighttime construction would be necessary for track work adjacent to the existing mainline where lead tracks would tie into the mainline. All construction activities would occur within BIG footprint.

BIG components would involve the following construction activities:

Demolition and Grading

The BIG footprint is primarily vacant, undeveloped land traversed by an existing BNSF railroad and containing scattered residential, commercial, and industrial land uses. Existing land uses within BIG's footprint are listed in **Table 4: Existing Land Uses**. All existing land uses not demolished during acquisition to avoid trespassing and safety concerns would be demolished prior to, or during, mass grading. In

[18] Based on 23,200 construction worker "job years"

addition, existing utilities (underground and aboveground) within BIG footprint would be removed or temporarily relocated as needed.

Six culverts/bridges would need to be demolished within the existing BIG footprint. Demolition would involve excavators to break apart bridge abutments and foundations.

Mass grading would occur in one phase across the BIG footprint and require approximately 26 million cubic yards of cut and fill. Mass grading would be typified by large construction equipment establishing the area's general grading contours. For locations supporting future buildings, roadways, or track, mass grading would include watering and compaction of soil to provide a stable subgrade. Earthwork on-site would be balanced, with excess cut from the rail yard being used as fill within the transload warehouse center.

Fine grading would include site-specific grading for the transload warehouse center, as well as finish grading around buildings, parking areas, curb and gutter, etc.

Construction of Rail Yard (Intermodal Facility and Block Swap Yard)

The likely sequence for BIG rail yard construction (intermodal facility and block swap yard) would include mass grading; compacting the rail bed and internal roadways/parking areas; installing underground improvements/utilities; fine grading; installing crushed rock subballast; laying track and ballast; and installing train signals and communications systems. To reduce construction trucking, BIG would bring rail ties, welded rail, and rail ballast in via train.

Rail yard construction elements would include surface and elevated track work where the track would cross a water feature, a grade-separated roadway crossing for electric hostlers to access (and return from) the transload warehouse center, and installation of an intermodal facility. Major construction activities would include grading and excavation support, underground utility installation, systems construction, bridge construction, and railway systems construction (including trackwork, signaling, and communications). High-mast lights (up to 120 feet in height) would be constructed throughout the rail yard, including foundation work, conduits, and security camera positions. Rail yard construction would also include foundations and tracks for gantry cranes.

Furthermore, the proposed rail yard area would be excavated to result in a nearly-level grade between the east and west ends. With the proposed grading, most of the rail yard would be approximately 30-45 feet below Main Street. Various key BIG elements are also shown below.

Rail materials such as rail ties, welded rails, and ballast would be delivered by train. As noted above, the two existing north mainlines would be protected in place except at the bridge crossings, and two new south mainlines constructed. The south mainlines would be constructed first, and, during the first year of construction, existing rail traffic would use the new south mainlines so that the existing mainlines can be rebuilt and their bridge crossings upgraded. Mainline, rail yard, and lead track construction would utilize a Track-Laying Machine for approximately 20 months to lay track.

Intermodal facility construction would include various administrative and support buildings and substantial paving for the container parking and storage.

Solar Farm Construction

Solar farm construction, which would occur in a single phase, would require minimal grading to level the site as existing topography is utilized wherever possible and excavation limited primarily to stormwater detention to capture runoff. Fencing would be installed around the solar farm's perimeter of the solar farm, internal drive-aisles would be graded and paved, and the proposed substation would be constructed per SCE standards.

Construction of Transload Warehouse Center

Construction elements for the transload warehouse center would include grading, over-excavation,[19] footing and foundation excavation and pouring, tilt-up panel concrete construction, parking lot grading and paving, utility installation and undergrounding, and hydrology/drainage improvements.

Construction of On-site Bridges and Roadway Improvements

Railroad bridge and roadway construction may use various methods including segmented pre-cast, cast-in-place, box girder or pre-cast, and span-by-span techniques.

Pre-construction activities would occur during final design and would include geotechnical investigations, identification of staging areas, initiation of site preparation and demolition, relocation of utilities, and implementation of temporary, long-term, and permanent road closures. Two bridges would be constructed over Lenwood Channel (BR 6.5D, 6.5E, and BR 6.5F) to enable traffic to flow from either side of Lenwood Channel.

Construction of Off-Site Rail Improvements

Off-site rail improvements would include clearing and grubbing, bridge crossing construction, ballast placement, track laying, and connection to the mainline. Off-site rail improvements would parallel the existing mainline and primarily be within existing BNSF right-of-way. BIG's rail deliveries of rail ties and ballast would include materials for construction of off-site rail improvement.

Construction of Off-Site Non-Rail Improvements

Off-site non-rail improvements would include construction of drainage, utility, and roadway improvements.

Drainage. Lenwood Channel improvements would consist of scouring and widening the channel. Construction equipment would be within Lenwood Channel in order to accomplish the widening.

Utilities. Additionally, off-site construction would include utility improvements including the 33kv distribution/Tortilla Substation improvements. Construction processes are anticipated to include clearing and grubbing, saw cuts and demolition of existing pavement, excavation to approximately ten feet below ground surface, installation of temporary shoring, placement of circuits and distribution lines, fill placement and removal of temporary shoring, and roadway repair.

[19] "Over-excavation" refers to removal and re-compaction of soil.

Roadways/Intersections. A bridge over Lenwood Channel for Main Street would be constructed to replace the existing low water crossing and accommodate widening of Main Street in that immediate area. Additionally, BIG proposes roadway/intersection improvements/modifications, including the installation of traffic signals at various intersections.

Typical construction processes for these off-site non-rail improvements would include clearing and grubbing, over-excavation, bridge construction, traffic signals with associated underground conduits and cabling, and restriping and asphalt or concrete pavement placement, where needed.

4.0 ENVIRONMENTAL SETTING

This section describes the existing environmental setting relevant to the circulation system, including roadways, transit, and non-motorized (i.e., bicycle and pedestrian) facilities.

4.1 City and County Jurisdictional Areas

The BIG footprint totals approximately 5,000 acres and is composed of the BIG Specific Plan area (totaling approximately 4,300 acres) and off-site improvements (totaling approximately 601 acres). BIG's proposed Specific Plan area is generally bounded by the Mojave River to the north, Main Street (also referred to as National Trails Highway or Route 66) to the south, Lenwood Road to the east, and Hinkley Road to the west.

The BIG footprint, City, and County jurisdictional areas are depicted in **Figure 12: Map of Existing Jurisdictional Areas**. As shown in **Figure 12**, approximately 63 percent of the BIG footprint is currently within unincorporated County and approximately 37 percent is within Barstow City limits.

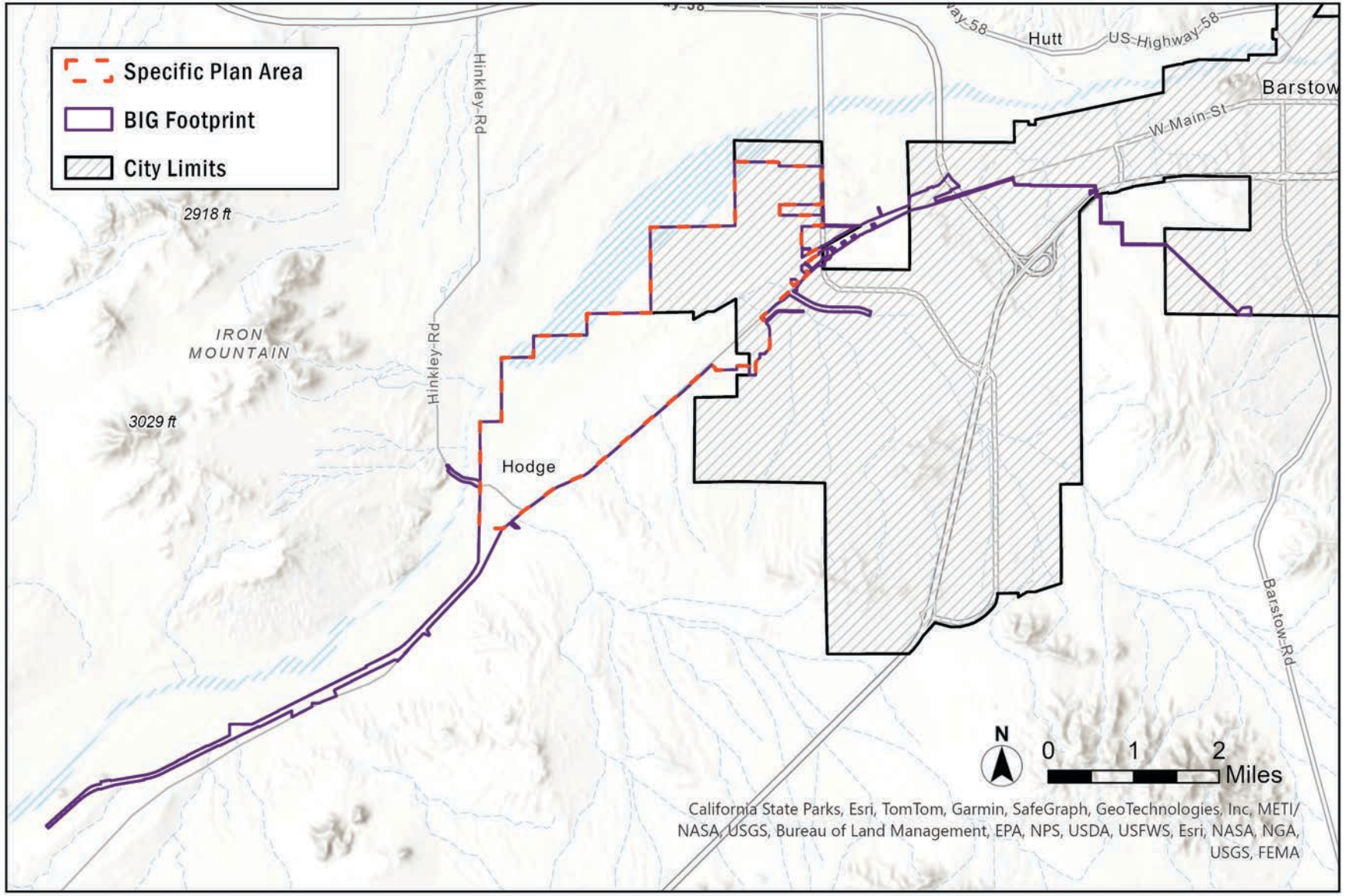


Figure 12: Map of Existing Jurisdictional Areas

4.2 Roadway Network

The study area for the VMT analysis is the City of Barstow and its unincorporated Sphere of Influence (SOI), as shown in **Figure 8: Local Vicinity Map**. The study area for other CEQA transportation analyses (Circulation System, Hazards, and Emergency Access) involves the transportation network surrounding BIG, which provides connectivity to the BIG Specific Plan area and its surroundings. The roadways discussed in **Section 4.0 Environmental Setting** of this document are intended to provide a qualitative understanding of the transportation network surrounding the BIG Specific Plan area.

Existing Major Freeways and State Routes

Regional and interregional vehicular access to the proposed BIG Specific Plan area is provided via I-15, SR-58, and SR-247.

Interstate 15

I-15 runs north-south approximately 4.0 miles southeast of the proposed BIG Specific Plan area. I-15 serves as a major route through the United States, connecting California to Nevada, Utah, Idaho, Montana, and Alberta, Canada. The I-15 average daily traffic (ADT) near the BIG Specific Plan area ranges from approximately 54,000 to 70,000 (Caltrans, 2022).

Interstate 40

I-40 runs east-west and converges with I-15 approximately 6.5 miles east of the proposed BIG Specific Plan area. I-40 is a major freight route through the southern United States, connecting California to Arizona, New Mexico, Texas, Oklahoma, Arkansas, Tennessee, and North Carolina. The I-40 ADT near its western terminus at I-15 is approximately 23,000 (Caltrans, 2022).

State Route 58

SR-58 runs east-west approximately 4.0 miles north of the proposed BIG Specific Plan area. SR-58 primarily serves as a connector between Barstow and Bakersfield, California. The SR-58 ADT near the BIG Specific Plan area is approximately 12,600 (Caltrans, 2022).

State Route 247

SR-247's northern terminus is approximately 6.0 miles east of the proposed BIG Specific Plan area. SR-247 primarily serves as a connector between Yucca Valley, Lucerne Valley, and Barstow, California. The SR-247 ADT near the BIG Specific Plan area is approximately 15,500 (Caltrans, 2022).

Existing Roadway Network

Table 7: Existing Roadway Network includes information about some of the roadway segments near the BIG Specific Plan area, including each facility's jurisdiction. Roadway segments are listed by classification.

Table 7: Existing Roadway Network												
Street Classification	**Roadway**	**#**	**From**	**To**	**Existing ADT[1]**	**# of Lanes**	**Median Type**	**Sidewalks**	**Bike Lanes**	**Transit Route**	**Posted Speed Limit**	**Jurisdiction**
Major Highway	Main Street	1	Hinkley Road	Country Club Drive	3,800	1EB/ 1WB	None	None	None	28, 115	55 MPH	City-County[3]
Primary Arterial	Main Street	2	Country Club Drive	Lenwood Road	3,800	1EB/ 1WB	None	None	None	28, 115	45 MPH, 55 MPH	City
		3	Lenwood Road	County/City Boundary	10,330	2EB/ 2WB	None	Intermittent Both Sides	None	3, 28, 115	45 MPH, 55 MPH	County
		4	County/City Boundary	SR-58 Eastbound Ramps	10,330	2EB/ 2WB	None	None	None	3, 28, 115	45 MPH, 55 MPH	City
		5	SR-58 Eastbound Ramps	SR-58 Westbound Ramps	9,180	2EB/ 2WB	None	None	None	3, 115	55 MPH	Caltrans
		6	SR-58 Westbound Ramps	L Street	8,020	2EB/ 2WB	None	Intermittent Both Sides	Small portion with Class II	3, 115	55 MPH	City
		7	L Street	Avenue A	13,910	2EB/ 2WB	TWLTL[2]	Intermittent Both Sides	None	3	40 MPH, 45 MPH	
		8	Avenue A	Barstow Road	13,050	2EB/ 2WB	TWLTL	Intermittent Both Sides	None	1	35 MPH, 40 MPH	
	Barstow Road	9	Main Street	I-15 Southbound Ramps	11,670	1NB/2SB	None	Both Sides	None	1, 15, 28, 29, 111, 115	35 MPH	
		10	I-15 Southbound Ramps	I-15 Northbound Ramps	11,940	2NB/2SB	None	East Side	None	2, 6, 15, 28, 29, 111, 115	35 MPH	
		11	I-15 Northbound Ramps	Rimrock Road	12,210	2NB/2SB	Raised	Intermittent Both Sides	None	2, 6	45 MPH	
	Lenwood Road	12	SR-58 Westbound Ramp	Community Boulevard	1,640	1NB/1SB	None	Intermittent East Side	None	3	55 MPH	County
		13	Community	Agate Road	1,640	1NB/1SB	None	None	None	3	55 MPH	

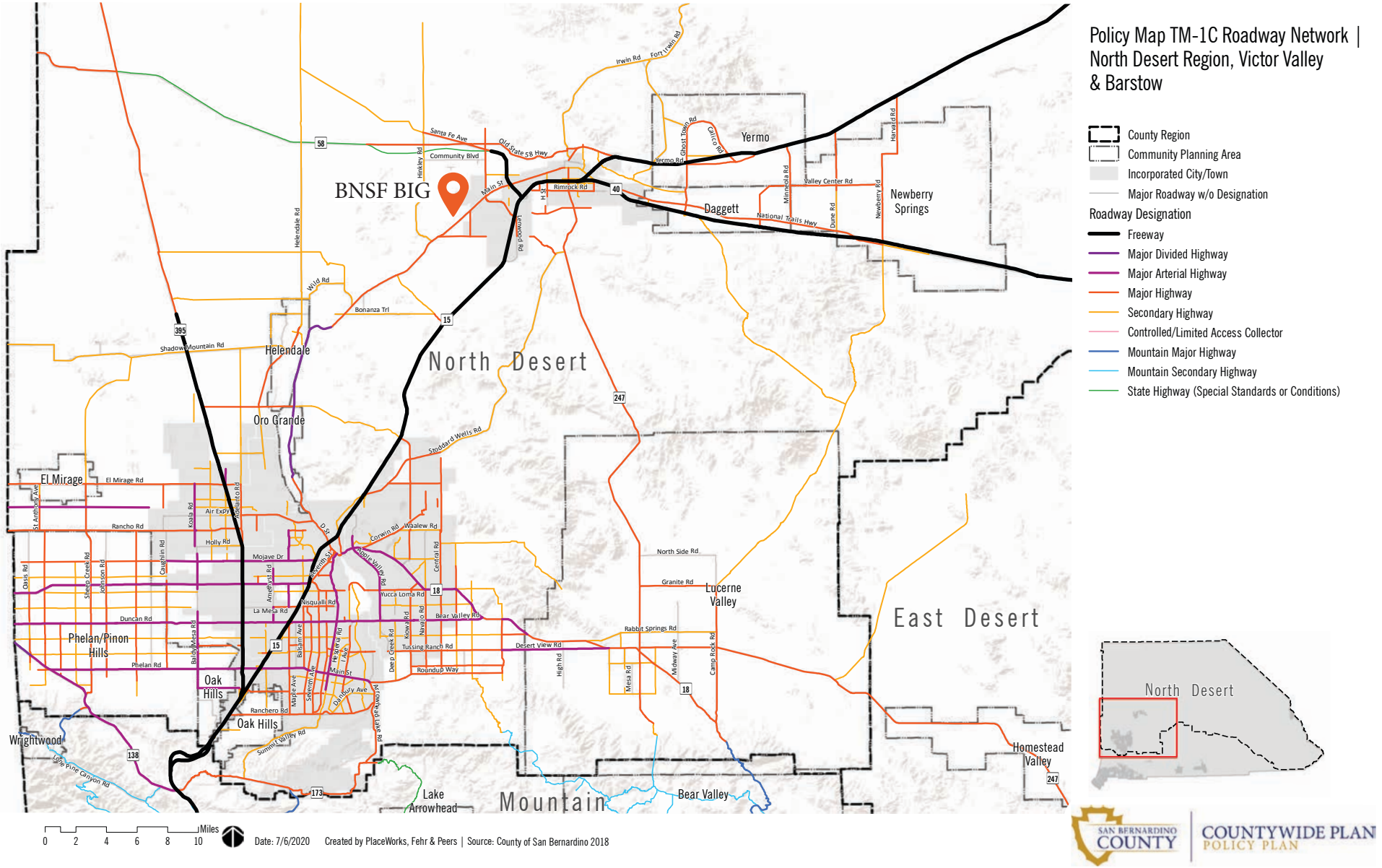
Table 7: Existing Roadway Network												
Street Classification	**Roadway**	**#**	**From**	**To**	**Existing ADT[1]**	**# of Lanes**	**Median Type**	**Sidewalks**	**Bike Lanes**	**Transit Route**	**Posted Speed Limit**	**Jurisdiction**
			Boulevard									
		14	Agate Road	Jasper Road	4,270	1NB/1SB	None	None	None	3	55 MPH	
		15	Jasper Road	Main St	6,890	2NB/2SB	None	Both Sides	None	3	55 MPH	City
		16	Main Street	High Desert Road	4,270	1NB/1SB	None	None	None	3	55 MPH, 40 MPH	
		17	High Desert Road	I-15 Southbound Off-Ramp	11,790	2NB/2SB	TWLTL	Both Sides	None	3	40 MPH	
		18	I-15 SB Off-Ramp	I-15 Northbound Off-Ramp	9,880	2NB/2SB	Left-Turn Pockets	Both Sides	None	3	40 MPH	Caltrans
Secondary Highway	Hinkley Road	19	SR-58 Westbound Ramp	BIG Driveway	410	1NB/1SB	None	Intermittent East Side	None	27	55 MPH	County
		20	BIG Driveway	Main St	410	1NB/1SB	None	None	None	27	55 MPH	

Note:
[1] ADT = average daily traffic (vehicles per day). All volumes listed are two-way average daily traffic volumes.
[2] TWLTL = Two-Way Left Turn Lane
[3] This segment is currently within both City and County Jurisdiction but would be fully annexed to the City as part of the proposed General Plan.

Sources:
- *National Data & Surveying Services traffic counts*. (2021-2022). See *Appendix 5.15-2: Level of Service Assessment* for more information.
- City of Barstow. (2015). *City of Barstow 2015-2020 General Plan – Circulation Element*.
- County of San Bernardino. (2020). *Countywide Plan*.

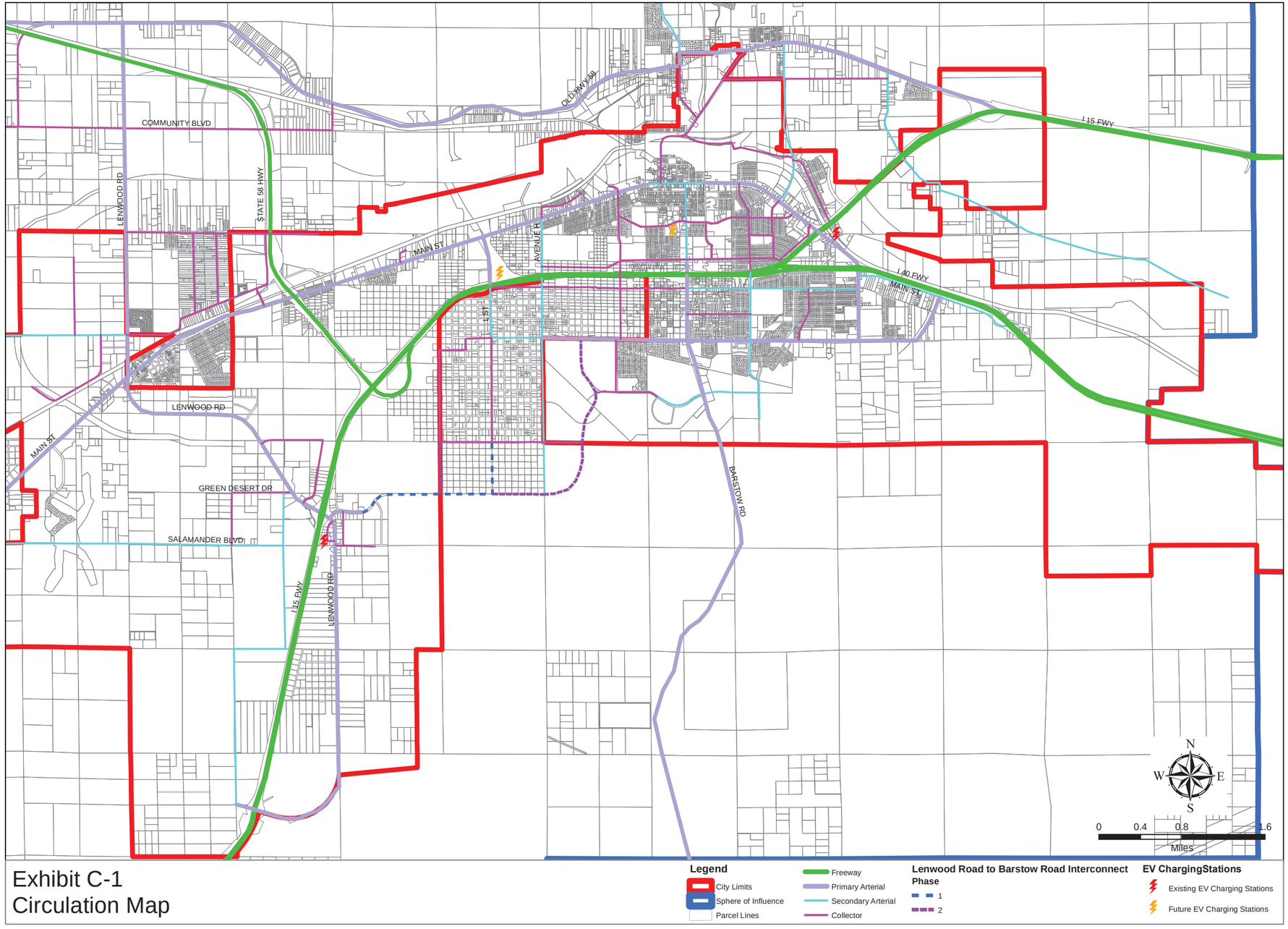
County and City Roadway Network Maps

Figure 13: San Bernardino County Roadway Network – North Desert Region depicts the County's existing and planned roadway network, as presented in CWP Policy Map TM-1C: Roadway Network North Desert Region, Victor Valley, & Barstow (2020). **Figure 14: City Circulation Map 2015 General Plan** depicts the roadway network as presented in the City's Circulation Element Exhibit C1: Circulation Map (2015). **Figure 15: City 2015 General Plan and County CWP Roadway Classification Map** illustrates a layered comparison between the City and County planned roadway network classifications. The *County of San Bernardino Countywide Plan* (2020) and *City of Barstow General Plan* (2015) do not identify any specific improvements within the study area.



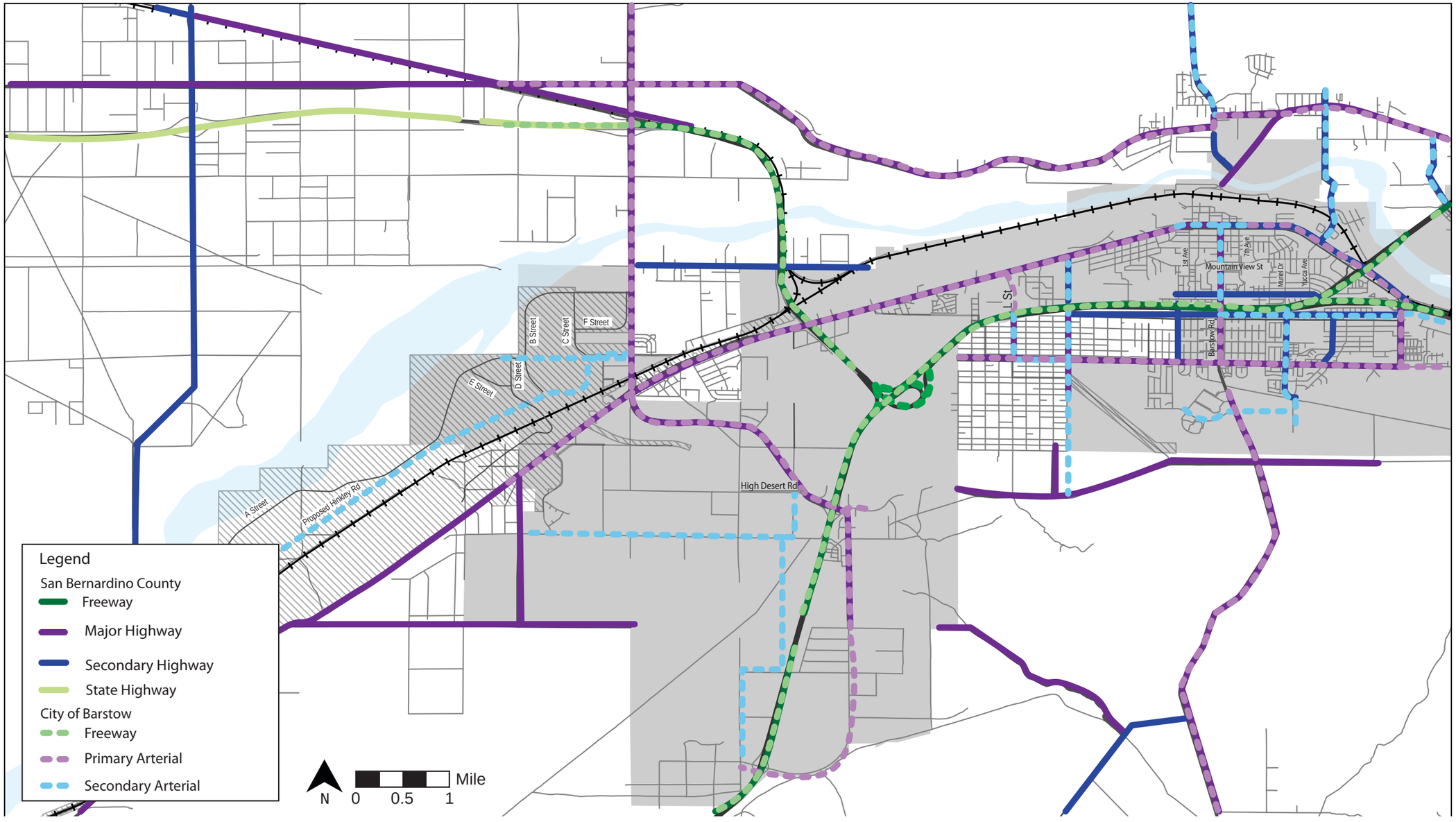
Source: San Bernardino County Countywide Plan Transportation & Mobility Element, 2020

Figure 13: San Bernardino County Roadway Network - North Desert Region



Source: City of Barstow General Plan Circulation Element, 2015

Figure 14: City Circulation Map 2015 General Plan



Sources: City of Barstow General Plan Circulation Element, 2015
San Bernardino Countywide Plan Transportation & Mobility Element, 2020

Figure 15: City 2015 General Plan and County CWP Roadway Classification Map

4.3 Nonmotorized Transportation

The *San Bernardino County Non-Motorized Transportation Plan Update* (San Bernardino County Transportation Authority, 2018) recommends Class II[20] bike lanes along Main Street and Lenwood Road along BIG's Specific Plan area frontage, as illustrated in **Figure 16: San Bernardino County Non-Motorized Transportation Plan Update – Existing and Planned Bicycle Facilities**. The plan does not show any planned pedestrian facilities in the Barstow area.

The *San Bernardino Countywide Plan* (CWP) (County of San Bernardino, 2020) designates planned pedestrian and bike routes, as illustrated in **Figure 17: San Bernardino County – Future Bicycle Facilities Map**. The plan recommends Class II bike lanes along Main Street and Lenwood Road along BIG's Specific Plan area frontage. The plan does not show any planned pedestrian facilities in the Barstow area.

The *City of Barstow General Plan – Circulation Element* (2015) designates planned pedestrian and bike routes, as illustrated in **Figure 18: City Planned Pedestrian Paths, Bicycle Routes, and Park and Ride Facilities**. The plan recommends Class II bike lanes along Main Street and Lenwood Road along BIG's Specific Plan area frontage. The plan does not show any planned pedestrian facilities along BIG's Specific Plan area frontage.

The *City of Barstow Active Transportation Plan* (City of Barstow, 2018) designates planned pedestrian facilities, as illustrated in **Figure 19: City of Barstow – Active Transportation Plan Proposed Pedestrian Network**. The *City of Barstow Active Transportation Plan* also designates planned and existing bike facilities, as illustrated in **Figure 20: City of Barstow – Active Transportation Plan Proposed Bicycle Network**. The plan recommends Class II bike lanes along BIG's Specific Plan area frontage consistent with the *City of Barstow General Plan – Circulation Element* (2015). The *City of Barstow Active Transportation Plan* does not show any planned pedestrian facilities along BIG's Specific Plan area frontage.

Figure 21: City and County Planned Pedestrian Paths and Bike Lanes compares the *City of Barstow General Plan* (City of Barstow, 2015) and *San Bernardino County Non-Motorized Transportation Plan Update* (San Bernardino County Transportation Authority, 2018) planned pedestrian and bicycle facilities. The pedestrian and bicycle networks within the study area are discussed below.

Main Street

There are existing intermittent sidewalks along Main Street between Lenwood Road and I-40. The County plans Class II bike lanes along Main Street between Hinkley Road and I-40. The City designates a Bike Lane/Route along this same segment, within the City. According to the San Bernardino County Non-Motorized Transportation Plan, bicycle improvements along Main Street from I-40 to the western city limit are a priority.

Lenwood Road

[20] Class II (Bike Lane): A portion of roadway that has been designated by striping and pavement markings for the preferential or exclusive use of bicyclists (Non-Motorized Transportation Plan, page ES-6).

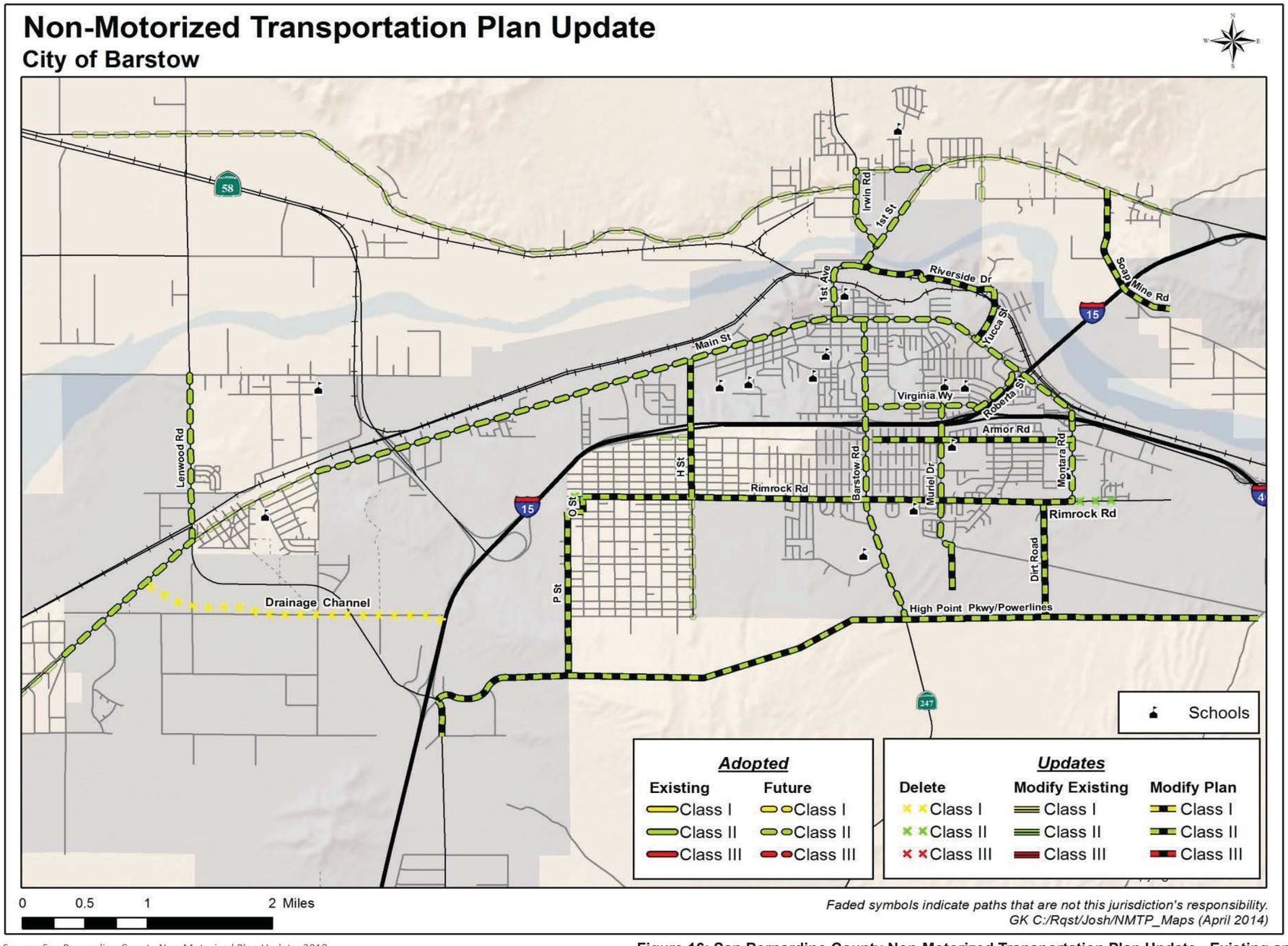
There are existing intermittent sidewalks along portions of Lenwood Road. The County plans Class II bike lanes along Lenwood Road between Main Street and Agate Road. The City designates a Bike Lane/Route along Lenwood Road between Main Street and Community Boulevard.

Barstow Road

There are existing sidewalks along Barstow Road between Main Street and Barstow Community College. San Bernardino County plans Class II bike lanes along Barstow Road between Main Street and the edge of City limits. The City designates a Bike Lane/Route between along this same segment and south of City limits. According to the San Bernardino County Non-Motorized Transportation Plan, improvements along Barstow Road from Main Street to SR-247 are priority.

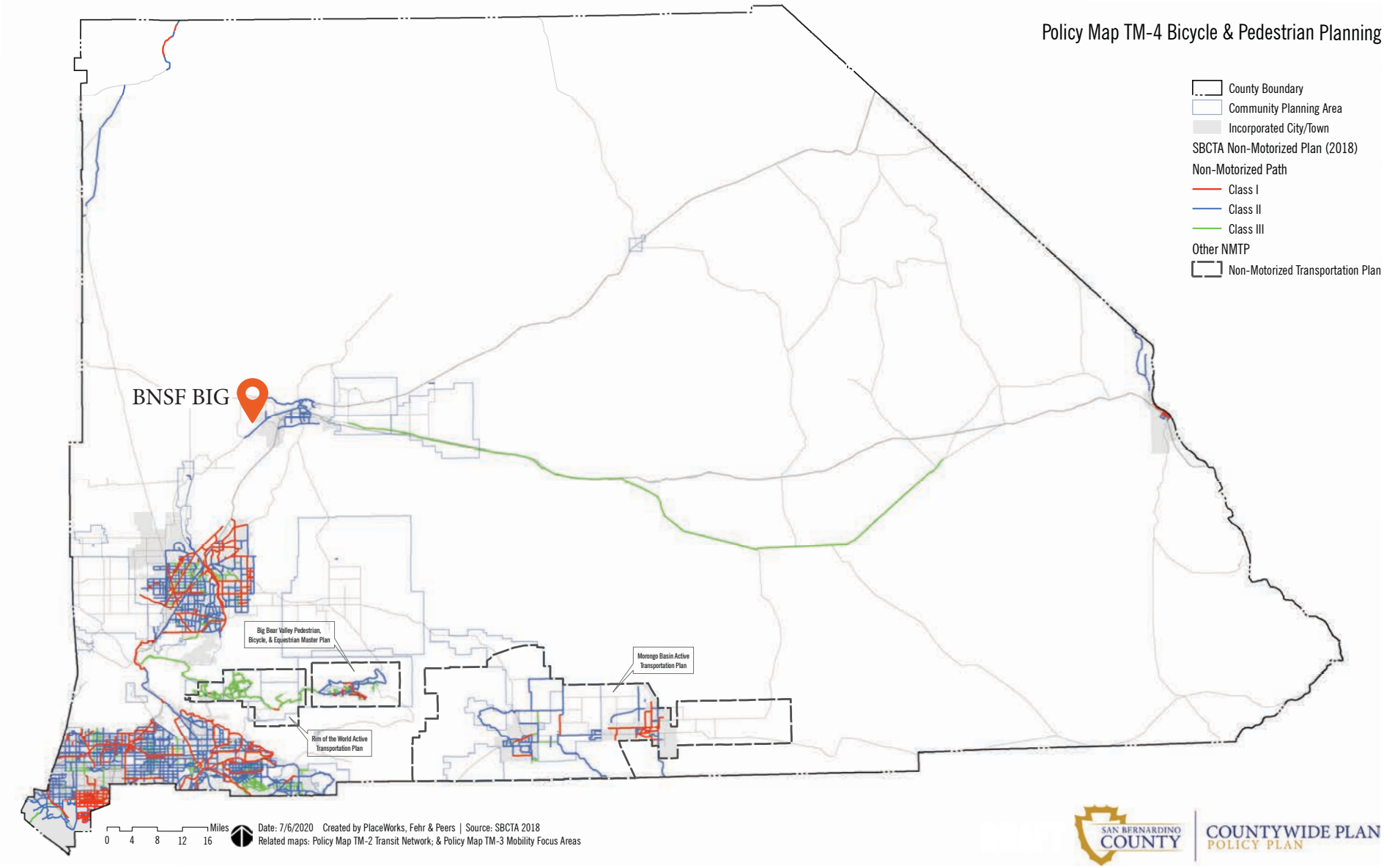
Hinkley Road

No County or City bike lanes or sidewalks are designated or planned along the entirety of Hinkley Road.



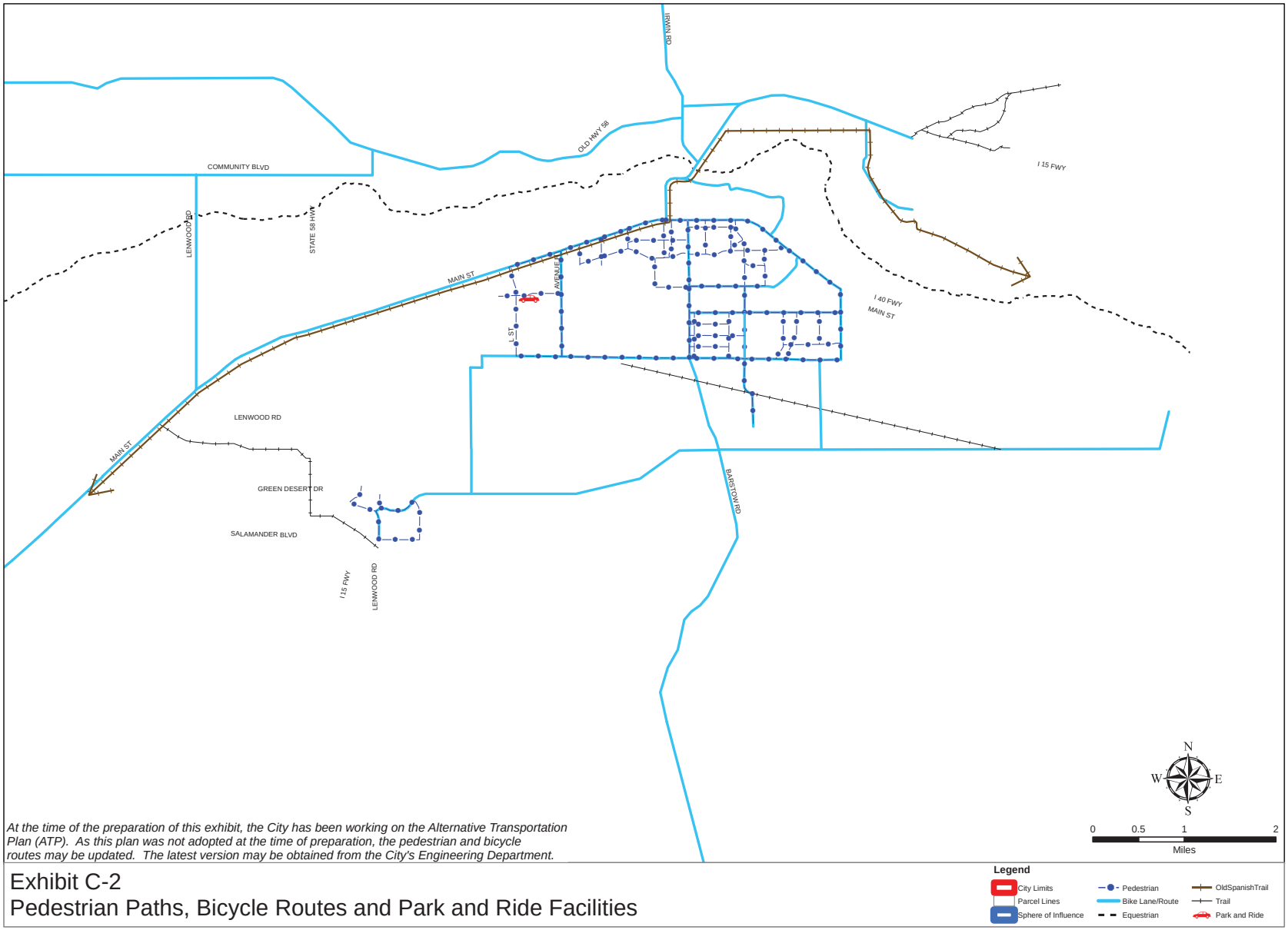
Source: San Bernardino County Non-Motorized Plan Update, 2018

Figure 16: San Bernardino County Non-Motorized Transportation Plan Update - Existing and Planned Bicycle Facilities



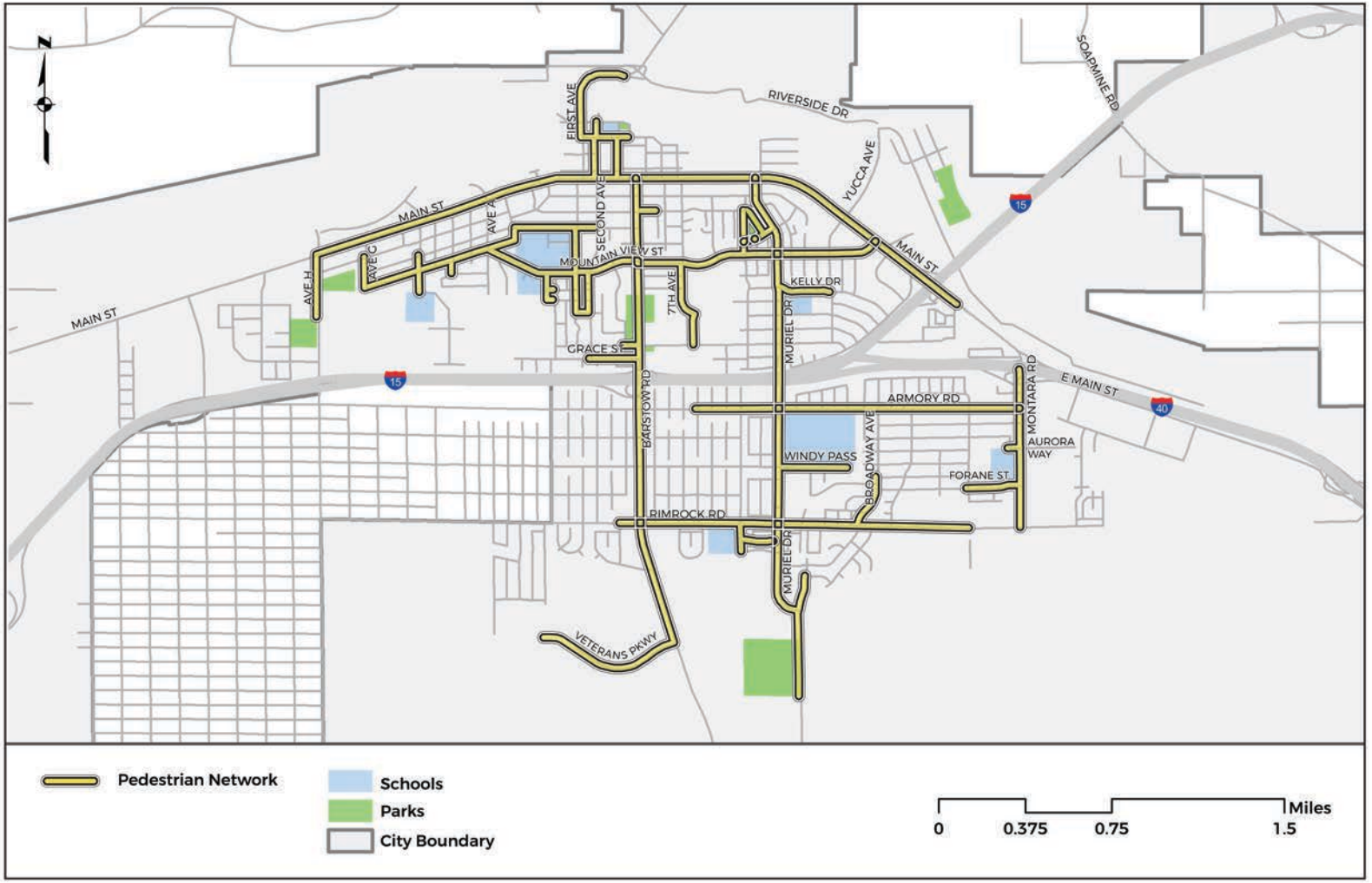
Source: San Bernardino County Countywide Plan Transportation & Mobility Element, 2020

Figure 17: San Bernardino County - Future Bicycle Facilities Map



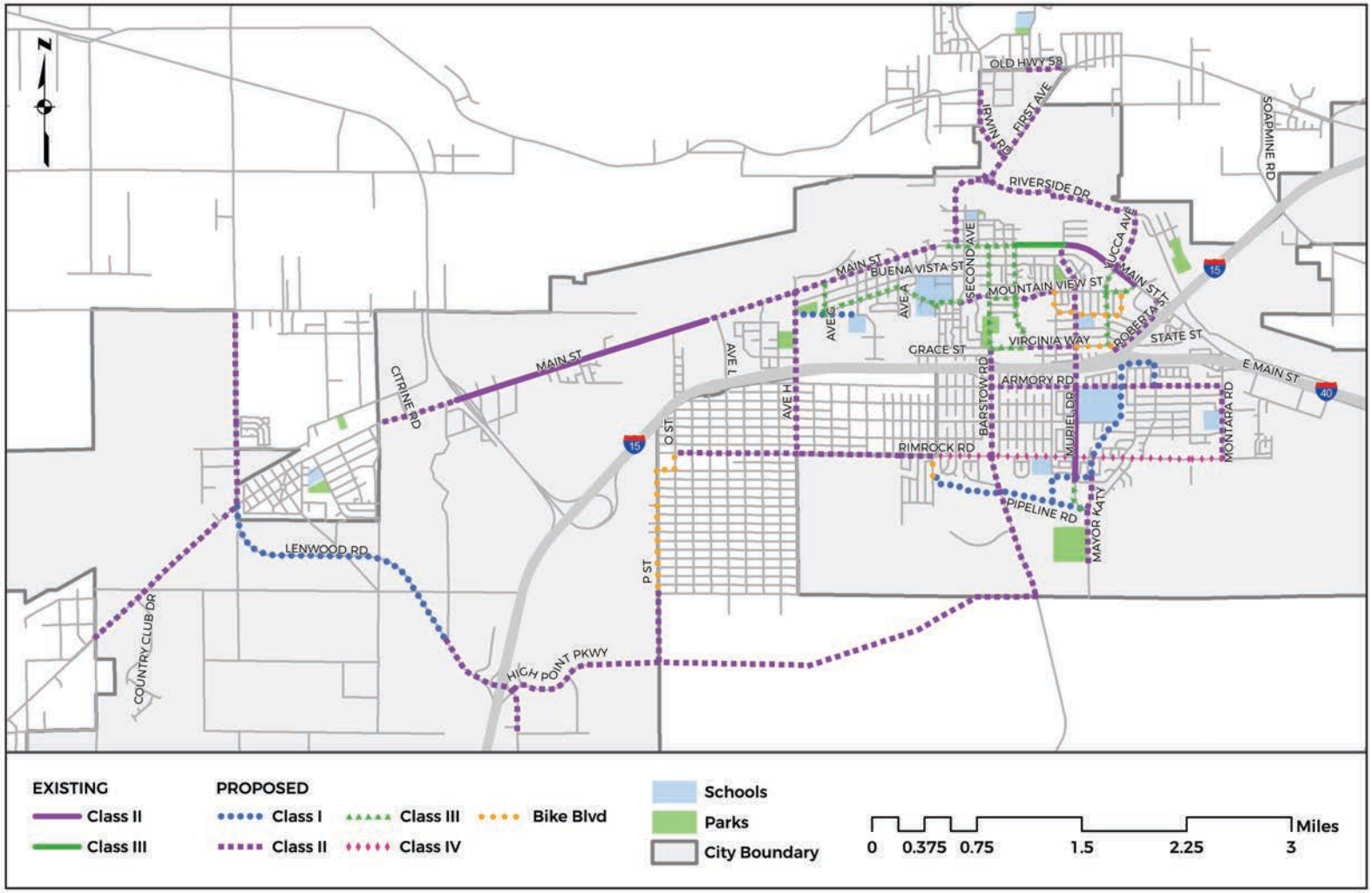
Source: City of Barstow General Plan Mobility Element, 2015

Figure 18: City Planned Pedestrian Paths, Bicycle Routes, and Park and Ride Facilities



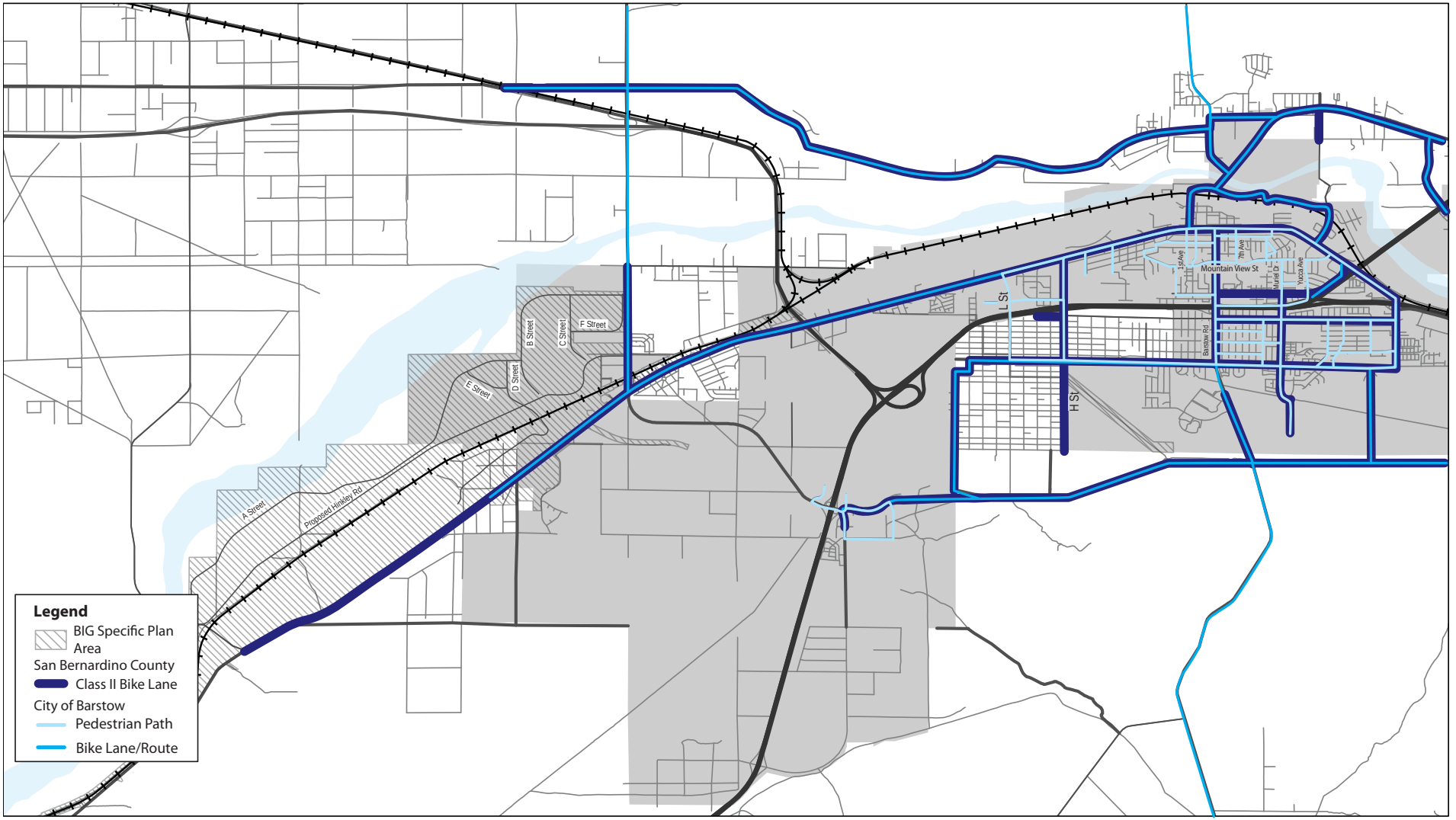
Source: City of Barstow Active Transportation Plan, 2018

Figure 19: City of Barstow - Active Transportation Plan Proposed Pedestrian Network



Source: City of Barstow Active Transportation Plan, 2018

Figure 20: City of Barstow - Active Transportation Plan Proposed Bicycle Network



Sources: City of Barstow General Plan Circulation Element, 2015
San Bernardino County Countywide Plan Transportation & Mobility Element, 2020

Figure 21: City and County Planned Pedestrian Paths and Bike Lanes

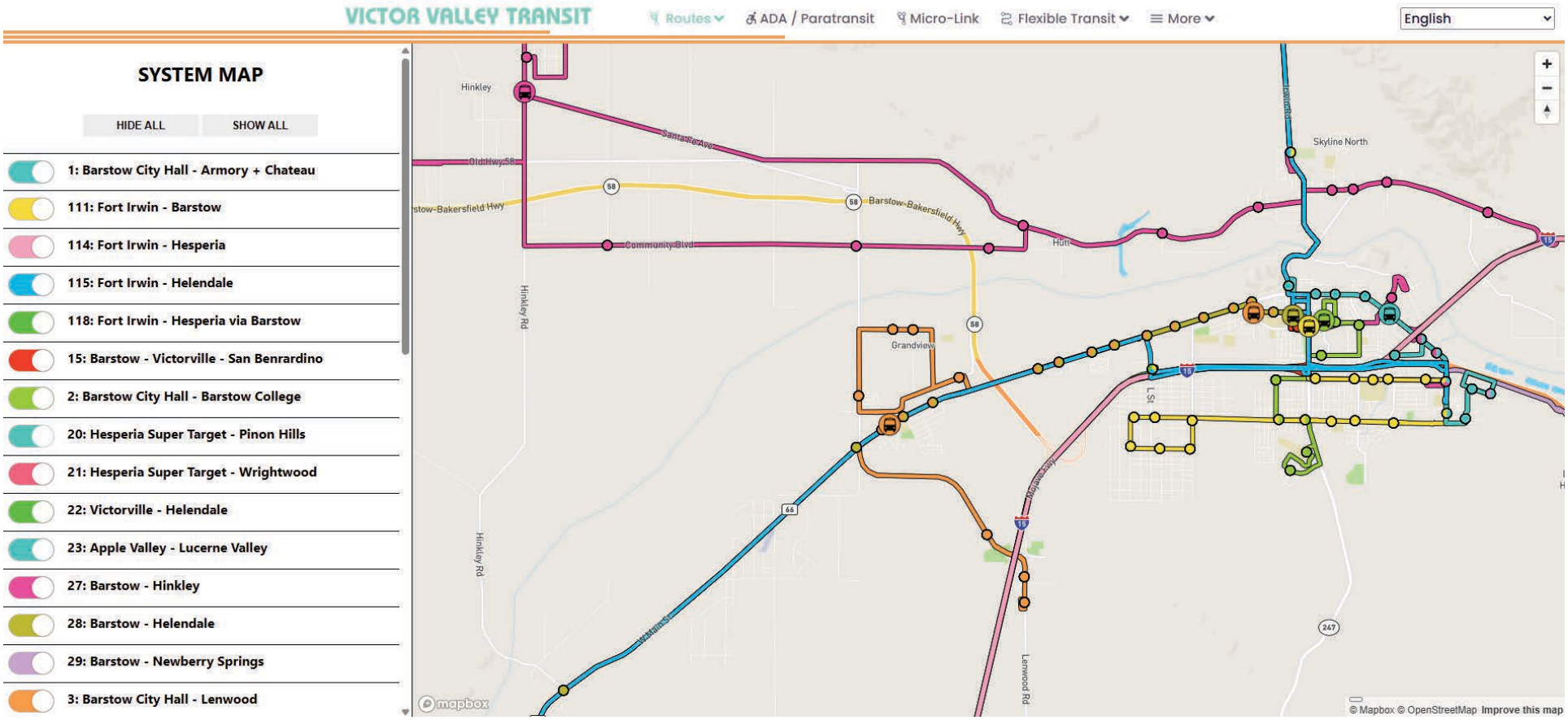
4.4 Transit

Transit within BIG's study area is operated by VVTA and includes fixed route buses, paratransit, and other flexible transit services. **Figure 22: Victor Valley Transit Map** shows the existing VVTA transit services near the BIG Specific Plan area and indicates VVTA bus lines 3, 28, and 115 run adjacent to the BIG Specific Plan area. Line 3 has one-hour headways and stops east of the BIG Specific Plan area at Lenwood Road & Camino Del Sol, near a single-family residential area. Line 28 has two-hour headways connecting Barstow and Helendale and stops near the BIG Specific Plan area at the intersections of Main Street with Hinkley Road and Lenwood Road. Line 115 runs once per day connecting Fort Irwin and Helendale and stops east of the BIG Specific Plan area at the L Street Park & Ride.

VVTA Direct Access paratransit service provides curb-to-curb service to complement the VVTA fixed-route bus system and accommodates passengers with certain disabilities. The service applies to all fixed routes.

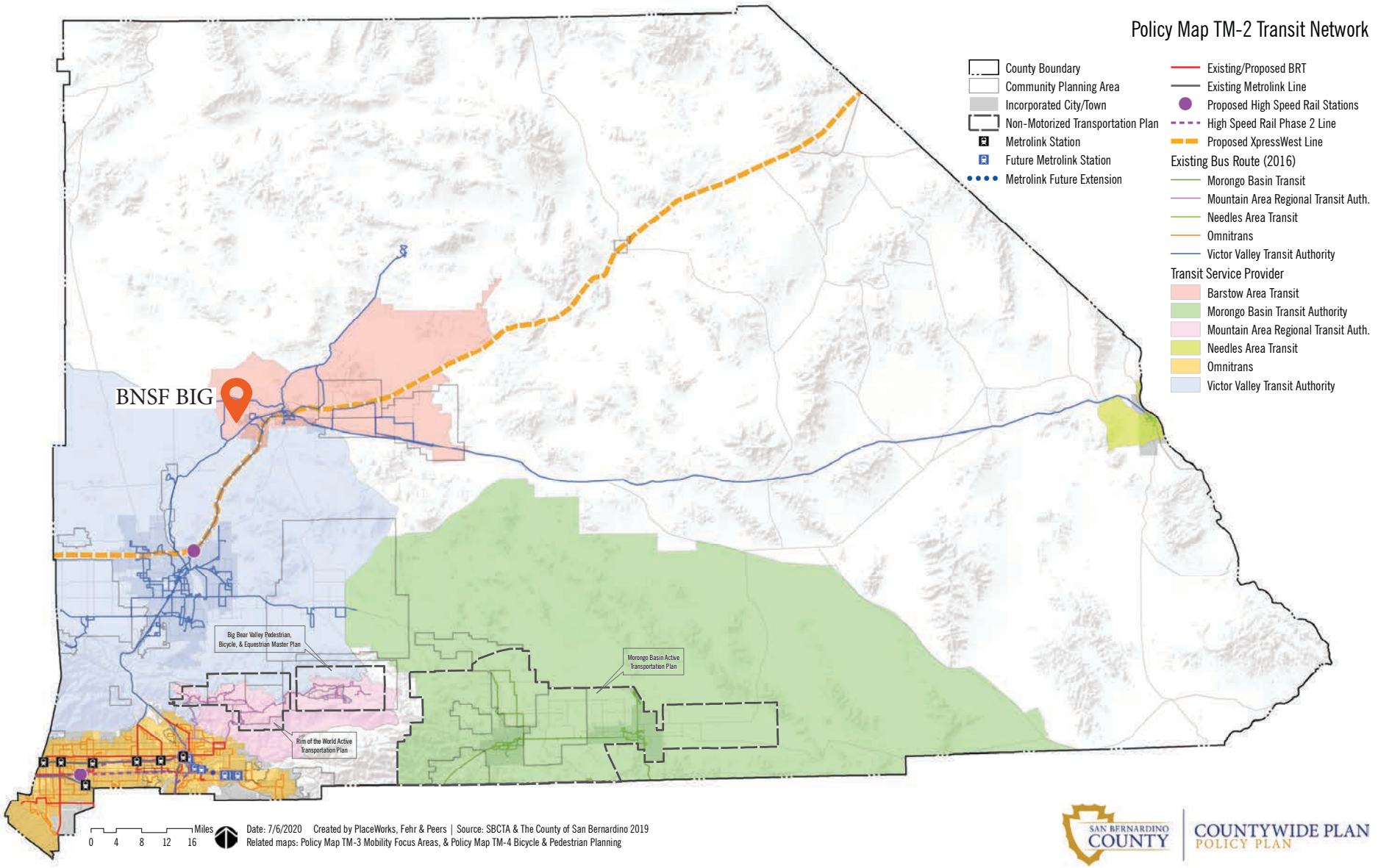
VVTA Vanpool allows employers to lease a specially equipped commuter van to groups of five or more individuals through one of three vendors. VVTA subsidizes qualified vanpools up to $500 per month and ridership costs start at $35 per week. Vanpools are advertised to the public and any empty seats must be made available to any rider who shares the same work commute.

Figure 23: San Bernardino County – Transit Network depicts the County's existing and planned transit services as presented in CWP Policy Map TM-2: Transit Network (2020). Near the BIG Specific Plan area, VVTA operates lines that run along Main Street, Lenwood Road, and Barstow Road. The Brightline West (formerly XpressWest) high speed rail line is planned along the I-15 corridor near the BIG Specific Plan area. However, besides Brightline West, no additional transit services are planned near the BIG Specific Plan area.



Source: Victor Valley Transit, Accessed May 2025

Figure 22: Victor Valley Transit Map



Source: San Bernardino County Countywide Plan Transportation & Mobility Element, 2020

Figure 23: San Bernardino County - Transit Network

4.5 Goods Movement

San Bernardino County serves as a gateway between the Ports of Los Angeles/Long Beach (Ports) and the rest of the United States. **Figure 24: City Existing Truck and Rail Routes** shows the City's local truck routes per the City of Barstow General Plan (City of Barstow, 2015). **Figure 25: San Bernardino County – Goods Movement** depicts goods movement within the County, as presented in CWP Policy Map TM-5: Goods Movement (2020). Union Pacific Railroad and BNSF freight railroad lines serve the County. There are two modern classification yards[21] east of BIG: one BNSF yard is approximately 3.0 miles to the east, in Barstow, and one Union Pacific Railroad yard is approximately 17 miles to the east, in Yermo, an unincorporated County community. Heavy-duty trucks access these classification yards and travel through the County mainly using truck routes.

Additionally, the region around BIG contains truck routes that are part of the National Network as defined by the Federal Surface Transportation Assistance Act of 1982. **Figure 26: Caltrans District 8 – National Network Truck Routes** shows these truck routes, including I-15, I-40, SR-58, and SR-247.

4.6 Emergency Services

Fire Protection

Table 8: Fire Protection Facilities notes the locations of the existing fire stations that serve the area surrounding the BIG Specific Plan area. The stations within the Barstow Fire Protection District (BFPD) serve the City of Barstow (including the BIG Specific Plan area, after annexation) and the San Bernardino County Fire Protection District stations serve locations within unincorporated San Bernardino County.

Table 8: Fire Protection Facilities

Station	Address
Barstow Fire Protection District (BFPD)	
BFPD Headquarters	861 Barstow Road, Barstow, CA
BFPD Fire Station 366	2600 West Main Street, Barstow, CA
San Bernardino County Fire Protection District (County Fire)	
County Fire Hinkley Fire Station 56	37284 Flower Road, Hinkley, CA
County Fire Helendale Fire Station 4	27089 Helendale Road, Helendale, CA
Source: Google Maps.	

Police Protection

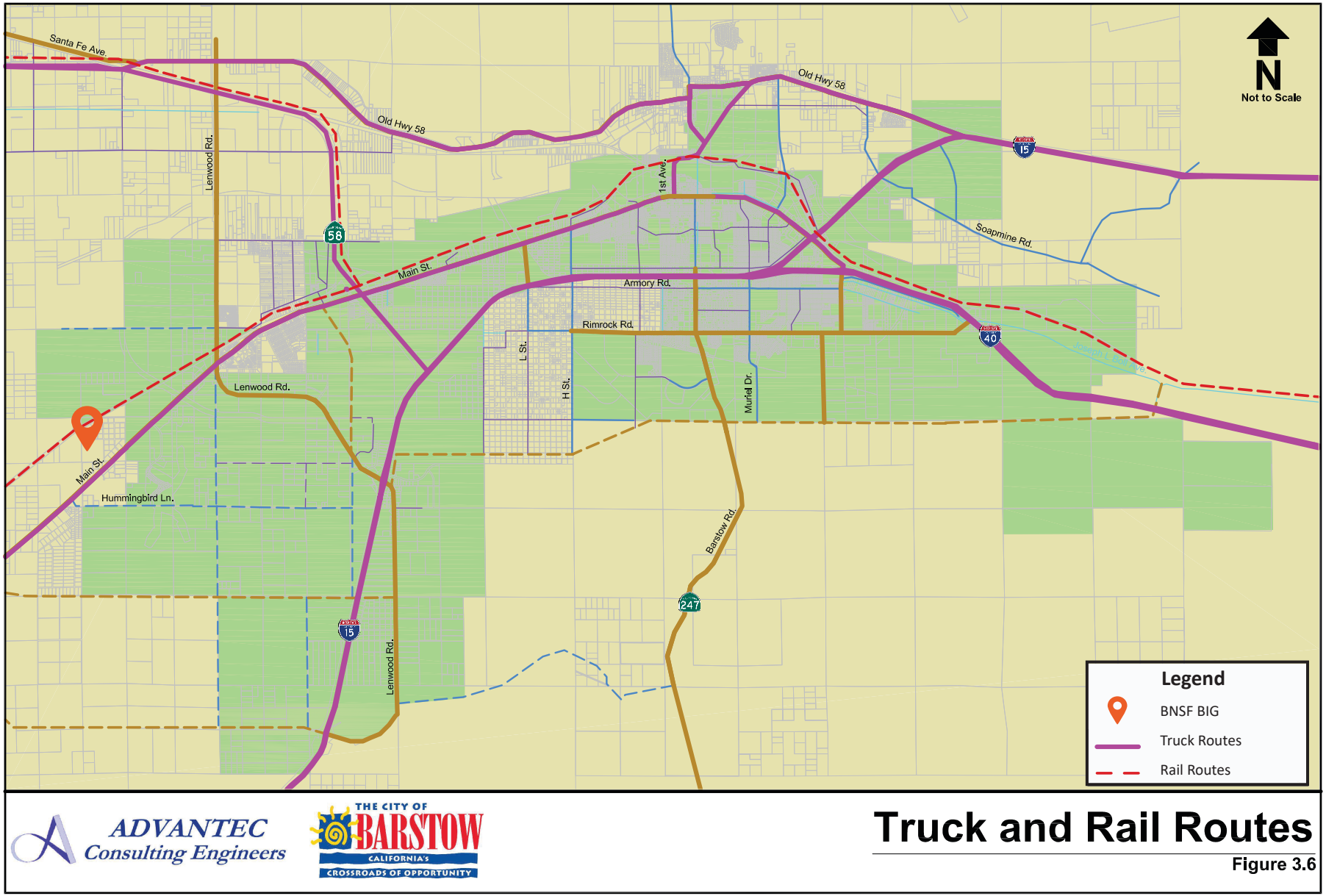
Barstow Police Department

The Barstow Police Department, headquartered at 220 East Mountain View Street, provides services within City limits and has a service area of 40 square miles.

[21] Classification yards are used for processing trains with non-intermodal railcars consisting of individual boxcars, gondolas, open and closed hopper cars, automobile railcars, tank cars, and other non-intermodal railcars.

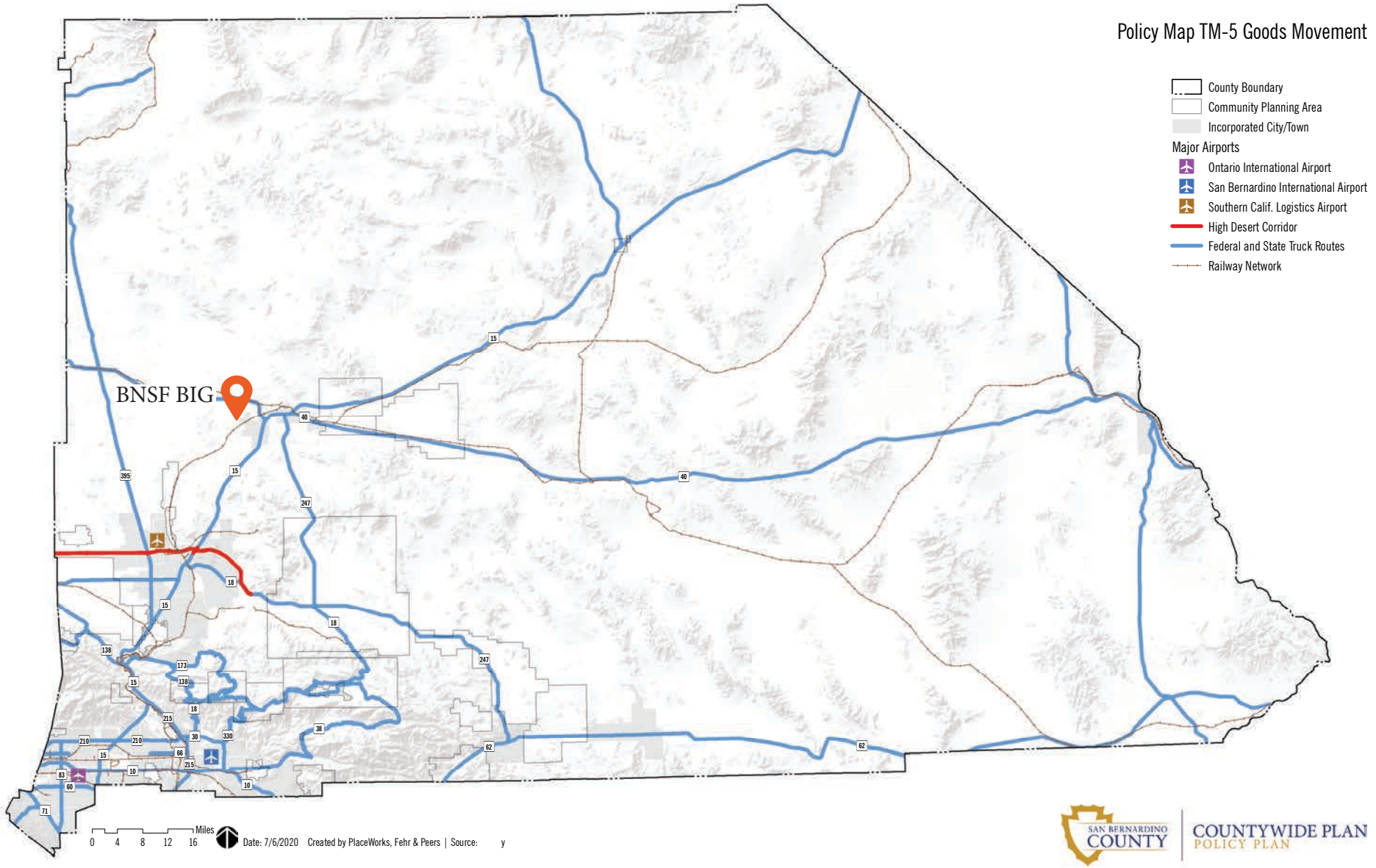
San Bernardino County Sheriff's Department Barstow Patrol Station

The SBCSD Barstow Patrol Station covers approximately 9,200 square miles of San Bernardino County. The Barstow Patrol Station patrols and covers calls for services in the unincorporated areas of Barstow, and the communities of Lenwood, Hinkley, Dagget, and Newberry Springs (SBCSD, ND).



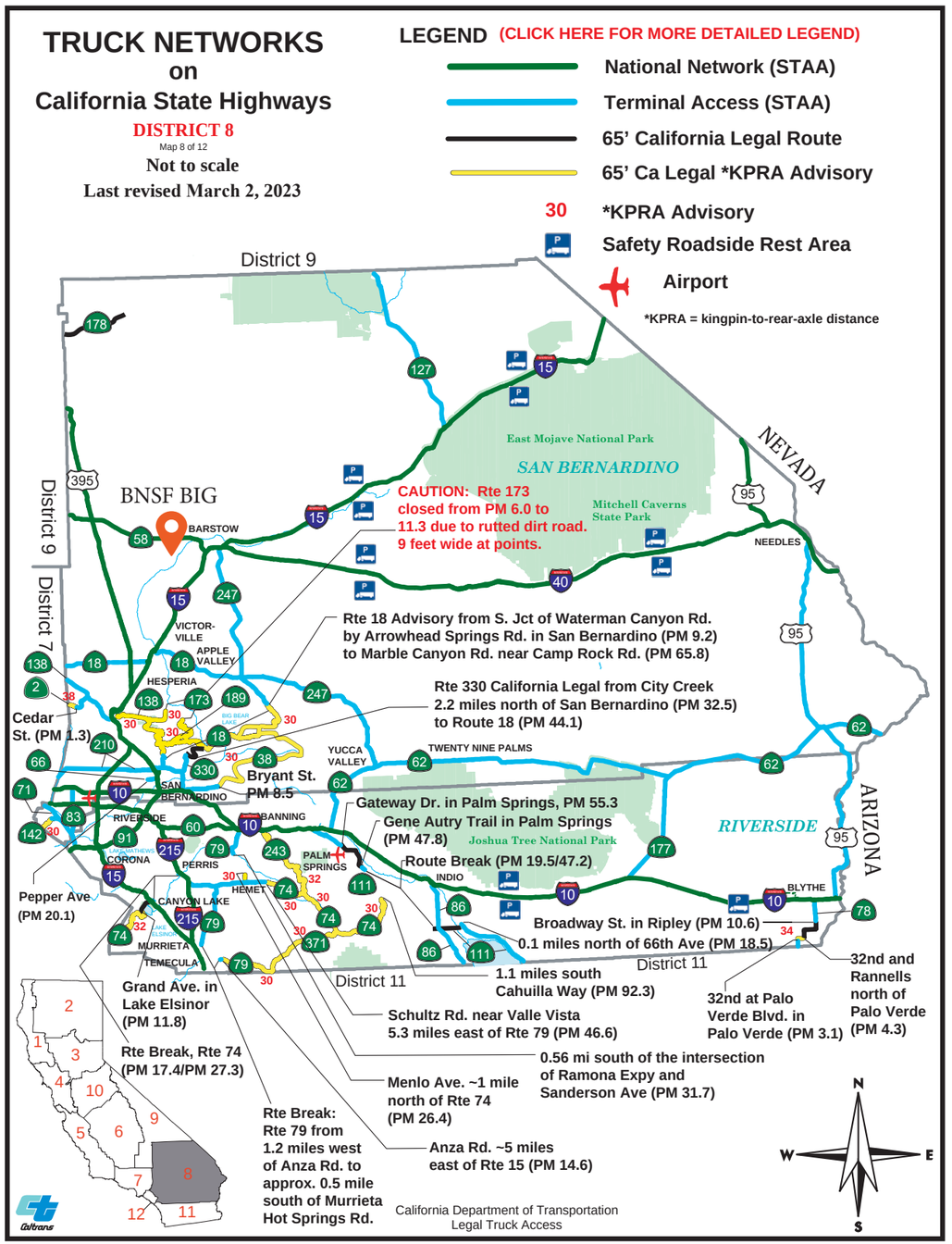
Source: City of Barstow General Plan Traffic Study, 2015

Figure 24: City Existing Truck and Rail Routes



Source: San Bernardino County Countywide Plan Transportation & Mobility Element, 2020

Figure 25: San Bernardino County - Goods Movement



Source: Caltrans, 2023

Figure 26: Caltrans District 8 - National Network Truck Routes

5.0 LAWS, ORDINANCES, REGULATIONS AND STANDARDS

This section describes the federal, State, and local laws, ordinances, regulations, and standards that are relevant to transportation and apply to BIG.

5.1 Federal

Federal Transportation Improvement Program

All federally-funded projects must be included in a Federal Highway Administration-approved Federal Transportation Improvement Program. The Federal Transportation Improvement Program is managed by the Metropolitan Planning Organizations (MPOs) and the Regional Transportation Planning Agencies. The Office of Federal Transportation Management Program is responsible for preparing and managing the Federal Statewide Transportation Improvement Program (FSTIP), a four-year statewide intermodal program of transportation projects.

The FSTIP compiles all Federal Highway Administration and Federal Transit Administration projects that have been programmed throughout the states using federal funds. Highway Safety Improvement Program projects are programmed in the FSTIP on a lump-sum basis. Each MPO is provided with a backup list of their Highway Safety Improvement Program projects for FSTIP programming. Federal law does not directly require criteria for the analysis of federal-aid eligible roadways and highways. However, certain conditions must be met to maintain the funding eligibility of facilities. Federal agencies, such as Federal Highway Administration and Federal Transit Administration, are also responsible for implementing certain federal environmental protection laws.

The California Department of Transportation (Caltrans) and the California Transportation Commission are responsible for producing the long-range transportation plan for planning statewide facilities (STIP). Caltrans and the California Transportation Commission prepare the STIP in cooperation with the MPOs and the Regional Transportation Planning Agencies. Federal law requires states to update the STIP at least once every four years; see also the *State Transportation Improvement Plan* Section below.

5.2 State

As previously noted, Caltrans and the California Transportation Commission are responsible for producing a long-range transportation plan for planning statewide facilities and assembling a statewide short-term improvement plan (i.e., the STIP). California law requires the State to update and adopt this document every two years. The STIP, which is often prepared prior to the FSTIP, compiles all capacity-increasing and operations-improving projects related to rail, mass transportation, local highways, and the State highway system programmed through the State using federal or State funds.

State Greenhouse Gas Reduction Goals

California has established a framework of statutory greenhouse gas (GHG) reduction targets to guide statewide climate policy. Assembly Bill 32 (2006) mandated the reduction of GHG emissions to 1990 levels by 2020, which the state achieved in 2016 (California Air Resources Board, undated). Subsequently, Senate Bill 32 (2016) codified a mid-term target of reducing emissions to 40 percent below 1990 levels by 2030. Most recently, Assembly Bill 1279 (2022) set a long-term objective of

achieving carbon neutrality no later than 2045, with interim milestones to ensure sectoral compliance. The California Air Resources Board (CARB) Scoping Plan provides sector-specific strategies and regulatory mechanisms to meet the state's GHG reduction targets.

California Government Code § 65080

The State requires each transportation planning agency to prepare and adopt a regional transportation plan (RTP) directed at achieving a coordinated and balanced regional transportation system.

California Streets and Highways Code § 1 et seq.

This code provides the standards for administering the statewide streets and highways system. Designated State route and interstate highway facilities are under Caltrans jurisdiction, except where facility management has been delegated to the county transportation authority.

Senate Bill 743 and State CEQA Guidelines § 15064.3

Senate Bill 743 (SB 743), codified in California Public Resources Code § 21099, created a shift in transportation impact analysis under the CEQA from a focus on automobile delay, as measured by LOS and similar metrics, toward a focus on reducing VMT and GHG emissions. The California Legislature required the Office of Planning and Research (OPR), now called the Office of Land Use and Climate Innovation, to propose new criteria for determining the significance of transportation. The statute states that upon certification of the new criteria, automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA, except in any locations specifically identified in the new criteria.

The new criteria, contained in State CEQA Guidelines § 15064.3, were certified and adopted in December 2018. State CEQA Guidelines § 15064.3 provides that VMT is the most appropriate metric to assess transportation impacts; with limited exceptions (applicable to roadway capacity projects, which BIG is not), a project's effect on automobile delay does not constitute a significant environmental impact. Other relevant considerations may include a project's effects on transit and nonmotorized travel. State CEQA Guidelines § 15064.3 further provides that transportation projects that reduce VMT should be presumed to cause a less-than-significant impact. This section took effect statewide on July 1, 2020.

Title 13, California Code of Regulations § 2014 and § 2015

On April 28, 2023, the California Air Resources Board (CARB) approved the Advanced Clean Fleets Regulation, which includes Drayage Truck Requirements for drayage trucks transporting cargo to and from California's intermodal seaports and rail yards. All drayage trucks intending to begin or continue operations at a California seaport or intermodal rail yard must report in the CARB Truck Regulation Upload, Compliance, and Reporting System (TRUCRS).

- Legacy combustion powered drayage trucks (non-zero-emission) must report in TRUCRS by 12/31/23.
- Only zero-emission drayage trucks can report for drayage in TRUCRS beginning 1/1/24.

Beginning in 2035, all drayage trucks in the TRUCRS system will be required to be zero-emission vehicles.

The regulation applies to trucks performing drayage operations at seaports and rail yards, fleets owned by State, local, and federal government agencies, and high priority fleets.

- High-priority fleets are those entities that own, operate, or direct at least one vehicle in California, and that have either $50 million or more in gross annual revenue, or that own, operate, or have common ownership or control of a total of 50 or more vehicles. The regulation affects medium- and heavy-duty on-road vehicles with a gross vehicle weight rating greater than 8,500 pounds, off-road yard tractors, and light-duty mail and package delivery vehicles (CARB, 2023a; CARB, 2023b).

California Transportation Plan 2050

The California Transportation Plan 2050 (Caltrans 2021) is a core document that integrates State and transportation stakeholder plans and programs to help define and plan transportation in California. It exists within the larger context of long-range transportation planning that considers other relevant statewide, regional, and local plans and programs that may affect the transportation system.

The plan integrates findings and recommendations from key documents from various statewide programs. The plan also identifies a sustainable transportation system by pulling together these statewide long-range modal plans to envision the future system:

- Interregional Transportation Strategic Plan
- California Freight Mobility Plan
- California State Rail Plan
- California High-Speed Rail Business Plan
- Statewide Transit Strategic Plan
- California Aviation System Plan
- Bicycle and Pedestrian Plan

Assembly Bill 1358, Complete Streets Act

The California Complete Streets Act of 2008, Assembly Bill (AB) 1358, was signed into law on September 30, 2008. Beginning January 1, 2011, AB 1358 required general plan circulation elements to address the transportation system from a multimodal perspective. AB 1358 states that streets, roads, and highways must "meet the needs of all users…in a manner suitable to the rural, suburban, or urban context of the general plan." AB 1358 requires a circulation element to plan for all modes of transportation where appropriate—including walking, biking, car travel, and transit. AB 1358 also requires circulation elements to consider the transportation system's multiple users (i.e., children, adults, seniors, and disabled people). For further clarity, AB 1358 tasked OPR with releasing guidelines for compliance with AB 1358 by January 1, 2014.

Assembly Bill 32, Global Warming Solutions Act

The Global Warming Solutions Act of 2006, AB 32, establishes a comprehensive program to reduce GHG emissions to combat climate change. This bill requires CARB to develop regulations that reduce GHG

emissions to 1990 levels by 2020. On January 1, 2012, the GHG rules and market mechanisms, adopted by CARB, took effect and became legally enforceable. The reduction goal for 2020 is to reduce GHG emissions by 25 percent of the current rate in order to meet the 1990 levels, and a reduction of 80 percent of current rates by 2050. The AB 32 Scoping Plan contains the main strategies California will use to reduce GHG. The scoping plan has a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms, and an AB 32 program implementation regulation for funding. In 2016, the Legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB recognizes cities as "essential partners" in reducing GHG emissions. The Air Resources Board has developed a Local Government Toolkit with guidance for GHG reduction strategies such as improving transit, developing bicycle/pedestrian infrastructure, increasing city fleet vehicle efficiency, and other strategies.

Senate Bill 375, Sustainable Communities and Climate Protection Act

The Sustainable Communities and Climate Protection Act of 2008 (SB 375) provides incentives for cities and developers to develop housing and jobs closer to each other and to improve public transit. SB 375's goal is to reduce automobile commuting trips and length of automobile trips, thus helping to meet the statewide targets for reducing GHG emissions set by AB 32. SB 375 requires each metropolitan planning organization (MPO) to add a broader vision for growth, called a "Sustainable Communities Strategy", to its RTP. The Sustainable Communities Strategy must lay out a plan to meet the region's transportation, housing, economic, and environmental needs in a way that enables the area to lower GHG emissions. The Sustainable Communities Strategy should integrate transportation, land use, and housing policies to plan for achieving the regional emissions target.

5.3 Local

Connect SoCal 2024

On April 4, 2024, SCAG adopted the 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal 2024), which places emphasis on sustainability and integrated planning (Southern California Association of Governments, 2024). Connect SoCal 2024 encompasses a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals (Southern California Association of Governments, 2024). Connect SoCal 2024 includes a strong commitment to reduce emissions from transportation sources to comply with SB 375, improve public health, and meet national ambient air quality standards. This long-range plan, required by the federal and State governments, is updated by SCAG every four years to reflect changing demographic, economic, and policy circumstances. Connect SoCal 2024 is a living, evolving blueprint for the region's future. **Table 9: Connect SoCal 2024 Regional Planning Policies Relevant Goals** lists relevant goals and policies from Connect SoCal 2024 relevant to the Project.

Table 9: Connect SoCal 2024 Regional Planning Policies Relevant Goals
SCAG Goals
Mobility: Build and maintain an integrated multimodal transportation network.
Support investments that are well-maintained and operated, coordinated, resilient and result in improved safety, improved air quality and minimized greenhouse gas emissions
Ensure that reliable, accessible, affordable, and appealing travel options are readily available, while striving to

Table 9: Connect SoCal 2024 Regional Planning Policies Relevant Goals
enhance equity in the offerings in high-need communities
Support planning for people of all ages, abilities, and backgrounds
Communities: Develop, connect, and sustain communities that are livable and thriving
Create human-centered communities in urban, suburban and rural settings to increase mobility options and reduce travel distances
Produce and preserve diverse housing types in an effort to improve affordability, accessibility and opportunities for all households
Environment: Create a healthy region for the people of today and tomorrow
Develop communities that are resilient and can mitigate, adapt to and respond to chronic and acute stresses and disruptions, such as climate change.
Integrate the region's development pattern and transportation network to improve air quality, reduce greenhouse gas emissions and enable more sustainable use of energy and water.
Conserve the region's resources.
Economy: Support a sustainable, efficient and productive regional economic environment that provides opportunities for all residents.
Improve access to jobs and educational resources.
Advance a resilient and efficient goods movement system that supports the economic vitality of the region, attainment of clean air and quality of life for our communities.
Source: Southern California Association of Governments. (2024). *Connect SoCal: The Southern California Association of Governments' 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy*. Retrieved September 2025 from: https://scag.ca.gov/sites/default/files/2024-05/23-2987-connect-socal-2024-final-complete-040424.pdf

County of San Bernardino Countywide Plan

The County of San Bernardino (County) adopted the Countywide Plan (CWP) in October 2020. The CWP addresses the physical, social, and economic issues facing the County's unincorporated areas. **Table 10: CWP Policy Plan Relevant Goals and Policies –Transportation** lists the CWP goals and policies addressing transportation.

Table 10: CWP Policy Plan Relevant Goals and Policies –Transportation	
Number	**Goal or Policy**
TRANSPORTATION & MOBILITY ELEMENT	
Goal TM-1	**Roadway Capacity.** Unincorporated areas served by roads with capacity that is adequate for residents, businesses, tourists, and emergency services.
Policy TM-1.7	**Fair share contributions.** We require new development to pay its fair share contribution toward off-site transportation improvements.
Goal TM-3	**Vehicle-Miles Traveled.** A pattern of development and transportation system that minimizes vehicle miles traveled.
Policy TM-3.1	**VMT Reduction.** We promote new development that will reduce household and employment VMT relative to existing conditions.
Policy TM-3.2	**Trip reduction strategies.** We support the implementation of transportation demand management techniques, mixed use strategies, and the placement of development in proximity to job and activity centers to reduce the number and length of vehicular trips.
Policy TM-4.4	**Transit access for residents in unincorporated areas.** We support and work with local transit agencies to generate a public transportation system, with fixed routes and on-demand service, that provide residents of unincorporated areas with access to jobs, public services, shopping, and entertainment throughout the county.
Policy TM-4.5	**Transit access to job centers and tourist destinations.** We support and work with local transit agencies to

Table 10: CWP Policy Plan Relevant Goals and Policies –Transportation	
Number	**Goal or Policy**
	generate public transportation systems that provide access to job centers and reduce congestion in tourist destinations in unincorporated areas.
Goal TM-5	**Goods Movement. A road, rail, and air transportation system that supports the logistics industry and minimizes congestion in unincorporated areas.**
Policy TM-5.1	**Efficient and sustainable goods movement network.** We advocate for the maintenance of a goods movement system in southern California that is efficient and sustainable and that prioritizes public health through the use of zero-emission equipment and infrastructure.
Policy TM-5.4	**Grade separations.** We support grade separations to reduce conflicts between rail facilities and roadways, subject to available funding.
Policy TM-5.7	**Trucking-intensive businesses.** We require trucking-intensive businesses to pay their fair share of costs to build and maintain adequate roads.
Source: San Bernardino County. 2020. *County of San Bernardino Countywide Plan, County Policy Plan.* Retrieved from: https://countywideplan.sbcounty.gov/wp-content/uploads/sites/125/2021/02/Transportation-and-Mobility_Policy-Plan-2020.pdf	

It is noted that the proposed General Plan proposes to annex an approximately 2,700-acre portion of the BIG Specific Plan area that is currently outside the City of Barstow limits. Therefore, the CWP goals and policies identified above in **Table 10: CWP Policy Plan Relevant Goals and Policies –Transportation** would not apply to the BIG Specific Plan area. Instead, BIG's Specific Plan area would be subject to the proposed General Plan goals and policies; see *City of Barstow 2015 – 2020 General Plan* section below. However, the CWP goals and policies identified above would apply to BIG off-site improvements, which would remain as unincorporated County lands.

The CWP Policy Plan includes the following Policy Maps that address transportation:

- Policy Map TM-1(A-E) Roadway Network: Depicts the County's roadway network.
- Policy Map TM-2 Transit Network: Depicts the County's transit service areas, bus routes, locations of existing and future Metrolink lines and stations, and the proposed location of the High-Speed Rail line and station.
- Policy Map TM-4 SBCTA Bicycle Plan: Depicts the County's Class I, Class II, Class III, and Class IV bike routes (County of San Bernardino, 2020).
- Policy Map TM-5 Goods Movement: Depicts the County's truck network, railway network, and proposed Xpress West line.
- Policy Map TM-6 Airports: Depicts the locations of the County's airports.

Codified Ordinances of the County of San Bernardino

Table 11: Codified Ordinances of the County of San Bernardino lists the Codified Ordinances of the County of San Bernardino (County Code) regulations addressing transportation applicable to BIG.

Table 11: Codified Ordinances of the County of San Bernardino	
Number	**Standard**
County Code Chapter 51.01: Vehicle Regulations	This chapter establishes requirements for traffic control devices, parking regulations, pavement markings, and weight limits.
Source: San Bernardino County. (2023). *San Bernardino County, CA Code of Ordinances.* Retrieved from: https://codelibrary.amlegal.com/codes/sanbernardino/latest/sanberncty_ca/0-0-0-164891	

As noted above, the proposed General Plan proposes to annex an approximately 2,700-acre portion of the BIG Specific Plan area that is currently outside the City of Barstow limits. Additionally, the proposed BIG Specific Plan would provide a comprehensive development plan, standards, and implementation program for the BIG land uses within the Specific Plan area. Therefore, the County Code standards identified above would not apply to the Specific Plan area. Instead, BIG's Specific Plan area would be subject to the Barstow Municipal Code and BIG Specific Plan regulations; see *Code of the City of Barstow* Section below. However, the County Code standards identified above would apply to BIG's off-site improvements which would remain as unincorporated County lands.

San Bernardino County Congestion Management Program

The San Bernardino County Transportation Authority (SBCTA), formerly known as the San Bernardino Associated Governments (SANBAG), is San Bernardino's Congestion Management Agency. SBCTA prepares, monitors, and periodically updates the County CMP to meet federal Congestion Management Process requirements and the County's Measure I Program. The San Bernardino County CMP defines a network of State highways and arterials, LOS standards and related procedures, the process for mitigation of impacts of new development on the transportations system, and technical justification for the approach. **Table 12: San Bernardino County Congestion Management Program** outlines the applicable County CMP goals addressing transportation.

Table 12: San Bernardino County Congestion Management Program

Number	Goal or Policy
Goal 5	Anticipate the impacts of proposed new development on the multimodal transportation system, provide consistent procedures to identify and evaluate the effectiveness of mitigation measures and provide for adequate funding of mitigations.
Goal 6	Promote air quality and improve mobility through implementation of land use and transportation alternatives or incentives that reduce both vehicle trips and miles traveled and vehicle emissions.

Source: San Bernardino County Transportation Authority. (2016). *San Bernardino County CMP, 2016 Update*. Retrieved September 2025 from: https://www.gosbcta.com/wp-content/uploads/2019/10/2016-Congestion-Management-Plan-.pdf

Measure I Strategic Plan

Measure I authorizes a half-cent sales tax in San Bernardino County until March 2040 for use exclusively on transportation improvement and traffic management programs. San Bernardino County voters first approved the measure in 1989 and in 2004 overwhelmingly approved the extension through 2040. Measure I includes language mandating development to pay its fair share for transportation improvements in San Bernardino County. The Measure I Strategic Plan is the official guide for the allocation and administration of the combination of local transportation sales tax, State and federal transportation revenues, and private fair-share contributions to regional transportation facilities to fund the Measure I 2010–2040 transportation programs. The Strategic Plan identifies funding categories and allocations and planned County transportation improvement projects including freeways, major and local arterials, bus and rail transit, and traffic management systems. The City has adopted a development impact fee program that is consistent with Measure I requirements. **Table 13: Measure I Strategic Plan** outlines the applicable sections of the Measure I Strategic Plan addressing transportation.

Table 13: Measure I Strategic Plan	
Number	**Goal or Policy**
Section II.C.2.	For areas outside the San Bernardino Valley and Victor Valley cities and spheres: local jurisdictions must prepare Traffic Impact Analysis (TIA) reports for proposed development projects exceeding specified thresholds of trip generation. This is a continuation of a requirement established when the CMP was originally approved by the SBCTA Board in 1992. TIA reports must comply with requirements contained in Appendix B of the CMP. Local jurisdictions required to participate in the TIA program are: Barstow, Big Bear Lake, Needles, Twentynine Palms, Yucca Valley and the County of San Bernardino for other un-incorporated areas in the Mountain/Desert Subareas.
Source: San Bernardino Associated Governments. (2017). *Measure I 2010-2040 Strategic Plan.* Retrieved from: https://www.gosbcta.com/wp-content/uploads/2019/09/MeasureIStrategicPlan-Part1-rev0917.pdf	

San Bernardino Countywide Transportation Plan

The SBCTA developed the County's Countywide Transportation Plan (CTP), which was released in September 2015. The CTP has a horizon year of 2040 and serves as the County's input into the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal 2020). The purpose of the CTP is to lay out a strategy for long-term investment in and management of the County's transportation system. Key issues the CTP addresses include transportation funding, congestion relief, economic competitiveness, system preservation and operations, transit system interconnectivity, air quality, sustainability, and GHG emission reductions. The CTP analyzes a Year 2040 baseline scenario with traditional revenue sources and a Year 2040 aggressive scenario with added, "innovative revenue sources" defined in Connect SoCal 2020. The CTP has developed a set of strategies to address issues such as air quality, goods movement, sustainability, and active transportation. **Table 14: San Bernardino Countywide Transportation Plan: Interim 2021 Update** outlines the applicable goals and objectives of the San Bernardino Countywide Transportation Plan: Interim 2021 Update addressing transportation.

Table 14: San Bernardino Countywide Transportation Plan: Interim 2021 Update	
Goals and Objectives	**Definition**
GOALS	
GOAL 1	Focus on our transportation "customers" by building an integrated, multimodal network and managing that network to improve safety, mobility, and accessibility for the residents and businesses within San Bernardino County and the region.
GOAL 3	Promote stewardship of the public resources entrusted to SBCTA and other transportation agencies in the County through analysis and application of cost-effective, customer-focused, and technology-enabled approaches to the multimodal movement of people and goods.
GOAL 4	Promote the funding of transportation needs and efficient operation of transportation systems through collaboration with local, regional, State, and federal transportation agencies, together with private stakeholders.
GOAL 5	Support State, regional, and local environmental and sustainability goals.
OBJECTIVES	
OBJECTIVE 1	Maximize the accessibility, efficiency and reliability of the transportation system for all users
OBJECTIVE 3	Reduce vehicle miles traveled and travel times for both highway and transit travel (for both people and goods)
OBJECTIVE 4	Reduce vehicle emissions, both criteria pollutants and GHG emissions
OBJECTIVE 5	Increase the proportion of people sharing rides, bicycling, walking, taking transit, and replacing trips with "virtual travel"
OBJECTIVE 8	Encourage development around existing and planned transit stations and hubs

Table 14: San Bernardino Countywide Transportation Plan: Interim 2021 Update	
Goals and Objectives	**Definition**
Source: San Bernardino County Transportation Authority. (2021). *San Bernardino Countywide Transportation Plan (Interim 2021 Update).* Retrieved from: https://www.gosbcta.com/wp-content/uploads/2019/10/SBCTA_CTP_2021Update_ExecutiveSumFinal.pdf	

Codified Ordinances of the County of San Bernardino Municipal Code

Below is an outline of a County of San Bernardino (County Code) regulation addressing transportation.

County Code 52.019: Procedure for Establishing Terminal Routes. This Chapter establishes procedures for designating truck routes, including routes necessary to accommodate over-sized/over-weight trucks accessing a terminal. A terminal is defined in the Code as "any facility at which freight is consolidated to be shipped or where full load consignments may be loaded and off-loaded or at which the vehicle combinations defined in Vehicle Code § 35401.5 are regularly maintained, stored or manufactured."

San Bernardino County Long-Range Transit Plan

SBCTA updates its Long-Range Transit Plan (LRTP) to address transit needs for an approximate 25-year horizon. The LRTP prioritizes goals and projects for transit growth. Since the passage of SB 375, the LRTP has also closely tied land use and transportation planning strategies. The LRTP addresses countywide travel challenges and creates a system aimed to increase the role of transit in future travel choices. The LRTP anticipates that a premium transit service, such as rapid buses and rail modes, will offer solutions to future travel demands by providing competitive travel times and increased reliability, mobility, and accessibility. Premium transit will reduce dependence on cars, encourage community revitalization, and encourage more balanced transit-oriented land use development.

SBCTA Development Mitigation Nexus Study

The SBCTA Development Mitigation Nexus Study identifies the fair share contributions from new development for regional transportation improvements (e.g., freeway interchanges, railroad grade separations, and regional arterial highways). The Nexus Study is updated biennially or as requested by SBCTA Board of Directors and in close coordination with local jurisdictions.

San Bernardino County Transportation Impact Study Guidelines

The County developed the County TIS Guidelines to provide recommendations related to VMT assessment (both thresholds of significance and methodology for identifying VMT related impacts) and to refine the County's existing TIS guidelines to reflect state-of-the-practice methodologies for identifying project impacts. The guidelines provide a general guide in assessing the potential transportation impacts of proposed development projects, General Plan Amendments, and changes in zoning in the County. The guidelines also provide the recommended format and methodology that should be utilized in the preparation of traffic studies.

San Bernardino County Local Road Safety Plan

San Bernardino County completed its first comprehensive road safety plan in 2022. The Local Road Safety Plan (LRSP) proactively identifies and evaluates hot spots and systemic risk factors throughout unincorporated San Bernardino County and identifies proven countermeasures that can be implemented

through roadway design changes and partnerships with stakeholders. . The LRSP identifies the County's top ten collision hot spots, systemic trends, and recommended countermeasures.

Of the top ten collision hot spots selected for project development, one location is within BIG's study area, "#8 National Trails Highway". Approximately three miles of collision hot spot location #8 runs along BIG Specific Plan area frontage, on National Trails Highway/Main Street, between the western extent of BIG Specific Plan area and Amarylis Street. The LSRP's recommended engineering countermeasures for the Hot Spot #8 segment that runs along the BIG Specific Plan area's frontage are provided below. **Table 15: San Bernardino County Local Road Safety Plan** outlines the applicable engineering countermeasures of the San Bernardino County Local Road Safety Plan addressing transportation.

Table 15: San Bernardino County Local Road Safety Plan

Number	Hot Spot #8 Engineering Countermeasures
1	Upgrade to larger stop signs at all unsignalized intersections.
2	Install flashing beacon at all unsignalized, stop-controlled intersections.
3	Install splitter islands on the minor road approaches at all unsignalized intersections with paved minor road approaches.
4	Install chevron signs on horizontal curves at select locations.
5	High friction surface treatment on entire corridor along curved roadway segments.
6	Install speed limit signs at select locations.
7	Widen unpaved shoulder on entire corridor.
8	Install edgeline rumble strips on entire corridor.
9	Install centerline rumble strips on each side of the painted median on entire corridor.
10	Create 4' wide painted median on entire corridor.
11	Install flexible posts in the median where passing is not permitted on entire corridor.
12	Restripe edge-lines and centerlines with 6" retroreflective lane markings on entire corridor.
13	Install pavement reflectors (raised pavement markers) on entire corridor along centerline and edgeline.

Source: San Bernardino County. (2022). *San Bernardino County Local Road Safety Plan.* Retrieved from: https://dpw.sbcounty.gov/wp-content/uploads/sites/87/2022/08/SanBernardinoCountyLRSP_FinalPlan_Master_8.19.22_Sml.pdf?x39624

San Bernardino County Non-Motorized Transportation Plan

The San Bernardino County Non-Motorized Transportation Plan (NMTP) outlines benefits of creating an interconnected bicycle and pedestrian network in San Bernardino County. While there has been significant growth in bicycle infrastructure in recent years, there is still a need for a comprehensive plan and funding sources to further develop these systems. The NMTP, which was revised in 2018 aims to address this challenge, aligning with State initiatives to reduce vehicle travel and GHG emissions. The plan emphasizes collaboration between local governments, transportation agencies, and citizens to make it a reality and ensures coordination across jurisdictions for facility development, scheduling, and funding. **Table 16: San Bernardino County Non-Motorized Transportation Plan Goals and Policies** outlines the relevant goals and policies of the San Bernardino County Non-Motorized Transportation Plan addressing transportation.

Table 16: San Bernardino County Non-Motorized Transportation Plan Goals and Policies

Goals and Policies	Definition
GOALS	
GOAL 1	**Increased bicycle and pedestrian access** – Expand bicycle and pedestrian facilities and access

Table 16: San Bernardino County Non-Motorized Transportation Plan Goals and Policies	
Goals and Policies	**Definition**
	within and between neighborhoods, to employment centers, shopping areas, schools, and recreational sites.
GOAL 2	**Increased travel by cycling and walking** – Make the bicycle and walking an integral part of daily life in San Bernardino County, particularly (for bicycle) for trips of less than five miles, by implementing and maintaining a bikeway network, providing end-of-trip facilities, improving bicycle/transit integration, encouraging bicycle use, and making bicycling safer and more convenient.
GOAL 3	**Routine accommodation in transportation and land use planning –** Routinely consider bicyclists and pedestrians in the planning and design of land development, roadway, transit, and other transportation facilities, as appropriate to the context of each facility and its surroundings.
GOAL 4	**Improved bicycle and pedestrian safety –** Encourage local and statewide policies and practices that improve bicycle and pedestrian safety.
POLICIES	
POLICY 1	Local jurisdictions are the agencies responsible for the identification of non-motorized transportation projects within their jurisdiction for inclusion into the Plan. SANBAG shall only serve in an advisory capacity with respect to the identification of projects on the regional network. SANBAG shall provide advice on the inclusion of projects that may serve to better establish connectivity between jurisdictions, intermodal facilities and regional activity centers. However, local jurisdictions have sole authority over all projects included in the Plan.
POLICY 2	Local jurisdictions are also responsible for implementation of the projects included in the NMTP. SANBAG may provide advisory support to jurisdictions in the project development process on request. Should SANBAG be requested to provide assistance delivering a project in the Plan, such instances should be limited to development of regional non-motorized transportation facilities that provide connectivity to more than one jurisdiction or complete gaps within the regional non-motorized transportation network or serve to provide better access to transit facilities.
Source: San Bernardino County Transportation Authority. (2018). *San Bernardino County Non-Motorized Transportation Plan (Revised June 2018).* Retrieved from: https://www.gosbcta.com/wp-content/uploads/2019/10/Non-Motorized-Transportation-Plan-.pdf	

City of Barstow 2015 – 2020 Barstow General Plan

The City adopted the City of Barstow 2015-2020 General Plan (2015 General Plan) in February 2015. The Circulation Element establishes goals, policies and programs that correlate the City's roadway and active transportation network with the land uses within the planning area. The 2015 General Plan Exhibit C-1: Circulation Map depicts the City's roadways and identifies a hierarchy of five classes of streets that collectively comprise the City's vehicular circulation network. The 2015 General Plan Exhibit C-2: Pedestrian Paths, Bicycle Routes, and Park and Ride Facilities depicts the existing and proposed pedestrian and bicycle facilities. The Safety Element establishes goals, policies and strategies for public safety services and emergency preparedness. **Table 17: 2015 General Plan Relevant Goals and Policies** outlines the applicable goals and policies of the 2015-2020 Barstow General Plan addressing transportation.

Table 17: 2015 General Plan Relevant Goals and Policies	
Number	**Goal or Policy**
CIRCULATION ELEMENT	
GOAL 1	The City shall maintain and expand a safe, efficient and convenient circulation system.
POLICY 1.C	Pursue expansion of the City's roadway network to accommodate planned residential, commercial and industrial growth and to address existing system deficiencies.
GOAL 3	Foster improved traffic flow and air quality by encouraging the use of non-motorized transportation,

Table 17: 2015 General Plan Relevant Goals and Policies	
Number	**Goal or Policy**
	alternative fuel vehicles and multi-occupant vehicles.
POLICY 3.A	Encourage pedestrian travel by improving the means by which residents and visitors may walk throughout the community.
POLICY 3.B	Establish a network of bicycle routes as illustrated on Exhibit C-2 (of the City of Barstow General Plan).
POLICY 3.C	Encourage carpooling and the use of alternative fuel vehicles by city residents and employees.
POLICY 3.D	Implement incentives outlined in Municipal Code Chapter 19.49 – Design Guidelines such as relaxation of parking requirements, density bonuses and exceptions to building height and lot coverage requirements in exchange for on- or off-site provision of bicycle racks and/or storage facilities, bikeways, electric vehicle charging facilities, designated pedestrian pathways or other design features designed to foster alternatives to single-occupancy, internal combustion engine driven vehicle use.
SAFETY ELEMENT	
STRATEGY 2.A.2	Ensure that all proposed development is designed to provide unencumbered access for police, fire, and paramedic vehicles.
Source: City of Barstow. (2015). *City of Barstow 2015-2020 General Plan*. Retrieved from: https://www.barstowca.org/departments/community-development-department/planning/general-plan-and-master-environmental-impact-report	

City of Barstow Active Transportation Plan

The City adopted the City of Barstow Active Transportation Plan (Active Transportation Plan) in 2018. The Active Transportation Plan placed emphasis on five goals: safety, connectivity and access, health and equity, economic development, and sustainability. The City's adoption of the Active Transportation Plan is a means for the City to comply with AB 32.

Code of the City of Barstow

The City of Barstow (Barstow Code) regulations addressing transportation are provided below. **Table 18: Code of the City of Barstow Relevant Regulations** outlines the relevant Barstow Code sections addressing transportation applicable to BIG.

Table 18: Code of the City of Barstow Relevant Regulations	
Section	**Standard**
TITLE 10 – TRAFFIC	
Sec. 10.09.030(c)	**Trip Reduction.** Continue to support public information programs which promote the use of alternative modes of transportation such as those provided through commercials on local television stations and availability of bus schedules at various locations throughout the city. The city will continue to encourage public information programs which promote the use of alternate modes of transportation.
Sec. 10.09.030(d)	**Trip Reduction.** Continue to promote land use regulations which have the potential to reduce vehicle trips (VT) and/or vehicle miles travelled (VMT), such as the MU (mixed use) land use district which permits mixed residential and commercial uses.
Sec. 10.09.040(b)(1)	**Travel Demand Management.** New development is required to comply with the city's standard requirement of installing public sidewalks. This improvement provides for pedestrian use as an alternate transportation mode, and serves as a link to other transportation systems which encourage their use, thus reducing traffic congestion, VMT and VT. The city shall continue to install sidewalks in those limited areas of the city where development existed prior to the requirements for sidewalks with the 1911

Table 18: Code of the City of Barstow Relevant Regulations	
Section	**Standard**
	Bond Act and Community Development Block Grant funds.
Sec. 10.09.040(b)(2)	**Travel Demand Management.** The city (as the city area transit and dial-a-ride) provides multiple occupancy vehicle service to the city and surrounding county area. Approximately 85 miles of roads are covered by the current route and monthly ridership exceeds 12,000. This service reduces traffic congestion, VMT and VT. The fixed route network will be periodically evaluated to determine appropriate changes and expansion based upon new development and levels of ridership.
Sec. 10.09.040(b)(3)	**Travel Demand Management.** Traffic signal coordination and timing are being used to increase roadway efficiency and capacity during peak travel periods, resulting in improved vehicle movement. New signals are being installed by the city and by private development at locations where traffic volumes warrant and as determined by the city's traffic engineer. These improvements also result in improved vehicle movement.
Sec. 10.48.020(b)	**Restricted Use of Streets – Truck Routes** When any such truck routes are established and designated by appropriate signs, the operator of any vehicle exceeding a maximum gross weight limit of three tons shall drive on such routes and none other, except that nothing in this section shall prohibit the operator of any vehicle exceeding a maximum gross weight of three tons coming from a truck route having ingress and egress by direct route to and from restricted streets when necessary for the purpose of making pickups or deliveries of goods, wares and merchandise from or to any building or structure located on such restricted streets or for the purpose of delivering materials to be used in the actual and bona fide repair, alteration, remodeling or construction of any building or structure upon such restricted streets for which a building permit has previously been obtained.
Sec. 10.48.020(d)	**Restricted Use of Streets – Truck Routes** Those streets and parts of streets established by resolution of the council are declared to be truck routes for the movement of vehicles exceeding a maximum gross weight of three tons.
TITLE 12 – PUBLIC IMPROVEMENTS	
Sec. 12.04.020(b)	**Required Improvements.** For commercial and industrial subdivisions, installation of all required public off-site improvements shall be required by the property owner, lessee or agent, on the property where development activity will occur prior to the issuance of a building permit.
Sec. 12.04.020(d)	**Required Improvements.** The city shall establish a master plan of required off-site public improvement standards for the following land use designations: (1) Rural. (2) Residential. (3) Commercial. (4) Industrial. All public improvements required under this section shall be designed and constructed in accordance with the city's established master plan of required off-site public improvement standards. The master plan will outline the specifications of the off-site public improvements required throughout the entire community. Any deviation from the established standard will require city council authorization and approval.
Sec. 12.04.020I	**Required Improvements.** The city engineer may require that plans be prepared by a registered civil engineer showing the line and grade of the public improvements required to be constructed by this section in conjunction with any construction. When such plans are required, no building permit shall be issued until the plans are approved by the city engineer. Further, no final certificate of occupancy shall be issued until the improvements required by this section have been constructed.

Table 18: Code of the City of Barstow Relevant Regulations	
Section	**Standard**
Source: City of Barstow. (2025b). City of Barstow, CA Code of Ordinances. Retrieved from: https://library.municode.com/ca/barstow/codes/code_of_ordinances	

As noted above, the proposed General Plan proposes to annex an approximately 2,700-acre portion of the BIG Specific Plan area that is currently outside the City of Barstow limits. Additionally, the proposed BIG Specific Plan would provide a comprehensive development plan, standards, and implementation program for the portion of the BIG footprint within the Specific Plan area. Therefore, the Barstow Code regulations specified above and/or the BIG Specific Plan standards apply to the Specific Plan area, and not the County Code standards. The Barstow Code regulations specified above also apply to BIG's proposed off-site improvements within City limits.

City of Barstow VMT Resolution

The City VMT Resolution was adopted June 17, 2025, as City Council Resolution No. 5219-2025, "A Resolution of the City Council of the City of Barstow Adopting "Vehicle Miles Traveled" Thresholds of Significance for Purposes of Analyzing Transportation Impacts Under the California Environmental Quality Act". The City VMT Resolution is included in this report as **Appendix A**. Resolution 5219-2025 repealed and replaced Resolution No. 5010-2020 to correct a clerical error. **Table 19: City of Barstow VMT Resolution** outlines the City VMT Resolution sections applicable to BIG.

Table 19: City of Barstow VMT Resolution	
Section	**Standard**
Section 1	
Section 1.1	Utilizing the San Bernardino County Travel Demand Model (SBTAM) as its preferred methodology to measure VMT.
Section 1.2	Utilizing the SBTAM as its preferred method to analyze a project's VMT impact.
Exhibit A: Table 1 VMT Impact Thresholds	
Land Use Plans (such as General Plans and Specific Plans)	Methods: SBTAM forecast of total daily VMT/SP. Project Threshold: A significant impact would occur if the project VMT per service population [VMT/SP] (for the land use plan) exceeds the [Countywide/Citywide] average under General Plan Buildout Conditions. Cumulative Threshold: A significant impact would occur if the project caused total daily VMT per service population within the City to be higher than the no project alternative under cumulative conditions.
Source: City of Barstow. (2025a). VMT Resolution No.5219-2025. 2025.	

City of Barstow Engineering Standards

The Community Services Department Engineering Services Division maintains a series of engineering details and standards that apply to all work within the public right of way. The standards explain where and how driveways are to be placed, standard street and lane widths, sewer and water line placement, and other improvements. Adopted in August 10, 2010, the standards are regularly reviewed and amended to reflect best practices or changes in design.

City of Barstow Standard Plan 138 addresses Encroachment Permits, traffic control plans (TCPs), and lane closures. Standard Plan 138 specifies that prior to issuance of an Encroachment Permit, the contractor must obtain a City business license, designate a contact person (who is available 24 hours a day, every day of the week for call outs), provide an Underground Service Alert ticket number, and submit a TCP for approval.

6.0 METHODS FOR EVALUATING IMPACTS

This section describes the methodology for evaluating impacts under CEQA and discusses the sources and methodology behind values denoted by "Author Compilation" in tables throughout this report.

6.1 Thresholds of Significance

State CEQA Guidelines Appendix G: Environmental Checklist Form includes questions concerning transportation. The issues presented in the Environmental Checklist Form have been used to formulate thresholds of significance in this CEQA Assessment. Accordingly, BIG would have a significant effect on the environment if it would:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
- Conflict or be inconsistent with State CEQA Guidelines § 15064.3, subdivision (b).
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.

State CEQA Guidelines § 15064.3, subdivision (b) as noted in the threshold above provides that, for land use projects, "vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact." Also concerning the State CEQA Guidelines § 15064.3, subdivision (b) threshold above, the City-adopted VMT Impact Thresholds are applied to the analysis of VMT impacts in this CEQA Assessment (see **VMT Significance Criteria and Impact Thresholds** below).

It is noted that these thresholds apply to project operations. The City, County, and State have not identified/adopted thresholds that apply to a project's construction activities, which would be temporary and the associated VMT would cease once project construction is complete.

VMT Significance Criteria and Impact Thresholds

Senate Bill 743 (SB 743) was signed into law on September 27, 2013. In response, OPR updated the State CEQA Guidelines to establish new criteria for determining the significance of transportation impacts. Under State CEQA Guidelines § 15064.3, VMT is the most appropriate measure of transportation impacts. For purposes of this CEQA Assessment, "vehicle miles traveled" or (VMT) refers to the amount and distance of automobile travel attributable to a project. As noted in the Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) (Governor's Office of Planning and Research, 2018), the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. However, the Technical Advisory also notes heavy-duty truck VMT may be included for modeling convenience and ease of calculation (for example, where models or data provide combined auto and heavy-duty truck VMT). The Technical Advisory also notes that CEQA generally defers to lead agencies on the choice of methodology to analyze impacts. Under State CEQA Guidelines § 15064.3, a project's effect on automobile delay (e.g., at intersections and roadway segments) shall not constitute a significant environmental impact. Accordingly, this CEQA Assessment addresses VMT based on the State's legal requirements and

does not characterize any particular level of automobile delay on intersections and roadway segments as a significant environmental impact.

Consistent with State CEQA Guidelines § 15064.7, the City adopted VMT thresholds of significance for analyzing transportation impacts under CEQA with the City VMT Resolution (City of Barstow, 2025), included in **Appendix A**. The City will serve as lead agency under CEQA, so City VMT thresholds apply. The City VMT Resolution identifies three types of projects which may require VMT analysis: land use plans (such as General Plans and Specific Plans); land use projects; and transportation projects. BNSF proposes the BIG Specific Plan to establish a land use plan, site-specific zoning regulations, and development standards for the Specific Plan area. Therefore, the "land use plan" (i.e., Specific Plan) project type is the most relevant of the three project types provided in the City VMT Resolution. It is noted that the significance thresholds for the "land use plan" and "land use project" types are effectively the same.

Table 20: City of Barstow VMT Impact Thresholds identifies the City's VMT Project Threshold and Cumulative Threshold for land use plans (e.g., Specific Plans) pursuant to City VMT Resolution Exhibit A: Table 1 VMT Impact Thresholds (City of Barstow, 2025).

Table 20: City of Barstow VMT Impact Thresholds

Methods	Project Threshold	Cumulative Threshold
Land Use Plans (such as General Plans and Specific Plans)		
San Bernardino Traffic Analysis Model (SBTAM) forecast of total daily VMT/SP. - To capture project effect, the same cumulative year population and employment growth totals should be used. The 'project' only influences land use allocation.	A significant impact would occur if the project VMT/SP (for the land use plan) exceeds the [Countywide/Citywide] average under General Plan Buildout Conditions.	A significant impact would occur if the project caused total daily VMT per service population within the City to be higher than the no project alternative under cumulative conditions.

Source: City VMT Resolution No. 5219-2025. (2025a).

Notes:
VMT/SP = vehicle miles traveled per service population
Service population is defined as population plus employment.

The City of Barstow evaluates VMT impacts using a metric known as VMT per service population (VMT/SP). This approach defines "Service Population" as the combined number of residents and employees in a specific area.

VMT/SP is widely used by public agencies because it provides a more meaningful measure of transportation efficiency than total VMT alone. While total VMT simply reflects the amount of driving generated by a project, VMT/SP accounts for how efficiently that travel serves the people living and working in the area. In other words, it reflects the average daily travel burden per person, making it easier to assess whether a project supports a more sustainable and connected land use pattern.

This metric is particularly useful for evaluating employment-generating development projects, such as BIG. Projects like BIG often increase the total VMT by adding jobs and the associated commute trips.

However, they also increase the service population by bringing more employment opportunities to the area. VMT/SP normalizes these impacts by factoring in both the added travel and the increased number of people served, providing a balanced view of how the project affects transportation efficiency.

If a project causes VMT/SP to rise compared to the baseline, it means the average person in the area would drive more - suggesting reduced transportation efficiency. This might occur with developments located far from existing homes, jobs, or services. On the other hand, if VMT/SP decreases compared to the baseline, it indicates improved efficiency: the average resident or employee would drive less. This could happen when jobs are located closer to where people live, as is the case with BIG, which is expected to provide employment opportunities closer to many High Desert residents, potentially shortening commute distances and reducing average VMT.

By using VMT/SP, Barstow can assess how projects affect overall travel behavior and whether they support long-term goals for sustainability, accessibility, and efficient land use. Therefore, based upon consideration of the factors discussed above, use of the VMT/SP metric, under the City's "land use plan" VMT thresholds, is well-suited to evaluate the significance of BIG's transportation impacts under CEQA.

VMT/SP can be quantified using multiple efficiency metrics, with three common efficiency metrics described below. Note that the metric selected should be relevant to the project being studied. To help guide the selection of which metric to use, the San Bernardino County Transportation Analysis Model (SBTAM) Model Development and Validation Report and User's Guide (County of San Bernardino, 2012) should be used. Section 5 provides details regarding the SBTAM outputs, which can be used to calculate VMT/SP. Additional discussion regarding the SBTAM is included in **Section 6.3 Methodology for Impact Analysis**.

- Total VMT per Service Population (Total VMT/SP)
    - Total VMT/SP is defined as the total VMT within a specific area, divided by the total number of residents and employees in that area. Total VMT includes all on-road passenger vehicles (cars and light trucks) and may or may not include heavy-duty trucks assigned by the model on the roadway network within the specific area. Vehicle volume on each roadway segment (link) is multiplied by the roadway segment length (link distance). Total VMT/SP accounts for trips to work, as well as other trips (e.g., to commercial, educational, and recreation, and normalizes them by the sum of residents and employees in the specific area. This metric is typically used to evaluate changes at a citywide or regionwide scale.

- Home Based VMT per Resident
    - Home Based VMT per Resident quantifies VMT based on the residents within a specific area. "Home based" means that the trips counted in this metric either begin or end at a resident's home. This includes commute trips to their place of employment and other trips (e.g., to commercial, educational, and recreational uses), but only records trips for residents. This means that the trips made by residents within the specific area are included, but the trips made by employees who work within the area but live elsewhere are excluded. Home Based VMT per Resident includes passenger vehicles (cars and light trucks) assigned by the model on the roadway network within the specific area but excludes heavy-duty trucks. This metric is typically most relevant to residential projects.

- Home Based Work VMT per Worker
    - Home Based Work VMT per Worker quantifies the VMT based on the workers/employees within a specific area. "Home based" means that the trips counted in this metric either begin or end at an employee's home. This metric measures the VMT that employees, but not residents, in a specific area travel due to work to and from their homes. Home Based VMT per Worker includes passenger vehicles (cars and light trucks) assigned by the model on the roadway network within the specific area but excludes heavy-duty trucks. This metric is typically most relevant to office or industrial projects.

The City has identified the Total VMT per Service Population, Home Based VMT per Resident, and Home Based Work VMT per Worker metrics as acceptable ways to calculate VMT/SP in the City's "Traffic Impact Analysis and Vehicle Miles Traveled VMT Threshold Information" document attached to this report as **Appendix B**.

For BIG's analysis under the Project Threshold, the Home Based Work VMT per Worker metric is used to quantify VMT/SP because this metric is most applicable to BIG's industrial-related Specific Plan. It measures the average VMT by workers commuting to and from home, specifically for employees associated with the BIG Specific Plan area. This approach excludes unrelated travel – such as residents driving to shopping centers or from other non-work purposes – and focuses only on work-related trips generated by the project. The VMT efficiency of the BIG Specific Plan area is then compared to the citywide average, where "citywide" refers to the City and its unincorporated SOI. A significant project impact would occur if BIG's Home Based Work VMT per Worker is higher than the citywide average Home Based Work VMT per Worker under the Horizon Year 2048 conditions.

For BIG's analysis under the Cumulative Threshold, the Total VMT Per Service Population metric is used to quantify VMT/SP, consistent with the City VMT Resolution. For this analysis, the City is evaluated as a whole, both without and with BIG. This differs from the Project Threshold, which compares only BIG to the citywide average. A significant cumulative impact would occur if BIG's implementation causes the citywide Total VMT per Service Population to be higher than the No BIG Baseline under the Horizon Year 2048 conditions.

Table 21: BIG VMT Thresholds of Significance summarizes the Project Threshold and Cumulative Threshold used to evaluate BIG's VMT effects.

Table 21: BIG VMT Thresholds of Significance

Project Threshold	Cumulative Threshold
A significant project impact would occur if BIG's Home Based Work VMT per Worker is higher than the citywide average Home Based Work VMT per Worker under the Horizon Year 2048 conditions.	A significant cumulative impact would occur if BIG's implementation causes the citywide Total VMT per Service Population to be higher than the No BIG Baseline under the Horizon Year 2048 conditions.
Sources: *Author Compilation. (2025).* *City VMT Resolution No. 5219-2025. (2025a).*	

6.2 Analysis Scenarios

For each threshold of significance, BIG's construction period and operations are analyzed, as applicable.

BIG's operational VMT analysis is conducted under Horizon Year 2048 conditions, consistent with the City VMT Resolution. VMT is typically analyzed in the horizon year because it provides a long-term perspective of the effects of projects and plans.

BIG's other operational analyses are conducted under various scenarios as appropriate to each threshold.

6.3 Methodology for Impact Analysis

BIG's transportation impacts were evaluated using State CEQA Guidelines and VMT-based methodologies specified in the City VMT Resolution and further described in the San Bernardino County TIS Guidelines Section 4 (County of San Bernardino, 2019), to comply with CEQA requirements. These methodologies are discussed below.

Vehicle Miles Traveled Methodology

San Bernardino County Traffic Analysis Model

The City VMT Resolution specifies that the San Bernardino County Traffic Analysis Model (SBTAM) is the preferred methodology for VMT analysis. The latest version of SBTAM, SBTAM Plus (SBTAM+), has a base year of 2019 and a forecast year of 2050.

As part of the City's proposed General Plan efforts, Fehr and Peers modified the City's SBTAM inputs for roadway network and land use data to more accurately reflect existing 2023 land use, residential, and employment data within the City and sphere of influence (SOI)[22]. These modifications addressed changes to the City's population, employment, and developments which occurred after 2019, which was the previous base year of SBTAM. This represents "Existing Year 2023 Conditions" under the proposed General Plan (referred to as the Existing No BIG Baseline scenario in this CEQA Assessment). The City also revised the future year model to reflect forecast 2048 (the proposed General Plan horizon year) land use, employment, and roadway conditions within the proposed General Plan area (i.e., the City and it's SOI), including BIG. With these updates, the 2050 SBTAM+ reflects the City's proposed General Plan Buildout Conditions. This model represents "Cumulative Year 2048 Conditions" under the proposed General Plan (referred to as the Horizon Year 2048 Plus BIG scenario in this CEQA Assessment). BIG's VMT analysis was completed using this most current, available version of SBTAM+ provided by the City (2025), inclusive of these modifications.

BIG's proposed land use, employment, and truck trip data is included in the City's proposed General Plan and incorporated into the Cumulative Year 2048 Conditions (i.e. BIG is part of the City's proposed General Plan Buildout Conditions). Therefore, to understand how BIG would change VMT, a 2048 No BIG Baseline SBTAM+ was developed. The 2048 No BIG Baseline scenario assumes the City's proposed General Plan Buildout conditions without BIG. In the 2048 No BIG Baseline scenario, BIG's traffic analysis zone (TAZ) land use and employment conditions are replaced with the land use and employment conditions in the County's SBTAM+ prior to the City's proposed General Plan modifications. The 2048 No BIG Baseline and 2048 Plus BIG VMT metrics are compared to understand BIG's VMT effects.

[22] The sphere of influence (SOI) includes Lenwood and areas adjacent to the City, as illustrated in **Figure 8: Local Vicinity Map**.

VMT Calculation Methods

SBTAM+ provides outputs (including VMT, number of employees, and number of residents for specified geographic boundaries), which are used to calculate the efficiency metrics discussed in **Section 6.1 Thresholds of Significance**.

Three methods for calculating VMT are available using the SBTAM+ model, including the origin/destination method, production/attraction (PA) method, and boundary method[23].

- The **origin/destination method** calculates VMT by summing all vehicle trips with at least one trip end (origin or destination) within the study area. Trip origins represent the start of a vehicle trip in a given traffic analysis zone (TAZ[24]), while destinations represent trip ends within a given TAZ. This approach accounts for trips that either begin or end outside the boundaries of SBTAM+, resulting in a more comprehensive capture of travel activity associated with the study area. However, SBTAM+ does not retain information on trip purpose when using this method, limiting its applicability for purpose-specific analyses. The origin/destination method is generally most appropriate for analyzing mixed-use developments or GP VMT impacts where capturing a full spectrum of trip activity is critical.

- The **production/attraction (PA) method** also sums trips with at least one end in the study area, but it distinguishes between productions (typically residential land uses that generate trips) and attractions (typically employment or commercial land uses that draw trips). For VMT calculations, person trips are converted into vehicle trips. A key advantage of the PA method is that it enables VMT analysis by trip purpose, in alignment with California Office of Planning and Research (OPR) guidance. For example, office developments can be evaluated using the Home-Based Work VMT per Worker metric. However, the PA method excludes trips with an external end outside of the SBTAM+ model boundary, which can result in underestimation of total VMT and inconsistencies when comparing results with other environmental impact assessments (e.g., greenhouse gas emissions or air quality). This method is best suited for analyzing project-level impacts of projects with a single, clearly defined land use such as BIG.

- The **boundary method** calculates VMT by summing all vehicle travel on the roadway network within a specified geographic boundary, regardless of trip origin or destination. As such, this is the only method that captures pass-through or cut-through traffic—vehicle trips that do not begin or end within the study area but still use the roadway network. This approach provides a full accounting of all vehicular activity within the defined area and is useful when the primary objective is to understand the operational impacts of all traffic, including displaced or non-local trips.

Based on the advantages and limitations discussed above, and in coordination with the City, two different methods were selected to calculate VMT for the analysis of VMT impacts in this CEQA Assessment. The PA method was used to calculate VMT for the Project Threshold because it is the most suitable – and the

[23] These methods are also described in a January 24, 2020 technical memorandum to SBCTA and the City of Rancho Cucamonga regarding the implementation of SB 743 located at: https://www.gosbcta.com/wp-content/uploads/2021/12/Sample-Projects.pdf

[24] Traffic Analysis Zones (TAZs) are geospatial areas in a traffic model where residential, employment, land use, and other characteristics are measured. Traffic analysis models such as SBTAM+ determine trips based on people's predicted movement between TAZs.

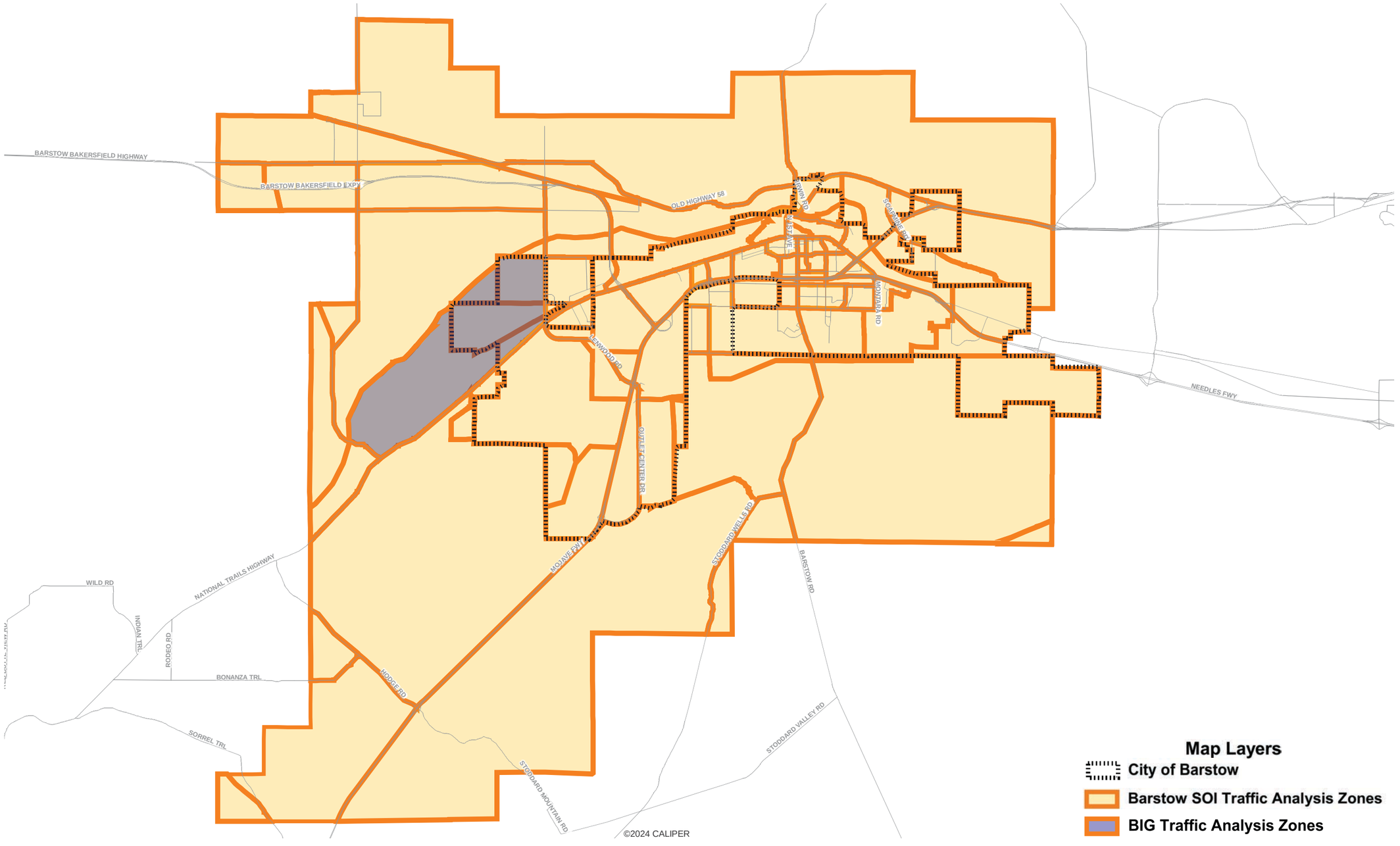
only – method that can measure Home Based VMT per Worker, which, for reasons explained immediately above, is the metric best suited for the BIG land uses. For the Cumulative Threshold, the boundary method was used because it better reflects the effects of BIG in combination with other related past, present and probable future projects. This method is also consistent with the City's VMT Resolution for "Land Use Projects," which calls for using the boundary method for cumulative impact analysis.

The geographic boundaries of the BIG TAZs and the proposed General Plan area (i.e., City and SOI) TAZs are depicted in **Figure 27: SBTAM+ City and Sphere of Influence (SOI) SBTAM+ Traffic Analysis Zones**. These TAZs make up the study areas for analyses of BIG's VMT impacts under CEQA.

Activities Excluded from Determination of BIG's Transportation Impacts under CEQA

See **Section 8.1 Truck Miles Traveled** for further discussion concerning heavy-duty truck travel attributable to BIG operations, which is provided for informational purposes in this CEQA Assessment and does not inform the analysis of BIG's transportation impacts under CEQA. See **VMT Significance Criteria and Impact Thresholds** for discussion related to the exclusion of heavy-duty truck VMT from determination of BIG's transportation impacts under CEQA.

The electric hostlers are also excluded from the analysis of BIG's transportation impacts, including VMT, under CEQA because, 1) as discussed above, State CEQA Guidelines § 15064.3, subdivision (a) refers to analysis of on-road cars and light trucks, and the electric hostlers would be used solely to transport containers short distances within the rail yard, and between the rail yard and transload warehouse center, and would remain within a private on-site closed-loop, never accessing any public roads; and 2) Senate Bill 743, which established VMT as the metric for analyzing transportation impacts, was also intended to combat climate change by reducing GHG emissions and the electric hostlers used during BIG operations would be zero-emission vehicles. Therefore, electric hostlers are excluded from this analysis of VMT under CEQA.



Source: San Bernardino Traffic Analysis Model Plus (SBTAM+), Accessed May 2025

Figure 27: SBTAM+ City and Sphere of Influence (SOI) SBTAM+ Traffic Analysis Zones

Circulation System Conflict Evaluation Methodology

BIG's proposed transportation improvements are identified in **Figure 1: On-Site Circulation Improvements** and **Figure 3: BIG Transportation Modifications**. Additionally, as discussed in the *Level of Service Assessment,* BIG proposes Transportation Modifications (TMs) to improve traffic operations and safety, identified through LOS analysis of study area intersections and roadway segments. As such, BIG inclusive of these circulation improvements and TMs was evaluated for potential to conflict with a program, plan, ordinance, or policy addressing the circulation system (e.g., including transit, roadway, bicycle, and pedestrian facilities) during construction and operations; see **Section 7.2 Circulation System Conflict Evaluation**. This analysis evaluates potential conflicts with the applicable circulation standards of relevant agencies including SCAG, the County, and the City.

Transportation Hazards Methodology

BIG (inclusive of proposed circulation improvements and TMs) was evaluated for potential transportation safety hazards during construction and operations. An evaluation of geometric design features and land use compatibility is discussed in **Section 7.2 Circulation System Conflict Evaluation**.

Emergency Access Methodology

BIG (inclusive of proposed circulation improvements and TMs) was evaluated concerning emergency access during construction and operations. Emergency access during construction and operations is evaluated in **Section 7.4 Emergency Access Impact Evaluation**.

7.0 CEQA IMPACT EVALUATION

7.1 Vehicle Miles Traveled Impact Evaluation

Temporary Construction Period

Vehicle trips used for construction purposes would be temporary, and generated VMT would generally be limited to construction equipment and construction workers. VMT is typically analyzed in the horizon year because it provides a long-term perspective of the effects of projects and plans, but construction activities would not result in long-term trip generation. Additionally, BIG would transport construction materials using the BNSF rail line to the extent practicable. Further, neither the City, County, nor State provide thresholds specific to construction VMT. Therefore, BIG construction would result in a less than significant impact concerning VMT.

Operations

Vehicle Miles Traveled Summary

As discussed in **Section 6.3 Methodology for Impact Analysis**, the VMT analysis was completed using SBTAM+. BIG's VMT effects are summarized in **Table 22: BIG VMT Effects Summary.** Additional detail is provided in **Table 23: BIG VMT Detail**.

As noted in **Table 22: BIG VMT Effects Summary,** BIG's Home Based Work VMT per Worker is forecast to be less than the citywide average Home Based Work VMT per Worker under Horizon Year 2048 conditions. Therefore, BIG would have a less than significant VMT impact according to the City's Project Threshold. Additionally, the citywide total VMT per service population is forecast to be lower with BIG than the No BIG baseline under the Horizon Year 2048 conditions. Therefore, BIG would have a less than significant cumulative VMT impact according to the City's Cumulative Threshold. Therefore, BIG would have a less than significant impact concerning VMT, and no mitigation is required.

Table 22: BIG VMT Effects Summary

Project Threshold			
Metric	**Horizon Year 2048 No BIG Baseline – City of Barstow and SOI**	**Horizon Year 2048 Plus BIG – BIG Specific Plan Area**	**Significant Impact?**
Home Based Work VMT per Worker (PA Method) (Horizon Year)	15.7	13.6	No
Cumulative Threshold			
Metric	**Horizon Year 2048 No BIG Baseline – City of Barstow and SOI**	**Horizon Year 2048 Plus BIG – City of Barstow and SOI**	**Significant Impact?**
Total Daily VMT per Service Population (Boundary Method) (Horizon Year)	37.3	35.4	No

Notes:
PA = production-attraction
VMT = vehicle miles traveled
SOI = sphere of influence. City VMT results include Lenwood and nearby areas.

Source: SBTAM+. (2025).

Table 23: BIG VMT Detail		
Metric	**Horizon Year 2048 No BIG Baseline**	**Horizon Year 2048 Plus BIG**
City of Barstow and Sphere of Influence TAZs		
Daily Total Home Based Work VMT (PA Method)	331,314	383,724
Employees (Workers)	21,100	26,475
Home Based Work VMT per Worker (PA Method)	**15.7**	14.5
Boundary VMT (Daily Total)	2,760,396	2,804,193
Service Population	73,933	79,308
Boundary VMT per Service Population	**37.3**	**35.4**
BIG TAZs		
Daily Total Home Based Work VMT (PA Method)	1,279	73,932
Employees (Workers)	80	5,455
Home Based Work VMT per Worker (PA Method)	16.0	**13.6**

Notes:
PA = production-attraction
VMT = vehicle miles traveled
SOI = sphere of influence. City VMT results include Lenwood and nearby areas.
Values used for CEQA effect determination are shaded and **bolded**.

Source: SBTAM+. (2025).

7.2 Circulation System Conflict Evaluation

As discussed in **Section 6.1 Thresholds of Significance**, BIG could have a significant effect on the environment if it would:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

This analysis evaluates BIG's potential conflicts with the applicable circulation standards of all relevant agencies including SCAG, the County, and the City. The circulation system conflict evaluation is summarized below, with the following subsections providing additional detail; see **Table 24** through **Table 36** below. BIG would not conflict with programs, plans, ordinances, or policies addressing transit, roadway, bicycle, and pedestrian facilities. BIG would result in a less than significant impact in this regard, and no mitigation is required.

Temporary Construction Period

BIG's construction activities would result in increased heavy-duty truck traffic within the study area and may result in temporary lane or roadway closures. Consistent with City standards and construction best practices, the contractor would prepare a detailed Traffic Control Plan (TCP) pursuant to City of Barstow Standard Plan 138 requirements to minimize the impact of construction activities and construction traffic on adjoining and nearby roadways and land uses. A TCP is required for any work in the public right-of-way and would show how to safely manage vehicles, bicyclists, and pedestrians through or around construction zones.

The TCP would be prepared in close consultation with the City, local law enforcement, and Fire District officials. The City would review and approve the TCP before commencement of any construction activities.

The County would review and approve the TCP portions relevant to work within County right-of-way before commencement of construction activities within County right-of-way. The TCP must adhere to the California Manual on Uniform Traffic Control Devices (Caltrans, 2025), which outlines standards for temporary traffic control devices, equipment placement, and personnel, with specific requirements set by the City or County. Key elements of the TCP include maps of the work area, placement of signs, temporary traffic control devices (cones, barricades, channelizers), equipment, and personnel like flaggers. In instances of long-term lane closures, additional elements (e.g., temporary striping, contra-flow, or crash cushions) would be required. The use of a TCP is a typical best practice.

The contractor's exact means and methods are not yet detailed, but the TCP would require provisions to minimize access disruption to residents, businesses, customers, delivery vehicles, and buses to the extent practicable (and where road closures are required during construction, limit to the hours that are least disruptive to access for the adjacent land uses), provisions for 24-hour access by emergency vehicles, and safe vehicular and pedestrian access to local businesses and residences during construction.

For example, Lenwood Channel bridge construction would require lane or roadway closures on Main Street. However, a temporary bypass is proposed to maintain through traffic and access to private driveways for nearby land uses, as illustrated in **Figure 5: Main Street at Lenwood Channel Bridge Reconstruction - BIG**.

Thus, circulation network access for transit, vehicles, bicycles, and pedestrians would be maintained throughout construction. Therefore, BIG construction activities would not conflict with a program, ordinance, or policy addressing transit, roadway, bicycle, or pedestrian facilities. BIG construction would result in a less than significant impact concerning the circulation system.

Operations

BIG would not conflict with adopted policies, plans, ordinances, or programs regarding transit, roadway, bicycle, and pedestrian facilities. An analysis of BIG's potential to conflict with each relevant policy, plan, ordinance, and program is provided in **Table 26** through **Table 36** below.

Additionally, to assess whether BIG would conflict with a City circulation program, plan, ordinance or policy, BIG was evaluated against the City's proposed General Plan circulation maps. **Figure 28: City Proposed Draft Roadway Classification Map** illustrates the draft of the City's existing and future roadway network, **Figure 29: City Proposed Draft Truck Routes Map** illustrates the draft of the City's truck routes, and **Figure 30: City Proposed Draft Bicycle Network Map** illustrates the draft of the City's existing and proposed bicycle facilities, under the proposed General Plan (City of Barstow, 2025). **Table 24: City Proposed General Plan Circulation Map Conflict Evaluation** summarizes the assessment. As noted in **Table 24** and discussed further below, BIG would not conflict with the City's proposed circulation facilities.

Table 24: City Proposed General Plan Circulation Map Conflict Evaluation			
Roadway	**City Roadway Classification Map**	**City Truck Routes**	**City Bike Classification Map**
Main Street: western Specific Plan area limit to Main Street Driveway/Country Club Drive	• Primary Arterial • BIG proposes to dedicate R/W to meet the 50-foot half-section width consistent with 100-foot R/W of Primary Arterial • No conflict	• Not a truck route • BIG does not propose to use this portion of Main Street as a truck route • No conflict	• No bike facilities proposed • BIG proposes to dedicate R/W to accommodate future bike lane construction by others • No conflict
Main Street: Main Street Driveway/Country Club Drive to Lenwood Road	• Primary Arterial • BIG proposes to widen Main Street to meet Primary Arterial (modified) requirements • No conflict	• Truck route • BIG proposes to use this portion of Main Street as a truck route • No conflict	• Class II bike lanes • BIG proposes Class II bike lanes • No conflict
Lenwood Road: Main Street to northern Specific Plan area limit	• Primary Arterial • BIG proposes to dedicate R/W to meet the 50-foot half-section width consistent with 100-foot R/W of Primary Arterial • No conflict	• Truck route • BIG proposes to use this portion of Lenwood Road as a truck route • No conflict	• Class II bike lanes • BIG proposes to dedicate R/W to accommodate future bike lane construction by others • No conflict
Proposed Hinkley Road	• Secondary Arterial • BIG proposes to construct the roadway to meet Secondary Arterial (modified) requirements • No conflict	• Truck route • BIG proposes to use Proposed Hinkley Road as a truck route • No conflict	• No bike facilities proposed • BIG does not propose bike lanes • No conflict
Notes: Each cell notes the relevant proposed General Plan classification, then BIG's proposed improvements, and finally the analysis conclusion. R/W = right-of-way			
Source: City of Barstow proposed General Plan, 2025			

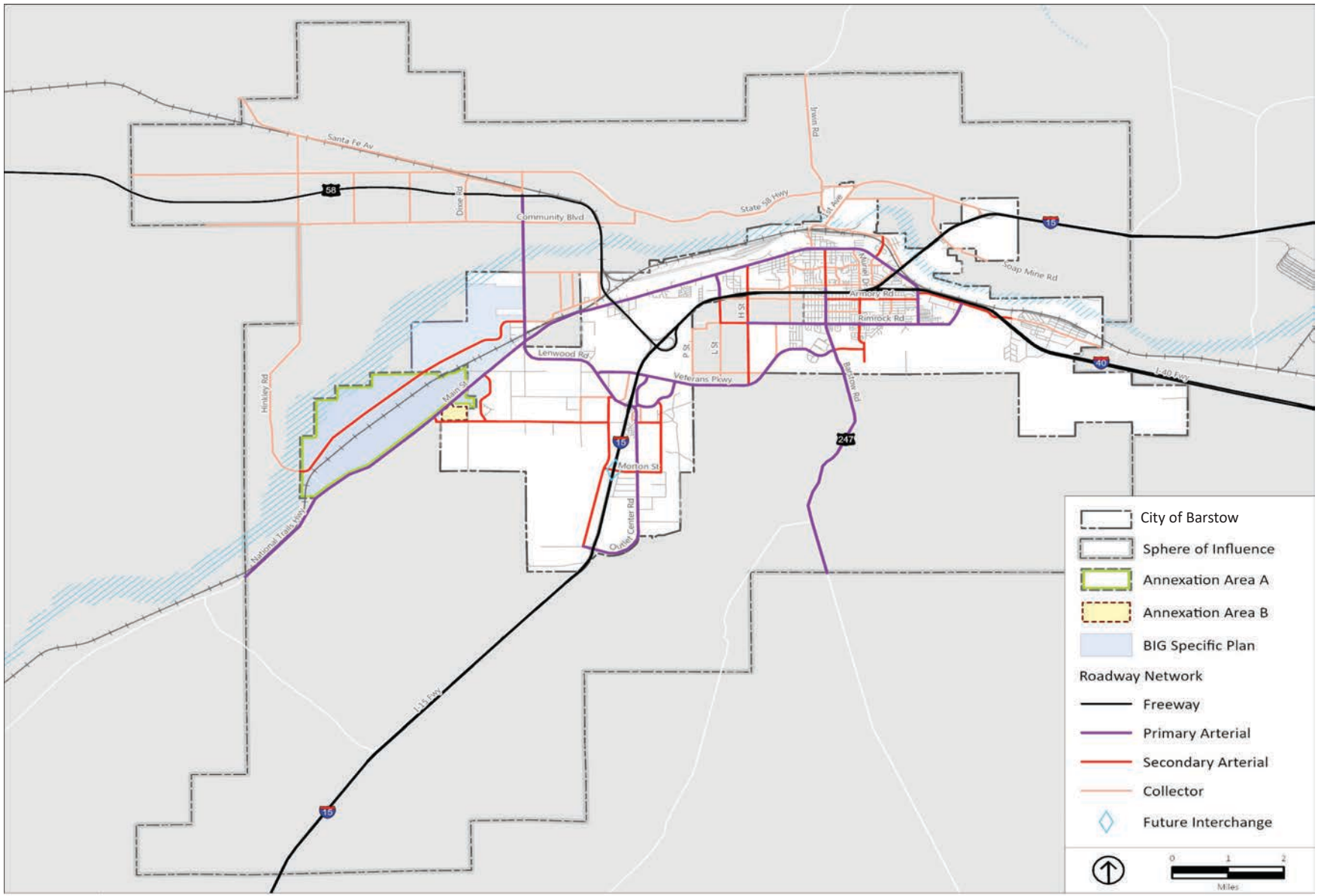
BIG was also evaluated against other relevant adopted County and City circulation maps, which are introduced and discussed in **Section 4.0 Environmental Setting**. **Table 25: City and County Bicycle Facilities Map Conflict** summarizes the assessment of maps with proposed bike and pedestrian facilities along BIG's specific plan frontage, including **Figure 16: San Bernardino County Non-Motorized Transportation Plan Update – Existing and Planned Bicycle Facilities**, **Figure 17: San Bernardino County – Future Bicycle Facilities Map**, and **Figure 20: City of Barstow – Active Transportation Plan Proposed Bicycle Network**. As noted in **Table 25** and discussed further below, BIG would not conflict with the City or County's proposed circulation facilities.

Table 25: City and County Bicycle Facilities Map Conflict Evaluation			
Roadway	**San Bernardino County Non-Motorized Transportation Plan Update – Existing and Planned Bicycle Facilities**	**San Bernardino County – Future Bicycle Facilities Map**	**City of Barstow – Active Transportation Plan Proposed Bicycle Network**
Main Street: western Specific Plan area limit to Main Street Driveway/Country Club Drive	• Class II bike lanes • BIG proposes to dedicate R/W to accommodate future bike lane construction by others • No conflict	• Class II bike lanes • BIG proposes to dedicate R/W to accommodate future bike lane construction by others • No conflict	• No bike facilities proposed • BIG proposes to dedicate R/W to accommodate future bike lane construction by others • No conflict
Main Street: Main Street Driveway/Country Club Drive to Lenwood Road	• Class II bike lanes • BIG proposes Class II bike lanes • No conflict	• Class II bike lanes • BIG proposes Class II bike lanes • No conflict	• Class II bike lanes • BIG proposes Class II bike lanes • No conflict
Lenwood Road: Main Street to northern Specific Plan area limit	• Class II bike lanes • BIG proposes to dedicate R/W to accommodate future bike lane construction by others • No conflict	• Class II bike lanes • BIG proposes to dedicate R/W to accommodate future bike lane construction by others • No conflict	• Class II bike lanes • BIG proposes to dedicate R/W to accommodate future bike lane construction by others • No conflict
Notes: Each cell notes the relevant proposed classification, then BIG's proposed improvements, and finally the analysis conclusion. R/W = right-of-way			
Sources: City of Barstow Active Transportation Plan, 2018 San Bernardino County Non-Motorized Transportation Plan, 2018 San Bernardino Countywide Plan Transportation & Mobility Element, 2021			

BIG proposes to construct, or dedicate right-of-way for future construction by others, the planned bicycle and pedestrian facilities that are identified in the relevant adopted policies, plans, ordinances, and programs along BIG's Specific Plan area frontage. This includes a sidewalk on the north side of Main Street between Main Street Driveway/Country Club Drive and 250 feet west of Lenwood Road, where the existing sidewalk begins, as well as Class II bike lanes in both directions between Main Street Driveway/Country Club Drive and Lenwood Road. While bike lanes are also planned along Lenwood Road, BIG does not propose to implement them because BIG would only own intermittent right-of-way fronting Lenwood Road between Main Street and proposed Hinkley Road/Jasper Road. Instead, BIG proposes to dedicate right-of-way to accommodate the improvement for future construction by others. The proposed transportation improvements to Main Street would provide pedestrian and bicycle access to BIG.

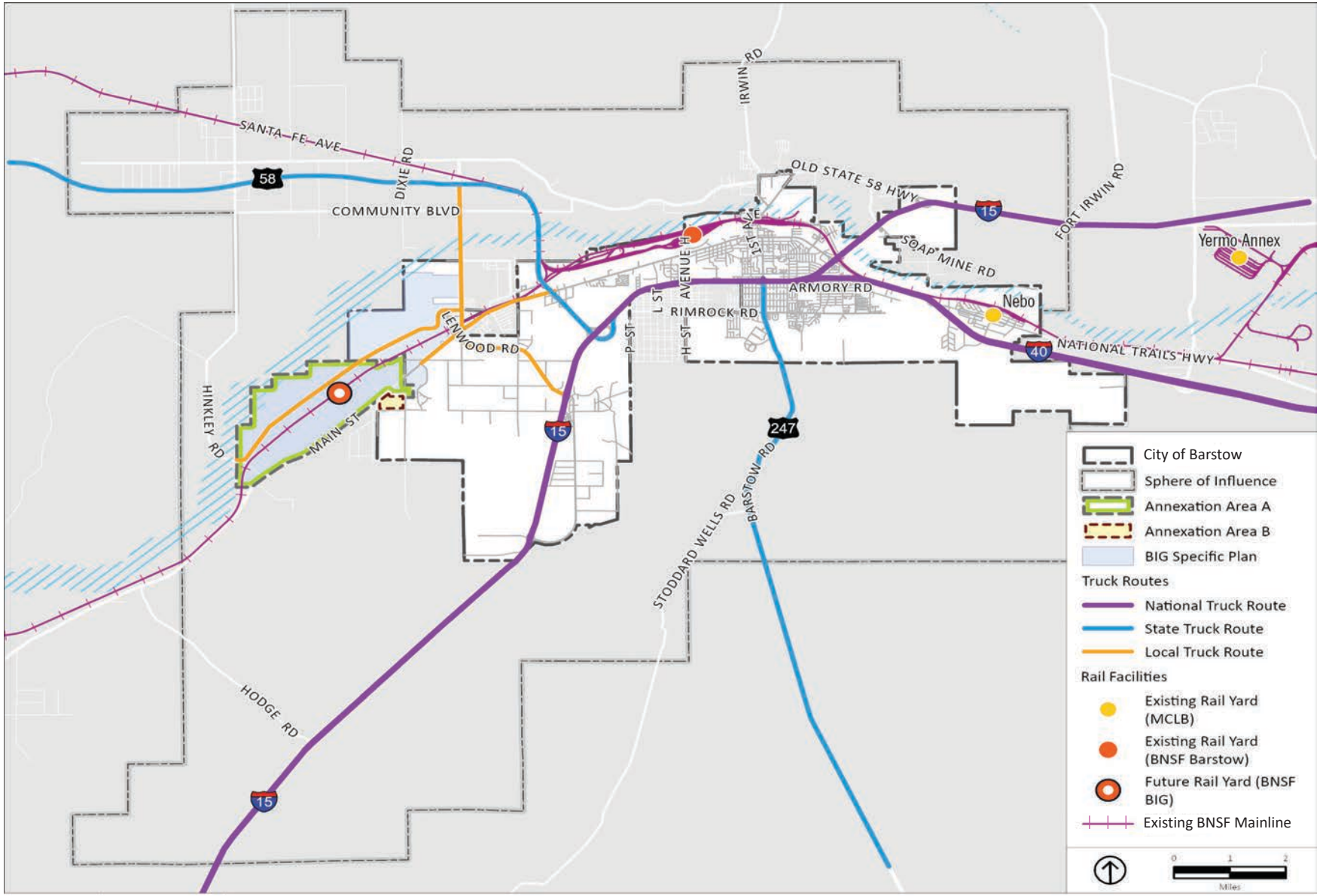
As discussed in **Appendix 5.15-2: Level of Service Assessment**, **Section 6.0 Plus BIG with Transportation Modifications**, BIG proposes several TMs to address forecast operational deficiencies of intersections and roadway segments. The TMs are also listed in this document in **Section 1.4 BIG Transportation Improvements.** Most BIG TMs take the form of intersection modifications – signalization, restriping, or lane additions. All TMs would be designed to meet relevant agency standards.

Therefore, BIG would result in a less than significant impact concerning the circulation system, and no mitigation is required.



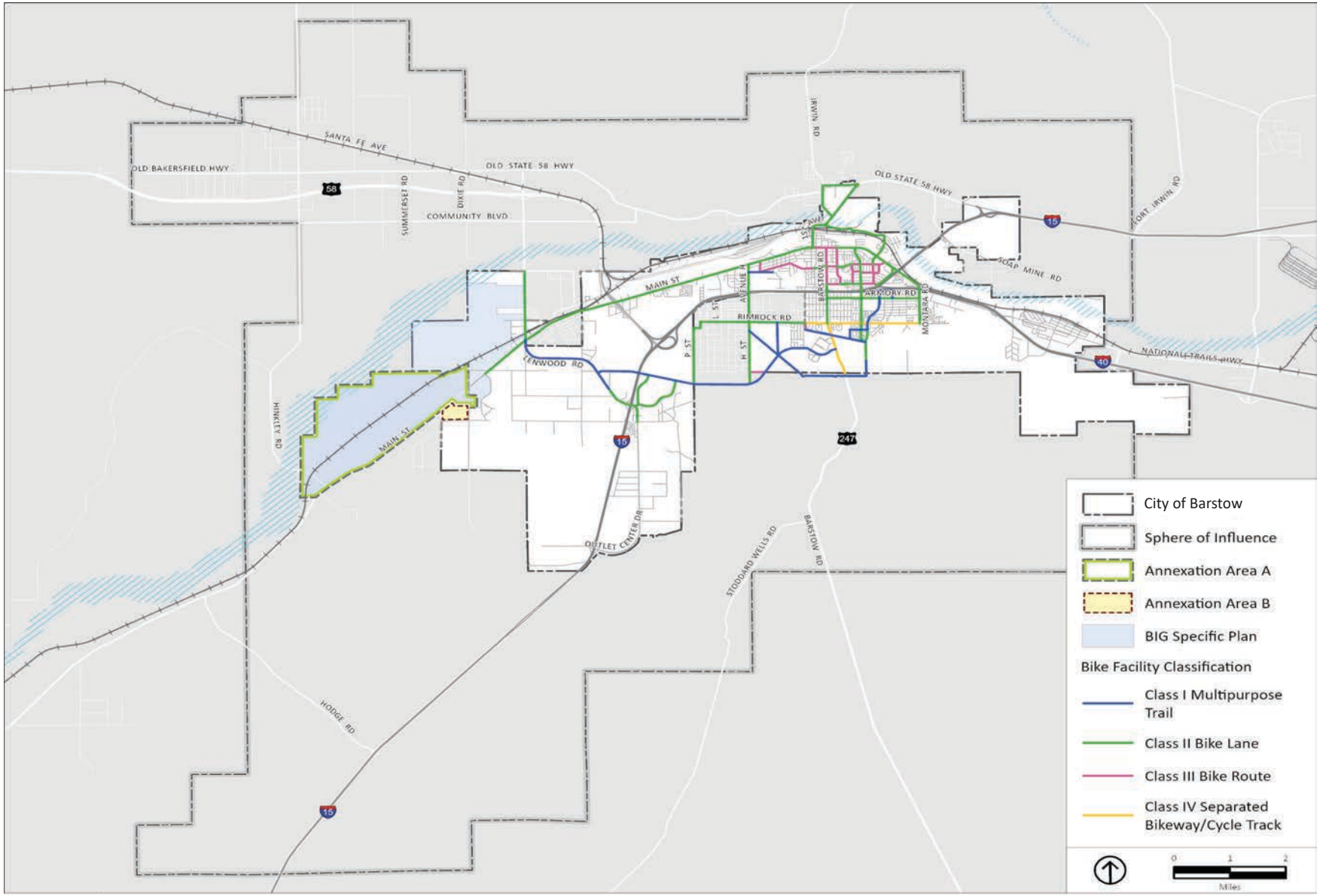
Source: City of Barstow proposed General Plan

Figure 28: City Proposed Draft Roadway Classification Map



Source: City of Barstow proposed General Plan

Figure 29: City Proposed Draft Truck Routes Map



Source: City of Barstow proposed General Plan

Figure 30: City Proposed Draft Bicycle Network Map

Connect SoCal 2024

Table 26: Connect SoCal 2024 Conflict Evaluation lists the applicable SCAG goals addressing the circulation system and indicates BIG would not conflict with these goals.

Table 26: Connect SoCal 2024 Conflict Evaluation

SCAG Goals	Analysis
Mobility: Build and maintain an integrated multimodal transportation network.	
Support investments that are well-maintained and operated, coordinated, resilient and result in improved safety, improved air quality and minimized greenhouse gas emissions	**No conflict.** BIG would not conflict with its implementation. Connect SoCal notes that infrastructure improvements that create greater system efficiency would reduce emissions. Reducing air quality emissions is addressed through cleaner and more efficient operation of vehicles, largely by modifying or replacing the existing regional fleet of goods movement equipment (e.g., locomotives, cargo handling equipment, ocean going vessels and commercial harbor craft) with cleaner technologies or efficiency improvements. BIG's reduction in heavy-duty truck TMT, improvement in goods movement, ZE cargo handling equipment, ZE yard trucks/electric hostlers, Tier 4 locomotives, idling reduction technology, and use of renewable diesel RTG cranes help address the regional attainment objectives identified by SCAG. Therefore, as a result of net reductions in GHG emissions, BIG would not conflict with this goal.
Ensure that reliable, accessible, affordable, and appealing travel options are readily available, while striving to enhance equity in the offerings in high-need communities	**No conflict.** BIG proposes a new goods movement facility that would have regional efficiencies and includes electric cargo handling equipment and electric hostlers to reduce emissions. Mitigation measures in **Appendix 5.3 BIG-1** and this analysis would minimize construction and operational emissions by requiring clean construction equipment and operational locomotives and RTG cranes powered by renewable diesel. BIG would support the local and regional economy and would not conflict with the surrounding community's ability to access healthy food, quality schools, affordable housing, or connected transportation system.
Support planning for people of all ages, abilities, and backgrounds	
Communities: Develop, connect, and sustain communities that are livable and thriving	
Create human-centered communities in urban, suburban and rural settings to increase mobility options and reduce travel distances	**No conflict.** BIG proposes a new goods movement facility that would have regional efficiencies. BIG would support the local and regional economy and would not conflict with the surrounding community's mobility options.

Table 26: Connect SoCal 2024 Conflict Evaluation	
SCAG Goals	**Analysis**
Environment: Create a healthy region for the people of today and tomorrow	
Develop communities that are resilient and can mitigate, adapt to and respond to chronic and acute stresses and disruptions, such as climate change.	**No conflict.** BIG is anticipated to reduce heavy-duty truck TMT by providing an intermodal facility closer to unit origins than currently exists. BIG would reduce approximately 217 million TMT from the national network in 2028 (with greater truck trip reductions in future years), which would reduce roadway congestion and improve regional transportation system operations.
Integrate the region's development pattern and transportation network to improve air quality, reduce greenhouse gas emissions and enable more sustainable use of energy and water.	
Conserve the region's resources.	**No conflict**. BIG's reduction in heavy-duty truck TMT, improvement in goods movement, ZE cargo handling equipment, ZE yard trucks/electric hostlers, Tier 4 locomotives, idling reduction technology, and use of renewable diesel RTG cranes result in reduced use of non-renewable diesel fuel. In addition, BIG would include the development of a solar farm and rooftop solar (through code compliance and implementation of **MM EN-1**). Therefore, BIG would be consistent with this goal.
Economy: Support a sustainable, efficient and productive regional economic environment that provides opportunities for all residents.	
Improve access to jobs and educational resources.	**No conflict**. BIG operations would generate approximately 5,373 direct jobs within the City of Barstow by 2048, as well as approximately 7,650 indirect jobs and 8,920 induced jobs throughout the State. Additionally, BNSF currently collaborates, and would continue to do so, with Barstow Community College to provide a contract education program to provide welding instruction for college students. As such, BIG would improve access to jobs and educational resources.
Advance a resilient and efficient goods movement system that supports the economic vitality of the region, attainment of clean air and quality of life for our communities.	**No conflict.** BIG is anticipated to reduce heavy-duty truck TMT by providing an intermodal facility closer to unit origins than currently exists. BIG would reduce approximately 217 million TMT from the national network in 2028 (with greater truck trip reductions in future years), which would reduce roadway congestion and improve regional transportation system operations. BIG would directly achieve the Connect SoCal vision of advancing a resilient and efficient goods movement system that supports the economic vitality of the region.
Sources: 1. Southern California Association of Governments.(2024). Connect SoCal (2024 – 2050 Regional Transportation Plan/Sustainable Communities Strategy). 2. Sierra Club v. County of Fresno (Dec. 24, 2018) 6 Cal.5th 502.	

Table 26: Connect SoCal 2024 Conflict Evaluation	
SCAG Goals	**Analysis**

3. Southern California Association of Governments. (2020). Connect SoCal (2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy).

County of San Bernardino Countywide Plan

Approximately 439 acres of BIG's off-site improvements would occur on land that is currently within unincorporated County jurisdiction where off-site improvements are proposed and that would not be annexed to the City under the proposed GPU and so would be subject to CWP goals and policies. **Table 27: CWP Conflict Evaluation** lists the applicable CWP policies addressing the circulation system and indicates BIG would not conflict with these policies in the locations which will remain governed by the County and therefore subject to CWP goals and policies.

Table 27: CWP Conflict Evaluation	
Policy	**Analysis**
TRANSPORTATION & MOBILITY ELEMENT	
Policy TM-1.7 Fair share contributions. We require new development to pay its fair share contribution toward off-site transportation improvements.	**No Conflict.** BIG proposes transportation modifications or fair share contributions where BIG would cause LOS deficiencies, as discussed in **Appendix 5.15 BIG-2: Level of Service Assessment – Transportation Analysis.**
Policy TM-3.1 VMT Reduction. We promote new development that will reduce household and employment VMT relative to existing conditions.	**No Conflict.** Off-site improvements would not generate VMT. Furthermore, BIG would reduce VMT per service population as discussed in **7.1 Vehicle Miles Traveled Impact Evaluation**.
Policy TM-3.2 Trip reduction strategies. We support the implementation of transportation demand management techniques, mixed use strategies, and the placement of development in proximity to job and activity centers to reduce the number and length of vehicular trips.	**No Conflict.** As discussed in **Section 7.1 Vehicle Miles Traveled Impact Evaluation**, BIG would reduce VMT per service population by increasing the number of jobs near High Desert residents. Furthermore, BIG operations would remove approximately 627,000 annual heavy-duty truck trips (1,715 daily heavy-duty truck trips) in 2028, 829,000 annual heavy-duty truck trips (2,270 daily heavy-duty truck trips) in 2033, and approximately 962,000 heavy-duty truck trips (2,635 daily heavy-duty truck trips) in 2048, improving the speed/efficiency of the goods movement process.
Policy TM-4.4 Transit access for residents in unincorporated areas. We support and work with local transit agencies to generate a public	**No Conflict.** VVTA Routes 3, 28, and 115 run within or adjacent to the BIG Specific Plan area. BIG construction traffic control would maintain at least

Table 27: CWP Conflict Evaluation	
Policy	**Analysis**
transportation system, with fixed routes and on-demand service, that provide residents of unincorporated areas with access to jobs, public services, shopping, and entertainment throughout the county.	one lane in each direction on Main Street. BIG operations and construction would not conflict with Routes 3, 28, or 115 because access would be maintained along all roadways used by Routes 3, 28, and 115. See **Section 7.2 Circulation System Conflict Evaluation, Temporary Construction Period** for more information regarding roadway access during BIG construction.
Policy TM-4.5 Transit access to job centers and tourist destinations. We support and work with local transit agencies to generate public transportation systems that provide access to job centers and reduce congestion in tourist destinations in unincorporated areas.	**No Conflict.** VVTA Routes 3, 28, and 115 run within or adjacent to the BIG Specific Plan area. BIG construction traffic control would maintain at least one lane in each direction on Main Street. BIG operations and construction would not conflict with Routes 3, 28, or 115 because access would be maintained along all roadways used by Routes 3, 28, and 115.
Policy TM-5.1 Efficient and sustainable goods movement network. We advocate for the maintenance of a goods movement system in southern California that is efficient and sustainable and that prioritizes public health through the use of zero-emission equipment and infrastructure.	**No Conflict.** BIG proposes a new goods movement facility that would improve the efficient movement of goods and includes electric cargo handling equipment and electric hostlers to reduce emissions. Mitigation measures in Appendix 5.3 BIG-1 and this analysis would minimize construction and operational emissions by requiring clean construction equipment and operational locomotives and RTG cranes powered by renewable diesel. Therefore, as a result of net reductions in GHG emissions, BIG would not conflict with this goal.
Policy TM-5.4 Grade separations. We support grade separations to reduce conflicts between rail facilities and roadways, subject to available funding.	**No Conflict.** BIG proposes to reduce conflicts between rail facilities and roadways by eliminating the existing Hinkley Road at-grade rail crossing. BIG does not propose any new public roadway rail crossings.
Policy TM-5.7 Trucking-intensive businesses. We require trucking-intensive businesses to pay their fair share of costs to build and maintain adequate roads.	**No Conflict.** BIG proposes transportation modifications or fair share contributions where BIG would cause LOS deficiencies, as discussed in **Appendix 5.15 BIG-2: Level of Service Assessment – Transportation Analysis.**
Source: County of San Bernardino. (2020). *The Countywide Plan, Transportation & Mobility Element*. Retrieved from: https://countywideplan.sbcounty.gov/wp-content/uploads/sites/125/2021/02/Transportation-and-Mobility_Policy-Plan-2020.pdf	

Codified Ordinances of the County of San Bernardino

Table 28: Codified Ordinances of the County of San Bernardino Conflict Evaluation lists the applicable County Code standards addressing the circulation system in the County and indicates BIG transportation improvements occurring within County jurisdiction would not conflict with these standards.

Table 28: Codified Ordinances of the County of San Bernardino Conflict Evaluation

Code Chapter/Section	Analysis
County Code Chapter 51.01: Vehicle Regulations. This chapter establishes requirements for traffic control devices, parking regulations, pavement markings, and weight limits.	**No Conflict.** BIG would occur primarily within the City or portions of the unincorporated County which are proposed for annexation. The proposed off-site improvements occurring within the County which would not be annexed are lead tracks, roadway improvements, traffic signal improvements, and traffic control. Proposed traffic signals, signage, pavement markings, and traffic control within the County would be planned and designed in accordance with the procedures established in County Code 51.01.

Sources: San Bernardino County. (2023). *San Bernardino County, CA Code of Ordinances.* Retrieved from: https://codelibrary.amlegal.com/codes/sanbernardino/latest/sanberncty_ca/0-0-0-164891

San Bernardino County Congestion Management Program

Table 29: San Bernardino County Congestion Management Program Conflict Evaluation lists the applicable County CMP goals addressing the circulation system in the County and indicates BIG would not conflict with these goals.

Table 29: San Bernardino County Congestion Management Program Conflict Evaluation

Goal	Analysis
Goal 5. Anticipate the impacts of proposed new development on the multimodal transportation system, provide consistent procedures to identify and evaluate the effectiveness of mitigation measures and provide for adequate funding of mitigations.	**No Conflict.** Traffic engineering studies were performed to anticipate the effects of BIG on the transportation system including roadways within County jurisdiction. See **Appendix 5.15 BIG-2: Level of Service Assessment – Transportation Analysis** and **Section 7.1 Vehicle Miles Traveled Impact Evaluation**.

Table 29: San Bernardino County Congestion Management Program Conflict Evaluation	
Goal	**Analysis**
Goal 6. Promote air quality and improve mobility through implementation of land use and transportation alternatives or incentives that reduce both vehicle trips and miles traveled and vehicle emissions.	**No Conflict.** BIG would promote air quality through implementation of land uses that would reduce vehicle trips, which would reduce vehicle emissions. BIG is anticipated to reduce heavy-duty truck trips/emissions by 1) increasing the use of trains for cargo transportation leaving the Ports (i.e., heavy-duty truck transport would be reduced, to the extent that it would be replaced by cross-dock intermodal rail operations between the Ports' on-dock facilities and the proposed BIG IMF, and the electric hostlers that would be internal to the BIG Specific Plan area); and 2) providing an IMF closer to container origins and destinations than currently existing BNSF IMFs. BIG would reduce VMT per service population as discussed in **Section 7.1 Vehicle Miles Traveled Impact Evaluation**.
Sources: San Bernardino County Transportation Authority. (2016). *San Bernardino County CMP, 2016 Update.* Retrieved from: https://codelibrary.amlegal.com/codes/sanbernardino/latest/sanberncty_ca/0-0-0-164891	

Measure I Strategic Plan

Table 30: Measure I Strategic Plan Conflict Evaluation lists the applicable requirements for Measure I Strategic Plan regarding the circulation system and indicates BIG would not conflict with these requirements.

Table 30: Measure I Strategic Plan Conflict Evaluation	
Section	**Analysis**
Section II.C.2. Prepare Traffic Impact Analysis (TIA) reports for proposed development projects exceeding specified thresholds of trip generation. TIA reports must comply with requirements contained in Appendix B of the CMP.	**No Conflict.** A TIA report was prepared for BIG. Intersections and roadway segments were analyzed in accordance with applicable City, County, and CMP LOS thresholds. Traffic impact analysis is discussed in **Appendix 5.15-2: Level of Service Assessment**.

Table 30: Measure I Strategic Plan Conflict Evaluation	
Section	**Analysis**
Sources: San Bernardino Associated Governments. (2017). *Measure I 2010-2040 Strategic Plan.* Retrieved from: https://www.gosbcta.com/wp-content/uploads/2019/09/MeasureIStrategicPlan-Part1-rev0917.pdf	

San Bernardino Countywide Transportation Plan

Table 31: San Bernardino Countywide Transportation Plan Conflict Evaluation lists the applicable Countywide Transportation Plan goals addressing the County circulation system and indicates BIG would not conflict with these goals.

Table 31: San Bernardino Countywide Transportation Plan Conflict Evaluation	
Goals and Objectives	**Analysis**
GOALS	
GOAL 1. Focus on our transportation "customers" by building an integrated, multimodal network and managing that network to improve safety, mobility, and accessibility for the residents and businesses within San Bernardino County and the region.	**No Conflict.** BIG proposes to complete the planned County bicycle and pedestrian facilities along the BIG Specific Plan area's Main Street frontage on the southern half-width of the roadway (the portion which will not be annexed to the City and which will remain within County jurisdiction), which would improve pedestrian and bicycle mobility. See **Section 4.3 Nonmotorized Transportation** for planned facilities and **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements.
GOAL 3 Promote stewardship of the public resources entrusted to SBCTA and other transportation agencies in the County through analysis and application of cost-effective, customer-focused, and technology-enabled approaches to the multimodal movement of people and goods.	**No Conflict.** BIG proposes to complete the planned County bicycle and pedestrian facilities along the BIG Specific Plan area's Main Street frontage on the southern half-width of the roadway (the portion which will not be annexed to the City and which will remain within County jurisdiction), which would improve pedestrian and bicycle safety. **See Section 4.3 Nonmotorized Transportation** for planned facilities and **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements.
GOAL 4 Promote the funding of transportation needs and efficient operation of transportation systems through collaboration with local, regional, State, and	**No Conflict.** BNSF is collaborating closely with local, regional, State, and federal transportation agencies on the development of BIG. As discussed in

Table 31: San Bernardino Countywide Transportation Plan Conflict Evaluation	
Goals and Objectives	**Analysis**
federal transportation agencies, together with private stakeholders.	**Section 1.4 BIG Transportation Improvements**, BIG proposes transportation improvements to address transportation needs and would improve the efficiency of goods movement within the County.
GOAL 5 Support State, regional, and local environmental and sustainability goals.	**No Conflict.** BIG proposes an international gateway that would operate as a comprehensive and sustainable transportation hub. BIG would efficiently move goods through use of trains, which would reduce heavy-duty truck travel, and through use of clean technologies at the rail yard (i.e., ZE cargo handling equipment and ZE hostlers). Therefore, BIG would not conflict with this goal.
OBJECTIVES	
OBJECTIVE 1 Maximize the accessibility, efficiency and reliability of the transportation system for all users	**No Conflict.** As discussed in **Section 8.1** Truck Miles Traveled, BIG operations would remove approximately 627,000 annual heavy-duty truck trips (1,715 daily heavy-duty truck trips) in 2028, 829,000 annual heavy-duty truck trips (2,270 daily heavy-duty truck trips) in 2033, and approximately 962,000 heavy-duty truck trips (2,635 daily heavy-duty truck trips) in 2048, improving the speed/efficiency of the goods movement process. Additionally, a Class II bike lane is proposed along the south side of Main Street within County jurisdiction along the BIG Specific Plan area's Main Street frontage, which would provide alternative transportation options to BIG employees. See **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements.
OBJECTIVE 3 Reduce vehicle miles traveled and travel times for both highway and transit travel (for both people and goods)	**No Conflict.** BIG would reduce VMT per service population. See **Section 7.1 Vehicle Miles Traveled Impact Evaluation** for analysis concerning this policy. Additionally, BIG would improve the efficient movement of goods between the City and outside areas. BIG would improve train efficiency, increasing the competitiveness of rail transport over heavy-duty truck transport and reducing truck miles traveled across the county.
OBJECTIVE 4 Reduce vehicle emissions, both criteria pollutants and GHG emissions	**No Conflict.** BIG's reduction in heavy-duty truck TMT, improvement in goods movement, and ZE yard trucks/electric hostlers would reduce vehicle emissions. Therefore, as a result of net reductions in vehicle emissions, BIG

Table 31: San Bernardino Countywide Transportation Plan Conflict Evaluation	
Goals and Objectives	**Analysis**
	would not conflict with this goal.
OBJECTIVE 5 Increase the proportion of people sharing rides, bicycling, walking, taking transit, and replacing trips with "virtual travel"	**No Conflict.** BIG proposes to complete the planned bicycle and pedestrian facilities along the BIG Specific Plan area's Main Street frontage, which would improve pedestrian and bicycle mobility. See **Section 4.3 Nonmotorized Transportation** for planned facilities and **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements.
OBJECTIVE 8 Encourage development around existing and planned transit stations and hubs	**No Conflict.** There are no existing or planned transit stations or hubs in Barstow.
Sources: San Bernardino County Transportation Authority. (2021). *San Bernardino Countywide Transportation Plan (Interim 2021 Update).* Retrieved from: https://www.gosbcta.com/wp-content/uploads/2019/10/SBCTA_CTP_2021Update_ExecutiveSumFinal.pdf	

San Bernardino County Local Road Safety Plan

Table 32: San Bernardino County Local Road Safety Plan Conflict Evaluation lists applicable countermeasures from the San Bernardino County Local Road Safety Plan and indicates BIG would not conflict with these countermeasures. Approximately 3.0 miles of Collision Hot Spot Location #8 runs along the BIG Specific Plan area's Main Street (National Trails Highway) frontage, between the western extent of the BIG Specific Plan area and Amarylis Street ("Hot Spot corridor segment").

Table 32: San Bernardino County Local Road Safety Plan Conflict Evaluation	
Hot Spot #8 Engineering Countermeasures	**BIG Analysis**
Countermeasure 1 Upgrade to larger stop signs at all unsignalized intersections.	**No Conflict.** Within BIG's Specific Plan area frontage along this Hot Spot corridor segment, there are no existing (and BIG does not propose any) unsignalized intersections.
Countermeasure 2 Install flashing beacon at all unsignalized, stop-controlled intersections.	**No Conflict.** Within BIG's Specific Plan area frontage along this Hot Spot corridor segment, there are no existing (and BIG does not propose any) unsignalized or stop-controlled intersections.
Countermeasure 3 Install splitter islands on the minor road approaches at all unsignalized intersections with paved minor road approaches.	**No Conflict.** Within BIG's Specific Plan area frontage along this Hot Spot corridor segment, there are no existing (and BIG does not propose any) unsignalized intersections.
Countermeasure 4	**No Conflict**. This Hot Spot corridor does not include any of the select locations

Table 32: San Bernardino County Local Road Safety Plan Conflict Evaluation	
Hot Spot #8 Engineering Countermeasures	**BIG Analysis**
Install chevron signs on horizontal curves at select locations.	provided for this countermeasure.
Countermeasure 5 High friction surface treatment on entire corridor along curved roadway segments.	**No Conflict.** There are no existing curved roadways, and BIG does not propose any curved roadways along this Hot Spot corridor segment.
Countermeasure 6. Install speed limit signs at select locations.	**No Conflict**. This Hot Spot corridor segment does not include any of the select locations provided for this countermeasure.
Countermeasure 7 Widen unpaved shoulder on entire corridor.	**No Conflict.** This countermeasure exists along BIG's frontage and no further shoulder improvements are needed.
Countermeasure 8 Install edgeline rumble strips on entire corridor.	**No Conflict.** BIG would install edgeline rumble strips along this Hot Spot corridor segment, as part of TM-11, discussed in **Section 1.4 BIG Transportation Improvements**.
Countermeasure 9 Install centerline rumble strips on each side of the painted median on entire corridor.	**No Conflict.** BIG would install centerline rumble strips on each side of the painted median along this Hot Spot corridor segment, as part of TM-11, discussed in **Section 1.4 BIG Transportation Improvements**.
Countermeasure 10 Create 4' wide painted median on entire corridor.	**No Conflict.** This Hot Spot corridor segment does not include the median provided for in this countermeasure.
Countermeasure 11 Install flexible posts in the median where passing is not permitted on entire corridor.	**No Conflict.** This Hot Spot corridor segment does not include the median provided for in this countermeasure.
Countermeasure 12 Restripe edge-lines and centerlines with 6" retroreflective lane markings on entire corridor.	**No Conflict.** BIG would restripe edge-lines and centerlines with 6" retroreflective lane markings along this Hot Spot corridor segment, as part of TM-11, discussed in **Section 1.4 BIG Transportation Improvements**.
Countermeasure 13 Install pavement reflectors (raised pavement markers) on entire corridor along centerline and edgeline.	**No Conflict.** BIG would install pavement reflectors along the centerline and edge-line along this Hot Spot corridor segment, as part of TM-11, discussed in **Section 1.4 BIG Transportation Improvements**.
Sources: County of San Bernardino. (2022). *San Bernardino County Local Road Safety Plan.* Retrieved from: https://dpw.sbcounty.gov/wp-content/uploads/sites/87/2022/08/SanBernardinoCountyLRSP_FinalPlan_Master_8.19.22_Sml.pdf?x39624	

San Bernardino County Non-Motorized Transportation Plan

Table 33: San Bernardino County Non-Motorized Transportation Plan Conflict Evaluation lists the applicable San Bernardino County Non-Motorized Transportation Plan goals addressing the County circulation system and indicates BIG would not conflict with these goals.

Table 33: San Bernardino County Non-Motorized Transportation Plan Conflict Evaluation	
Goals	**Analysis**
GOALS	
GOAL 1. **Increased bicycle and pedestrian access** - Expand bicycle and pedestrian facilities and access within and between neighborhoods, to employment centers, shopping areas, schools, and recreational sites.	**No Conflict.** BIG proposes to implement the planned bicycle facility on the south side of Main Street within County Jurisdiction along the BIG Specific Plan area's Main Street frontage, which would improve bicycle mobility. See **Section 4.3 Nonmotorized Transportation** for planned facilities and **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements.
GOAL 2. **Increased travel by cycling and walking** - Make the bicycle and walking an integral part of daily life in San Bernardino County, particularly (for bicycle) for trips of less than five miles, by implementing and maintaining a bikeway network, providing end-of-trip facilities, improving bicycle/transit integration, encouraging bicycle use, and making bicycling safer and more convenient.	**No Conflict.** BIG proposes to implement the planned bicycle facility on the south side of Main Street within County Jurisdiction along the BIG Specific Plan area's Main Street frontage, which would improve bicycle mobility. See **Section 4.3 Nonmotorized Transportation** for planned facilities and **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements. BIG also proposes to implement bike parking.
GOAL 3 **Routine accommodation in transportation and land use planning -** Routinely consider bicyclists and pedestrians in the planning and design of land development, roadway, transit, and other transportation facilities, as appropriate to the context of each facility and its surroundings.	**No Conflict.** BIG proposes to implement the planned bicycle facility on the south side of Main Street within County Jurisdiction along the BIG Specific Plan area's Main Street frontage, which would improve bicycle mobility. See **Section 4.3 Nonmotorized Transportation** for planned facilities and **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements.
GOAL 4 **Improved bicycle and pedestrian safety –** Encourage local and statewide policies and practices that improve bicycle and pedestrian safety.	**No Conflict.** BIG proposes to implement the planned bicycle facility on the south side of Main Street within County Jurisdiction along the BIG Specific Plan area's Main Street frontage, which would improve bicycle safety. See **Section 4.3 Nonmotorized Transportation** for planned facilities and **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements.
POLICIES	
POLICY 1 Local jurisdictions are the agencies responsible for the identification of non-motorized transportation projects within their jurisdiction for inclusion into	**No Conflict.** BIG would work with local jurisdictions to implement non-motorized transportation projects along portions of the BIG Specific Plan area's frontage including Class II bike lanes and sidewalk along Main Street,

Table 33: San Bernardino County Non-Motorized Transportation Plan Conflict Evaluation	
Goals	**Analysis**
the Plan. SANBAG shall only serve in an advisory capacity with respect to the identification of projects on the regional network. SANBAG shall provide advice on the inclusion of projects that may serve to better establish connectivity between jurisdictions, intermodal facilities and regional activity centers. However, local jurisdictions have sole authority over all projects included in the Plan	as specified in **Section 1.4 BIG Transportation Improvements**. This improvement would comply with City and County planned facilities referenced in **Section 4.3 Nonmotorized Transportation.**
POLICY 2 Local jurisdictions are also responsible for implementation of the projects included in the NMTP. SANBAG may provide advisory support to jurisdictions in the project development process on request. Should SANBAG be requested to provide assistance delivering a project in the Plan, such instances should be limited to development of regional non-motorized transportation facilities that provide connectivity to more than one jurisdiction or complete gaps within the regional non-motorized transportation network or serve to provide better access to transit facilities.	**No Conflict.** BIG would work with local jurisdictions to implement non-motorized transportation projects along portions of the BIG Specific Plan area's frontage including Class II bike lanes and sidewalk along Main Street, as specified in **Section 1.4 BIG Transportation Improvements**. This improvement would comply with City and County planned facilities referenced in **Section 4.3 Nonmotorized Transportation.**
Sources: San Bernardino County Transportation Authority. (2018). *San Bernardino County Non-Motorized Transportation Plan.* Retrieved in February 2023 from: https://www.gosbcta.com/wp-content/uploads/2019/10/Non-Motorized-Transportation-Plan-.pdf	

City of Barstow Proposed General Plan

Table 34: Barstow Proposed General Plan Conflict Evaluation lists the applicable City of Barstow proposed General Plan policies addressing circulation and mobility within the City and indicates BIG would not conflict with these policies.

Table 34: Barstow Proposed General Plan Conflict Evaluation	
Policy	**Analysis**
CIRCULATION AND MOBILITY	
Policy CM-1.2 Regional network. Support the development of regional transportation facilities that ensure the safe and efficient movement of people and goods between the city and	**No Conflict.** The BIG Specific Plan in nature is a regional transportation facility and would improve the efficient movement of goods between the City and outside areas. The BIG Specific Plan would include an intermodal

Table 34: Barstow Proposed General Plan Conflict Evaluation	
Policy	**Analysis**
outside areas, accommodating regional travel demands while minimizing impacts on Barstow residents and businesses.	facility and transload warehouse center, which would operate together to create a new "cross-dock intermodal" transportation mode that would increase the competitiveness of rail transport over heavy-duty truck transport cross country, as well as a block swap yard which would optimize train lengths and synchronize trains to their destinations, improving east and westbound train efficiency. BIG's off-site improvements would facilitate development of the BIG Specific Plan area with railway and logistics facilities that would contribute to the safe and efficient movement of goods between the City and outside areas. Therefore, BIG would not conflict with Policy CM-1.2.
Policy CM-1.3 Interagency coordination. Coordinate with the County and other agencies on long-term plans, proposed development projects, and capital improvements while minimizing adverse traffic impacts on Barstow residents and businesses.	**No Conflict.** BNSF is collaborating closely with local, regional, State, and federal transportation agencies on the development of BIG. As discussed in **Section 1.4 BIG Transportation Improvements**, BIG proposes transportation improvements to address transportation needs and would improve the efficiency of goods movement. Therefore, BIG would not conflict with Policy CM-1.3.
Policy CM-1.4 Traffic management. Utilize intelligent transportation systems and research changing trends in mobility to more efficiently and safely move people and vehicles while managing motor vehicle speeds.	**No Conflict.** BIG's proposed roadway and intersection improvements would be designed to meet relevant design standards (City, County, Caltrans), including intelligent transportation system features. See **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements. Therefore, BIG would not conflict with Policy CM-1.4.
Policy CM-1.5 Road maintenance. Regularly update the pavement management plan and maintain roadways to ensure safety and functionality, as an investment strategy, and to improve the City's image and quality of life.	**No Conflict.** BIG's proposed roadway and intersection improvements would be designed to meet relevant design standards (City, County, Caltrans), including pavement section design. See **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements. Therefore, BIG would not conflict with Policy CM-1.5.
Policy CM-1.6 Fair share of improvements. Require new development to pay a fair share of needed transportation improvements based on a project's impacts to the City's motorized and non-	**No Conflict.** BIG would be conditioned to make several improvements to the existing City roadway network and would pay into fair share costs for other improvements needed to address LOS deficiencies caused by BIG. Therefore,

Table 34: Barstow Proposed General Plan Conflict Evaluation	
Policy	**Analysis**
motorized transportation networks.	BIG would not conflict with Policy CM-1.6.
Policy CM-1.7 Bridges and rail crossings. Coordinate with regional, State, and federal agencies as well as BSNF to provide and maintain multiple options for vehicles to safely cross the Mojave River and railway facilities, even during 100-year flooding and seismic events.	**No Conflict.** BIG would construct/reconstruct several railway crossings, bridges, and other roadway infrastructure to facilitate the movement of vehicles across the Mojave River and railway facilities even during 100-year flooding and seismic events. These improvements would be made to accommodate the 100-year storm event as required by the County Stormwater Manual. Therefore, BIG would not conflict with Policy CM-1.7.
Policy CM-2.1 Pedestrian Network. Establish and maintain pedestrian walkways that promote safe and convenient travel to transit stops and between residential and commercial areas, schools, parks, recreation facilities and other key destination points.	**No Conflict.** BIG proposes a sidewalk along the north side of Main Street adjacent to the BIG Specific Plan area frontage, which would improve pedestrian mobility within City jurisdiction. See **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements. Therefore, BIG would not conflict with Policy CM-2.1.
Policy CM-2.2 Bicycle Network. Establish and maintain a citywide bicycle network that consists primarily of Class I multipurpose trails, Class II bikeways, or Class IV separated bikeways. Class III bike routes are acceptable facilities in constrained circumstances to attain connectivity.	**No Conflict.** BIG proposes a Class II bike lane within City jurisdiction along the north side of Main Street adjacent to the BIG Specific Plan area frontage, which would improve bicycle mobility. The proposed bike facilities are consistent with the City's proposed General Plan *Draft Existing and Proposed Bicycle Facilities*, illustrated in **Figure 30: City Proposed Draft Bicycle Network Map** and would not provide separation between the travel lane and bike lane. See **Section 4.3 Nonmotorized Transportation** for planned facilities and **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements. Therefore, BIG would not conflict with Policy CM-2.2.
Policy CM-2.3 Electric bikes. Support and encourage the use of electric bicycles to reduce resident and employee reliance on cars, resulting in greater mobility while lowering vehicle miles traveled and associated emissions.	**No Conflict.** BIG proposes bike parking that would support the use of electric bicycles. Therefore, BIG would not conflict with Policy CM-2.3.
Policy CM-2.4 Transit service. Coordinate with Victor Valley Transit Authority (VVTA) to provide residents and workers with accessible and convenient service between residential	**No Conflict.** VVTA Routes 3, 28, and 115 run within or adjacent to the BIG Specific Plan area. BIG construction traffic control would maintain at least one lane in each direction on Main Street. BIG operations and construction

Table 34: Barstow Proposed General Plan Conflict Evaluation	
Policy	**Analysis**
neighborhoods, commercial centers, educational facilities, employment nodes, and medical facilities. Coordinate with VVTA to install, improve, and maintain safe, clean, comfortable, well-lit, and rider-friendly transit stops that are well marked and visible to motorists.	would not conflict with Routes 3, 28, or 115. Therefore, BIG would not conflict with Policy CM-2.4.
Policy CM-2.5 Downtown Barstow. Enhance the public realm to create a pedestrian- and transit-friendly environment along and connecting to Main Street between Otis and 7th Avenues.	**No Conflict.** The BIG Specific Plan area does not include downtown Barstow.
Policy CM-2.6 Design of new facilities. Design new streets and streetscape improvements to accommodate vehicles, transit, bicycles, and pedestrians based on a combination of the land use and roadway context to promote safety and efficiency for all users.	**No Conflict.** The BIG Specific Plan includes a circulation plan which accommodates the movement of trucks, automobiles, and other machinery which would operate within the BIG footprint, as detailed in BIG Specific Plan Section 2.2. This includes improvements to existing roadways, such as Route 66, with bike lanes and sidewalks. Internal circulation would be designed based on demand and expected use. BIG's proposed roadway and intersection improvements would be designed to meet relevant design standards (City, County, Caltrans). Therefore, BIG would not conflict with Policy CM-2.6.
Policy CM-2.7 Public space and networks. Leverage public rights-of-way, easements, and other public spaces to maintain and expand bicycle and pedestrian networks.	**No Conflict**. BIG proposes to implement the planned bicycle and pedestrian facilities within City jurisdiction along the north side of the Specific Plan area's Main Street frontage, which would improve pedestrian and bicycle mobility. BIG proposes to dedicate right-of-way along Lenwood Road to accommodate bike lanes for future construction by others. See **Section 4.3 Nonmotorized Transportation** for planned facilities and Section **1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements. Therefore, BIG would not conflict with Policy CM-2.7.
Policy CM-2.8 Access management Minimize access points and curb cuts along primary and secondary arterials and in the proximity of an intersection to improve traffic flow and safety for vehicles and bicycles. Eliminate and/or consolidate driveways when new development occurs or when traffic operation or safety warrants.	**No Conflict.** The BIG Specific Plan circulation plan, as detailed in Section 2.2 of the BIG Specific Plan, identifies Main Street and Lenwood Road as primary arterial roadways and Jasper Road and Hinkley Road as secondary arterial roadways and prioritizes the minimization of access points along these roads near intersections. BIG would have consolidated primary driveways and

Table 34: Barstow Proposed General Plan Conflict Evaluation	
Policy	**Analysis**
	roadways, which would serve as collectors in the internal circulation of BIG. BIG's proposed roadway and intersection improvements would be designed to meet relevant design standards (City, County, Caltrans). Therefore, BIG would not conflict with Policy CM-2.8.
Policy CM-2.9 Site design. Require new development to incorporate amenities and pathways so that pedestrians and bicyclists can access the site and onsite businesses safely and conveniently from the public right-of-way and parking areas.	**No Conflict.** Each building within BIG would be required to have Americans with Disabilities Act paths of travel for all areas generally accessible to the public. Additionally, BIG would include shading and pathways for employees, as detailed in Chapter 4.5 General Design Guidelines. Therefore, BIG would not conflict with Policy CM-2.9.
Policy CM-2.10 VMT reduction. Promote new development and transportation demand management strategies that will reduce household and employment vehicle miles traveled (VMT). Prioritize the implementation of transportation demand management strategies over the expansion of roadway capacity.	**No Conflict.** BIG would reduce VMT per service population within the City. See **Section 7.1 Vehicle Miles Traveled Impact Evaluation**. Therefore, BIG would not conflict with Policy CM-2.10.
Policy CM-3.1 Truck routes. Maintain a network of City truck routes that provides for the safe and efficient transport of goods while minimizing negative impacts on local circulation, noise-sensitive land uses, and sensitive receptors.	**No Conflict.** Proposed General Plan-identified truck routes near the BIG Specific Plan area are Main Street and Lenwood Road. BIG proposes two locations for truck access to the Specific Plan area: on Lenwood Road at the intersection of Lenwood Road and Jasper Road; and on Main Street at the intersection of Main Street and Country Club Drive. Most heavy-duty trucks accessing the BIG IMF would use the new driveway on Main Street. Of the small percentage of heavy-duty trucks accessing the transload warehouse center, all would enter from Lenwood Road. Therefore, BIG's proposed access driveways would be provided along the City's designated truck routes. Therefore, BIG would not conflict with Policy CM-3.1.
Policy CM-3.2 Truck parking. Require new truck-intensive land uses to design and incorporate space and facilities in order to reduce truck parking and idling in the public rights-of-way. (ROWs); exceptions may be allowed for portions of ROWs entirely surrounded by land designated as General Industrial. Prohibit truck parking except on property designated for General Industrial or General Commercial	**No Conflict.** BIG is designed to reduce truck idling or parking in public rights-of-way by providing sufficient truck facilities. The rail yard would provide parking spaces for wheeled chassis storage and stacked spaces, as well as warehouse staging areas so that trucks can leave containers/chassis. As such, the BIG would not conflict with Policy CM-3.2.

Table 34: Barstow Proposed General Plan Conflict Evaluation	
Policy	**Analysis**
along Interstate 15 south of State Route 58.	
Policy CM-3.3 Train facilities. Support improvements to roadways and rail facilities that increase the efficiency of goods movement; enhance the safety of rail operations, motor vehicles, and non-motorized modes of mobility; and minimize noise and vibration impacts on sensitive land uses.	**No Conflict.** BIG would include a block swap yard which would synchronize trains to their destinations, improving east and westbound train efficiency. BIG is a regional transportation facility and would improve the efficient movement of goods between the City and outside areas. As such, BIG would not conflict with Policy CM-3.3.
Sources: City of Barstow. (2025). *City of Barstow proposed General Plan Circulation Element.*	

City of Barstow Active Transportation Plan

lists the applicable City of Barstow Active Transportation Plan goals and strategies addressing the circulation system and indicates BIG would not conflict with these goals.

Table 35: City of Barstow Active Transportation Plan Conflict Evaluation	
Goal/Strategy	**Analysis**
Goal 1: Safety. Improve the safety of pedestrian and bicycle travel for all users in Barstow.	**No Conflict.** BIG proposes to implement the planned bike lanes on Main Street along the BIG Specific Plan area's Main Street frontage, which would improve bicycle safety. BIG also proposes to construct sidewalk along the north side of Main Street between the existing sidewalk 250 feet west of Lenwood Road and the Main Street Driveway/Country Club Drive, which would provide a safe pedestrian connection to BIG. See **Section 4.3 Nonmotorized Transportation** for planned facilities and **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements. Therefore, BIG would not conflict with this goal.
Strategy 1.B.1. Utilize best practice street design guidelines by the National Association of City Transportation Officials and Institute of Transportation Engineers and those included in this Plan.	**No Conflict.** BIG's proposed roadway and intersection improvements would be designed to meet relevant design standards (City, County, Caltrans) which may take into account National Association of City Transportation Officials and Institution of Transportation Engineers recommendations. Therefore, BIG would not conflict with this strategy.

Table 35: City of Barstow Active Transportation Plan Conflict Evaluation	
Goal/Strategy	**Analysis**
Goal 2: Connectivity & Access. Develop a comprehensive active transportation network that enhances the accessibility of the City's places and transit system.	**No Conflict.** BIG proposes to help implement the City's planned active transportation network by constructing the planned bike lanes on Main Street along the BIG Specific Plan area's Main Street frontage, and dedicating right-of-way along the BIG Specific Plan area's Lenwood Road frontage for the future construction of bike lanes by others. BIG also proposes to construct a sidewalk along the north side of Main Street between the existing sidewalk 250 feet west of Lenwood Road and the Main Street Driveway/Country Club Drive. These improvements would enhance the City's accessibility. Therefore, BIG would not conflict with this goal.
Strategy 2.B.2. Provide and maintain end-of-trip facilities and other amenities that help increase the ease of walking and bicycling in Barstow (i.e. bicycle parking, lockers, curb ramps, etc.).	**No Conflict.** BIG proposes bike parking that would support the use of bicycles. Additionally, each building within BIG would be required to have Americans with Disabilities Act paths of travel for all areas generally accessible to the public. Therefore, BIG would not conflict with this strategy.
Goal 3: Health & Equity. Increase awareness in the health benefits of walking and bicycling and develop an equitable active transportation system that serves the needs of all users.	**No Conflict.** BIG proposes to help implement the City's planned active transportation network by constructing the planned bike lanes on Main Street along the BIG Specific Plan area's Main Street frontage, and dedicating right-of-way along the BIG Specific Plan area's Lenwood Road frontage for the future construction of bike lanes by others. BIG also proposes to construct a sidewalk along the north side of Main Street between the existing sidewalk 250 feet west of Lenwood Road and the Main Street Driveway/Country Club Drive. These improvements would enhance the City's accessibility and make the transportation network more equitable by serving more roadway users. Therefore, BIG would not conflict with this goal.
Strategy 3.B.3. Promote the implementation of Complete Streets infrastructure and policies in all street improvements.	**No Conflict.** The BIG Specific Plan circulation plan, as detailed in Section 2.2 of the BIG Specific Plan, identifies Main Street and Lenwood Road as primary arterial roadways and Jasper Road and Hinkley Road as secondary arterial roadways. BIG proposes to implement bike lanes on Main Street along the BIG Specific Plan area's Main Street frontage, which would improve bicycle safety. BIG also proposes to construct sidewalk along the north side of Main Street between the existing sidewalk 250 feet west of Lenwood Road and the Main Street Driveway/Country Club Drive, which would provide a safe

Table 35: City of Barstow Active Transportation Plan Conflict Evaluation	
Goal/Strategy	**Analysis**
	pedestrian connection to BIG. Therefore, BIG would not conflict with this strategy.
Strategy 3.B.4. Implement the provisions of the Americans with Disabilities Act (ADA) to improve pedestrian access for all people.	**No Conflict.** Each building within BIG would be required to have Americans with Disabilities Act paths of travel for all areas generally accessible to the public. Therefore, BIG would not conflict with this strategy.
Goal 5: Sustainability. Support state and regional greenhouse gas (GHG) emission and vehicle miles traveled (VMT) reduction goals through active transportation investments and improvements.	**No Conflict.** BIG proposes to help implement the City's planned active transportation network by constructing the planned bike lanes on Main Street along the BIG Specific Plan area's Main Street frontage, and dedicating right-of-way along the BIG Specific Plan area's Lenwood Road frontage for the future construction of bike lanes by others. BIG also proposes to construct a sidewalk along the north side of Main Street between the existing sidewalk 250 feet west of Lenwood Road and the Main Street Driveway/Country Club Drive. These improvements are investments in the active transportation network. Therefore, BIG would not conflict with this goal.
Strategy 5.A.1. Support and implement transportation demand management programs such as bicycle parking, transit incentives, ridesharing, and carpooling to complement a multi-modal transportation system.	**No Conflict.** BIG proposes bike parking that would support the use of bicycles. Therefore, BIG would not conflict with this strategy.
Sources: City of Barstow. (2018). *City of Barstow Active Transportation Plan*.	

Code of the City of Barstow

Table 36: Code of the City of Barstow Conflict Evaluation lists the applicable Barstow Code standards addressing the circulation system and indicates BIG would not conflict with these standards.

Table 36: Code of the City of Barstow Conflict Evaluation	
Chapter/Section	**Analysis**
TITLE 10 – TRAFFIC	
Sec. 10.09.030(c)	**No Conflict.** BIG would implement a voluntary commute reduction (CTR)

Table 36: Code of the City of Barstow Conflict Evaluation	
Chapter/Section	**Analysis**
Trip Reduction. Continue to support public information programs which promote the use of alternative modes of transportation such as those provided through commercials on local television stations and availability of bus schedules at various locations throughout the city. The city will continue to encourage public information programs which promote the use of alternate modes of transportation.	program. This is a public information program, which promotes the use of alternative modes of transportation.
Sec. 10.09.030(d) **Trip Reduction.** Continue to promote land use regulations which have the potential to reduce vehicle trips (VT) and/or vehicle miles travelled (VMT), such as the MU (mixed use) land use district which permits mixed residential and commercial uses.	**No Conflict.** BIG would reduce VMT per service population. See **Section 7.1 Vehicle Miles Traveled Impact Evaluation** for analysis concerning VMT.
Sec. 10.09.040(b)(1) **Travel Demand Management.** New development is required to comply with the city's standard requirement of installing public sidewalks. This improvement provides for pedestrian use as an alternate transportation mode, and serves as a link to other transportation systems which encourage their use, thus reducing traffic congestion, VMT and VT. The city shall continue to install sidewalks in those limited areas of the city where development existed prior to the requirements for sidewalks with the 1911 Bond Act and Community Development Block Grant funds.	**No Conflict.** BIG would not conflict with pedestrian travel. BIG proposes to complete the planned roadway, bicycle, and pedestrian facilities along portions of the BIG Specific Plan area's frontages under City jurisdiction. See **Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements.
Sec. 10.09.040(b)(2) **Travel Demand Management.** The city (as the city area transit and dial-a-ride) provides multiple occupancy vehicle service to the city and surrounding county area. Approximately 85 miles of roads are covered by the current route and monthly ridership exceeds 12,000. This service reduces traffic congestion, VMT and VT. The fixed route network will be periodically evaluated to determine appropriate changes and expansion based upon new development and levels of ridership.	**No Conflict.** BIG would not conflict with this Barstow Code section. BIG employees may use this program, which could increase the effectiveness of the program as a whole.

Table 36: Code of the City of Barstow Conflict Evaluation	
Chapter/Section	**Analysis**
Sec. 10.09.040(b)(3) **Travel Demand Management.** Traffic signal coordination and timing are being used to increase roadway efficiency and capacity during peak travel periods, resulting in improved vehicle movement. New signals are being installed by the city and by private development at locations where traffic volumes warrant and as determined by the city's traffic engineer. These improvements also result in improved vehicle movement.	**No Conflict.** BIG would install traffic signals and improve existing traffic signals that would increase roadway efficiency during peak travel periods. **See Section 1.4 BIG Transportation Improvements** for BIG's proposed transportation improvements**.**
Sec. 10.48.020(b) **Restricted Use of Streets – Truck Routes** When any such truck routes are established and designated by appropriate signs, the operator of any vehicle exceeding a maximum gross weight limit of three tons shall drive on such routes and none other, except that nothing in this section shall prohibit the operator of any vehicle exceeding a maximum gross weight of three tons coming from a truck route having ingress and egress by direct route to and from restricted streets when necessary for the purpose of making pickups or deliveries of goods, wares and merchandise from or to any building or structure located on such restricted streets or for the purpose of delivering materials to be used in the actual and bona fide repair, alteration, remodeling or construction of any building or structure upon such restricted streets for which a building permit has previously been obtained.	**No Conflict.** BIG would adhere to Barstow Code requirements regarding truck routes. See **Section 4.5 Goods Movement** for additional information concerning truck routes.
Sec. 10.48.020(d) **Restricted Use of Streets – Truck Routes** Those streets and parts of streets established by resolution of the council are declared to be truck routes for the movement of vehicles exceeding a maximum gross weight of three tons.	**No Conflict.** BIG would adhere to Barstow Code requirements regarding truck routes. See **Section 4.5 Goods Movement** for additional information concerning truck routes.
TITLE 12 – PUBLIC IMPROVEMENTS	
Sec. 12.04.020(b) **Required Improvements.** For commercial and industrial subdivisions, installation of all required public	**No Conflict.** BIG would adhere to city code regarding required public off-site improvements.

Table 36: Code of the City of Barstow Conflict Evaluation	
Chapter/Section	**Analysis**
off-site improvements shall be required by the property owner, lessee or agent, on the property where development activity will occur prior to the issuance of a building permit.	
Sec. 12.04.020(d) **Required Improvements.** The city shall establish a master plan of required off-site public improvement standards for the following land use designations:(1) Rural. (2) Residential. (3) Commercial. (4) Industrial. All public improvements required under this section shall be designed and constructed in accordance with the city's established master plan of required off-site public improvement standards. The master plan will outline the specifications of the off-site public improvements required throughout the entire community. Any deviation from the established standard will require city council authorization and approval.	**No Conflict.** BIG would adhere to Barstow Code requirements regarding required public off-site improvements. Public improvements would be designed and constructed in accordance with the city's established master plan of required off-site public improvement standards.
Sources: City of Barstow. (2025b). City of Barstow, CA Code of Ordinances. Retrieved from: https://library.municode.com/ca/barstow/codes/code_of_ordinances	

7.3 Hazards Impact Evaluation

As discussed in **Section 6.1 Thresholds of Significance**, BIG could have a significant effect on the environment if it would:

- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Temporary Construction Period

BIG construction activities would not substantially increase hazards due to geometric design features or incompatible uses. BIG's construction activities would be temporary and would occur mostly within the BIG footprint. Also, the construction plans and specifications would be designed to meet relevant design standards (City, County, and Caltrans) and sight distance requirements. Therefore, BIG construction activities would not increase hazards due to a geometric design feature or incompatible uses. BIG construction would result in a less than significant impact concerning hazards and incompatible uses.

Operations

BIG would not substantially increase hazards due to geometric design features or incompatible uses. The proposed roadway and intersection improvements would be designed to meet relevant design standards (City, County, Caltrans). Further, BIG proposes to remove the existing at-grade crossing at Hinkley Road, which would reduce potential conflicts between vehicles and trains, reducing hazards. BIG does not propose any incompatible uses. Therefore, BIG would not increase hazards due to a geometric design feature or incompatible uses. BIG would result in a less than significant impact concerning hazards and incompatible uses, and no mitigation is required.

7.4 Emergency Access Impact Evaluation

As discussed in **Section 6.1 Thresholds of Significance**, BIG could have a significant effect on the environment if it would:

- Result in inadequate emergency access

Temporary Construction Period

As discussed in **Section 7.2 Circulation System Conflict Evaluation**, the contractor would prepare a detailed TCP, which would minimize the impact of construction activities (e.g., road and lane closures) and construction traffic on adjoining and nearby roadways in close consultation with the City, local law enforcement, and Fire District officials.

Emergency vehicle access would be maintained at all times to the construction site and adjacent land uses, and to and from fire stations, hospitals, and medical facilities near the construction site and along the truck routes. A temporary bypass would be constructed to facilitate access through the corridor throughout the Main Street at Lenwood Channel bridge reconstruction. As shown on **Figure 5: Main Street at Lenwood Channel Bridge Reconstruction - BIG,** the temporary bypass would maintain through traffic and access to private driveways for nearby land uses. Construction activities, road closures, and lane closures would be coordinated with local law enforcement and Fire District officials prior to

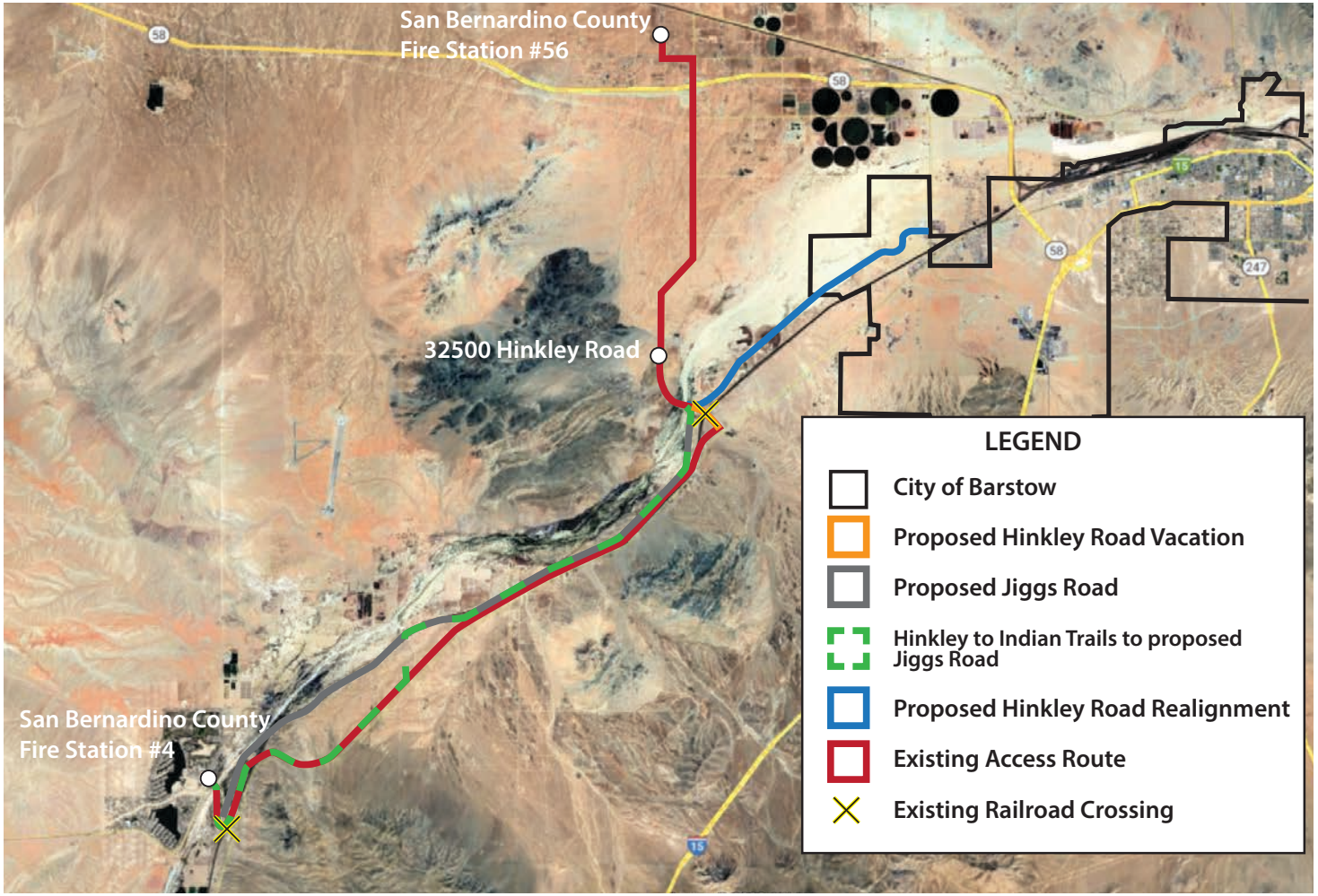
commencement. Implementation of these measures would maintain emergency vehicle access to the construction site and adjacent land uses.

BIG proposes to vacate the southern portion of Hinkley Road for approximately 0.6-mile (i.e., between the south side of the Mojave River bridge crossing and Main Street), closing the existing at-grade rail crossing and removing access to Hinkley Road via Main Street. BIG also proposes to realign Jiggs Road slightly north/west to align with realigned Hinkley Road; see **Figure 1: On-Site Circulation Improvements**. The two County Fire stations nearest this portion of Hinkley Road are Hinkley Fire Station 56 ("Station 56") located to the north at 37284 Flower Road, Hinkley, and Helendale Fire Station 4 ("Fire Station 4") located to the southwest at 27089 Helendale Road, Helendale; see **Figure 31: Emergency Access (Fire Service) to Hinkley Road Area**. Station 56 is staffed by volunteer County firefighters requiring them to assemble at the station and then proceed to the incident.

During BIG's construction phase, while Hinkley Road and Jiggs Road are being reconstructed/realigned (approximately 30 months of the total 34-month construction duration), Station 56 located to the north would have access to the Hinkley Road area, as under existing conditions. Vacating the southern portion of Hinkley Road would remove Station 4's direct access to the Hinkley Road area via Main Street. However, while Hinkley Road and Jiggs Road are being reconstructed/realigned, access from Station 4 to the Hinkley Road area would be provided from the northeast via SR-58.

Additionally, Barstow Fire Protection District (BFPD) Headquarters Fire Station 366 ("Station 366") is located to the east, at 2600 Main Street. Station 366 would have access to the Hinkley Road area via SR-58 or Community Boulevard. Pursuant to existing mutual aid agreements between the County and Barstow, emergency response to the Hinkley Road area would first rely on County resources, but assistance would be available from Barstow resources (e.g., Station 366, as well as other nearby jurisdiction resources) when necessary.

Overall, emergency access from Station 56 and Station 4 to the Hinkley Road area would be provided during BIG's construction phase, emergency response assistance could be provided (e.g., from Station 366 and other jurisdiction resources) when needed through the mutual aid agreements, and construction-related access interruptions are temporary (access to the Hinkley Road area would be restored once construction of realigned Hinkley Road and Jiggs Road is complete (see Operations discussion below)). Additionally, as discussed above, BIG would implement a TCP which would minimize the impact of BIG's construction activities (e.g., road and lane closures) and construction traffic on nearby land uses. Therefore, BIG's impacts concerning emergency access during the construction phase would be less than significant.



Source: Google Earth, 2025

Figure 31: Emergency Access (Fire Service) to Hinkley Road Area

Operations

BIG would maintain adequate emergency access during operations. Proposed roadway and intersection improvements would be designed to meet relevant design standards (City, County, Caltrans). BIG proposes to vacate select roads to allow for BIG construction; as applicable, BIG also proposes to acquire and vacate the existing parcels adjacent to the vacated roadways to eliminate the need for vehicle access to these parcels. The proposed site design would also allow for adequate emergency access to the BIG Specific Plan area. Internal and off-site roadways and transportation improvements would be designed to meet City Code, including Fire Code, and County Code (as applicable).

During BIG's operational phase, vacating the southern portion of Hinkley Road would remove Station 4's direct access to the Hinkley Road area via Main Street. However, once Hinkley Road and Jiggs Road are reconstructed/realigned, alternate emergency access to the Hinkley Road area would be provided via the following routes: realigned Jiggs Road to Hinkley Road; Indian Trails to realigned Jiggs Road to Hinkley Road; and Main Street to Lenwood Road to realigned Hinkley Road to Hinkley Road; see **Figure 31: Emergency Access (Fire Service) to Hinkley Road Area**. Pursuant to existing mutual aid agreements, assistance from Station 366 would be available from Barstow resources (as well as other nearby jurisdictions) when necessary. Overall, emergency access from Station 56 and Station 4 to the Hinkley Road area would be provided during BIG's operational phase, and emergency response assistance could be provided (e.g., from Station 366 and other jurisdiction resources) when needed through the mutual aid agreements. Also, as discussed in **Section 5.14: Public Services and Recreation**, one re-established and two new fire stations would be required to maintain acceptable performance objectives for fire protection services to meet future needs under the proposed General Plan. It is anticipated that a new fire station would be constructed in an as yet unidentified location in the City's eastern portion. Emergency response assistance could also be provided when needed from the new facilities. Therefore, BIG's impacts concerning emergency access to the Hinkley Road area during the operational phase would be less than significant.

8.0 ADDITIONAL ANALYSIS

The sections below present additional analyses which do not contribute to the determination of transportation impacts under CEQA. These additional analyses are provided for disclosure and may be used to inform other relevant BIG environmental analyses (e.g. Air Quality, GHG Emissions, Energy, and Noise).

8.1 Truck Miles Traveled

As previously mentioned, under State CEQA Guidelines § 15064.3, subdivision (a), VMT refers to the amount and distance of *automobile* travel attributable to a project. The Governor's Office of Land Use and Climate Innovation has advised that the term "automobile" in CEQA Guidelines § 15064.3, subdivision (a) refers to on-road passenger vehicles, specifically cars and light trucks, as distinguished from heavy-duty trucks (Governor's Office of Planning and Research, 2018). Therefore, analysis of the heavy-duty truck miles traveled (TMT) attributable to BIG operations is provided in this CEQA Assessment independent of VMT and does not inform the transportation impact analysis under CEQA. It is noted, however, that the TMT analysis included in this Assessment will be used to inform CEQA analysis of BIG's impacts in other relevant impact areas (e.g., Air Quality, GHG Emissions, Energy, and Noise).

The proposed electric hostler operations are not included in the TMT calculations. Under BIG operations, electric hostlers would transport containers within the rail yard, and between the rail yard and the transload warehouse center. The electric hostlers would not leave BIG or access any public roads; instead, they would drive on private roads between the intermodal facility and the transload warehouse center within BIG. These private roadways are illustrated in **Figure 1: On-Site Circulation Improvements**. Therefore, the electric hostlers are excluded from the TMT analysis because they are not "on-road" vehicles (i.e. they would not use public roadways or result in impacts on off-site transportation facilities).

BIG is anticipated to reduce regional and national heavy-duty TMT by 1) increasing the use of trains for cargo transportation; and 2) providing an IMF closer to container origins/destinations than currently exists. TMT calculations are broken into two separate categories: transload warehouse center TMT (transload TMT), which includes the TMT for heavy-duty trucks accessing the transload warehouse center and reductions due to increased use of trains for cargo transportation; and IMF TMT, which includes the TMT for heavy-duty trucks accessing the IMF and reductions due to the proposed BIG IMF location. Net annual TMT reductions are determined by combining the calculated Plus BIG transload TMT minus No BIG Baseline transload TMT, and Plus BIG IMF TMT minus No BIG Baseline IMF TMT.

Transload warehouse center TMT reductions are calculated based on the forecast number of containers served by the BIG transload warehouse center. To calculate TMT, the forecast number of containers served by the BIG transload warehouse center is multiplied by the number of heavy-duty truck trips per container and by the relevant trip distance for No BIG Baseline or Plus BIG conditions. Under existing conditions, the containers that would be served by the transload warehouse center are trucked from the Ports to transload facilities around the Los Angeles basin, Orange County, and the Inland Empire, and then trucked from the transload facilities to their final destinations across the United States. BIG would reduce the number of heavy-duty truck trips required to serve these transload containers by providing a train connection directly from the Ports to BIG's transload warehouse center (via BIG's IMF and electric

hostlers) and from the transload warehouse center to nationwide hub cities near the containers' final destinations.

The transload warehouse center would also serve a portion of containers destined to the Inland Empire from the Ports. Under existing conditions, these containers are transported by truck from the Ports to the Inland Empire. Under Plus BIG conditions, these goods would travel by train from the Ports to BIG's transload warehouse center (via BIG's IMF and electric hostlers), be transloaded, and then trucked from BIG's transload warehouse center to their destinations in the Inland Empire. The containers from BIG would then be re-filled with goods in the Inland Empire and transported by heavy-duty truck back to BIG's transload warehouse center, to be transloaded and sent east by train.

Net IMF TMT reductions are calculated based on the forecast number of containers that would be trucked to BIG's IMF. Under existing conditions, these containers are served by BNSF IMFs in San Bernardino or Hobart, or do not use an IMF and are trucked directly to their destinations across the United States (nationwide destinations). To calculate TMT, the forecast number of containers trucked to the BIG IMF is multiplied by the number of heavy-duty truck trips per container and by the relevant trip distance per container for the No BIG Baseline or Plus BIG conditions.

BIG's TMT analysis is not limited to California's boundaries. The geographic scope of this analysis is the national road network, which accounts for the full scope of TMT changes due to BIG's implementation. As BIG is intended to serve the national market stream, specifically acting as a point of service for goods traveling from the Ports to destinations eastward across the United States, TMT savings are not limited to within California. Instead, the following TMT analysis reviews the bigger picture of BIG's TMT effects as goods travel from the Ports or their domestic origins to their final destinations nationwide.

TMT estimations were completed for the following scenarios:

- Opening Year 2028
    - Opening Year 2028 No BIG Baseline
    - Opening Year 2028 Plus BIG
- Interim Year 2033
    - Interim Year 2033 No BIG Baseline
    - Interim Year 2033 Plus BIG
- Horizon Year 2048
    - Horizon Year 2048 No BIG Baseline
    - Horizon Year 2048 Plus BIG

TMT methodology and analysis is discussed in more detail in the following sections, *Transload Warehouse Center Truck Miles Traveled* and *Intermodal Facility Truck Miles Traveled*.

Transload Warehouse Center Truck Miles Traveled

As discussed in detail below, transload warehouse center TMT is subdivided into two distinct movements of goods:

- Ports to Nationwide Destinations
- Inland Empire

Transload Warehouse Center TMT: Ports to Nationwide Destinations

Under existing conditions, containers destined for locations across the United States arrive at the Ports in 20-foot and 40-foot international containers. A portion of these containers are unloaded from container ships onto heavy-duty trucks, hauled to local transload warehouses in the Los Angeles basin, Orange County, and the Inland Empire, and repackaged into 53-foot domestic containers. The 53-foot domestic containers are then trucked to their final destinations nationwide. The No BIG Baseline transload TMT for goods traveling to nationwide destinations reflects the heavy-duty truck trips from the Ports to existing transload warehouses and from the existing transload warehouses to the goods' final nationwide destinations.

To determine which containers within this market stream would potentially use BIG's transload warehouse center, BNSF reviewed 2021 Ports import data accessed through an S&P Global / Transearch subscription. This is a proprietary data sweep that uses US Census and Bureau of Economic Analysis and Intermodal Association of North America data in a behind-the-scenes black box environment to develop an estimated number of containers and their destinations. Based on operational research and planning, BNSF estimated the percentage of containers forecast to be served by BIG by destination under each analysis scenario. This data is included in **Appendix C: TMT Calculations**.

Under Plus BIG conditions, most of the 20-foot and 40-foot international containers served by BIG would be loaded directly onto trains at the Ports and moved by train to BIG's IMF. At BIG's IMF, containers would be transferred from trains to electric hostlers, transported by electric hostlers on private roads to the transload warehouse center, transloaded into 53-foot domestic containers, and transported by electric hostlers back to the IMF to be put on a train to be sent to nationwide destinations. The electric hostlers would not leave BIG or access public roads; instead, they would drive on private roads between the IMF and the transload warehouse center and are not considered in TMT calculations. Therefore, there is no Plus BIG TMT associated with the goods transported by train from the Ports to BIG. A small portion of containers (approximately one half of one percent of the containers served by the transload warehouse center traveling to nationwide destinations) are forecast to be transported by heavy-duty truck directly from the Ports to BIG's transload warehouse center due to missed train connections or shorter travel times.

After being transloaded into 53-foot domestic containers at the BIG transload warehouse center, goods would depart from BIG by train to hub cities across the United States, where they would be placed on heavy-duty trucks and driven to their final destinations. The Plus BIG TMT calculation for goods traveling to nationwide destinations includes the heavy-duty truck trips required to transport goods from hub cities to their final destinations and to transport the small fraction of international containers transported by heavy-duty truck directly from the Ports to the BIG transload warehouse center.

Transload warehouse center operations are expected to experience a ramp-up between 2028 and 2033, and then experience more steady, slower growth between 2033 and 2048. Based on BNSF operational research and planning, the number of containers served by the transload warehouse center is expected to grow by 5.75% year-over-year between 2028 and 2033, and then by 1.0% each subsequent year between 2033 and 2048, reaching an anticipated operating level of approximately 307,000 20-foot and 40-foot international containers served per year in 2048.

Additional assumptions to estimate transload TMT related to the "Ports to nationwide destinations" move are summarized in **Table 37: Transload TMT: Ports to Nationwide Destinations Assumptions**.

Table 37: Transload TMT: Ports to Nationwide Destinations Assumptions

Variable	Value	Unit	Notes
Distance from Ports to typical (non-BIG) transload warehouse location	30	miles	This analysis assumes Orange, California to be a typical existing transloading warehouse location due to its proximity to the Ports and central location to major truck routes. Orange, California is 30 miles from the Ports according to TruckMap.com.
Distance from Ports to BIG	128	miles	Calculated using TruckMap.com.
Heavy-duty truck trips per revenue container traveling from Ports to (non-BIG) transload warehouse location or from Ports to BIG's Transload Warehouse Center	3	trips / container	Analysis assumes 3 heavy-duty truck trips per unit to account for balancing empties – about 50% of trucks would leave with a container after they drop off a container (e.g. approximately 50% of trucks would return with an empty container, meaning an additional truck trip from the existing transload warehouses to the Ports would be required for the other 50% of containers in order to balance empties).
International to domestic container conversion rate	3:2	International containers: domestic containers	Three international 20-foot or 40-foot containers hold the equivalent amount of goods as two 53-foot domestic containers. A conversion rate of 3:2 is applied to the transloading of goods; for every three loaded international containers to arrive at a transload warehouse, two loaded domestic containers would depart.
Distance from Ports to destination	varies	miles	Calculated using TruckMap.com; refer to **Appendix C: TMT Calculations**.

Sources:
Author Compilation. (2025).
BNSF. (2025).

Transload Warehouse Center TMT: Inland Empire

Additionally, some goods are expected to travel between the BIG transload warehouse center and existing transload warehouses in the Inland Empire by truck. This "Inland Empire Injection" movement would

complement the "Ports to Nationwide Destinations" movement discussed above. In some containers, a small portion of the goods inside that would be moved by train to BIG's transload warehouse center would be destined for Southern California, and some of the goods processed at existing Inland Empire transload warehouses would be destined for nationwide locations. Based on BNSF market research, these goods are forecast to travel between BIG and the Inland Empire at an approximately one to one ratio (for every container trucked from the Inland Empire to BIG, there would be one container trucked from BIG to the Inland Empire). However, to maintain consistency with other TMT calculations and to ensure a conservative analysis of the TMT savings due to the Inland Empire Injection, three truck trips per container are assumed.

As discussed above, under existing conditions, containers destined for nationwide locations arrive at the Ports in 20-foot and 40-foot international containers. A portion of these containers are unloaded from container ships onto heavy-duty trucks, hauled to local transload warehouses in the Los Angeles basin, Orange County, and the Inland Empire, and repackaged into 53-foot domestic containers. The 53-foot domestic containers are then trucked to their final destinations across the United States, including within Southern California. For a more conservative approach, No BIG Baseline transload TMT for goods included in the "Inland Empire Injection" reflects only the movement of these goods between the Ports and the Inland Empire warehouses; movement of goods to nationwide destinations is not included in the calculations.

Under Plus BIG conditions, some 20-foot and 40-foot international containers would be loaded directly onto trains at the Ports and moved by train to BIG's IMF. At BIG's IMF, containers would be transferred from trains to electric hostlers, transported by electric holsters on private roads to the transload warehouse center (not factored into TMT calculations, as discussed above), and transloaded into 53-foot domestic containers. A small number of 53-foot domestic containers with goods destined for Southern California would be transported by heavy-duty truck from the BIG transload warehouse center to existing transload warehouses in the Inland Empire. Additionally, a small number of 53-foot domestic containers with goods destined nationwide would be picked up at the Inland Empire transload warehouses and trucked back to BIG's transload warehouse center, where they would join the rest of the goods destined for nationwide locations by train. Transloading and sorting activities are expected to occur at both BIG's transload warehouse center and the existing Inland Empire transload warehouses to meet customer needs. Based on BNSF market research, containers are forecast to travel between BIG and the Inland Empire at an approximately one to one ratio (for every container trucked from the Inland Empire to BIG, there would be one container trucked from BIG to the Inland Empire). Very few empty containers are forecast to be transported by truck under this movement. However, to maintain consistency with other TMT calculations and to ensure a conservative analysis of the TMT savings due to the Inland Empire Injection, the assumption of three truck trips per container is applied to the Inland Empire Injection TMT calculations.

Additional assumptions to estimate transload TMT related to the Inland Empire moves are summarized in **Table 38: Transload TMT: Inland Empire Assumptions**.

Table 38: Transload TMT: Inland Empire Assumptions			
Variable	**Value**	**Unit**	**Notes**
Distance from Ports to typical Inland Empire transload warehouse location	63	miles	Estimated using the existing locations of potential customer facilities within the Inland Empire. Distances were calculated using TruckMap.com and then averaged.
Distance from BIG to typical Inland Empire transload warehouse location	77	miles	Estimated using the existing locations of potential customer facilities within the Inland Empire. Distances were calculated using TruckMap.com and then averaged.
Heavy-duty truck trips per revenue container	3	trips / container	Analysis assumes 3 heavy-duty truck trips per unit to account for balancing empties – about 50% of trucks would leave with a container after they drop off a container (e.g. approximately 50% of trucks would return with an empty container, meaning an additional truck trip would be required for the other 50% of containers in order to balance empties).
International to domestic container conversion rate	3:2	International containers: domestic containers	Three international 20-foot or 40-foot containers hold the equivalent amount of goods as two 53-foot domestic containers. A conversion rate of 3:2 is applied to the transloading of goods; for every three loaded international containers to arrive at a transload warehouse, two loaded domestic containers would depart.
Sources: *Author Compilation. (2025).* *BNSF. (2025).*			

Total Transload Warehouse Center TMT

The net TMT reduction associated with the BIG transload warehouse center is calculated by subtracting the No BIG Baseline TMT from Plus BIG TMT.

The volumes noted in **Table 39: Transload Warehouse Truck Miles Traveled Variables** were used to estimate the change in TMT due to BIG's proposed transload warehouse center operations. TMT estimates are summarized in **Table 40: Transload Warehouse Center Truck Miles Traveled .** Additional calculations and assumptions are included in **Appendix C: TMT Calculations.**

Table 39: Transload Warehouse Truck Miles Traveled Variables			
Variable	**Year**	**Value**	**Unit**
Ports to Nationwide Destinations			
Plus BIG transload 20-foot and 40-foot international containers total delivered by heavy-duty truck and rail	2028	200,000	containers / year
	2033	264,504	containers / year
	2048	307,080	containers / year

Table 39: Transload Warehouse Truck Miles Traveled Variables			
Plus BIG transload 20-foot and 40-foot international containers delivered by heavy-duty truck	2028	1,000	containers / year
	2033	1,323	containers / year
	2048	1,535	containers / year
Inland Empire Injection			
Plus BIG transload 53-foot domestic containers total delivered by heavy-duty truck	2028	20,000	containers / year
	2033	24,450	containers / year
	2048	30,708	containers / year
Sources: *Author Compilation. (2025).* *BNSF. (2025).*			

Table 40: Transload Warehouse Center Truck Miles Traveled Summary									
Annual Truck Miles Traveled (1,000s)									
BNSF BIG Transload Warehouse Component	**2028**			**2033**			**2048**		
	No BIG Baseline	**Plus BIG**	**Delta (Net TMT Reduction)**	**No BIG Baseline**	**Plus BIG**	**Delta (Net TMT Reduction)**	**No BIG Baseline**	**Plus BIG**	**Delta (Net TMT Reduction)**
Goods Traveling to Nationwide Destinations									
20-foot and 40-foot international containers	17,992	384	**-17,608**	23,767	507	**-23,260**	27,593	588	**-27,004**
53-foot domestic containers	193,915	4,623	**-189,292**	255,118	6,088	**-249,030**	296,184	7,068	**-289,116**
Goods Traveling to the Inland Empire									
20-foot and 40-foot international containers	5,670	-	**-5,670**	7,499	-	**-7,499**	8,706	-	**-8,706**
53-foot domestic containers	-	4,620	**4,620**	-	6,110	**6,110**	-	7,094	**7,094**
Total Annual Truck Miles Traveled	**217,577**	**9,627**	**-207,950**	**286,384**	**12,705**	**-273,679**	**332,483**	**14,750**	**-317,733**

Source: *Author Compilation. (2025).*

Intermodal Facility Truck Miles Traveled

The IMF's primary purpose would be to transfer containers between rail cars and electric hostlers for cross-dock movements to and from the transload warehouse center. A small percentage of containers served by the IMF, however, would arrive at the IMF via heavy-duty truck to reduce the travel distance and/or travel time due to traffic conditions that the container would otherwise encounter under No BIG Baseline Conditions. Based on BNSF market research, it is expected that most containers that would utilize BIG as a traditional IMF would originate at/be destined for Boron (California), the Central Valley (California), Victorville (California), and Las Vegas/Arizona (Nevada/Arizona). Similar to operations at a traditional IMF, the containers arriving at BIG via heavy-duty truck from these locations would be transferred from a heavy-duty truck to a rail car (and vice versa) before being transported to their final destination. Each move that is forecast to utilize BIG as a traditional IMF is discussed in more detail below.

Boron, California

The Boron move involves goods which travel by heavy-duty truck from Boron to the Ports of Los Angeles and Long Beach (Ports) in 20-foot and 40-foot international containers under existing conditions. Due to BIG's proximity to Boron, this move could be accomplished with major time and heavy-duty truck miles traveled savings by utilizing BIG's IMF to transport the goods by rail from BIG to the Ports. The baseline TMT for this move is determined using the number of containers traveling from Boron to the Ports, the distance between Boron and the Ports, and the assumed average of 3 truck trips per container (assuming 50% of trucks return with an empty container). Plus BIG TMT for this move is determined by the number of containers traveling from Boron to the Ports, the distance between Boron and BIG, and the assumed average of 3 truck trips per container.

Central Valley

The Central Valley move involves goods which travel by heavy-duty truck from the Central Valley to the BNSF San Bernardino or Hobart IMFs, or vice versa, under existing conditions. Based on BNSF's operations data at the BNSF San Bernardino and Hobart yards, approximately 60% of these goods currently utilize the BNSF San Bernardino yard and 40% utilize the BNSF Hobart yard. Bakersfield was chosen to represent an average location for the start/end point of goods movement in the Central Valley. Although the Central Valley is nearer to the Hobart IMF than it is to BIG, truck routes from the Central Valley to Barstow avoid the congested corridors north of Los Angeles and therefore save time. Baseline TMT for the Central Valley move is calculated using the number of containers traveling to/from the Central Valley that would be captured by BIG, the distance between Bakersfield and the San Bernardino and Hobart yards, the proportion of containers using BNSF San Bernardino vs. BNSF Hobart, and the assumed average of 3 truck trips per container. Plus BIG TMT is calculated similarly to the No BIG Baseline TMT but uses the distance between Bakersfield and BIG, with 100% of the containers traveling to BIG.

Las Vegas/Arizona

The Las Vegas/Arizona move involves goods which travel by heavy-duty truck from Las Vegas and northern Arizona to the BNSF intermodal facilities at San Bernardino or Hobart, or vice versa, under existing conditions. These goods are then placed on trains heading to nationwide destinations. Similar to the Central Valley move, based on BNSF's operational data, 60% of the containers making this move are expected to utilize the BNSF San Bernardino yard, while the other 40% are expected to utilize the BNSF Hobart yard. Las Vegas was chosen as the representative origin point of goods making this move. The

baseline TMT for the Las Vegas/Arizona move is determined using the number of containers making the move, the distance between Las Vegas and the San Bernardino and Hobart yards, the proportion of containers using BNSF San Bernardino vs. BNSF Hobart, and the average number of 3 truck trips per container. Plus BIG TMT is calculated similarly to the baseline TMT but uses the distance between Las Vegas and BIG with 100% of the containers traveling to BIG.

Victorville

The Victorville move is similar to the Las Vegas/Arizona move. Based on BNSF market research, there are goods traveling by heavy-duty truck to/from Victorville which currently access intermodal facilities at the BNSF San Bernardino or BNSF Hobart yards. Due to BIG's proximity to Victorville, these goods would be expected to utilize BIG once BIG is operational. Baseline TMT for the Victorville move is calculated using the number of containers traveling to/from Victorville that would be captured by BIG, the distance between Victorville and the BNSF San Bernardino and BNSF Hobart yards, the proportion of containers using BNSF San Bernardino vs. BNSF Hobart (60% and 40%, respectively), and the assumed average of 3 truck trips per container. Plus BIG TMT is calculated similarly to the baseline TMT but uses the distance between Victorville and BIG with 100% of the containers traveling to BIG.

Total IMF TMT

The total change in TMT related to BIG's IMF is determined by taking the sum of the TMT related to the Boron, Central Valley, Las Vegas/Arizona, and Victorville moves. The number of containers making each of these moves is determined by BNSF market research and the IMF's capacity. IMF operations are expected to experience a ramp-up between 2028 and 2033, and then experience more steady, slower growth between 2033 and 2048 similar to operations at the transload warehouse center. Based on BNSF operational research and planning, the number of containers served by the IMF is expected to grow at a rate of approximately 5% year over year from 2028 to 2033, and then by approximately 1.5% each subsequent year between 2033 and 2048, reaching an anticipated operating level of approximately 98,600 containers served per year in 2048.

The assumptions used to determine the total TMT attributed to the IMF are described in **Table 41: IMF Truck Miles Traveled Assumptions and Variables**.

Table 41: IMF Truck Miles Traveled Assumptions and Variables

Variable	Value	Unit
Boron		
Annual Containers served by BIG from Boron (2028)	25,000	20'/40' Containers
Annual Containers served by BIG from Boron (2033)	33,063	20'/40' Containers
Annual Containers served by BIG from Boron (2048)	38,385	20'/40' Containers
Distance from Boron to Ports	137	miles
Distance from Boron to BIG	35	miles
Central Valley		
Annual Containers served by BIG from the Central Valley (2028)	3,000	53' Containers
Annual Containers served by BIG	3,394	53' Containers

Table 41: IMF Truck Miles Traveled Assumptions and Variables		
from the Central Valley (2033)		
Annual Containers served by BIG from the Central Valley (2048)	4,916	53’ Containers
Distance from Bakersfield to BNSF San Bernardino	171	miles
Distance from Bakersfield to BNSF Hobart	118	miles
Distance from Bakersfield to BIG	126	miles
Split between BNSF San Bernardino and BNSF Hobart	60% San Bernardino / 40% Hobart	-
Las Vegas/Arizona		
Annual Containers served by BIG from Las Vegas/Arizona (2028)	5,000	53’ Containers
Annual Containers served by BIG from Las Vegas/Arizona (2033)	5,657	53’ Containers
Annual Containers served by BIG from Las Vegas/Arizona (2048)	8,193	53’ Containers
Distance from Las Vegas to BNSF San Bernardino	227	miles
Distance from Las Vegas to BNSF Hobart	271	miles
Distance from Las Vegas to BIG	165	miles
Split between BNSF San Bernardino and BNSF Hobart	60% San Bernardino / 40% Hobart	-
Victorville		
Annual Containers served by BIG from Victorville (2028)	10,000	53’ Containers
Annual Containers served by BIG from Victorville (2033)	11,314	53’ Containers
Annual Containers served by BIG from Victorville (2048)	16,386	53’ Containers
Distance from Victorville to BNSF San Bernardino	41	Miles
Distance from Victorville to BNSF Hobart	84	Miles
Distance from Victorville to BIG	31	Miles
Split between BNSF San Bernardino and BNSF Hobart	60% San Bernardino / 40% Hobart	-
Source: *BNSF. (2025).*		

Table 42: IMF Truck Miles Traveled Summary summarizes BIG IMF TMT estimates under No BIG Baseline and Plus BIG conditions. Detailed BIG IMF heavy TMT calculations are included in **Appendix C: TMT Calculations.**

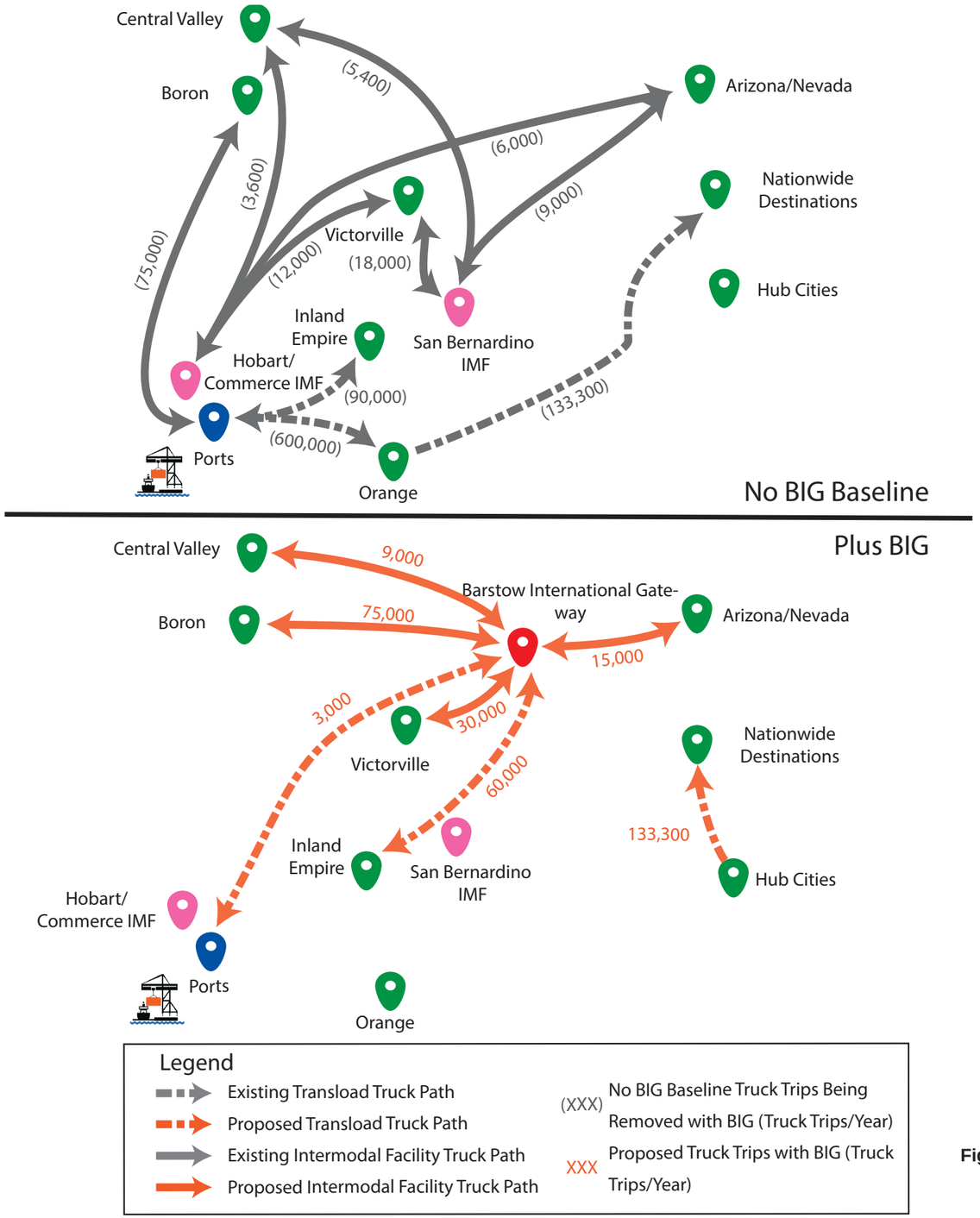
Table 42: IMF Truck Miles Traveled Summary									
Annual Truck Miles Traveled (1,000s)									
Scenario	2028			2033			2048		
	Baseline No BIG	Plus BIG	Delta (Net TMT Reduction)	Baseline No BIG	Plus BIG	Delta (Net TMT Reduction)	Baseline No BIG	Plus BIG	Delta (Net TMT Reduction)
Annual Truck Miles Traveled	17,038	7,164	-9,874	21,241	8,607	-12,634	26,859	11,468	-15,390
Source: BNSF, 2025; Author Compilation. (2025).									

Truck Miles Traveled Summary

Table 43: BIG Truck Miles Traveled Summary summarizes BIG's net TMT reduction, along with No BIG Baseline and Plus BIG TMT estimates, by summing the transload warehouse center TMT and the IMF TMT. As noted in **Table 43**, BIG would decrease heavy-duty TMT nationwide by hundreds of millions of miles per year. Detailed BIG TMT calculations are included in **Appendix C: TMT Calculations.**

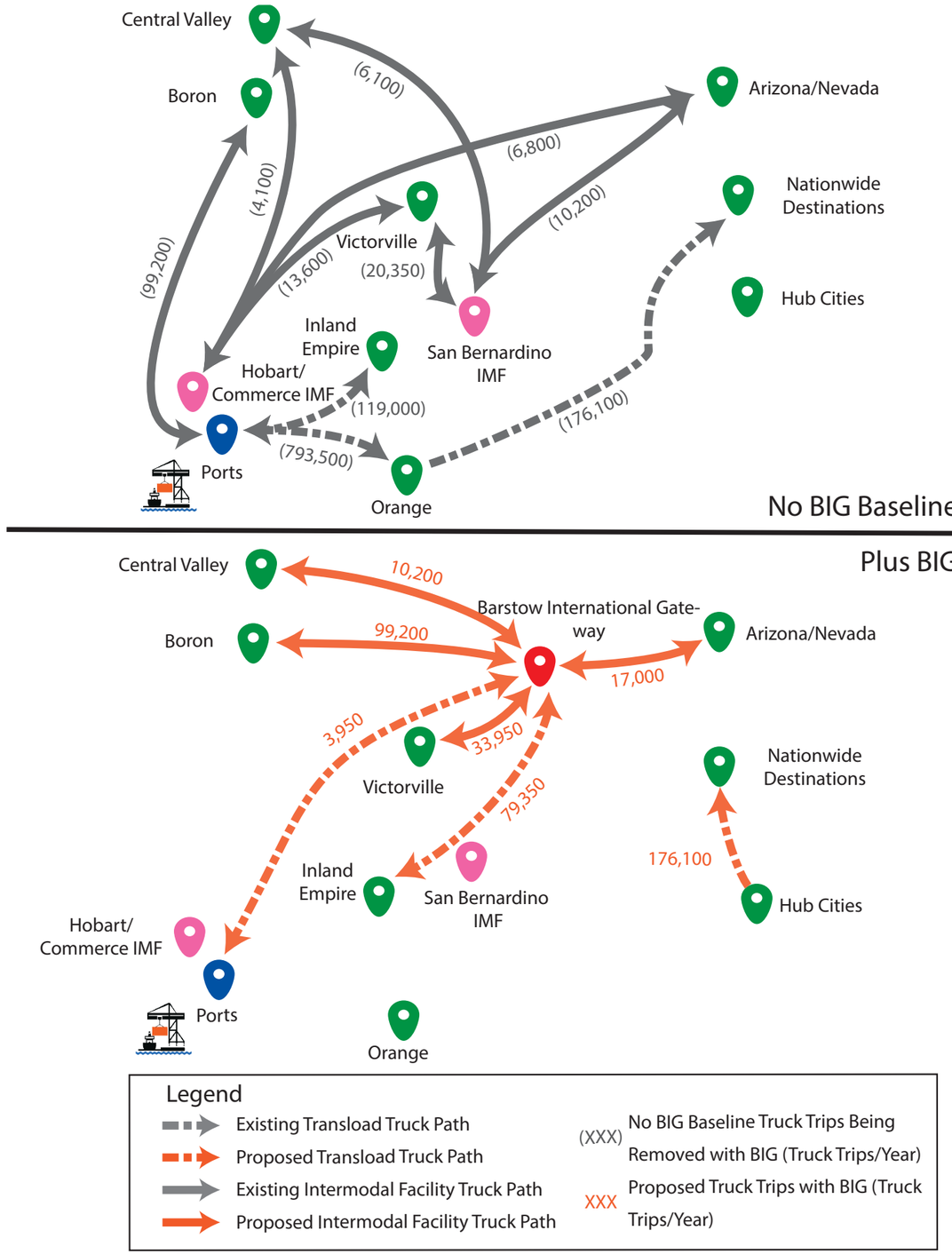
Table 43: BIG Truck Miles Traveled Summary									
Annual Truck Miles Traveled (1,000s)									
Scenario	2028			2033			2048		
	Baseline No BIG	Plus BIG	Net TMT Reduction	Baseline No BIG	Plus BIG	Net TMT Reduction	Baseline No BIG	Plus BIG	Net TMT Reduction
Annual Truck Miles Traveled (TMT)	234,616	16,791	-217,825	307,625	21,312	-286,312	359,342	26,218	-333,123
Source: BNSF, 2025; Author Compilation. (2025).									

Figure 32: BIG Truck Path and Truck Miles Traveled Changes – Opening Year 2028, Figure 33: BIG Truck Path and Truck Miles Traveled Changes – Interim Year 2033, **Figure 34: BIG Truck Path and Truck Miles Traveled Changes – Horizon Year 2048**, and **Table 44: BIG Heavy-Duty Truck Miles Traveled Changes** illustrate Opening Year 2028, Interim Year 2033, and Horizon Year 2048 heavy-duty truck volumes and TMT changes. Together, the three figures and table summarize the change between baseline and plus BIG heavy-duty truck trips and associated TMT reductions.



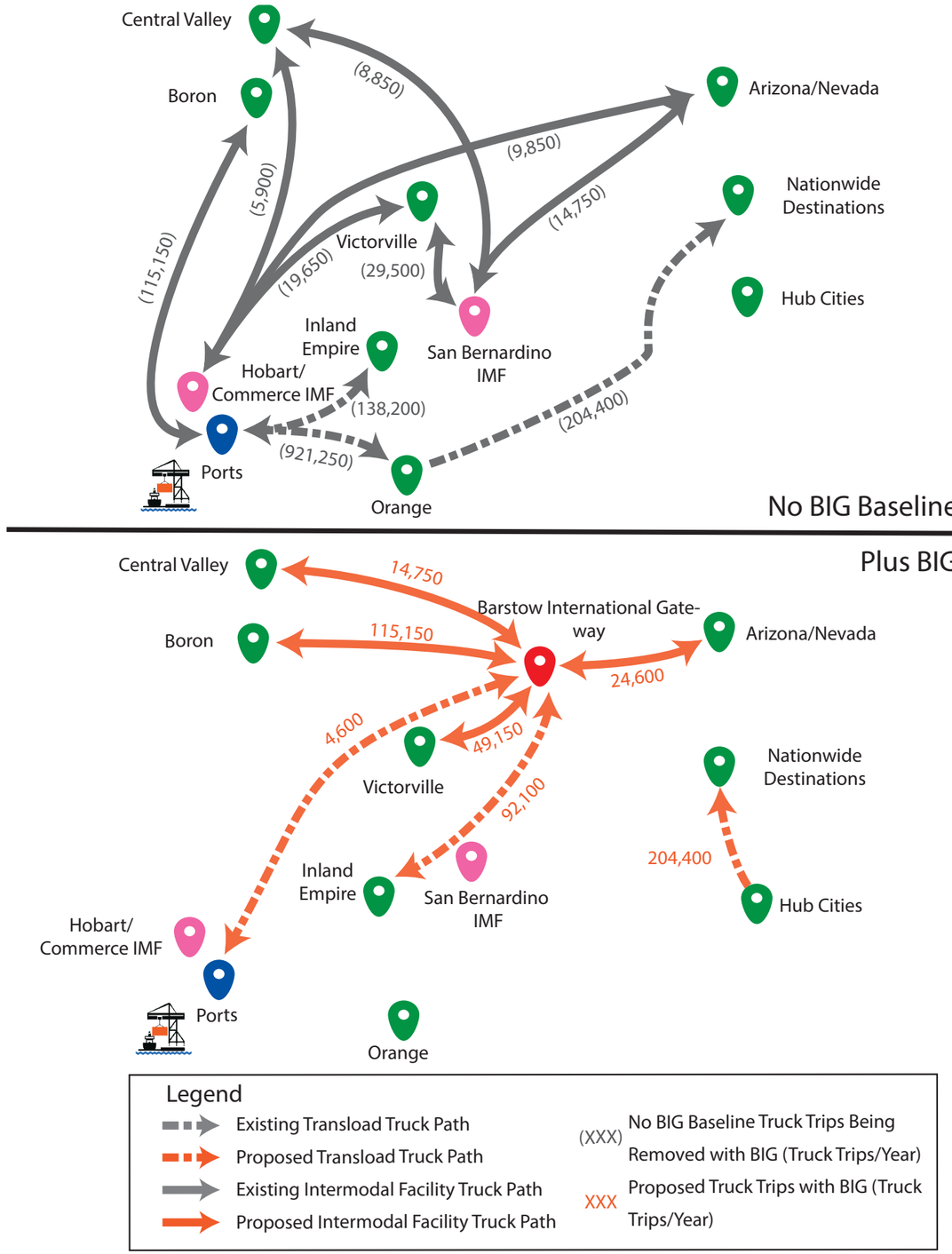
Notes: Truck trip numbers are rounded to the nearest 50.
Source: Author Compilation, 2025

Figure 32: BIG Truck Path and Truck Miles Traveled Changes Opening Year 2028



Notes: Truck trip numbers are rounded to the nearest 50.
Source: Author Compilation, 2025

Figure 33: BIG Truck Path and Truck Miles Traveled Changes Interim Year 2033



Notes: Truck trip numbers are rounded to the nearest 50.
Source: Author Compilation, 2025

Figure 34: BIG Truck Path and Truck Miles Traveled Changes Horizon Year 2048

Table 44: BIG Heavy-Duty Truck Miles Traveled Changes

BIG Component[1]	Scenario	Symbology[2]	2028		2033		2048	
			Annual Truck Trips[3]	Annual Truck Miles Traveled (1,000s of Miles)[4]	Annual Truck Trips[3]	Annual Truck Miles Traveled (1,000s of Miles)[4]	Annual Truck Trips[3]	Annual Truck Miles Traveled (1,000s of Miles)[4]
IMF	No BIG Baseline		129,000	17,038	160,284	21,241	203,640	26,859
	Plus BIG		129,000	7,164	160,284	8,607	203,640	11,468
Transload Warehouse Center	No BIG Baseline		823,274	217,577	1,088,590	286,384	1,263,818	332,483
	Plus BIG[5]		196,274	9,627	259,372	12,705	301,121	14,750
Total	***No BIG Baseline***		***952,274***	***234,616***	***1,248,874***	***307,625***	***1,467,458***	***359,342***
	Plus BIG		***325,274***	***16,791***	***419,656***	***21,312***	***504,761***	***26,218***
	Delta (Net Trucked Containers and TMT Reduction)		***-627,000***	***-217,825***	***-829,218***	***-286,312***	***-962,697***	***-333,123***

Source: Author Compilation, 2025

[1]This table summarizes the change between No BIG Baseline and Plus BIG heavy-duty truck miles traveled (TMT) (reported in 1,000s of miles). The intermodal facility (IMF) shows a reduction in TMT due to shorter travel distance between BIG and the container's origin/destination with the addition of BIG. The transload warehouse center shows a reduction in TMT due to many containers being transported via train, instead of truck, with the addition of BIG. **Figure 32**, **Figure 33**, and **Figure 34** illustrate these concepts, which are additionally explained in more detail in **Section 8.1 Truck Miles Traveled**, above.

[2]Symbology refers to the graphics illustrated in **Figure 32, Figure 33, and Figure 34**.

[3]**IMF Annual Truck Trips:** Includes truck trips for revenue containers that, without BIG, would be processed at the BNSF Hobart/Colton or BNSF San Bernardino IMF Yards, or would travel by truck the full distance to their destination. These containers are anticipated to be processed at the proposed BIG IMF due to its shorter travel time or distance between BIG and the container's origin/destination.

Transload Warehouse Center Annual Truck Trips: Includes truck trips for revenue containers that, without BIG, would first be transported by heavy-duty truck to a transload warehouse in the Los Angeles basin, Orange County, or the Inland Empire, and then transported by heavy-duty truck east to their final destination. Transload Warehouse Center Annual Truck Trips also includes a portion of goods that, without BIG, would travel from the Ports to warehouses in the Inland Empire. With BIG, many of the containers traveling to nationwide destinations will instead be transported to the proposed BIG transload warehouse center and then to hub cities nationwide by train. A small number of 53-foot domestic containers with goods destined for Southern California would be transported by heavy-duty truck from the BIG transload warehouse center to existing transload warehouses in the Inland Empire. Additionally, a small number of 53-foot domestic containers with goods destined nationwide would be picked up at the Inland Empire transload warehouses and trucked back to BIG's transload warehouse center, where they would join the rest of the goods destined for nationwide locations by train.

[4]Annual Truck Miles Traveled assumes an average of 3 truck trips per unit. The number of miles per container are based on distances between cities based on TruckMap.com. More information on truck trip distances per container can be found in **Appendix C**.

[5]The Transload Warehouse Center Plus BIG scenario includes freight movement from Hub Cities to Nationwide Destinations as well as movements directly to and from BIG. Annual truck trips directly to/from BIG's transload warehouse center are: 63,000 (2028), 83,319 (2033), and 96,729 (2048).

8.2 Construction Trip Generation

Construction Worker Trip Generation

Vehicle trips used for construction purposes would be temporary, and generated VMT would generally be limited to construction equipment and construction workers. VMT is typically analyzed in the horizon year because it provides a long-term perspective of the effects of projects and plans, but construction activities would not result in long-term trip generation. Further, neither the City, County, nor State provide thresholds specific to construction VMT. As such, the construction worker trip generation analysis provided below does not inform transportation impact analyses under CEQA; however, construction worker trips inform other EIR analyses (e.g., Air Quality, GHG Emissions, Energy, and Noise), and are therefore provided in this document for informational purposes. **Appendix D: Construction Trip Generation** includes the forecast number of construction worker trips that would occur each month, day, and hour with the expected construction overlaps. Construction trip generation projections are an approximation based on the construction worker data and construction schedule information available. Actual construction worker trip volumes would vary on any given day.

The construction worker trip analysis is based on the following:

- Construction worker and schedule information provided by TranSystems, BNSF, and Burns & McDonnell (May 2023) and compiled by Granite Construction (April 2025).
- Construction activities would occur 26 days per month and 10 hours per day with a typical start time of 6:00 am.
- Morning commutes to the construction site are expected to be made between 5:00-7:00 am and afternoon commutes from the site are expected to be made between 2:30-6:30 pm (based on an 8, 10, or 12 hour day that started at 6:00 am).
- Each worker is assumed to generate 2.5 passenger car trips per work day, including one trip to work, one trip from work, with some incidental trips included for lunch, appointments, etc.
- 50% of workers would be traveling during the afternoon peak hour (4:30-5:30 pm).

Figure 35: Number of Construction Worker Trips per Day by Month shows the forecast average number of construction worker trips per day at the BIG construction site during each month of the construction schedule. Construction activities during months 7-12 are expected to draw the greatest volume of workers to the construction site, peaking in month 9 at an average of 967 workers per day. This volume of workers is estimated to generate 2,418 construction worker trips per day throughout month 9.

Construction Truck Trip Generation

Appendix D: Construction Trip Generation includes the forecast number of construction truck trips that would occur each month, day, and hour with the expected construction overlaps. For purposes of estimating construction truck volumes that are anticipated to utilize the public transportation network, construction trucks are defined as heavy-duty trucks (3 or more axles) that transport materials and equipment to and from the construction site. Trips that do not leave the construction site to use public roadways are not included. Construction truck trip generation projections are an approximation based on

the construction truck data and construction schedule information available. Actual construction truck trips would vary on any given day.

The construction truck trip analysis is based on the following:

- Construction truck and schedule information provided by TranSystems, BNSF, and Burns & McDonnell (May 2023) and compiled by Granite Construction (January 2024).
- Construction activities would occur 26 days per month and 10 hours per day.
- Construction truck trips would be evenly distributed throughout the day.
- Each construction truck would generate two truck trips – one inbound trip and one outbound trip.
- Import and export of equipment and supplies to and from the construction site would be dispersed throughout the day and would primarily use freeways/highways and established truck routes.
- The conversion of the number of construction truck trips to the PCE metric assumes an equal volume of 3-axle (PCE=2.0) and 4+ axle (PCE=3.0) vehicles, for an average 2.5 PCE factor per truck.

Figure 36: Number of Construction Truck Trips per Day by Month shows the estimated number of construction truck trips per day by month (including inbound and outbound trips) that are expected during each month of the construction schedule. Construction activities during months 9-14 are expected to generate the greatest volume of heavy-duty construction trucks to and from the construction site, peaking in month 13 at an average of 866 trucks per day. This volume of construction trucks is estimated to generate 1,732 construction truck trips per day and 4,329 PCE trips per day throughout month 13.

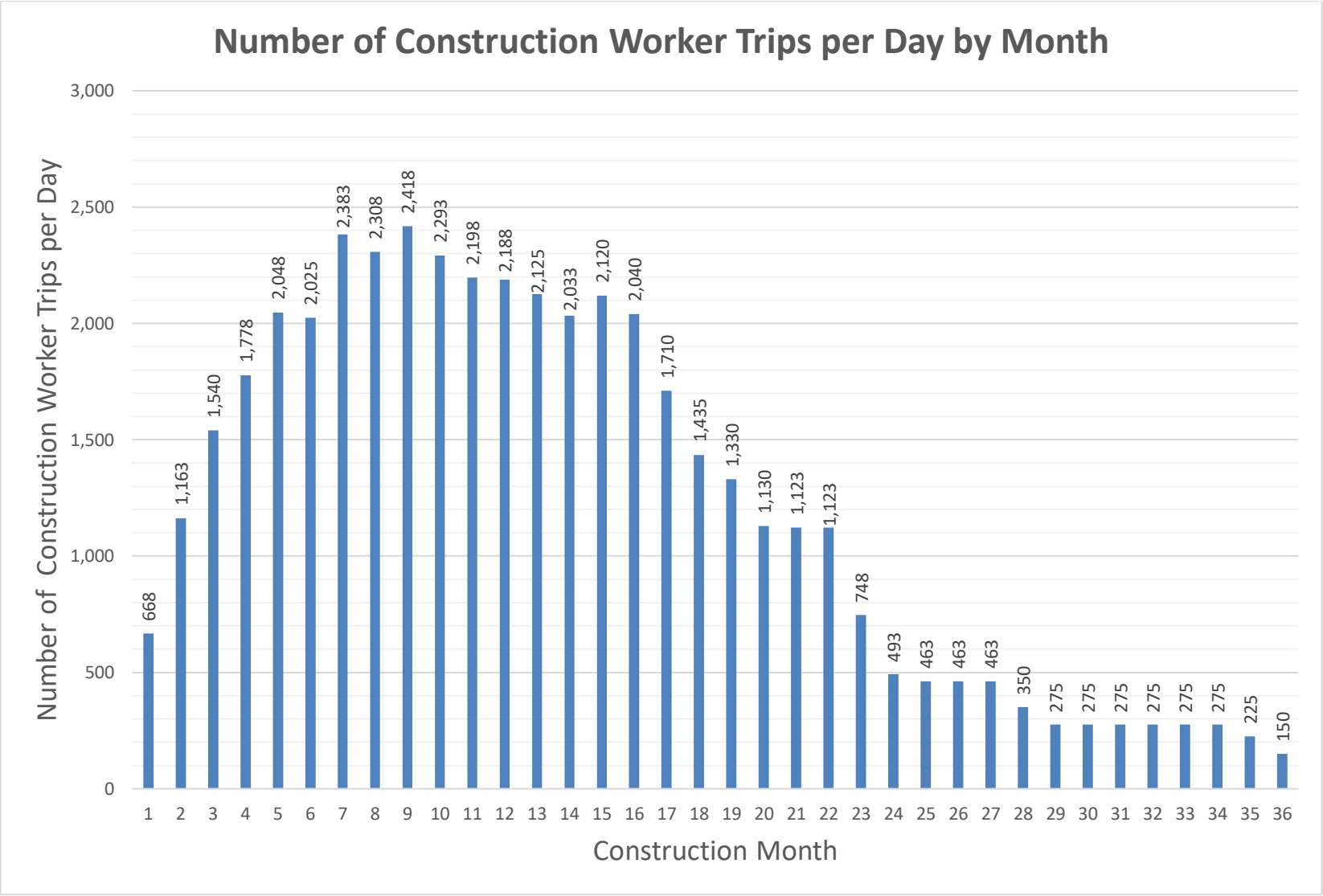
Highest Construction Trip Generation

The sum of the construction worker trips and construction truck trips (PCE) per month was calculated to determine the highest construction trip generation sequence. Construction trip generation projections are an approximation based on the construction truck data and construction schedule information available. Actual construction trips would vary on any given day.

Figure 37: Total Construction Trips (PCE) per Day by Month shows the total number of trips per day that are expected to be generated by BIG construction workers and heavy-duty construction truck trips (PCE) during each month of the construction schedule. The total construction trips (PCE) per day are calculated as the summation of estimated construction worker trips per day and heavy-duty construction truck trips (PCE) per day. The expected overlaps in construction worker and truck activities during months 9-14 are expected to generate the greatest volume of total trips (PCE) to and from the site, peaking in month 9 of the construction schedule with 6,634 total daily trips (PCE) throughout month 9. This total is composed of 2,418 daily construction worker trips and 4,217 daily construction truck trips (PCE).

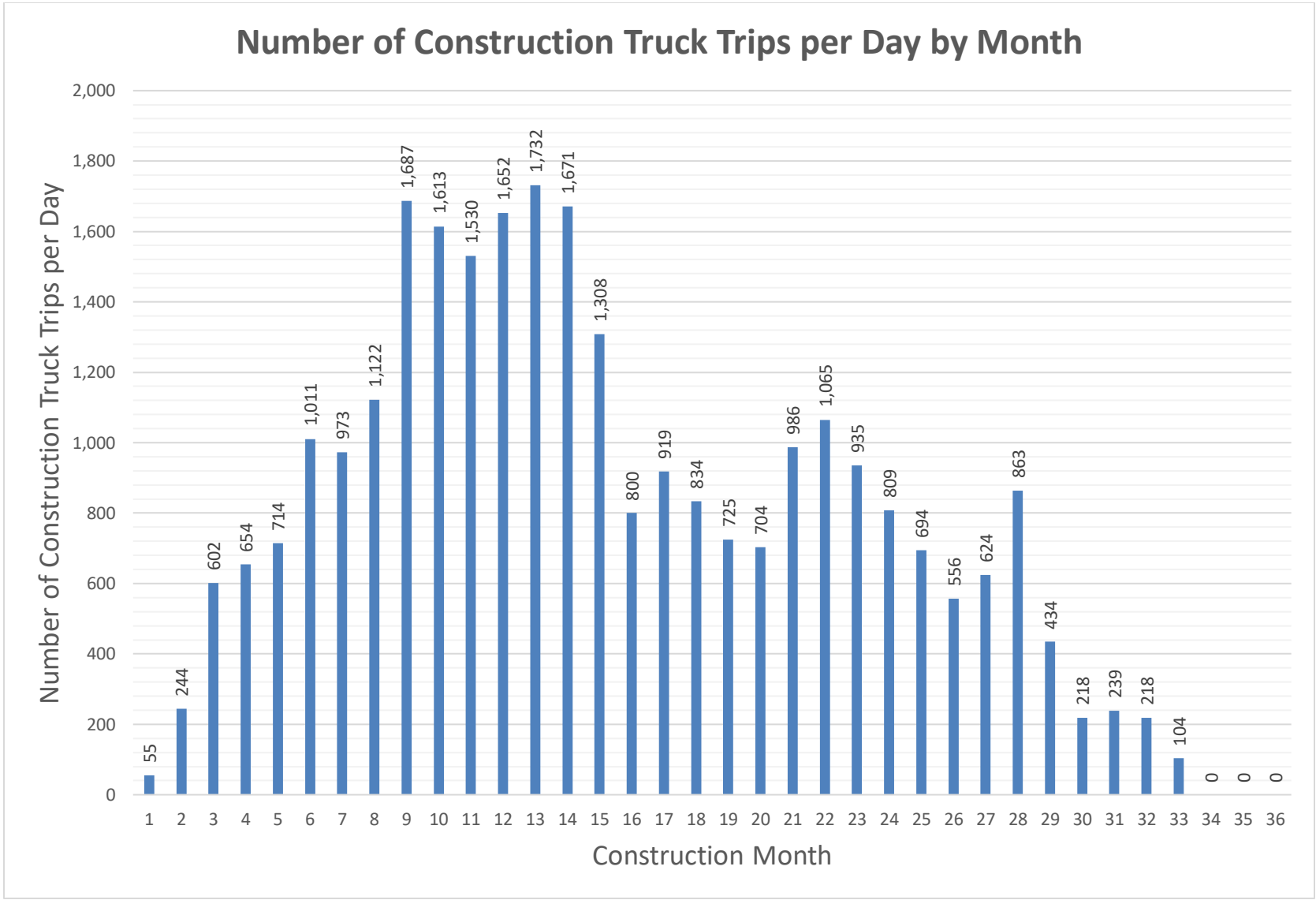
This overlap is summarized in **Table 45: Highest BIG Construction Traffic Generation Sequence (Month 9)** and in **Appendix D: Construction Trip Generation**.

Figure 35: Number of Construction Worker Trips per Day by Month



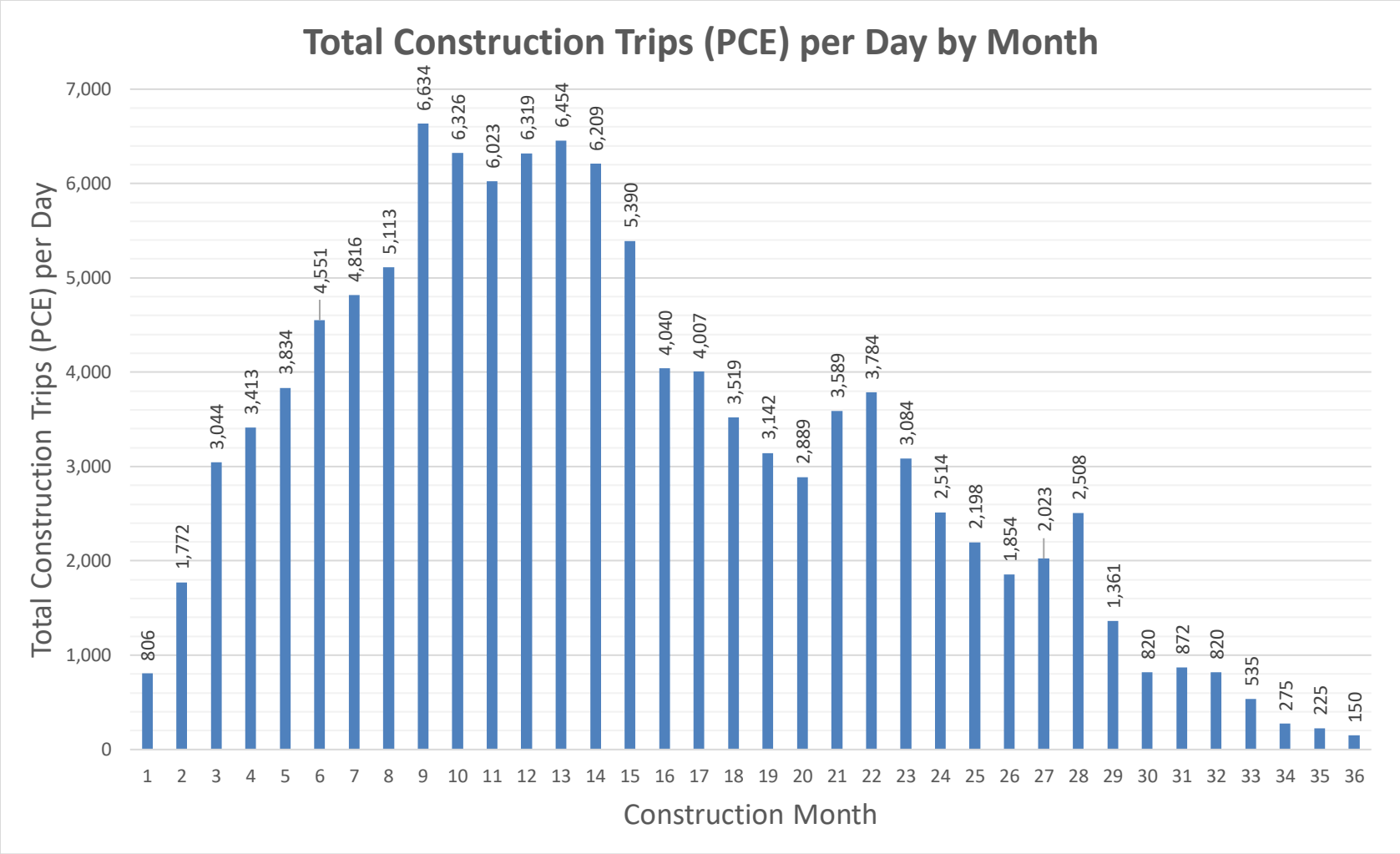
Note: Trip generation projections are an approximation based on the construction worker data and construction schedule information available. Actual trip volumes would vary on any given day.
Sources: BNSF, TranSystems, Burns & MacDonnell, and Granite Construction (2025).

Figure 36: Number of Construction Truck Trips per Day by Month



Note: Trip generation projections are an approximation based on the construction truck data and construction schedule information available. Actual trips would vary on any given day.
Sources: BNSF, TranSystems, Burns & MacDonnell, and Granite Construction (2024).

Figure 37: Total Construction Trips (PCE) per Day by Month



Note:

[1] Trip generation projections are an approximation based on available data of anticipated construction activities. Actual trips would vary on any given day.

[2] *Truck ADT assumes each truck makes two trips per day (one to site and one from site).*

[3] *PCE = passenger car equivalent. 1 worker trip = 1 PCE. It is assumed that there are an equal number of 3-axle (PCE=2.0) and 4+ axle (PCE=3.0) trucks for an average PCE=2.5. 1 truck trip = 2.5 PCE.*

Sources: Author Compilation of data from BNSF, TranSystems, Burns & MacDonnell, and Granite Construction, (2025).

Table 45: Highest BIG Construction Traffic Generation Sequence (Month 9)								
			Trips per Peak Hour					
			AM Peak			PM Peak		
Trip Type	Average Number of Workers / Trucks per Day	Average Daily Trips (ADT)	In	Out	Total	In	Out	Total
Construction Workers	967	2,418	1,209	0	1,209	0	1,209	1,209
Construction Trucks	843	1,687	85	85	170	85	85	170
Construction Truck Trips (PCE)		*4,217*	*213*	*213*	*425*	*213*	*213*	*425*
Total Construction Trips (PCE)		**6,634**	**1,422**	**213**	**1,634**	**213**	**1,421**	**1,634**

Note:
[1] Worker ADT assumes each worker makes 2.5 trips per day.
[2] Truck ADT assumes each truck makes two trips per day (one to site and one from site).
[3] PCE = passenger car equivalent, assumes equal number of 3-axle (PCE=2.0) and 4+ axle (PCE=3.) trucks for an average PCE=2.5.

Source: Author Compilation. (2025).

As indicated in **Table 45: Highest BIG Construction Traffic Generation Sequence (Month 9),** BIG construction activities during month 9 are forecast to generate 6,634 trips (PCE) per day, comprised of 4,217 heavy-duty construction truck trips (PCE) and 2,418 daily construction worker trips. Even during the peak traffic construction period, the anticipated traffic generated by BIG construction activities would be significantly less than BIG's anticipated normal operational trip generation. Additionally, according to the County TIS Guidelines, there is no threshold to warrant a separate construction analysis. Therefore, a separate construction analysis was not considered as part of this analysis.

9.0 REFERENCES

AirNav.Com. (undated). *Airport Information.* Retrieved from: https://airnav.com/airports/

Association of Environmental Professionals. (2023). *2023 California Environmental Quality Act (CEQA) Statute and Guidelines.* Retrieved June 2023 from: https://www.califaep.org/docs/CEQA_Handbook_2023_final.pdf

California Air Pollution Control Officers Association. (2021). *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, Advancing Health and Equity.* Retrieved January 2024 from: https://www.caleemod.com/documents/handbook/full_handbook.pdf

Caltrans. (2021). *California Transportation Plan 2050*. Retrieved June 2023 from: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/ctp-2050-v3-a11y.pdf

Caltrans. (2022). *Traffic Census Program*. Retrieved June 2023 from: https://dot.ca.gov/programs/traffic-operations/census

Caltrans. (2023). *Truck Networks on California State Highways District 8*. Retrieved June 2025 from: https://dot.ca.gov/-/media/dot-media/programs/traffic-operations/documents/trucks/truckmap-d08-a11y.pdf

Caltrans. (2025). *California Manual on Uniform Traffic Control Devices*. Retrieved September 2025 from: https://dot.ca.gov/programs/safety-programs/camutcd

California Air Resources Board. (2023a). *Advanced Cleaned Fleet Regulations – Drayage Outreach*. Retrieved from: Advanced Clean Fleets Regulation - Drayage Outreach | California Air Resources Board.

California Air Resources Board. (2023b). *Advanced Clean Fleets Regulation Overview*. Retrieved from: Advanced Clean Fleets Regulation Overview | California Air Resources Board.

City of Barstow. (2015). *General Plan – Circulation Element.* Retrieved November 2021 from: https://www.barstowca.org/home/showpublisheddocument/5363/636607004817830000

City of Barstow. (2018). *City of Barstow Active Transportation Plan*. Retrieved September 2025 from: https://barstowcityca.iqm2.com/Citizens/FileOpen.aspx?Type=1&ID=2079&Inline=True

City of Barstow. (2025a). *VMT Resolution No.5219-2025.* Received for internal use in 2025.

City of Barstow. (2025b). City of Barstow, CA Code of Ordinances. Retrieved from: https://library.municode.com/ca/barstow/codes/code_of_ordinances

County of San Bernardino. (2012). *San Bernardino County Transportation Analysis Model – SBTAM Model Development and Validation Report and User's Guide*. Retrieved June 2025 from: https://www.gosbcta.com/wp-content/uploads/2019/10/SBTAM-Documentation-and-User's-Guide.pdf

County of San Bernardino. (2016). *San Bernardino County Congestion Management Program.* Retrieved August 2023 from: https://www.gosbcta.com/wp-content/uploads/2019/10/2016-Congestion-Management-Plan-.pdf

County of San Bernardino. (2019). *Transportation Impact Study Guidelines*. Retrieved November 2021 from: https://www.sbcounty.gov/uploads/DPW/docs/Traffic-Study-Guidelines.pdf

County of San Bernardino. (2020). The Countywide Plan, Transportation & Mobility Element. Retrieved September 2025 from: https://countywideplan.sbcounty.gov/wp-content/uploads/sites/125/2021/02/Transportation-and-Mobility_Policy-Plan-2020.pdf

County of San Bernardino. (2022). *San Bernardino Countywide Plan – County Policy Plan September 2022.* Retrieved August 2023 from: https://countywideplan.sbcounty.gov/wp-content/uploads/sites/125/2021/01/CWP_PolicyPlan_HardCopy_MainText_Tables_2022_Sept_Adopted.pdf

County of San Bernardino. (2022). San Bernardino County Local Road Safety Plan. Retrieved from: https://dpw.sbcounty.gov/wp-content/uploads/sites/87/2022/08/SanBernardinoCountyLRSP_FinalPlan_Master_8.19.22_Sml.pdf?x39624

County of San Bernardino. (2023). San Bernardino County, CA Code of Ordinances. Retrieved from: https://codelibrary.amlegal.com/codes/sanbernardino/latest/sanberncty_ca/0-0-0-164891

Fehr & Peers. (2020). *SBCTA SB 743 Implementation: Case Study.* Retrieved from: https://www.gosbcta.com/wp-content/uploads/2021/12/Sample-Projects.pdf

Fehr & Peers. (2025). *Transportation Study for the Barstow Proposed General Plan*.

Governor's Office of Planning and Research. (2018). *Technical Advisory on Evaluating Transportation Impacts in CEQA*. Retrieved September 2025 from: https://lci.ca.gov/docs/20190122-743_Technical_Advisory.pdf

Kimley-Horn and Associates, Inc. (2025a). *BNSF Barstow International Gateway Project – Traffic Study Scoping*.

Kimley-Horn and Associates, Inc. (2025b). *Appendix 5.15-2: Level of Service Assessment*.

San Bernardino County Transportation Authority. (2016). *San Bernardino County CMP, 2016 Update*. Retrieved from: https://www.gosbcta.com/wp-content/uploads/2019/10/2016-Congestion-Management-Plan-.pdf

San Bernardino County Transportation Authority. (2017). Measure I 2010-2040 Strategic Plan. Retrieved September 2025 from: https://www.gosbcta.com/wp-content/uploads/2019/09/MeasureIStrategicPlan-Part1-rev0917.pdf

San Bernardino County Transportation Authority. (2018). *San Bernardino County Non-Motorized Transportation Plan.* Retrieved September 2025 from: https://www.gosbcta.com/wp-content/uploads/2019/10/Non-Motorized-Transportation-Plan-.pdf

Southern California Association of Governments. (2020). *Connect SoCal: The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments.* Retrieved September 2025 from: SCAG Connect SoCal - The 2020-2045 Regional Transportation Plan/ Sustainable Communities Strategy Adopted on September 3, 2020

Southern California Association of Governments. (2024). *Connect SoCal: The Southern California Association of Governments' 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy*. Retrieved September 2025 from: https://scag.ca.gov/sites/default/files/2024-05/23-2987-connect-socal-2024-final-complete-040424.pdf

San Bernardino County Sheriff's Department. (ND). *Barstow Patrol Station*. Retrieved January 2023, from https://wp.sbcounty.gov/sheriff/patrol-stations/barstowtrona/.

San Bernardino County Transportation Authority. (2018). *San Bernardino County Non-Motorized Transportation Plan.* Retrieved February 2023 from: https://www.gosbcta.com/wp-content/uploads/2019/10/Non-Motorized-Transportation-Plan-.pdf

Victor Valley Transit. (undated). *Interactive System Map*. Retrieved June 2025 from: https://vvta.org/interactive-map/

10.0 PREPARER QUALIFICATIONS

Prepared by:

Naomi (Willis) Germain, PE, TE (Kimley-Horn)

Joe Shultz, PE, TE, PTOE (Kimley-Horn)

Caralee Jaeckels, PE (Kimley-Horn)

Mehul Champaneri, PTP, RSP (Kimley-Horn)

Josh Rowe, EIT (Kimley-Horn)

APPENDICES

Appendix A: City of Barstow VMT Resolution

RESOLUTION NO. 5219-2025

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BARSTOW, ADOPTING "VEHICLE MILES TRAVELED" THRESHOLDS OF SIGNIFICANCE FOR PURPOSES OF ANALYZING TRANSPORTATION IMPACTS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

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) requires that thresholds of significance 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 public agency may consider thresholds of significance adopted or recommended by other public agencies provided that the decision of the agency 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; and

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

WHEREAS, CEQA Guidelines section 15064.3 requires agencies to stop treating automobile delay/LOS as an environmental impact effective on July 1, 2020, though public agencies may elect to be governed by this section immediately; and

WHEREAS, the City of Barstow, following a public review process consisting of staff presentations before the Planning Commission on October 12, 2020, adopted the VMT thresholds of significance for determining the significance of transportation impacts that are recommended in an analysis conducted by the San Bernardino County Transportation Authority on behalf of its member jurisdictions on November 2, 2020; and

WHEREAS, following the adoption of the VMT thresholds, staff has identified a clerical error in the adopted language under the Cumulative Threshold related to "per service population" in Exhibit A; and

WHEREAS, the change proposed would be to add the underlined text: "A significant impact would occur if the project caused total daily VMT per service population within the City to be higher than the no project alternative under cumulative conditions";

WHEREAS, this change does not alter the original policy, but ensures the County's correctly worded policy is properly cited in the City of Barstow's policy. Amending and restating the resolution to correct a clerical error in a City policy does not constitute a project under CEQA, as it involves general policy clarifications and does not result in a direct physical change to the environment. This administrative action is exempt pursuant to CEQA Guidelines §15378(b)(5).

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Barstow as follows:

Section 1. The City of Barstow hereby adopts the following:

1. Utilizing the San Bernardino County Travel Demand Model (SBTAM) as its preferred methodology to measure VMT.

2. Utilizing the San Bernardino County Travel Demand Model (SBTAM) as its preferred method to analyze a project's VMT impact.

3. Utilizing a threshold consistent with Table 1 in Exhibit A.

Section 2. This Resolution shall take effect immediately upon its adoption by the City Council, and the Clerk of the Council shall attest to and certify the vote adopting this Resolution.

Section 3. Resolution No. 5010-2020 shall be repealed and replaced by this resolution.

PASSED, APPROVED AND ADOPTED this 17th day of June, 2025.

Timothy R. Silva, Mayor

ATTEST:

Andrea Flores, City Clerk

APPROVED AS TO FORM:

Matthew Summers, City Attorney

I, Andrea Flores, City Clerk of the City of Barstow, do hereby certify that the foregoing Resolution No. 5219-2025 is the actual Resolution duly and regularly adopted by the City Council at its regular meeting on the 17th day of June 2025, by the following vote:

AYES:	COUNCIL MEMBERS HERNANDEZ, NOBLE, MAYOR PRO TEM ROSE, AND MAYOR SILVA.
NOES:	NONE
ABSENT:	COUNCIL MEMBER WILLIAMS.
ABSTAIN:	NONE

CITY OF BARSTOW INCORPORATED SEPT. 30, 1947 BARSTOW, CALIFORNIA

Andrea Flores, City Clerk

ATTACHMENT 1

Draft Resolution Repealing and Replacing Resolution No. 5010-2020

Exhibit A

Table 1 VMT Impact Thresholds		
Methods	**Project Threshold**	**Cumulative Threshold**
Land Use Plans (such as General Plans and Specific Plans)		
• San Bernardino Traffic Analysis Model (SBTAM) forecast of total daily VMT/SP • To capture project effect, the same cumulative year population and employment growth totals should be used. The "project" only influences land use allocation.	A significant impact would occur if the project VMT/SP (for the land use plan) exceeds the [Countywide/Citywide] average under General Plan Buildout Conditions.	A significant impact would occur if the project caused total daily VMT per service population within the City to be higher than the no project alternative under cumulative conditions.
• Consistency check with SCAG RTP/SCS • Is the proposed project within the growth projections in the RTP/SCS?	N/A	A significant impact would occur if the project is determined to be inconsistent with the RTP/SCS.
Land Use Projects		
• Transit Priority Area (TPA) screening	Presumed less than significant VMT impact for projects located in TPAs	Project presumption applies under cumulative conditions as long as project is consistent with SCAG RTP/SCS.
• Low VMT area screening	Presumed less than significant VMT impact for projects located in low VMT generating model traffic analysis zones (TAZs). These TAZs generate total daily VMT/SP that is 15% less than the baseline level for the County	Project presumption applies under cumulative conditions as long as the project is consistent with SCAG RTP/SCS.
• Project type screening	Local serving retail projects (Per OPR's Technical Advisory less than 50,000 square feet) and neighborhood schools are presumed to have a less than significant VMT impact. Projects that generate less than 110 daily trips do not require VMT analysis.	Project presumption applies under cumulative conditions as long as project is consistent with SCAG RTP/SCS.
• VMT analysis using SBTAM forecast of total daily VMT/SP.	A significant impact would occur if the project VMT/SP exceeds the [Countywide/Citywide] average under General Plan Buildout Conditions.	A significant impact would occur if the project is determined to be inconsistent with the RTP/SCS. A significant impact would occur if the project caused total daily VMT per service population within the City to be higher than the no project alternative under cumulative conditions. This analysis should be performed using the 'project effect' or 'boundary' method.

Table 1 VMT Impact Thresholds		
Methods	**Project Threshold**	**Cumulative Threshold**
Transportation Projects (thresholds may apply for SB 743 of GHG purposes)		
• SBTAM forecast of total citywide daily VMT[1]	A significant impact would occur if the project increased the baseline VMT within the City.	A significant impact would occur if the project caused total daily VMT within the City to be higher than the no build alternative under cumulative conditions.
• Consistency check with SCAG RTP/SCS	N/A	A significant impact would occur if the project is determined to be inconsistent with the RTP/SCS.

[1] It is recommended that SBTAM is used to develop VMT estimates for transportation project impact assessment. However, the analyst must verify the model results for sensitivity to changes in VMT. Alternatively, if the model is not deemed appropriate, Robert Cervero's research on lane-mile elasticity and its relationship to VMT can be referenced.

Appendix B: Traffic Impact Analysis and Vehicle Miles Traveled VMT and Threshold Information

Traffic Impact Analysis and Vehicle Miles Traveled
VMT and Threshold Information

SBCTA VMT Screening Tool

https://sbcta.maps.arcgis.com/apps/webappviewer/index.html?id=779a71bc659041ad995cd48d9ef4052b

Production/Attraction (PA) Method:

Can be presents as:

- Total VMT per Service Population
- Home Based VMT per Resident
- Home Based Work VMT per Worker

Threshold

Below City Future Buildout

Level of Service (LOS)

LOS may be required as part of the Traffic Impact Analysis (TIA). Contact Engineering Department at (760) 255-5156

If a LOS is required the analysis will not be used to determine CEQA impacts

Appendix C: TMT Calculations

Appendix C: Truck Miles Traveled Calculations

INTRODUCTION

This appendix was developed to provide a detailed description of how truck miles traveled (TMT) are calculated to support the BIG Transportation[1], Air Quality, Greenhouse Gas Emissions, Noise, and Energy Environmental Impact Report (EIR) sections. In these reports, TMT describes the total number of miles traveled by heavy-duty trucks involved with goods transport related to BIG. TMT is calculated by multiplying trip distance by the number of trucks making that trip. The number of trucks making a trip is determined by multiplying the number of containers making that trip by the number of truck trips per container. Multiple truck trips are often needed for each container because empty containers must be brought back to their original location.

For ease of calculation, TMT is broken into distinct categories. Individual trip lengths, container numbers, and truck trips per container are determined for each category. Eq. (1) represents a basic TMT calculation.

$$TMT = (\#\ Containers) * (Trip\ Distance) * (Truck\ Trips\ per\ Container) \quad (1)$$

BIG generates TMT through two components: the transload warehouse center (TWC) and the intermodal facility (IMF). Each is described in detail below, with the total TMT for BIG determined by adding the final TWC and IMF TMT values (see Eq. (2)).

$$TMT_{BIG} = TMT_{TWC} + TMT_{IMF} \quad (2)$$

Baseline TMT values are also calculated to determine BIG's overall effects on TMT. Baseline TMT is calculated for the containers which are expected to utilize BIG but currently use other means to reach their destinations. Total baseline TMT is determined by summing the TMT associated with containers which would utilize the TWC and the IMF but currently use other facilities, as shown in Eq. (3).

$$TMT_{Baseline} = TMT_{TWC\ Baseline} + TMT_{IMF\ Baselime} \quad (3)$$

BIG's overall TMT effects are estimated by subtracting the total Plus BIG TMT from the total baseline TMT, as shown in Eq. (4).

$$TMT_{Overall} = TMT_{Baseline} - TMT_{BIG} \quad (4)$$

[1] Analysis of the heavy-duty TMT attributable to BIG operations is provided in the Transportation CEQA Assessment independent of vehicle miles traveled (VMT) and does not inform the transportation impact analysis under CEQA. However, the TMT analysis is used to inform CEQA analysis of BIG's impacts in other relevant impact areas (e.g., Air Quality, GHG Emissions, Energy, and Noise).

In addition to the total calculation (nationwide), TMT is calculated for the following regional subsets:

- California
- South Coast Air Quality Management District (SCAQMD)
- Mojave Desert Air Quality Management District (MDAQMD)

To calculate each subset, TMT is truncated at the border of the region. For example, California TMT includes all relevant goods movement on roads inside California (i.e., by measuring trip distances up to the California border and by disregarding trips which take place entirely outside of California). The same process is used to determine SCAQMD and MDAQMD TMT savings.

Figure 1 shows the South Coast and Mojave Desert Air Quality Management District borders.

Figure 1: Southern California Air Quality Management District Borders



Source: https://www.laclimateactionguide.org/scaqmd

TRANSLOAD WAREHOUSE CENTER TMT

TWC TMT includes heavy-duty truck miles traveled for two BIG transload warehouse center-related goods movements:

1. **Ports to Nationwide Destinations:** The movement of goods from the Ports of Los Angeles and Long Beach (Ports) to destinations across the contiguous United States (nationwide destinations), such as Dallas, Cleveland, and Tampa.
2. **Inland Empire Injection:** The movement of goods traveling between BIG and the Inland Empire (IE), which is a metropolitan area east of Los Angeles and Orange County, primarily consisting of Riverside and San Bernardino Counties.

Total TMT for the TWC is described in Eq. (5). The TMT assumptions and calculations associated with these two moves are described below.

$$TMT_{TWC} = TMT_{Ports-Nationw\quad Destinations} + TMT_{IE\ Injection} \tag{5}$$

TWC TMT – Ports to Nationwide Destinations

Move Description

S&P Global's paid subscription-based platform Transearch[2] provides information related to freight movement within the United States. Data from Transearch shows that goods arrive at the Ports from shipping operations in the Pacific Ocean before being distributed to nationwide destinations. These goods arrive at the Ports in international (40') containers and are typically transloaded to domestic (53') containers before they travel to their nationwide destinations. The international (40') containers are brought back to the Ports after being emptied so they can be sent back to the international distributors and re-filled. When goods are transloaded into domestic (53') containers, they are often optimized so that each domestic (53') container is filled with goods destined for one specific location; this might mean that goods from each international (40') container are spread across several domestic (53') containers.

The conversion between international (40') containers and domestic (53') containers is generally a 2:3 ratio, as shown in Eq. (6) below. For every 3 full international (40') containers that arrive at a transload warehouse, 2 full domestic (53') containers will depart.

$$3\ international\ (40')\ containers : 2\ domestic\ (53')\ containers \tag{6}$$

Total TMT for the Ports to nationwide destinations move is determined by summing the TMT of the goods' movement from Ports to a transload facility, and then from the transload warehouse to each destination city.

[2] Transearch is developed by a proprietary data sweep that starts with US Census and Bureau of Economic Analysis (BEA) Data, and combines Intermodal Association of North America (IANA) data in a behind-the-scenes black box environment.

Plus BIG Conditions

Under Plus BIG conditions, TMT from the Ports to nationwide destinations is calculated by summing the TMT generated by the movement of international (40') containers from the Ports to BIG and the TMT generated by the movement of domestic (53') containers from BIG to nationwide destinations.

The distance between the Ports and BIG is assumed to be 128 miles based on the distance in Google Maps along major truck routes between the Ports and BIG. This trip length is also determined for the California, SCAQMD, and MDAQMD TMT analysis. Since the entire trip between the Ports and BIG takes place within California, the distance is also 128 miles for the California analysis. The border between SCAQMD and MDAQMD near Cajon Junction splits this trip distance, so different trip lengths are used for the two air quality management district TMT calculations. **Table 1** provides the trip distances for each TMT calculation for the Ports to BIG trips.

Table 1: Ports to Nationwide Destinations – Trip Distances

TMT Calculation Boundary	$dist_{Ports\text{-}BIG}$ (mi.)	$Dist_{Hub\ Cities\text{-}Destinations}$ (mi.)
Nationwide	128	Varies[1]
California	128	0
SCAQMD	85	0
MDAQMD	51	0

Notes:
[1] See **Table 3** for trip distances between hub cities and nationwide destinations.

This analysis assumes three truck trips per container between the Ports and BIG to account for balancing empties (assumes 50% of heavy-duty trucks return to the Ports with an empty container).

Goods which are transloaded into domestic (53') containers at the TWC depart from BIG by train to nationwide hub cities. These hub cities are metropolitan locations with rail connections which allow goods to be transported by train from the TWC to a city close to the goods' final destinations, greatly reducing the TMT required for a container to travel from the Ports to nationwide destinations. The final TMT involved in the Ports to nationwide destinations move in the Plus BIG condition is determined by the TMT required for containers to travel from the hub cities to destination cities. The distances between each hub and destination city for nationwide TMT calculations were determined by BNSF using TruckMap.com and are shown in **Table 3**. Each hub city and nationwide destination is outside of California, so the distance between hub cities and final nationwide destinations in the California, SCAQMD, and MDAQMD TMT calculations is 0.

This analysis assumes one truck trip per container between the hub and destination cities (for both Plus BIG and Baseline conditions) due to a lack of available information regarding container movement after transloading.

The calculation for TWC TMT – Ports to Nationwide Destinations under Plus BIG conditions is shown in Eq. (7).

$$TMT_{TWC-Port\ \ to\ Nationwide\ Destinations} = TMT_{Ports\ to\ BIG} + TMT_{Hub\ Cities\ to\ Destination\ Cities}$$

$$= (\#\ containers_{Ports-BI}\ ) * dist_{Ports-BIG} * (Truck\ Trips\ per\ Container) +$$

$$(\#\ containers_{Hub\ Cities-Destinations}) * dist_{Hub\ Cities-Destinations} * (Truck\ Trips\ per\ Container) \quad (7)$$

$$= (\#\ containers_{Ports-BIG}) * 128mi * 3 + \frac{2}{3}(\#\ containers_{Ports-BIG}) * dist_{Hub\ Cities-Destination}\ * 1$$

No BIG Baseline Conditions

Under No BIG Baseline conditions, Orange, California is assumed to be the standard transloading location. Orange is a conservative baseline assumption because it is central to most truck routes between the Ports and nationwide destinations. The distance between the Ports and the assumed baseline transloading location of Orange, California is assumed to be 30 miles based on Google Maps and known truck routes.

Based on BNSF market research, goods are assumed to be transported by heavy-duty truck from transload facilities to nationwide destinations. The calculation for TWC TMT – Ports to Nationwide Destinations under Baseline conditions is shown in Eq. (8).

$$TWC_{TMT-Ports\ to\ Nationwide\ Destinations\ (Baseline)}$$
$$= TMT_{Ports\ to\ Orange} + TMT_{Orange\ to\ Destination\ Cities}$$

$$= \left(\#\ containers_{Ports-Orange}\right) * dist_{Ports-Orange} * (Truck\ Trips\ per\ Container) +$$

$$\left(\#\ containers_{Orange-Destination\ Cities}\right) * dist_{Orange-Destinati\quad Cities} * (Truck\ Trips\ per\ Container) \quad (8)$$

$$= \left(\#\ containers_{Ports-Orange}\right) * dist_{Ports-Orange} * 3 +$$

$$\frac{2}{3}\left(\#\ containers_{Ports-Orange}\right) * dist_{Orange-Destination\ Cities} * 1$$

shows the distance from the Ports to Orange used for the nationwide, California, SCAQMD, and MDAQMD TMT calculations.

Table 2: Ports to Orange, CA – Trip Distances

TMT Calculation Boundary	$dist_{Ports\text{-}Orange}$ (mi.)
Nationwide	30
California	30
SCAQMD	30
MDAQMD[1]	0

Note: The route from the Ports to Orange,CA is outside of the MDAQMD; therefore, the truckload distance within MDAQMD is 0.

Table 3 shows each destination city included in the calculations for "nationwide destinations." Each row of **Table 3** includes the distance between that destination city and the nearest hub city accessible by rail from BIG ($dist_{hub\ cities-destinations}$), as well as the distance from Orange, CA to the destination City used for the No BIG Baseline calculation ($dist_{Orange-Destination\ Cities}$) used in

the California, SCAQMD, and MDAQMD calculations. All distances were determined using TruckMap.com.

Table 3 also shows the forecast number of containers served by BIG expected to travel to each destination city (# $containers_{Ports-BIG}$). This value was determined by BNSF through data on its existing operations and market research. The three variables represented in **Table 3** can be used to complete equations (7) and (8) to determine the net TMT reduction due to the Ports to Nationwide Destinations move, or the $TMT_{Ports-Nationwid\ \ Destinations}$ variable in Eq. (5). The TMT reduction due to the Ports to Nationwide Destinations move can be quantified using Eq. (4) where $TMT_{Baseline}$ is the result of Eq. (8), and TMT_{BIG} is the result of Eq. (7).

Table 3: Destinations and Distances for TWC (Ports to Nationwide Destinations) TMT											
Desination[1]	Railroad[2]	Intermodal Hub City[3]	BNSF Market	Truckload Miles between Orange, CA and Destination[4] (Nationwide)	Truckload Miles between Orange, CA and Destination[4] (California)	Truckload Miles between Orange, CA and Destination[4] (SCAQMD)	Truckload Miles between Orange, CA and Destination[4] (MDAQMD)	Truckload Miles between Intermodal Hub City and Destination	Forecast Containers Served by BIG (2028)[5]	Forecast Containers Served by BIG (2033)[5]	Forecast Containers Served by BIG (2048)[5]
Albuquerque, NM	BNSF	Albuquerque	Belen	785	260	55	208	20	4,336	5,696	6,613
Abilene, TX	BNSF	Alliance	Alliance	1,243	260	55	208	170	183	241	279
Austin, TX	BNSF, UP	Alliance	Alliance	1,407	205	180	33	209	2,145	2,818	3,272
Dallas, TX	BNSF, UP	Alliance	Alliance	1,417	205	180	33	54	9,084	11,935	13,856
Rochester, NY	CSXT	Buffalo	Northeast	2,623	220	55	164	78	193	253	294
Charleston, SC	CSXT, NS	Charleston	Southeast	2,512	260	55	208	10	176	232	269
Charlotte, NC	CSXT, NS	Charlotte	Southeast	2,424	260	55	208	20	1,088	1,429	1,659
Greenville, SC	CSXT, NS	Charlotte	Southeast	2,631	260	55	208	100	453	595	691
Greensboro, NC	CSXT, NS	Charlotte	Southeast	2,470	260	55	208	103	564	740	859
Cincinnati, OH	CSXT, NS	Cincinnati	Landers	2,269	260	55	208	20	908	1,193	1,385
Cleveland, OH	CSXT	Cleveland	Landers	2,427	220	55	164	20	1,977	2,598	3,016
Columbus, OH	NS	Columbus	Ohio Valley	2,340	260	55	208	20	2,228	2,927	3,399
Appleton, WI	BNSF, UP	Corwith	Chicago	2,102	220	55	164	206	654	859	997
Champaign, IL	BNSF, UP	Corwith	Chicago	2,038	260	55	208	141	402	528	613
Chicago, IL	BNSF, UP	Corwith	Chicago	2,025	220	55	164	20	7,533	9,896	11,489
Milwaukee, WI	BNSF, UP	Corwith	Chicago	2,054	220	55	164	98	2,537	3,333	3,870
Casper, WY	BNSF, UP	Denver	Denver	2,132	220	55	164	274	1,203	1,580	1,834
Denver, CO	BNSF, UP	Denver	Denver	1,025	220	55	164	20	16,646	21,868	25,388
Detroit, MI	CSXT, NS	Detroit	Detroit	2,299	220	55	164	20	1,285	1,688	1,960
Kansas City, MO	BNSF, UP	Edgerton	Kansas City	1,616	260	55	208	36	2,788	3,663	4,253
El Paso, TX	BNSF, UP	El Paso	Belen	790	205	180	33	20	2,358	3,098	3,596
Albany, GA	CSXT	Fairburn	Fairburn	2,295	205	180	33	173	506	664	771
Atlanta, GA	CSXT, NS	Fairburn	Fairburn	2,180	260	55	208	27	2,959	3,888	4,513
Macon, GA	CSXT, NS	Fairburn	Fairburn	2,256	260	55	208	91	272	358	415
Indianapolis, IN	CSXT	Indianapolis	Ohio Valley	2,040	260	55	208	21	1,485	1,951	2,265
Jacksonville, FL	CSXT, NS	Jacksonville	Florida	2,410	205	180	33	20	1,120	1,472	1,709
New York, NY	CSXT, NS	Kearny	Northeast	2,921	260	55	208	36	7,121	9,356	10,862
Albany, NY	NS	Mechanicville	Northeast	2,927	220	55	164	195	371	487	565
Birmingham, AL	BNSF, UP	Memphis	Memphis	2,034	260	55	208	231	714	938	1,088
Memphis, TN	BNSF, UP	Memphis	Memphis	1,799	260	55	208	20	557	731	849
Miami, FL	FEC	Miami	Florida	2,734	205	180	33	20	3,872	5,086	5,905
Nashville, TN	CSXT	Nashville	Southeast	2,011	260	55	208	20	1,402	1,842	2,138
New Orleans, LA	CSXT	New Orleans	Houston	1,881	205	180	33	20	1,632	2,144	2,489
Norfolk, VA	NS	Norfolk	Ohio Valley	2,707	260	55	208	20	616	809	939
Houston, TX	BNSF, UP	Pearland	Houston	1,535	205	180	33	25	6,862	9,015	10,466
Phoenix, AZ	BNSF	Phoenix	Phoenix	373	205	180	33	15	34,465	46,242	53,685
Portland, OR	BNSF, UP	Portland	PNW	996	690	95	0	15	0	0	0
Harrisburg, PA	NS	Rutherford	Eastern PA	2,761	260	55	208	15	342	449	521
Savannah, GA	CSXT, NS	Savannah	Southeast	2,428	260	55	208	20	787	1,033	1,200
Seattle, WA	BNSF, UP	South Seattle	PNW	1,178	690	95	0	20	0	0	0
Spokane, WA	BNSF	Spokane	PNW	1,347	690	95	0	15	0	0	0
St. Louis, MO	BNSF, UP	St Louis	St Louis	1,872	260	55	208	15	1,271	1,669	1,938
Minneapolis, MN	BNSF, UP	St Paul	St Paul	1,926	220	55	164	20	4,067	5,343	6,203
Syracuse, NY	CSXT	Syracuse	Northeast	2,816	220	55	164	15	320	421	489
Tampa, FL	CSXT	Tampa	Florida	2,520	205	180	33	20	1,127	1,481	1,719
Toledo, OH	NS	Toledo	Ohio Valley	2,309	220	55	164	15	557	732	850
Boston, MA	CSXT	Worcester	New England	3,140	220	55	164	71	2,111	2,774	3,220
Total								2,834	133,274	176,053	204,392

Footnotes:

Source: S&P Global / Transearch purchased subscription; a proprietary data sweep that starts with US Census and Bureau of Economic Analysis (BEA) Data, and combines Intermodal Association of North America (IANA) data in a behind-the-scenes black box environment.

Assumptions: Underlying assumption is that a container departed the Ports of Los Angeles/Long Beach (LA/LB) in a 53' domestic container or international (INTL) 40' container as an interior point intermodal (IPI) (there is no common unit of measure, i.e., twenty-foot equivalent unit (TEU))

Notes:

1. From BEA/IANA data.
2. Railroad line the containers typically use, as provided by BNSF. Only containers that travel on BNSF or BNSF partner railroads are included in the dataset.
3. Closest BNSF intermodal hub to final destination City, as provided by BNSF.
4. Miles from Orange, CA to final destination based on TruckMap.com.
5. Number of containers forecast to be served by BIG based on BNSF market data. The Eastern Pennsylvania, Phoenix, New England, and Northeast market streams (highlighted in green) are not anticipated to utilize BIG as much as other market streams. The Pacific Northwest market stream (red) is not expected to utilize BIG.

TWC TMT – Inland Empire Injection

Move Description

Some goods are expected to travel between the BIG transload warehouse center and existing transload warehouses in the Inland Empire by truck. This "Inland Empire Injection" movement would complement the "Ports to Nationwide Destinations" movement discussed above. In some containers, a small portion of the goods inside which would be moved by train to BIG's transload warehouse center would be destined for Southern California, and some of the goods processed at existing Inland Empire transload warehouses would be destined for nationwide locations. Based on BNSF market research, these goods are forecast to travel between BIG and the Inland Empire at an approximately one to one ratio (for every container trucked from the Inland Empire to BIG, there would be one container trucked from BIG to the Inland Empire). The analysis below assumes only 50% of trucks would return with an empty, however, to maintain consistency with the TMT calculations of other moves and to make the TMT analysis of the Inland Empire Injection more conservative.

Plus BIG Conditions

TMT under the Plus BIG conditions for the Inland Empire Injection move is calculated by multiplying the number of domestic (53') containers traveling between BIG and the Inland Empire, the distance between BIG and an assumed average Inland Empire transload warehouse location, and the number of truck trips per container. The assumed average Inland Empire transload warehouse location was determined by discussion between BNSF and potential clients within the Inland Empire. The heavy-duty truck trip distance between BIG and the Inland Empire for the nationwide, California, SCAQMD, and MDAQMD calculations is shown in **Table 4**. Three truck trips were assumed for the Inland Empire Injection move, meaning 50% of heavy-duty trucks return to BIG with a container.

$$TMT_{IE\ Injection} = (containers_{IE\ Injection}) * dist_{BIG\ to\ IE} * (Truck\ Trips\ per\ Container) \qquad (9)$$

$$= \#containers_{IE\ Injection} * dist_{BIG\ to\ IE} * 3\frac{truck\ trips}{container}$$

Table 4: BIG to Inland Empire – Trip Distances	
TMT Calculation Boundary	**$dist_{BIG\ to\ IE}$ (mi.)**
Nationwide	77
California	77
SCAQMD	26
MDAQMD	51

No BIG Baseline Conditions

Under No BIG Baseline conditions, goods would be transported from the Ports to the Inland Empire by heavy-duty truck and then from the Inland Empire to other destinations. Since goods would be transported to the Inland Empire directly from the Ports, they would be stored in international (40')

containers and would therefore be transported in 1.5 times the number of containers as the Plus BIG condition per Eq. (6). The heavy-duty truck trip distance between the Ports and the Inland Empire for the nationwide, California, SCAQMD, and MDAQMD calculations is shown in **Table 5**. The baseline TMT associated with the Inland Empire injection move are calculated as shown below.

$$TMT_{IE\ Injection\ Baseline} = \frac{3}{2}\left(\#containers_{IE\ Injection}\right) * dist_{Ports\ to\ IE} * (Truck\ Trips\ per\ Container) \quad (10)$$

$$= \frac{3}{2}\left(\#containers_{IE\ Injection}\right) * 63\ mi * 3 Truck\ Trips\ per\ Container$$

Table 5: Ports to Inland Empire – Trip Distances	
TMT Calculation Boundary	**$dist_{Ports\ to\ IE}$ (mi.)**
Nationwide	63
California	63
SCAQMD	63
MDAQMD	0

The number of containers expected to be involved in the IE Injection ($\#containers_{IE\ Injection}$ in Eq. (9) and Eq. (10)) are shown for each analysis year in **Table 6**. The TMT reduction due to the Ports to Nationwide Destinations move can be quantified using Eq. (4) where $TMT_{Baseline}$ is the result of Eq. (10), and TMT_{BIG} is the result of Eq. (9).

Table 6: IE Injection - Number of Containers per Year	
Year	**Number of containers**
2028	20,000
2033	26,450
2048	30,708

INTERMODAL FACILITY TMT

IMF TMT describes the sum of truck miles traveled by vehicles involved in the travel streams which are expected to utilize the BIG IMF. These moves include container transport from Boron, the Central Valley region in California, Victorville, and Las Vegas/Arizona. Each of these locations are expected to utilize BIG because BIG would provide an IMF closer than existing IMFs, or because BIG would reduce the travel distance and/or the travel time of goods. Each goods move expected to utilize BIG primarily for its IMF component is described in more detail in the following sections.

Boron, California

The Boron move involves goods which, under existing conditions, travel by heavy-duty truck from Boron, California to the Ports in 20-foot and 40-foot international containers. This analysis assumes three truck trips per container to balance empties. The baseline TMT calculation for goods from Boron is shown in Eq. (11) below.

$$TMT_{Boron\ Baseline} = (\#containers_{Boron}) * dist_{Boron\ to\ Ports} * (Truck\ Trips\ per\ Container) \quad (11)$$

$$= \#containers_{Boron} * dist_{Boron\ to\ Ports} * 3\ Truck\ Trips\ per\ Container$$

With the addition of BIG, some containers traveling from Boron to the Ports would utilize the rail connection between Barstow and the Ports through BIG's IMF. International 20-foot and 40-foot containers would be transported by truck from Boron to BIG, loaded onto trains, and transported by rail from BIG to the Ports. The Plus BIG TMT calculation for goods from Boron to the Ports is shown in Eq. (12) below.

$$TMT_{Boron} = (\#containers_{Boron}) * dist_{Boron\ to\ BIG} * \left(\#\frac{truck\ trips}{container}\right) \quad (12)$$

$$= \#containers_{Boron} * dist_{Boron\ to\ BIG} * 3\frac{truck\ trips}{container}$$

The heavy-duty truck trip distances from the Ports to Boron and from Boron to BIG are shown in **Table 7** below.

Table 7: Boron – Trip Distances

TMT Calculation Boundary	$Dist_{Boron\ to\ Ports}$ (mi.)	$Dist_{Boron\ to\ BIG}$ (mi.)
Nationwide	137	35
California	137	35
SCAQMD	78	0
MDAQMD	58	33

Victorville, California

Goods from Victorville, California currently utilize existing BNSF intermodal facilities in San Bernardino and Hobart. Approximately 60% of goods using these two facilities travel to the BNSF IMF in San Bernardino, and the other 40% travel to the BNSF IMF in Hobart. Goods from Victorville are transported in domestic (53') containers and depart from the BNSF IMFs to destinations across the United States by rail. This analysis assumes three truck trips per container to balance empties. The No BIG Baseline TMT calculation for the Victorville move is shown in Eq. (13) below.

$$TMT_{Victorville\ Baseline} = (\#containers_{Victorville})$$

$$* (60\% * dist_{Victorville\ to\ BNSF\ SBD} + 40\% * dist_{Victorville\ to\ BNSF\ Hob})$$

$$* (Truck\ Trips\ per\ Container) \quad (13)$$

$$containers_{Victorville} * (60\% * dist_{Victorville\ to\ BNSF\ SBD} + 40\% * dist_{Victorville\ to\ BNSF\ Hob})$$
$$* 3\ Truck\ Trips\ per\ Container$$

With the addition of BIG, containers departing by heavy-duty truck from Victorville could utilize BIG as a closer IMF than the facilities used currently under No BIG Baseline conditions. This analysis assumes three truck trips per container to balance empties. The Plus BIG TMT calculation for the Victorville move is shown in Eq. (14) below.

$$TMT_{Victorville} = (\#containers_{Victorville}) * dist_{Victorville\ to\ BIG} * (Truck\ Trips\ per\ Container) \quad (14)$$

$$= \#containers_{Victorville} * dist_{Victorville\ to\ BIG} * 3\ Truck\ Trips\ per\ Contianer$$

The heavy-duty truck trip distances from Victorville to BNSF San Bernardino, Victorville to BNSF Hobart, and Victorville to BIG are shown in **Table 8** below.

Table 8: Victorville – Trip Distances

TMT Calculation Boundary	$Dist_{Victorville\ to\ BNSF\ SBD}$ (mi.)	$Dist_{Victorville\ to\ BNSF\ Hob}$ (mi.)	$Dist_{Victorville\ to\ BIG}$ (mi.)
Nationwide	41	84	31
California	41	84	31
SCAQMD	19	63	0
MDAQMD	23	23	31

Central Valley, California

Goods from the Central Valley in California currently utilize existing BNSF intermodal facilities in San Bernardino and Hobart. Approximately 60% of goods using these two facilities travel to the BNSF IMF in San Bernardino, and the other 40% travel to the BNSF IMF in Hobart. Goods from the Central Valley are transported in domestic (53') containers and depart from the BNSF IMFs to destinations across the United States by rail. This analysis assumes three truck trips per container to balance empties. The No BIG Baseline TMT calculation for the Central Valley move is shown in Eq. (15) below.

$$TMT_{Central\ Valley\ Baseline} = \left(\#containers_{Central\ Valley}\right) * \left(60\% * dist_{Central\ Valley\ to\ BNSF\ SBD} + 40\% * dist_{Central\ Valley\ to\ BNSF\ Hob}\right) * (Truck\ Trips\ per\ Container) \quad (15)$$

$$= (\#containers_{Central\ Valley}) * \left(60\% * dist_{Central\ Valley\ to\ BNSF\ SBD} + 40\% * dist_{Central\ Valley\ to\ BNSF\ Hob}\right) * (Truck\ Trips\ per\ Container)$$

With the addition of BIG, containers departing by heavy-duty truck from the Central Valley could avoid the congested corridors north of Los Angeles and therefore save time. Although the distance between the Central Valley and BIG (126 miles) is greater than the distance between the Central Valley and the BNSF Hobart IMF (118 miles), containers traveling from the Central Valley to BIG are expected to utilize State Route 58 which is a less congested corridor than Interstate 5 north of Los Angeles. This analysis assumes three truck trips per container to balance empties. The Plus BIG TMT calculation for the Central Valley move is shown in Eq. (16) below.

$$TMT_{Central\ Valley} = \left(\#containers_{Central\ Valley}\right) * dist_{Central\ Valley\ to\ BIG} * (Truck\ Trips\ per\ Container) \quad (16)$$

$$= \#containers_{Central\ Valley} * dist_{Central\ Valley\ to\ BIG} * 3\ Truck\ Trips\ per\ Contianer$$

The heavy-duty truck trip distances from the Central Valley to BNSF San Bernardino, the Central Valley to BNSF Hobart, and the Central Valley to BIG are shown in **Table 9** below.

Table 9: Central Valley – Trip Distances			
TMT Calculation Boundary	**$Dist_{\text{Central Valley to BNSF SBD}}$ (mi.)**	**$Dist_{\text{Central Valley to BNSF Hob}}$ (mi.)**	**$Dist_{\text{Central Valley to BIG}}$ (mi.)**
Nationwide	171	118	126
California	171	118	126
SCAQMD	125	76	0
MDAQMD	0	0	23

Las Vegas/Arizona

Goods from Las Vegas and northern Arizona currently utilize existing BNSF intermodal facilities in San Bernardino and Hobart. Approximately 60% of goods using these two facilities travel to the BNSF IMF in San Bernardino, and the other 40% travel to the BNSF IMF in Hobart. Goods from Las Vegas and northern Arizona are transported in domestic (53') containers and depart from the BNSF IMFs to destinations across the United States by rail. This analysis assumes three truck trips per container to balance empties. The No BIG Baseline TMT calculation for the Las Vegas/Arizona move is shown below; Las Vegas was chosen as the representative location for all goods involved in this move as it results in the most conservative (lowest) No BIG Baseline TMT value.

$$TMT_{Las\ Vegas\ Baseline} = \left(\#containers_{Las\ Vegas}\right) * \left(60\% * dist_{Las\ Vegas\ to\ BNSF\ SBD} + 40\% * dist_{Las\ Vegas\ to\ BNSF\ Hob}\right) * \left(Truck\ Trips\ per\ Container\right) \quad (17)$$

$$containers_{Las\ Vegas} * (60\% * 227\ miles + 40\% * 271\ miles) * Truck\ Trips\ per\ Container$$

With the addition of BIG, containers departing by heavy-duty truck from Las Vegas and northern Arizona could utilize BIG as a closer IMF than the facilities used currently under No BIG Baseline conditions. This analysis assumes three truck trips per container to balance empties. The Plus BIG TMT calculation for the Las Vegas/Arizona move uses Las Vegas as the representative location for all goods involved in the move to be consistent with the No BIG Baseline calculations, and is shown below.

$$TMT_{Las\ Vegas} = \left(\#containers_{Las\ Vegas}\right) * dist_{Las\ Vegas\ to\ BIG} * \left(Truck\ Trips\ per\ Container\right) \quad (18)$$

$$= \#containers_{Las\ Vegas} * 165\ miles * 3\ Truck\ Trips\ per\ Container$$

The heavy-duty truck trip distances from Las Vegas to BNSF San Bernardino, Las Vegas to BNSF Hobart, and Las Vegas to BIG are shown in **Table 10** below.

Table 10: Las Vegas – Trip Distances			
TMT Calculation Boundary	**$Dist_{Las\ Vegas\ to\ BNSF\ SBD}$ (mi.)**	**$Dist_{Las\ Vegas\ to\ BNSF\ Hob}$ (mi.)**	**$Dist_{Las\ Vegsato\ BIG}$ (mi.)**
Nationwide	227	271	165
California	183	227	121
SCAQMD	19	63	0
MDAQMD	164	164	119

IMF TMT Summary & Container Numbers

TMT calculations for the No BIG Baseline and Plus BIG conditions require the number of containers involved in each move. Container numbers under Opening Year (2028), Interim Year (2033), and Horizon Year (2048) were determined by BNSF based on existing BNSF operations and market research. The container numbers shown in **Table 11** can be used to fill the variables $\#containers_{Boron}$, $\#containers_{Victorville}$, $\#containers_{Central\ Valley}$, and $\#containers_{Las\ Vegas}$ in Eq.(11) & (12), (13) & (14), (15) & (16), and (17) & (18), respectively. The TMT reduction due to the BIG IMF can be quantified using Eq. (4) where $TMT_{Baseline}$ is the sum of Eq. (11), Eq. (13), Eq. (15), and Eq. (17), and TMT_{BIG} is the sum of Eq. (12), Eq. (14), Eq. (16), and Eq. (18).

Table 11: IMF – Number of Containers per Year				
IMF Move	**Variable Used in Calculations**	**Number of Containers (2028)**	**Number of Containers (2033)**	**Number of Containers (2048)**
Boron	$\#containers_{Boron}$	25,000	33,063	38,385
Victorville	$\#containers_{Victorville}$	10,000	11,314	16,386
Central Valley	$\#containers_{Central\ Valley}$	3,000	3,394	4,916
Las Vegas/Arizona	$\#containers_{Las\ Vegas}$	5,000	5,657	8,193
	TOTAL	43,000	53,428	67,880

SUMMARY

BIG's net TMT reduction is determined by subtracting the No BIG Baseline TMT (total for the TWC and IMF) from the Plus BIG TMT (total for the TWC and IMF).

Table 12, **Table 13**, and **Table 14** show the net national, California[3], SCAQMD, and MDAQMD TMT reductions due to BIG for 2028, 2033, and 2048, respectively. **Attachment A** provides more detailed tabulation of the TMT calculations for the Ports to nationwide destinations move as well as a summary of the TMT calculations for the TWC and the IMF.

Table 12: TMT Savings – Opening Year 2028			
TMT Calculation Boundary	**No BIG Baseline TMT**	**Plus BIG TMT**	**BIG's Net TMT Reduction**
Nationwide	234,615,590	16,791,067	-217,824,523
California	69,638,784	11,507,828	-58,130,956
SCAQMD	47,333,897	1,814,886	-45,519,012
MDAQMD	23,389,727	8,669,931	-14,719,796

Table 13: TMT Savings – Interim Year 2033			
TMT Calculation Boundary	**No BIG Baseline TMT**	**Plus BIG TMT**	**BIG's Net TMT Reduction**
Nationwide	307,624,651	21,312,420	-286,312,231
California	90,842,813	14,477,407	-76,365,405
SCAQMD	62,116,333	2,399,924	-59,716,409
MDAQMD	28,963,334	10,895,996	-18,067,338

Table 14: TMT Savings – Horizon Year 2048			
TMT Calculation Boundary	**No BIG Baseline TMT**	**Plus BIG TMT**	**BIG's Net TMT Reduction**
Nationwide	359,341,500	26,218,465	-333,123,035
California	107,449,963	18,068,675	-89,381,289
SCAQMD	72,959,126	2,786,022	-70,173,104
MDAQMD	35,265,720	13,619,243	-21,646,477

[3] Due to distance rounding, the California TMT is slightly lower than the sum of the SCAQMD and MDAQMD TMT values.

ATTACHMENT A: DETAILED TMT CALCULATION TABLES

BNSF BIG TWC Ports to Nationwide Destinations Truck Miles Traveled - Detailed Calculations

Based on 2021 LA/LB Import Estimated Units on BNSF/Partner Network Routes

							2028 Containers			2033 Containers			2048 Containers			Existing (2021) TMT (theoretical containers forecast to be served by BIG)		Opening Year 2028 Baseline TMT		Opening Year 2028 Plus BIG TMT		Interim Year 2033 Baseline TMT		Interim Year 2033 Plus BIG TMT		Horizon Year 2048 Baseline TMT		Horizon Year 2048 Plus BIG TMT	
Desination[1]	Railroad[2]	Intermodal Hub City[3]	BNSF Market	Truckload Miles between Orange, CA and Destination[4]	Truckload Miles between Intermodal Hub City and Destination	Truckload Containers (2021)[1,5]	Forecast Truckload Containers (2028)[6]	Percent of Containers Forecast to be Served by BIG (2028)[7]	Containers Served by BIG (2028)[11]	Forecast Truckload Containers (2033)[6]	Percent of Containers Forecast to be Served by BIG (2033)[7]	Containers Served by BIG (2033)[11]	Forecast Truckload Containers (2048)[6]	Percent of Containers Forecast to be Served by BIG (2048)[7]	Containers Served by BIG (2048)[11]	Transload TMT (Origin Port Dray Miles)[8]	Truckload TMT[9]	Transload TMT (Origin Port Dray Miles)[8]	Truckload TMT[9]	BIG Transload TMT (Origin Port Dray Miles)[10]	BIG Truckload TMT between Intermodal Hub City and Destination	Transload TMT (Origin Port Dray Miles)[8]	Truckload TMT[9]	BIG Transload TMT (Origin Port Dray Miles)[10]	BIG Truckload TMT between Intermodal Hub City and Destination	Transload TMT (Origin Port Dray Miles)[8]	Truckload TMT[9]	BIG Transload TMT (Origin Port Dray Miles)[10]	BIG Truckload TMT between Intermodal Hub City and Destination
Albuquerque, NM	BNSF	Albuquerque	Belen	785	20	10,110	10,839	40%	4,336	11,392	50%	5,696	13,226	50%	6,613	1,364,850	7,936,350	585,322	3,403,537	12,487	86,714	768,974	4,471,439	16,411	113,922	892,754	5,191,202	19,040	132,260
Abilene, TX	BNSF	Alliance	Alliance	1,243	170	427	458	40%	183	481	50%	241	559	50%	279	57,645	530,761	24,721	227,619	527	31,131	32,478	299,037	693	40,898	37,706	347,173	804	47,481
Austin, TX	BNSF, UP	Alliance	Alliance	1,407	209	5,002	5,363	40%	2,145	5,636	50%	2,818	6,544	50%	3,272	675,270	7,037,814	289,592	3,018,196	6,178	448,332	380,456	3,965,192	8,119	589,002	441,697	4,603,465	9,420	683,813
Dallas, TX	BNSF, UP	Alliance	Alliance	1,417	54	21,183	22,711	40%	9,084	23,870	50%	11,935	27,712	50%	13,856	2,859,705	30,016,311	1,226,396	12,872,619	26,163	490,559	1,611,194	16,911,565	34,385	644,477	1,870,546	19,633,802	39,895	748,218
Rochester, NY	CSXT	Buffalo	Northeast	2,623	78	898	963	20%	193	1,012	25%	253	1,175	25%	294	121,230	2,355,454	25,995	505,073	555	15,019	34,151	663,546	729	19,732	39,649	770,356	846	22,908
Charleston, SC	CSXT, NS	Charleston	Southeast	2,512	10	411	441	40%	176	463	50%	232	538	50%	269	55,485	1,032,432	23,795	442,763	508	1,763	31,261	581,685	667	2,316	36,293	675,318	774	2,688
Charlotte, NC	CSXT, NS	Charlotte	Southeast	2,424	20	2,536	2,719	40%	1,088	2,858	50%	1,429	3,318	50%	1,659	342,360	6,147,264	146,823	2,636,280	3,132	21,751	192,890	3,463,445	4,116	28,576	223,939	4,020,953	4,776	33,176
Greenville, SC	CSXT, NS	Charlotte	Southeast	2,631	100	1,056	1,132	40%	453	1,190	50%	595	1,381	50%	691	142,560	2,778,336	61,137	1,191,501	1,304	45,287	80,320	1,565,349	1,714	59,496	93,249	1,817,322	1,989	69,073
Greensboro, NC	CSXT, NS	Charlotte	Southeast	2,470	103	1,314	1,409	40%	564	1,481	50%	740	1,719	50%	859	177,390	3,245,580	76,074	1,391,880	1,623	58,042	99,944	1,828,600	2,133	76,253	116,032	2,122,948	2,475	88,528
Cincinnati, OH	CSXT, NS	Cincinnati	Landers	2,269	20	2,117	2,270	40%	908	2,385	50%	1,193	2,769	50%	1,385	285,795	4,803,473	122,564	2,059,989	2,615	18,158	161,020	2,706,337	3,436	23,855	186,940	3,141,973	3,987	27,695
Cleveland, OH	CSXT	Cleveland	Landers	2,427	20	4,611	4,944	40%	1,977	5,196	50%	2,598	6,032	50%	3,016	622,485	11,190,897	266,955	4,799,263	5,695	39,549	350,716	6,305,091	7,485	51,958	407,170	7,320,015	8,684	60,322
Columbus, OH	NS	Columbus	Ohio Valley	2,340	20	5,196	5,571	40%	2,228	5,855	50%	2,927	6,797	50%	3,399	701,460	12,158,640	300,824	5,214,283	6,418	44,567	395,211	6,850,330	8,434	58,550	458,828	7,953,020	9,786	67,975
Appleton, WI	BNSF, UP	Corwith	Chicago	2,102	206	1,524	1,634	40%	654	1,717	50%	859	1,994	50%	997	205,740	3,203,448	88,232	1,373,812	1,882	134,636	115,916	1,804,863	2,474	176,880	134,575	2,095,390	2,870	205,352
Champaign, IL	BNSF, UP	Corwith	Chicago	2,038	141	937	1,005	40%	402	1,056	50%	528	1,226	50%	613	126,495	1,909,606	54,248	818,942	1,157	56,659	71,269	1,075,896	1,521	74,436	82,741	1,249,082	1,765	86,418
Chicago, IL	BNSF, UP	Corwith	Chicago	2,025	20	17,565	18,832	40%	7,533	19,793	50%	9,896	22,979	50%	11,489	2,371,275	35,569,125	1,016,931	15,253,967	21,695	150,656	1,336,006	20,040,090	28,512	197,927	1,551,062	23,265,923	33,081	229,787
Milwaukee, WI	BNSF, UP	Corwith	Chicago	2,054	98	5,916	6,343	40%	2,537	6,666	50%	3,333	7,739	50%	3,870	798,660	12,151,464	342,509	5,211,206	7,307	248,636	449,975	6,846,287	9,603	326,649	522,407	7,948,327	11,142	379,229
Casper, WY	BNSF, UP	Denver	Denver	2,132	274	2,804	3,006	40%	1,203	3,160	50%	1,580	3,668	50%	1,834	378,540	5,978,128	162,338	2,563,745	3,463	329,487	213,274	3,368,152	4,552	432,868	247,605	3,910,320	5,281	502,546
Denver, CO	BNSF, UP	Denver	Denver	1,025	20	38,814	41,614	40%	16,646	43,737	50%	21,868	50,777	50%	25,388	5,239,890	39,784,350	2,247,149	17,061,683	47,939	332,911	2,952,220	22,415,001	63,004	437,366	3,427,435	26,023,120	73,100	507,768
Detroit, MI	CSXT, NS	Detroit	Detroit	2,299	20	5,993	6,425	20%	1,285	6,753	25%	1,688	7,840	25%	1,960	809,055	13,777,907	173,483	2,954,356	3,701	25,701	227,916	3,881,323	4,864	33,765	264,603	4,506,095	5,643	39,200
Kansas City, MO	BNSF, UP	Edgerton	Kansas City	1,616	36	6,502	6,971	40%	2,788	7,327	50%	3,663	8,506	50%	4,253	877,770	10,507,232	376,435	4,506,070	8,031	100,383	494,547	5,919,906	10,554	131,879	574,153	6,872,827	12,245	153,108
El Paso, TX	BNSF, UP	El Paso	Belen	790	20	5,498	5,895	40%	2,358	6,195	50%	3,098	7,193	50%	3,596	742,230	4,343,420	318,308	1,862,694	6,791	47,157	418,182	2,447,137	8,924	61,953	485,496	2,841,050	10,355	71,925
Albany, GA	CSXT	Fairburn	Fairburn	2,295	173	1,179	1,264	40%	506	1,329	50%	664	1,542	50%	771	159,165	2,705,805	68,259	1,160,396	1,456	87,472	89,676	1,524,484	1,914	114,918	104,111	1,769,879	2,220	133,416
Atlanta, GA	CSXT, NS	Fairburn	Fairburn	2,180	27	6,900	7,398	40%	2,959	7,775	50%	3,888	9,027	50%	4,513	931,500	15,042,000	399,478	6,450,824	8,522	79,896	524,819	8,474,851	11,200	104,964	609,298	9,839,039	12,995	121,860
Macon, GA	CSXT, NS	Fairburn	Fairburn	2,256	91	635	681	40%	272	716	50%	358	831	50%	415	85,725	1,432,560	36,764	614,359	784	24,781	48,299	807,122	1,031	32,557	56,073	937,044	1,196	37,797
Indianapolis, IN	CSXT	Indianapolis	Ohio Valley	2,040	21	3,463	3,713	40%	1,485	3,902	50%	1,951	4,530	50%	2,265	467,505	7,064,520	200,491	3,029,649	4,277	31,188	263,398	3,980,239	5,621	40,973	305,797	4,620,934	6,522	47,568
Jacksonville, FL	CSXT, NS	Jacksonville	Florida	2,410	20	2,612	2,800	40%	1,120	2,943	50%	1,472	3,417	50%	1,709	352,620	6,294,920	151,223	2,699,603	3,226	22,403	198,671	3,546,637	4,240	29,433	230,650	4,117,535	4,919	34,170
New York, NY	CSXT, NS	Kearny	Northeast	2,921	36	33,211	35,607	20%	7,121	37,423	25%	9,356	43,447	25%	10,862	4,483,485	97,009,331	961,381	20,801,427	20,509	256,368	1,263,026	27,328,136	26,954	336,807	1,466,334	31,727,117	31,274	391,022
Albany, NY	NS	Mechanicville	Northeast	2,927	195	1,728	1,853	20%	371	1,947	25%	487	2,261	25%	565	233,280	5,057,856	50,022	1,084,541	1,067	72,253	65,716	1,424,830	1,402	94,924	76,295	1,654,183	1,627	110,204
Birmingham, AL	BNSF, UP	Memphis	Memphis	2,034	231	1,664	1,784	40%	714	1,875	50%	938	2,177	50%	1,088	224,640	3,384,576	96,338	1,451,489	2,055	164,845	126,565	1,906,912	2,701	216,567	146,938	2,213,866	3,134	251,427
Memphis, TN	BNSF, UP	Memphis	Memphis	1,799	20	1,298	1,392	40%	557	1,463	50%	731	1,698	50%	849	175,230	2,335,102	75,148	1,001,418	1,603	11,133	98,727	1,315,626	2,107	14,626	114,619	1,527,401	2,445	16,981
Miami, FL	FEC	Miami	Florida	2,734	20	9,028	9,679	40%	3,872	10,173	50%	5,086	11,811	50%	5,905	1,218,780	24,682,552	522,679	10,585,215	11,150	77,434	686,676	13,906,459	14,654	101,730	797,209	16,144,967	17,003	118,105
Nashville, TN	CSXT	Nashville	Southeast	2,011	20	3,269	3,505	40%	1,402	3,684	50%	1,842	4,277	50%	2,138	441,315	6,573,959	189,260	2,819,270	4,038	28,038	248,642	3,703,851	5,306	36,836	288,666	4,300,056	6,157	42,765
New Orleans, LA	CSXT	New Orleans	Houston	1,881	20	3,805	4,079	40%	1,632	4,288	50%	2,144	4,978	50%	2,489	513,675	7,157,205	220,292	3,069,397	4,700	32,636	289,411	4,032,459	6,176	42,876	335,997	4,681,560	7,166	49,777
Norfolk, VA	NS	Norfolk	Ohio Valley	2,707	20	1,436	1,540	40%	616	1,618	50%	809	1,879	50%	939	193,860	3,887,252	83,138	1,667,064	1,774	12,317	109,223	2,190,126	2,331	16,181	126,805	2,542,669	2,704	18,786
Houston, TX	BNSF, UP	Pearland	Houston	1,535	25	16,001	17,155	40%	6,862	18,030	50%	9,015	20,933	50%	10,466	2,160,135	24,561,535	926,383	10,533,316	19,763	171,552	1,217,047	13,838,276	25,973	225,379	1,412,954	16,065,809	30,135	261,658
Phoenix, AZ	BNSF	Phoenix	Phoenix	373	15	136,791	146,658	24%	34,465	154,140	30%	46,242	178,951	30%	53,685	18,466,785	51,023,043	4,652,740	12,855,348	99,258	516,971	6,242,651	17,248,213	133,225	693,628	7,247,524	20,024,639	154,574	805,280
Portland, OR	BNSF, UP	Portland	PNW	996	15	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harrisburg, PA	NS	Rutherford	Eastern PA	2,761	15	1,594	1,709	20%	342	1,796	25%	449	2,085	25%	521	215,190	4,401,034	46,143	943,701	984	5,127	60,620	1,239,799	1,294	6,736	70,378	1,439,368	1,501	7,820
Savannah, GA	CSXT, NS	Savannah	Southeast	2,428	20	1,834	1,966	40%	787	2,067	50%	1,033	2,399	50%	1,200	247,590	4,452,952	106,180	1,909,667	2,265	15,730	139,495	2,508,849	2,977	20,666	161,950	2,912,696	3,454	23,993
Seattle, WA	BNSF, UP	South Seattle	PNW	1,178	20	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spokane, WA	BNSF	Spokane	PNW	1,347	15	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Louis, MO	BNSF, UP	St Louis	St Louis	1,872	15	2,963	3,177	40%	1,271	3,339	50%	1,669	3,876	50%	1,938	400,005	5,546,736	171,544	2,378,741	3,660	19,060	225,368	3,125,100	4,810	25,041	261,645	3,628,145	5,580	29,072
Minneapolis, MN	BNSF, UP	St Paul	St Paul	1,926	20	9,483	10,167	40%	4,067	10,686	50%	5,343	12,406	50%	6,203	1,280,205	18,264,258	549,021	7,832,703	11,712	81,336	721,284	10,290,312	15,393	106,857	837,388	11,946,732	17,860	124,057
Syracuse, NY	CSXT	Syracuse	Northeast	2,816	15	1,494	1,602	20%	320	1,683	25%	421	1,954	25%	489	201,690	4,207,104	43,248	902,117	923	4,805	56,817	1,185,168	1,213	6,313	65,963	1,375,943	1,407	7,329
Tampa, FL	CSXT	Tampa	Florida	2,520	20	2,628	2,818	40%	1,127	2,961	50%	1,481	3,438	50%	1,719	354,780	6,622,560	152,149	2,840,112	3,246	22,541	199,887	3,731,233	4,266	29,613	232,063	4,331,846	4,949	34,380
Toledo, OH	NS	Toledo	Ohio Valley	2,309	15	1,299	1,393	40%	557	1,464	50%	732	1,699	50%	850	175,365	2,999,391	75,206	1,286,301	1,604	8,356	98,803	1,689,894	2,109	10,978	114,707	1,961,915	2,446	12,745
Boston, MA	CSXT	Worcester	New England	3,140	71	9,846	10,556	20%	2,111	11,095	25%	2,774	12,881	25%	3,220	1,329,210	30,916,440	285,019	6,629,322	6,080	149,899	374,447	8,709,355	7,991	196,931	434,721	10,111,290	9,272	228,631
Total					2,834	394,575	423,038	32%	133,274	444,617	40%	176,053	516,187	40%	204,392	53,267,625	552,080,683	17,991,935	193,915,455	383,828	4,623,239	23,767,186	255,118,203	507,217	6,088,289	27,592,965	296,184,313	588,497	7,068,315
																		211,907,390		5,007,067		278,885,388		6,595,506		323,777,278		7,656,811	

Footnotes:

Source: S&P Global / Transearch purchased subscription; a proprietary data sweep that starts with US Census and Bureau of Economic Analysis (BEA) Data, and combines Intermodal Association of North America (IANA) data in a behind-the-scenes black box environment.

Assumptions: Underlying assumption is that a container departed the Ports of Los Angeles/Long Beach (LA/LB) in a 53' domestic container or international (INTL) 40' container as an interior point intermodal (IPI) (there is no common unit of measure, i.e., twenty-foot equivalent unit (TEU))

Notes:

1. From BEA/IANA data.
2. Railroad line the containers typically use, as provided by BNSF. Only containers that travel on BNSF or BNSF partner railroads are included in the dataset.
3. Closest BNSF intermodal hub to final destination City, as provided by BNSF.
4. Miles from Orange, CA to final destination based on TruckMap.com. Please see additional discussion in note 8.
5. Number of containers that travel by truck from the Ports of Los Angeles/Long Beach (Ports) to the corresponding final destination under existing conditions (2021 data); the number of containers represents domestic (53') containers that arrive at the final destination by this move. Goods are typically transloaded from international containers (20' or 40') to domestic (53') containers in southern California, then trucked in domestic (53') containers.
6. Forecast number of trucked containers based on a 1.0% compound annual growth rate (CAGR) from 2021 to 2048.
7. Percent of containers forecast to be served by BIG based on BNSF market data. The Eastern Pennsylvania, Phoenix, New England, and Northeast market streams (highlighted in green) are not anticipated to utilize BIG as much as other market streams. The Pacific Northwest market stream (red) is not expected to utilize BIG.
8. Truck miles traveled to transport international (20' or 40') containers between origin (LA/LB) and transload warehouses before the containers are trucked to final destinations in domestic (53') containers. This analysis assumes an average of 3 truck trips per revenue container to account for empties (i.e. 50% of trucks who drop off a revenue container will leave with an empty container) based on data provided by BNSF on 6/29/2023. The analysis conservatively assumes 30 miles traveled each way, for a total of 90 miles per revenue container (30 miles x 3 trips x number of containers). 30 miles is approximately the distance from LA/LB to Orange, CA - a typical transload location. Based on data from Table 4.1 of "ON THE MOVE SOUTHERN CALIFORNIA DELIVERS THE GOODS Comprehensive Regional Goods Movement Plan and Implementation Strategy" (Cambridge Systematics, 2013), actual one-way trip length may be higher (table shows weighted average truck trip length of 46 miles). This value assumes a 3:2 ratio of international containers to domestic containers, meaning that for every 3 international (20' or 40') revenue containers entering a transload facility, 2 domestic (53') containers will depart with the same amount of goods.
9. Truck miles traveled to transport domestic (53') containers from Orange, CA to final destination (truckload miles x number of containers). This calculation conservatively assumes a one-way truck trip since there is not sufficient available data to include an evaluation of how the empty 53' container and truck return to their origins; instead, they are assumed to complete alternative goods movements.
10. Truck miles traveled to transport international (20' or 40') containers between origin (Ports of LA/LB) and BIG. This analysis assumes an average of 3 truck trips per revenue container to account for empties (i.e. 50% of trucks who drop off a revenue container will leave with an empty container) based on data provided by BNSF on 6/29/2023. While most containers would travel by rail between the Ports and BIG, a small percentage of heavy-duty trucks will access the transload warehouse center to deliver containers to/from the Ports.
11. The actual numbers of containers forecast to be served by BIG in 2028, 2033, and 2048 are 133,333, 176,336, and 204,720 respectively; therefore, the forecast containers served by BIG in each analysis year are slightly conservative.

Abbreviations:

BEA = Bureau of Economic Analysis
IANA = Intermodal Association of North America
IMDL = intermodal
LA/LB = Ports of Los Angeles/Long Beach
units = containers
INTL = international (20' or 40' container)
IPI = interior point intermodal
TEU = twenty-foot equivalent unit
TMT = truck miles traveled

Transload Warehouse Center TMT Summary

		No BIG Baseline			Plus BIG			Truck Miles Traveled		
Year	**Goods Movement Segment**	**# Containers[1]**	**# Truck Trips[4]**	**Trip Distance (mi.)[2]**	**# Containers[1]**	**# Truck Trips[4]**	**Trip Distance (mi.)[2]**	**Total Baseline TMT[3]**	**Plus BIG TMT[4]**	**Change in TMT Due to BIG**
2028	Nationwide Destinations: Ports to Transload[5]	200,000	600,000	30	1,000	3,000	128	17,991,935	383,828	-17,608,107
2033		264,504	793,512		1,323	3,969		23,767,186	507,217	-23,259,968
2048		307,080	921,240		1,535	4,605		27,592,965	588,497	-27,004,468
2028	Nationwide Destinations: Transload to Final Location[6]	133,274	133,274	Varies[6]	133,274	133,274	Varies[6]	193,915,455	4,623,239	-189,292,216
2033		176,053	176,053		176,053	176,053		255,118,203	6,088,289	-249,029,914
2048		204,392	204,392		204,392	204,392		296,184,313	7,068,315	-289,115,999
2028	Inland Empire	30,000	90,000	63	20,000	60,000	77	5,670,000	4,620,000	-1,050,000
2033		39,675	119,025		26,450	79,350		7,498,575	6,109,950	-1,388,625
2048		46,062	138,186		30,708	92,124		8,705,718	7,093,548	-1,612,170
2028	**Total Transload Warehouse Center TMT**							**217,577,390**	**9,627,067**	**-207,950,323**
2033								**286,383,963**	**12,705,456**	**-273,678,507**
2048								**332,482,996**	**14,750,359**	**-317,732,637**

Notes:
TMT = Truck Miles Traveled
mi. = miles

1. Number of Containers in No BIG Baseline conditions reflects the number of international (20'/40') containers traveling from the Ports to the Inland Empire. Under Plus BIG conditions, goods are first transloaded into domestic (53') containers before being transported by heavy-duty truck to the Inland Empire. Analysis assumes a conversion rate of 3:2 between international (20'/40') containers and domestic (53') containers.

2. Trip distance determined by Google Maps. "Nationwide Destinations: Ports to Transload" trip distance was calculated based on the distance from the Ports to Orange, CA; a typical transloading location. Inland Empire trip distance was calculated using an average warehouse location within the Inland Empire based on the locations of existing facilities within the Inland Empire and the predicted users of the BIG transload warehouse center.

3. No BIG Baseline TMT calculation assumes an average of 3 truck trips per revenue container to account for empties (i.e. 50% of trucks who drop off a revenue container will leave with an empty container) based on data provided by BNSF on 6/29/2023.

4. Plus BIG TMT calculation assumes an average of 3 truck trips per revenue container to account for goods movement between the Inland Empire and BIG (i.e. 50% of trucks who drop off a revenue container in the Inland Empire will leave with a full container returning to BIG) based on data provided by BNSF on 6/29/2023.

5. Under No BIG Baseline conditions containers travel to a transload warehouse in the Los Angeles Basin, Orange County, or the Inland Empire. For the purposes of TMT calculations, Orange, CA was chosen to represent a "typical" transload warehouse location because of its centrality to major truck routes and conservatively short distance from the Ports. Under Plus BIG conditions containers travel to the BIG transload warehouse center. The majority of goods traveling from the Ports to the BIG transload warehouse center will be transported by train, making the number of truck trips under Plus BIG conditions far lower than the number of truck trips under the No BIG Baseline conditons. Refer to Page 3 of this appendix for discussion and calculations regarding the movement of goods from the Ports to transload warehouses before movement to nationwide destinations.

6. Under No BIG Baseline conditions containers travel by heavy-duty truck from transload warehouses in the Los Angeles Basin, Orange County, or the Inland Empire to nationwide destinations. Under Plus BIG conditions these containers will be transported by train from BIG to an intermodal hub city, where they will travel a reduced distance by heavy-duty truck to their final destination. This is why the number of truck trips is identical between the No BIG Baseline and Plus BIG movement from transload warehouses to nationwide destinations, but the TMT value is far lower in the Plus BIG condition compared to the No BIG Baseline. Refer to Page 3 of this appendix for discussion and calculations regarding the movement of goods from the Ports to transload warehouses before movement to eastern destinations.

IMF TMT Summary

BIG IMF TMT Summary		No BIG Baseline									Plus BIG			Truck Miles Traveled		
		To: BNSF Hobart[1]			To: BNSF San Bernardino[1]			To: Ports			To: BNSF BIG					
Year	Revenue Container Origin/Destination	# Containers	# Truck Trips[4]	Trip Distance (mi.)[3]	# Containers	# Truck Trips[4]	Trip Distance (mi.)[3]	# Containers	# Truck Trips[4]	Trip Distance (mi.)[3]	# Containers	# Truck Trips[4]	Trip Distance (mi.)[3]	Total Baseline TMT[4]	Plus BIG TMT	Change in TMT Due to BIG
2028	Boron[2]	-	-	-	-	-	-	25,000	75,000	137	25,000	75,000	35	10,275,000	2,625,000	-7,650,000
2033		-	-		-	-		33,063	99,189		33,063	99,189		13,588,893	3,471,615	-10,117,278
2048		-	-		-	-		38,385	115,155		38,385	115,155		15,776,235	4,030,425	-11,745,810
2028	Central Valley	1,200	3,600	118	1,800	5,400	171	-	-	-	3,000	9,000	126	1,348,200	1,134,000	-214,200
2033		1,358	4,073		2,036	6,109		-	-		3,394	10,182		1,525,264	1,282,932	-242,332
2048		1,966	5,899		2,950	8,849		-	-		4,916	14,748		2,209,250	1,858,248	-351,002
2028	Las Vegas/Northern Arizona	2,000	6,000	271	3,000	9,000	227	-	-	-	5,000	15,000	165	3,669,000	2,475,000	-1,194,000
2033		2,263	6,788		3,394	10,183		-	-		5,657	16,971		4,151,107	2,800,215	-1,350,892
2048		3,277	9,832		4,916	14,747		-	-		8,193	24,579		6,012,023	4,055,535	-1,956,488
2028	Victorville	4,000	12,000	84	6,000	18,000	41	-	-	-	10,000	30,000	31	1,746,000	930,000	-816,000
2033		4,526	13,577		6,788	20,365		-	-		11,314	33,942		1,975,424	1,052,202	-923,222
2048		6,554	19,663		9,832	29,495		-	-		16,386	49,158		2,860,996	1,523,898	-1,337,098
2028	Total IMF TMT													**17,038,200**	**7,164,000**	**-9,874,200**
2033														**21,240,688**	**8,606,964**	**-12,633,724**
2048														**26,858,504**	**11,468,106**	**-15,390,398**

Notes:
IMF = Intermodal Facility
mi. = miles
TMT = Truck Miles Traveled

1. Number of containers split 40% to 60% between BNSF Hobart and BNSF San Bernardino, respectively. Based on information provided by BNSF.
2. Boron move comprised of international (20' or 40') containers transported directly between Boron and the Ports of Los Angeles/Long Beach (Ports).
3. Trip distance determined by Google Maps.
4. TMT calculation assumes an average of 3 truck trips per revenue container to account for empties (i.e. 50% of trucks who drop off a revenue container will leave with an empty container) based on data provided by BNSF on 6/29/2023.

Appendix D: Construction Trip Generation

BIG Construction Schedule and Forecast Traffic																																						
	2025					2026													2027												2028								
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36		
Workers per Day																																						
Total Construction Workers per Day	267	465	616	711	819	810	953	923	967	917	879	875	850	813	848	816	684	574	532	452	449	449	299	197	185	185	185	140	110	110	110	110	110	110	90	60		
Total Construction Worker Trips per Day [22]	668	1,163	1,540	1,778	2,048	2,025	2,383	2,308	2,418	2,293	2,198	2,188	2,125	2,033	2,120	2,040	1,710	1,435	1,330	1,130	1,123	1,123	748	493	463	463	463	350	275	275	275	275	275	275	225	150		
Workers per Month																																						
Total Construction Workers per Month	6,942	12,090	16,016	18,486	21,294	21,060	24,778	23,998	25,142	23,842	22,854	22,750	22,100	21,138	22,048	21,216	17,784	14,924	13,832	11,752	11,674	11,674	7,774	5,122	4,810	4,810	4,810	3,640	2,860	2,860	2,860	2,860	2,860	2,860	2,340	1,560		
Total Construction Worker Trips per Month [2]	17,355	30,225	40,040	46,215	53,235	52,650	61,945	59,995	62,855	59,605	57,135	56,875	55,250	52,845	55,120	53,040	44,460	37,310	34,580	29,380	29,185	29,185	19,435	12,805	12,025	12,025	12,025	9,100	7,150	7,150	7,150	7,150	7,150	7,150	5,850	3,900		
Worker Trips per Afternoon Peak Hour [1]																																						
Total Worker Trips per Afternoon Peak Hour:	334	581	770	889	1,024	1,013	1,191	1,154	1,209	1,146	1,099	1,094	1,063	1,016	1,060	1,020	855	718	665	565	561	561	374	246	231	231	231	175	138	138	138	138	138	138	113	75		
Trucks per Day																																						
Total Trucks per Day	28	122	301	327	357	505	487	561	843	807	765	826	866	835	654	400	459	417	362	352	493	532	467	404	347	278	312	432	217	109	119	109	52	0	0	0		
Total Truck Trips per Day[21]	55	244	602	654	714	1,011	973	1,122	1,687	1,613	1,530	1,652	1,732	1,671	1,308	800	919	834	725	704	986	1,065	935	809	694	556	624	863	434	218	239	218	104	0	0	0		
PCE[19] Total Truck Trips per Day[21]	138	609	1,504	1,636	1,786	2,526	2,433	2,806	4,217	4,034	3,825	4,131	4,329	4,176	3,270	2,000	2,297	2,084	1,812	1,759	2,466	2,662	2,337	2,021	1,735	1,391	1,561	2,158	1,086	545	597	545	260	0	0	0		
Trucks per Month [2]																																						
Total Trucks per Month	720	3,168	7,820	8,507	9,288	13,137	12,654	14,589	21,926	20,975	19,892	21,482	22,510	21,717	17,006	10,401	11,946	10,839	9,424	9,146	12,824	13,842	12,152	10,511	9,023	7,234	8,115	11,222	5,648	2,835	3,105	2,835	1,350	0	0	0		
Total Truck Trips per Month [21]	1,440	6,336	15,639	17,013	18,576	26,274	25,308	29,178	43,852	41,949	39,783	42,963	45,020	43,433	34,012	20,802	23,891	21,677	18,848	18,291	25,647	27,684	24,303	21,021	18,046	14,468	16,230	22,444	11,296	5,670	6,210	5,670	2,700					
PCE[19] Total Truck Trips per Month [21]	3,600	15,840	39,098	42,533	46,440	65,685	63,270	72,945	109,630	104,873	99,458	107,408	112,550	108,583	85,030	52,005	59,728	54,193	47,120	45,728	64,118	69,210	60,758	52,553	45,115	36,170	40,575	56,110	28,240	14,175	15,525	14,175	6,750	0	0	0		
Trucks per Hour [20]																																						
Total Trucks per Hour	3	13	31	33	36	51	49	57	85	81	77	83	87	84	66	41	46	42	37	36	50	54	47	41	35	28	32	44	22	11	12	11	6	0	0	0		
Total Truck Trips per Hour[21]	6	26	62	66	72	102	98	114	170	162	154	166	174	168	132	82	92	84	74	72	100	108	94	82	70	56	64	88	44	22	24	22	12	0	0	0		
PCE[19] Total Truck Trips per Hour[21]	15	65	155	165	180	255	245	285	425	405	385	415	435	420	330	205	230	210	185	180	250	270	235	205	175	140	160	220	110	55	60	55	30	0	0	0		
Total PCE[19] Trips per Month [21]	20,955	46,065	79,138	88,748	99,675	118,335	125,215	132,940	172,485	164,478	156,593	164,283	167,800	161,428	140,150	105,045	104,188	91,503	81,700	75,108	93,303	98,395	80,193	65,358	57,140	48,195	52,600	65,210	35,390	21,325	22,675	21,325	13,900	7,150	5,850	3,900		
Total PCE[19] Trips per Day [21]	806	1,772	3,044	3,413	3,834	4,551	4,816	5,113	6,634	6,326	6,023	6,319	6,454	6,209	5,390	4,040	4,007	3,519	3,142	2,889	3,589	3,784	3,084	2,514	2,198	1,854	2,023	2,508	1,361	820	872	820	535	275	225	150		
Total PCE[19] Trips in Afternoon Peak Hour [21]	349	646	925	1,054	1,204	1,268	1,436	1,439	1,634	1,551	1,484	1,509	1,498	1,436	1,390	1,225	1,085	928	850	745	811	831	609	451	406	371	391	395	248	193	198	193	168	138	113	75		

Notes:

1 Construction worker and schedule information provided by TranSystems and Burns & McDonnell, May 2023. Construction worker and schedule information compiled by Granite, December 2023. Construction workers are expected to work between 8 and 12 hour days with a typical start time of 6:00 am. Morning commutes to the site are expected to be made between 5:00-7:00 am and afternoon commutes from the site are expected to be made between 2:30-6:30 pm (based on an 8, 10, or 12 hour day that started at 6:00 am). This analysis assumes that 50% of workers would be travelling during the afternoon peak hour (4:30-5:30 pm).

2 Trucks per Day: Assumes 26 construction days per month, with the trucking operations spread equally throughout the subphase. All information provided by TranSystems, December 2023. Construction truck information was compiled by Granite, January 2024.

3 Site Preparation: Assumes 8,203 trucks total.

4 Site Grading - Track and Roadway: Assumes all cut/fill will come from/remain on-site.

5 Subcut & Soil - Subcut is expected to be minimal and remain on-site. Trips noted mostly included rip rap and stone to stabilize embankments and drainage ways. Rip rap is assumed to weigh about 1.6 tons/CY. Assumes 20,000 CY at 12 CY per truck, for 1,667 trucks total.

6 Box Culverts, Storm Sewers, and Underdrains: Assumes 135 trucks total. Box Culverts vary in size from 8' x 8' to 10' x 10' and it is assumed they are shipped in 8' sections at 2 per truck. Culverts are assumed to be shipped 144' LF per truck (3 x 24').

7 Underdrain Stone: Assumes 6,000 trucks total. Assumes 1.5 CY per foot, 1.8 tons per CY, and 18 tons per truck.

8 Retaining Walls: Assumes 4,150 trucks total. Retaining walls are expected to be T-Wall - 5' x 5' - 20' Stem - Average size, 7,350# Each - Assumes a 2,000' wall with average height = 20'. Select Fill for the T-Wall retaining walls is expected to be crushed stone - Estimated at 2 Tons per CY - Stem Width then at a 1:1 back slope.

9 Railroad Bridge Expansions: Assume 175 trucks total. Railroad Bridges are to assumed to be Concrete Box Beams (2-3 Beams per track) - 1 Beam Span per truck.

10 Track Lighting & Communications: Assumes 20 trucks total. Light Poles are assumed to be delivered by truck - Wood 25 per truck, HML = 5 per truck plus fixtures (Distribution piping 2 trucks).

11 Install Compressed Air: Assumes 2 trucks total. Compressed Air Stations are Prefabricated buildings delivered as a single unit - Reservoir tanks shipped separately 1 per truck.

12 Subballast Placement: Assumes 14, 150 trucks total. Assumes 169,805 CY = 339,610 tons, 12 CY per truck. Subballast is assumed to be base course crushed stone at about 145#/CF = 145*27/2000 = 1.975 TN/CY say 2TN/CY.

13 Compressed Stations: Assumes 6 trucks total. Compressed Air Stations are Prefabricated buildings delivered as a single unit - Reservoir tanks shipped separately 1 per truck.

14 Track Construction: Assumes 212 trucks total. Track Construction to Utilize Track Laying Machine (TLM) - All Rail, Ties and OTM delivered by Rail except 1,000' to land TLM. Ties are expected to be delivered to the site in rail cars at 200 ties per car for the TLM - Ties estimated at 0.25 tons per Track Foot (TF). Signal materials are expected to be delivered to site by truck - Estimated 5 trucks per Control Point - Estimated seven (7) Control Points.

15 Remove Pavement: Assumes 200 trucks total. Demolished pavement assumes 6" section, for 3,225 tons removed at 17 tons/truck.

16 Bridge Construction: Assumes 150 trucks total.Truck trips for the Hinkley Road bridges are based on concrete required at 8CY/Truck utilizing the 15% Bridge Plans.

17 Retaining Walls: Assumes 725 trucks total. Retaining walls for the Hinkley Road Bridges total about 1,000' at 30' in height.

18 Roadway Paving: Assumes 1,026 trucks total. Pavement - Hinkley Road Section is assumed to be 8" asphalt over 12" of Stone (Grading under grading) Asphalt 115#/SY/inch, Stone 2 TN/CY.

19 PCE = Passenger Car Equivalent, assumes equal number of 3-axle (PCE=2.0) and 4+ axle (PCE=3.) trucks for an average PCE=2.5.

20 Trucks per Hour: Assumes 10 hour average construction day, with truck trips spread equally throughout the day.

21 Total Truck Trips: Assumes each truck makes 2 trips (one to site and one from site).

22 Assumes each construction worker makes 2.5 trips per day (including one trip to work, one trip from work).