

# CITY OF SAN BERNARDINO CITY-WIDE TRUCK ROUTE STUDY

DRAFT – NOVEMBER 2022



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# 1 INTRODUCTION

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This Truck Route Study was developed for the City of San Bernardino, as an effort directly related to the larger General Plan update. The study analysis and report were undertaken by KOA Corporation, with The Tioga Group, Inc. as a subconsultant.

The goals of the study are the following:

- Determine the existing pattern of medium-duty and heavy-duty truck trips.
- Identify the reasons behind those truck trip patterns.
- Determine likely future shifts or increases in those trip patterns from internal or external development.
- Identify potential conflicts between truck routing patterns and community preferences.
- Develop an understanding of future commercial and industrial land development plans on the cities bordering the city and as well as the greater Inland Empire's surrounding communities
- Prepare truck route system options to balance the need for truck access and through movements with local community preferences.

Establishment and enforcement of a truck route network can reduce damage to smaller local city streets, and also can reduce the number of trucks that drive past schools and residential neighborhoods.

The adoption of the recommendations in the Truck Route Study, and subsequent passing of an ordinance, will allow the City Council to designate the routes that trucks must use when passing through and traveling to and from points within San Bernardino. The ordinance will define the ability of the City to legally enforce the truck routes. Truck route signage will be installed along the truck routes as part of the implementation. Truck prohibition or "no trucks" signs will also need to be installed at locations where truck routes end at industrial parcels, to avoid routes through nearby residential neighborhoods.

The analysis of potential truck routes included consideration of land use, roadway functional classification, pavement conditions, industrial corridors and single site locations, interagency linkages, truck delivery needs, and overall city circulation needs. Local truck trip patterns are determined as much or more by adjoining city land uses as by San Bernardino's own development patterns.

This study provides the following results, from this analysis and definition of routes:

- Defines the basis of compliance with federal and California Vehicle Code trucking regulations
- Identifies existing policies and regulations at all government levels that enable and define trucking operations on public roadways
- Provides the basis for commercial vehicles and truck regulations through ordinances or resolutions so that commercial and industrial areas within the City limits can be served fairly while prohibiting commercial vehicles and trucks from using certain highways within residential areas
- Defines the regulatory routes that control both truck travel and parking locations
- Summarizes the characteristics of each truck route segment, including roadway and lane widths, and overlap with future bicycle projects
- Supports the diversion of trucks from residential areas and Downtown
- Recommends Municipal Code changes on truck regulations
- Provides a framework for regulatory truck route sign placement

A truck route map is included in this report. A table that lists the proposed truck route segments is also included, including all segments by roadway, and pavement quality, curb lane widths, and proposed bicycle facility segments under the City Active Transportation Plan (ATP). Pavement quality values were compiled from the City pavement management system. Curb lane widths were compiled as well, to determine if widths are adequate for truck travel. Data on proposed bicycle facilities indicates where bicycle facility implementation may be in conflict with the truck routes. Pavement rehabilitation and/or roadway improvements may be necessary before truck route implementation.

Selected intersections along the proposed truck routes were analyzed for potential truck turning issues. The roadway intersections were selected for this analysis to identify potential restrictions in geometry where trucks would be turning. These locations may have to be evaluated further and potentially improved as part of the implementation of the truck routes.

# 2 REGULATORY FRAMEWORK

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Existing federal and state laws are reviewed in this section, as these laws affect how trucks can use national and regional freeway and highway networks, and they also affect how local jurisdictions can regulate truck travel. Existing City of San Bernardino regulations on trucking are also reviewed in this section.

## 2.1 FEDERAL REGULATIONS

Federal law sets the maximum gross vehicle weights and axle loads on the Interstate System, at 80,000 pounds gross vehicle weight, 20,000 pounds for each single axle, and 34,000 pounds for each set of tandem axles. The National Network includes the Interstate highways and certain roadways designated by each state, and there are Federal standards on the Network for truck length and width.

The 1982 federal Surface Transportation Assistance Act (STAA) allowed larger trucks on the National Network. These larger trucks are called "STAA vehicles". Federal regulations prohibit states and local jurisdictions from enacting or enforcing any law denying reasonable access to STAA vehicles between the National Network and terminals or trucking destinations for loading/unloading, including facilities for food, fuel, repairs, and rest.

The Senate Joint Resolution Number 7 of 2003 maintained the current federal truck size and weight limitations at the time, and rejected proposals to experiment with longer and heavier trucks on public highways. This was done as part of the reauthorization of the federal Transportation Equity Act for the 21st Century.

States may not enact or enforce any law that denies access within one road-mile from the National Network, for trucks that use the most reasonable and practicable route available. Specific safety reasons on individual routes can justify mandating that alternate routes be used. Vehicle dimension limits on state or local regulations are not permitted to be more restrictive than federal requirements.

Truck operators may request access from the National Network, if such a route is not defined by State truck network maps, by specific truck types along specific routes to points of loading and unloading. States are required to have defined procedures for the review of new route requests within a 90-day period.

## 2.2 STATE REGULATION

The movement of trucks is regulated by the State of California for State highways and Interstate routes within California, and local jurisdictions are permitted by State law to regulate access by trucks to local roadways. Other policies, establishing the right to regulate truck trips and enforce weight limits, are defined by the California Vehicle Code (CVC).

Maximum truck size and weight regulations in the CVC ensure that trucks have safe operating characteristics, such as clearance under bridges, turning radius at corners, and stopping capability. The regulations also insure that truck movements and parking do not damage state and local highways and roadways. The CVC allows local jurisdictions to issue permits to vehicles in excess of these size or weight standards. The CVC includes sections that define how truck size and weight limits may be enforced, and provides authority to local jurisdictions to establish truck routes on specific streets and to prohibit trucks on other streets.

Caltrans District 8, which encompasses San Bernardino County, publishes a *Truck Networks on California State Highways* map, as do the other Caltrans districts throughout California. The National Network within the County is defined by this map, as are the STAA truck terminal routes and California Legal Routes.

Truck size, weight, and route regulations at the State level are discussed below.

### 2.2.1. Truck Size Limits

Caltrans defines the following combinations as legal when operating on the "designated system." The designated system is a network of highways defined by these criteria:




1. *Qualified by the U.S. Secretary of Transportation (National Network or the Interstate System) and*
2. *Identified by the Department of Transportation (Caltrans) or 35401.5(a) by local authorities as Terminal Access. VC These combinations may leave the designated system at identified signs at points of egress and ingress for access to terminals. VC These combinations may leave the designated system at identified signs at points of egress and ingress, where they may travel one mile to the facilities for food, fuel, lodging and repair.*

The California Legal trucks and other truck sizes are defined by the Length Sections 35400-35414, Width Sections 35100-35111, and Height Section 35250 of the California Vehicle Code (CVC).

The legal maximum size of trucks, as truck tractor-semitrailers, in California are "green" trucks that are Interstate STAA type and "black" trucks that are California Legal trucks. Table 2-1 provides the maximum allowed lengths for these two truck tractor-semitrailers types.



**Table 2-1 Vehicle Lengths**

LENGTHS	"GREEN" STAA TRUCKS		"BLACK" CALIFORNIA LEGAL TRUCKS
			
Overall Length:	unlimited	Unlimited	65 feet Max
Semitrailer:	53 feet Max	48 feet Max	unlimited
KPRA (kingpin-to-rear-most-axle distance):	40 feet Max (two-axle semitrailer); 38 feet Max (single-axle)	unlimited	40 feet Max (two-axle semitrailer); 38 feet Max (single-axle)

Source: Caltrans Quick Guide: Truck Lengths & Routes

## 2.2.2. Weight Limits

Caltrans has also established standardized maximum vehicle weights across the State of California in CVC Weight Sections 35550 - 35558. The following are the basic rules on maximum vehicle weights:

- **Vehicle Combination Weight:** 80,000 pounds
- **Axle Weight, each single axle:** 20,000 pounds
- **Axle Group Weight, less than 8'-6" (8-foot-6-inches) between outer axles:** 34,000 pounds

For other unique configurations where the distance between axles is higher, a weight chart is provided in the CVC for those calculations.

A gross vehicle weight rating (GVWR) is also defined to classify trucks by weight, per Section 350 of the CVC. The GVWR is the manufacturer-specified loaded weight of vehicles, as the maximum allowable total weight of a road vehicle or trailer that is loaded, including the base vehicle weight, fuel, passengers, cargo, and trailer weight.

The categories of these ratings are the following:

- **Class 1:** <6,000 lb GVWR, light trucks, 2 axles
- **Class 2:** 6,000 – 10,000 lb GVWR, light trucks, 2 axles
- **Class 3:** 10,000 – 14,000 lb GVWR, medium-duty trucks, 2 axles
- **Class 4:** 14,000 – 16,000 lb GVWR, medium-duty trucks, 2 axles
- **Class 5:** 16,000 – 19,500 lb GVWR, medium-duty trucks, 2 axles
- **Class 6:** 19,500 – 26,000 lb GVWR, light-heavy-duty trucks, 3 axles
- **Class 7:** 26,000 – 33,000 lb GVWR, heavy-duty trucks, 3 axles
- **Class 8:** >33,000 lb GVWR, heavy-duty trucks, 3 or more axles

## 2.2.3. Establishment of Local Truck Routes

The State of California Vehicle Code, in Division 11, Rules of the Road Section 21000-23336, Article 3, states the following:

*“Local authorities, for those highways under their jurisdiction, may adopt rules and regulations by ordinance or resolution...Prohibiting the use of particular highways by certain vehicles....”*

The California Vehicle Code allows for local definition and control of truck routes on city roadways, in Division 15 (Size, Weight, and Load), Chapter 4, Section 35401.5. The following section provides for truck access on routes identified by “local authorities” or cities, and defines the maximum length of trucks with trailers:

*(a) A combination of vehicles consisting of a truck tractor and semitrailer, or of a truck tractor, semitrailer, and trailer, is not subject to the limitations of...[Sections 35400 (special vehicle types and accessories) and 35401 (multiple trailer configurations)...], when operating on the Dwight D. Eisenhower National System of Interstate and Defense Highways or when using those portions of federal-aid primary system highways that have been qualified by the United States Secretary of Transportation for that use, or when using routes appropriately identified by the Department of Transportation or local authorities as provided in subdivision (c) or (d), if all of the following conditions are met:*

*(1) The length of the semitrailer in exclusive combination with a truck tractor does not exceed 48 feet. A semitrailer not more than 53 feet in length shall satisfy this requirement when configured with two or more rear axles, the rearmost of which is located 40 feet or less from the kingpin or when configured with a single axle which is located 38 feet or less from the kingpin.*

*(2) Neither the length of the semitrailer nor the length of the trailer when simultaneously in combination with a truck tractor exceeds 28 feet 6 inches.*

Connections to trucking destinations that are off of designated highways and local roadways are permitted by the following within the same Vehicle Code section, within a one-mile distance when the need for access can be defined in this manner:

*(c) Combinations of vehicles operated pursuant to subdivision (a) may also use highways not specified in subdivision (a) that provide reasonable access to terminals and facilities for purposes limited to fuel, food, lodging, and repair when that access is consistent with the safe operation of the combinations of vehicles and when the facility is within one road mile of identified points of ingress and egress to or from highways specified in subdivision (a) for use by those combinations of vehicles.*

The following clause defines a process for adding routes to local truck networks, if needed to access new land uses that generate regular truck trips:

*(d) The Department of Transportation or local authorities may establish a process whereby access to terminals or services may be applied for upon a route not previously established as an access route. The denial of a request for access to terminals and services shall be only on the basis of safety and an engineering analysis of the proposed access route. If a written request for access has been properly submitted and has not been acted upon within 90 days of receipt by the department or the appropriate local agency, the access shall be deemed automatically approved. Thereafter, the route shall be deemed open for access by all other vehicles of the same type regardless of ownership. In lieu of processing an access application, the Department of Transportation or local authorities with respect to highways under their respective jurisdictions may provide signing, mapping, or a listing of highways as necessary to indicate the use of specific routes as terminal access routes.*

A "terminal" is where freight originates, terminates, or is handled, or where a motor carrier maintains operating facilities.

The following clause allows for moving trucks to access residential areas that are outside of the truck routes:

*(f) Notwithstanding subdivision (d), the limitations of access specified in that subdivision do not apply to licensed carriers of household goods when directly en route to or from a point of loading or unloading of household goods, if travel on highways other than those specified in subdivision (a) is necessary and incidental to the shipment of the household goods.*

## 2.3 LOCAL REGULATION

The current General Plan has the following policies related to trucking. These are listed in the General Plan under Goal 6.5, which is entitled “Develop a transportation system that reduces conflicts between commercial trucking, private/public transportation, and land uses”:

*6.5.1 Provide designated truck routes for use by commercial/industrial trucking that minimize impacts on local traffic and neighborhoods.*

*6.5.2 Continue to regulate on-street parking of trucks to prevent truck parking on residential streets or in other locations where they are incompatible with adjacent land uses. The use of signs, restricted parking, limited parking times, and the posting of “no overnight” parking signs are mechanisms that can be employed depending upon the specific needs of the affected area.*

*6.5.3 Prepare neighborhood protection plans for areas of the City where heavy vehicle traffic or parking becomes a significant enforcement problem. (C-2)*

*6.5.4 Require that on-site loading areas minimize interference of truck loading activities with efficient traffic circulation on adjacent roadways. (LU-1)*

There are existing Municipal Code provisions that govern the use of trucks or parking of trucks on specific streets within San Bernardino. The Code text establishes limits for these activities on the roadways based on vehicle weight, through the following sections. The primary Code section text is provided, and the locations listed in each section were mapped and are shown on Figure 2-1:

*10.24.190 Commercial Vehicles Prohibited on Certain Streets*

*A Pursuant to the authority and restrictions of Vehicle Code Sections 35701 , et seq., no person shall operate or drive any commercial vehicle upon the following streets, and the Traffic Engineer shall cause appropriate signage to be erected giving notice thereof...*

*B. Pursuant to the authority and restrictions of Vehicle Code Sections 35701 , et seq., no person shall operate or drive any vehicle exceeding a maximum gross weight*

*limit of ten thousand pounds upon the following streets, and the Director of Public Services shall cause appropriate signs to be erected giving notice of such weight limitation prohibition...*

*C. Pursuant to the authority and restrictions of Vehicle Code Sections 35701, 35703, et seq., no person shall operate or drive any commercial vehicle having a manufacturer's Gross Vehicle Weight rating (GVWR) exceeding thirty thousand (30,000) pounds upon the following streets, and the Director of Public Services shall cause appropriate signs to be erected giving notice of such weight limitation prohibition...*

The following Municipal Code text establishes prohibitions for parking of trucks on public roadways under specific conditions. An exception is defined for trucks involved in construction activities:

*10.16.120 Parking of Commercial Vehicles Prohibited on Public Streets and Rights-of-Way; Exceptions*

*A. No person shall park or stand any commercial vehicle, truck tractor, semitrailer or trailer having a manufacturer's gross vehicle weight rating of ten thousand (10,000) pounds or more on any street, alley or parkway in any residential district, or on any residentially zoned property in the city.*

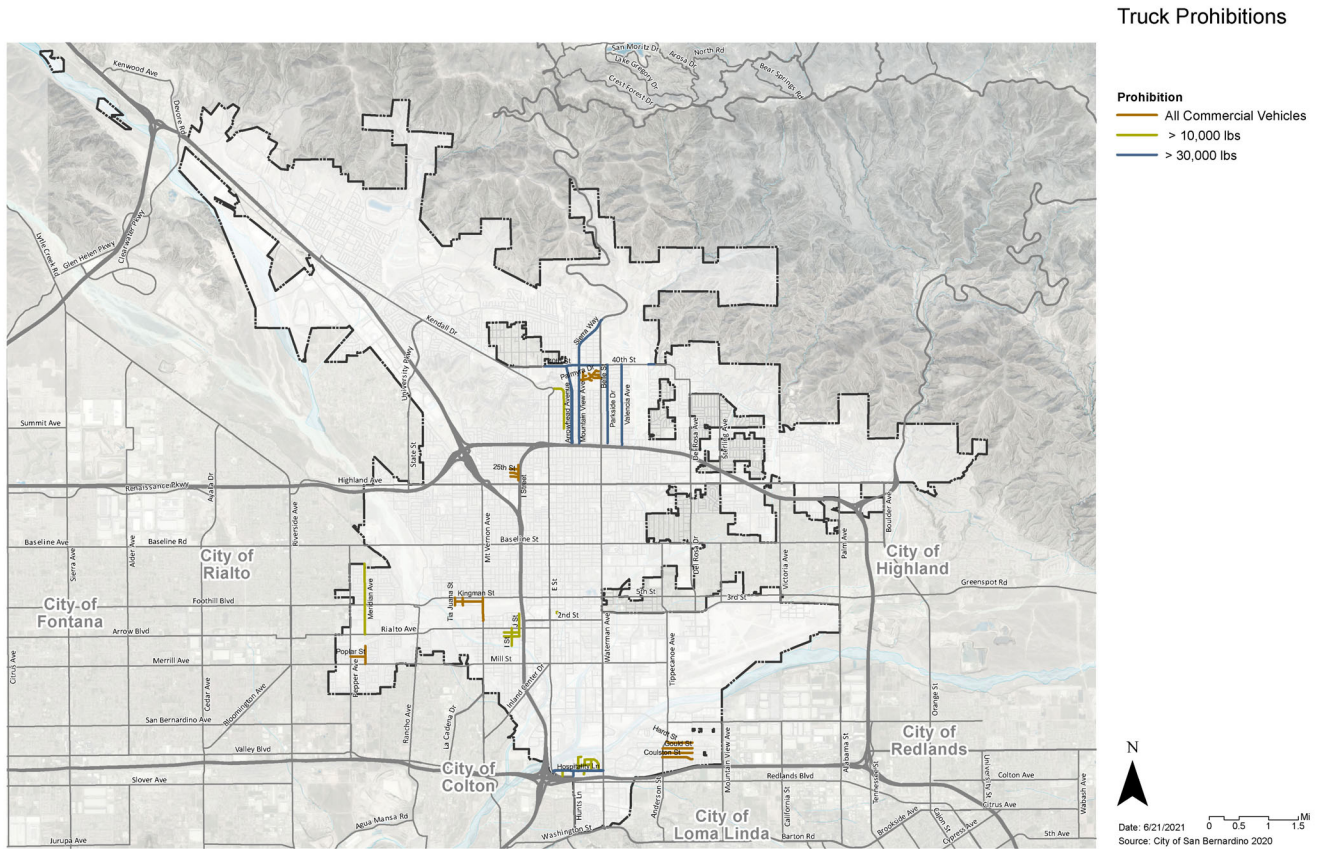
*B. No person shall park or stand any commercial vehicle, truck tractor, semitrailer or trailer having a manufacturer's gross vehicle weight rating of ten thousand (10,000) pounds or more for a continuous period of time in excess of two (2) hours on any street, alley or parkway in any nonresidential district of the city. Each consecutive two (2) hour period shall be considered a separate violation for the purpose of this subsection.*

*C. The provisions of this section shall not apply to:*

*1. Any vehicle or trailer component thereof, making pick ups or deliveries of goods, wares or merchandise from or to any building or structure located on the restricted streets and highways, 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 the restricted streets or highways for which a building permit has previously been obtained....*

*E. Any commercial vehicle, truck tractor, semitrailer or trailer having a manufacturer's gross vehicle weight rating of ten thousand (10,000) pounds or more left parked or standing on any street, alley or parkway in excess of twenty four (24) hours may be towed away pursuant to California Vehicle Code section 22651(n)....*

Figure 2-1 – Current Roadway Truck Travel and Parking Prohibitions



Sources: City of San Bernardino Municipal Code, KOA

With the establishment of regulatory truck routes defined by this document, and as adopted under future action by the City, the existing prohibitions on truck travel under Code section 10.24.190 can be removed from City regulations, or can remain to reinforce the use of the truck route network near these areas.

The proposed local truck route network defines permitted truck routes. Other roadways would be prohibited locations for truck travel and parking. The truck parking prohibitions defined under Code section 10.16.120 can continue to be enforced on all roadways, but truck movements to and from on-street parking, would be prohibited on roadways outside of the regulatory truck network within the city.

# 3 EXISTING TRUCKING CONDITIONS

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## 3.1 ROADWAYS AND LAND USE

The existing land use, as defined by current General Plan analysis efforts, was mapped along with the local roadway network. This provided for the analysis of potential truck routes the consideration of patterns of industrial and commercial land uses that generally require deliveries or shipments of goods and materials by large tractor-trailer trucks. It also provided for an analysis of the framework of primary roadways that provide routes from these land uses to regional highway and freeway travel routes.

Figure 3-1 provides the roadway classifications within the city, with freeways as the highest order of travelway and providing regional access and access to local roadway interchanges. Highways and major arterials link with the freeway interchanges and regional route access points and provide access to all other local roadways. Trucks must use all levels of this network to travel between regional destinations and local land uses.

Figure 3-2 provides the existing land uses within the city. The first two categories in the legend were the primary targets for the analysis of land use – commercial (shown in red color) and industrial (shown in a dark grey-blue color). The city truck route network must serve all of these locations that require access by large trucks for daily operations and commerce.



Figure 3-1 – Existing City Roadway Classifications

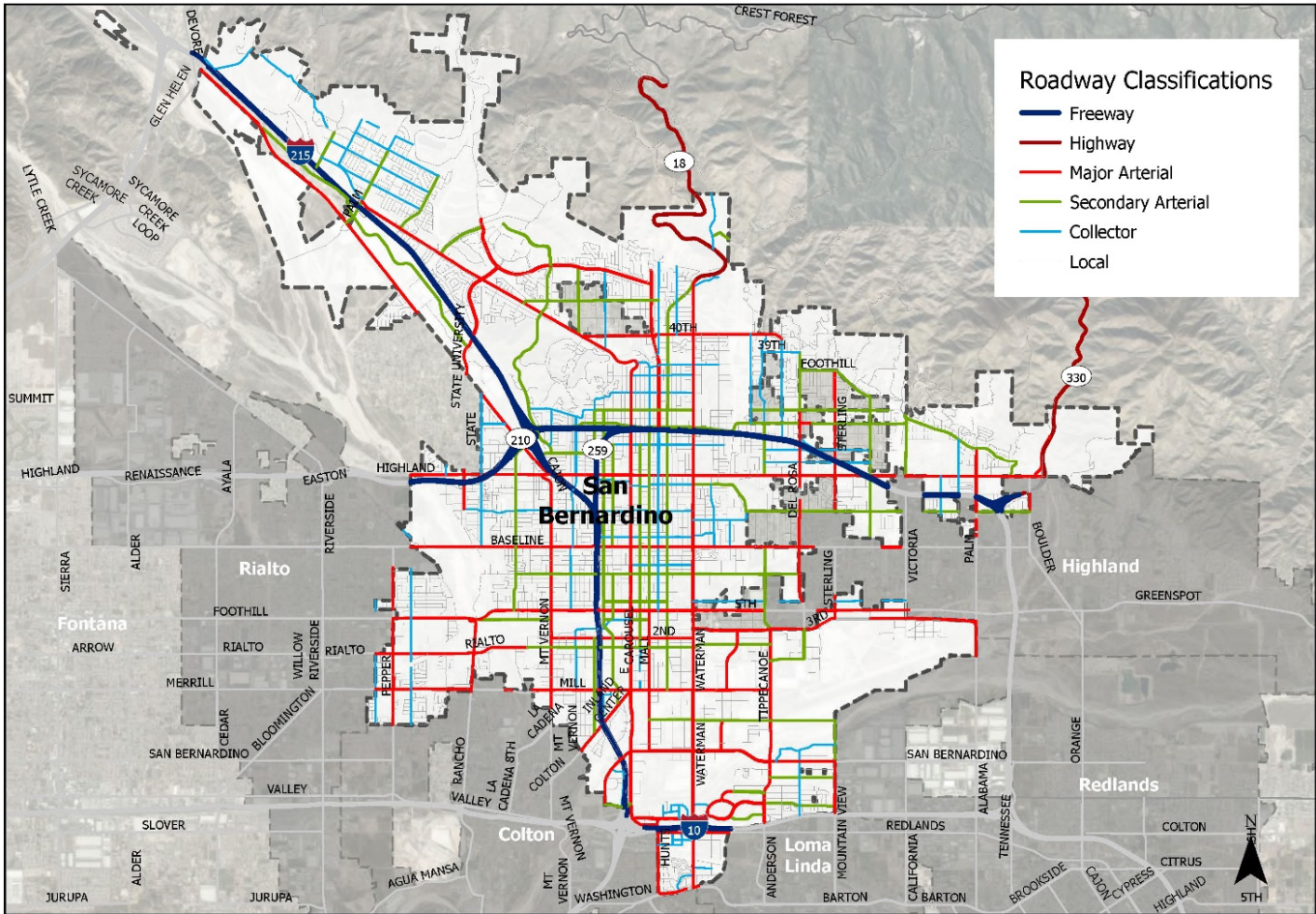
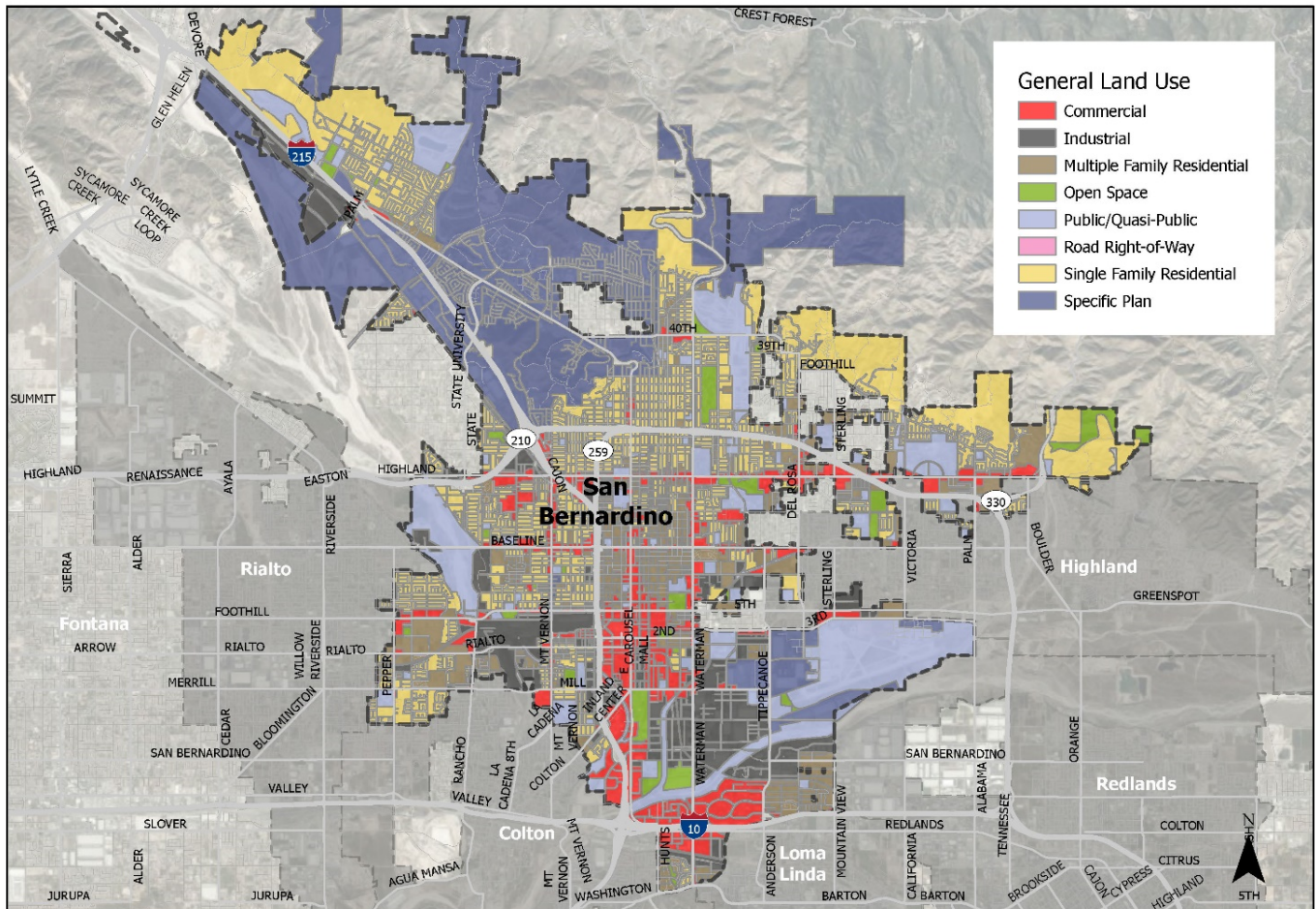


Figure 3-2 – Existing City Land Use Patterns



## 3.2 PAVEMENT CONDITIONS

Pavement conditions data, taken from visual surveys on roadways across the city that were conducted as input to the pavement management system, was mapped by location to create Figure 3-3. The information was compiled from the most recent data compiled for current pavement management actions by the City. The data is summarized as a Pavement Conditions Index (PCI) score.

The PCI value is a standard measurement in civil engineering to rate the condition of roadways. From visual surveys of pavement conditions, roadways are assigned a value within the range of 0 to 100. The value of 100 represents excellent pavement condition. Table 3-1 describes the ranges of PCI scores.

**Table 3-1 Pavement Condition Index (PCI) Values**

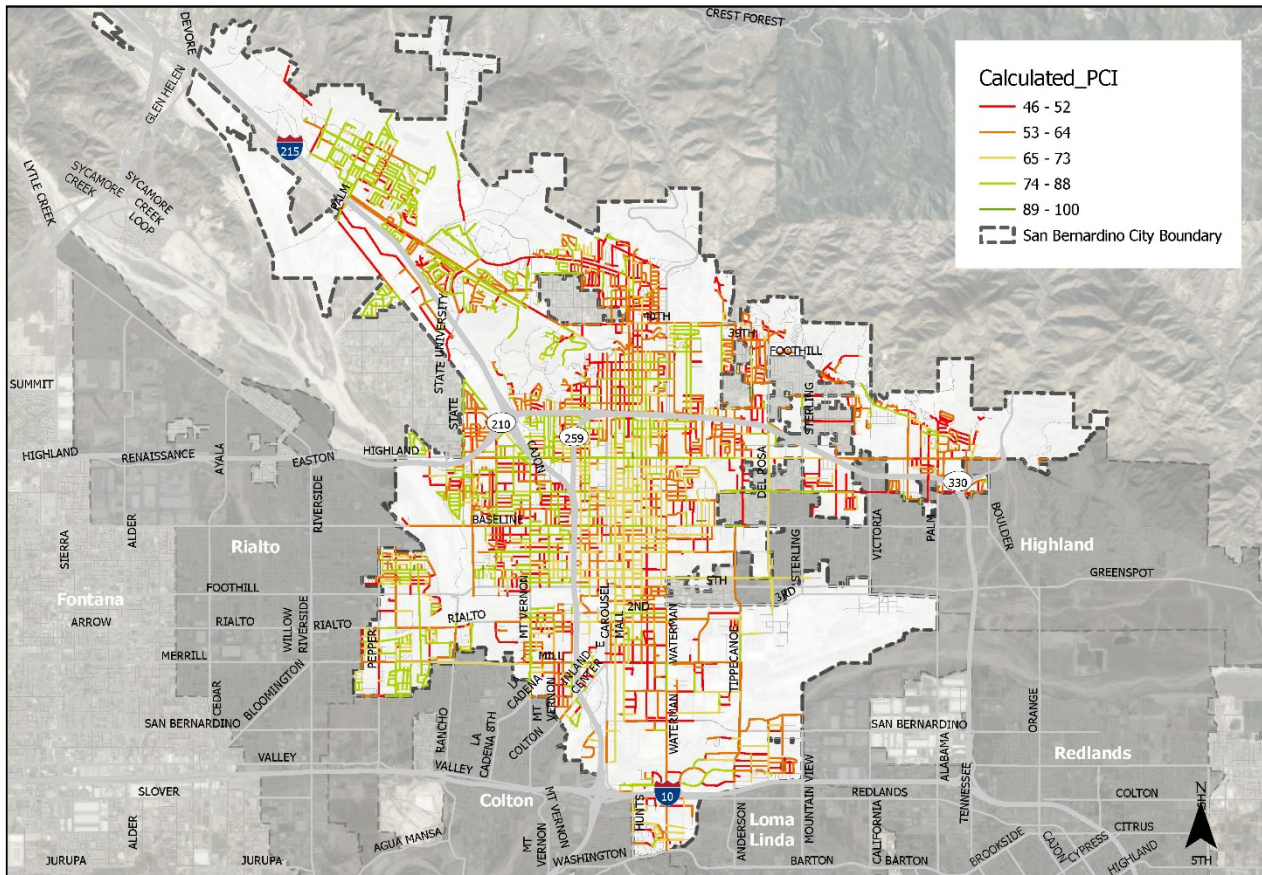
PCI SCORE	CONDITION	DESCRIPTION
100 – 70	Very Good	Pavements that have no distress and require mostly preventative maintenance.
70 – 50	Good	Pavement in this range offers acceptable ride quality, though road surfaces are becoming worn to the point where rehabilitation is needed to prevent rapid deterioration.
50 – 30	Poor	Pavements that have extensive amounts of distress and require major rehabilitation or reconstruction.
30 – 0	Very Poor	

Source: Street Saver software website

Figure 3-3 provides an illustration of the PCI values across the city. Segments with red color denote the lowest pavement quality category depicted at a value of 52 or lower. Each of five categories of values is shown, with the color changing from red to orange, to yellow, and to green, to denote the lowest to highest quality pavement categories.

A review was conducted of trucking terminals and other trucking destinations that are on roadways with low pavement ratings. These selected locations were identified through field visits and map searches. The review of these locations is provided in Appendix A.

Figure 3-3 – Existing City Roadway Pavement Conditions

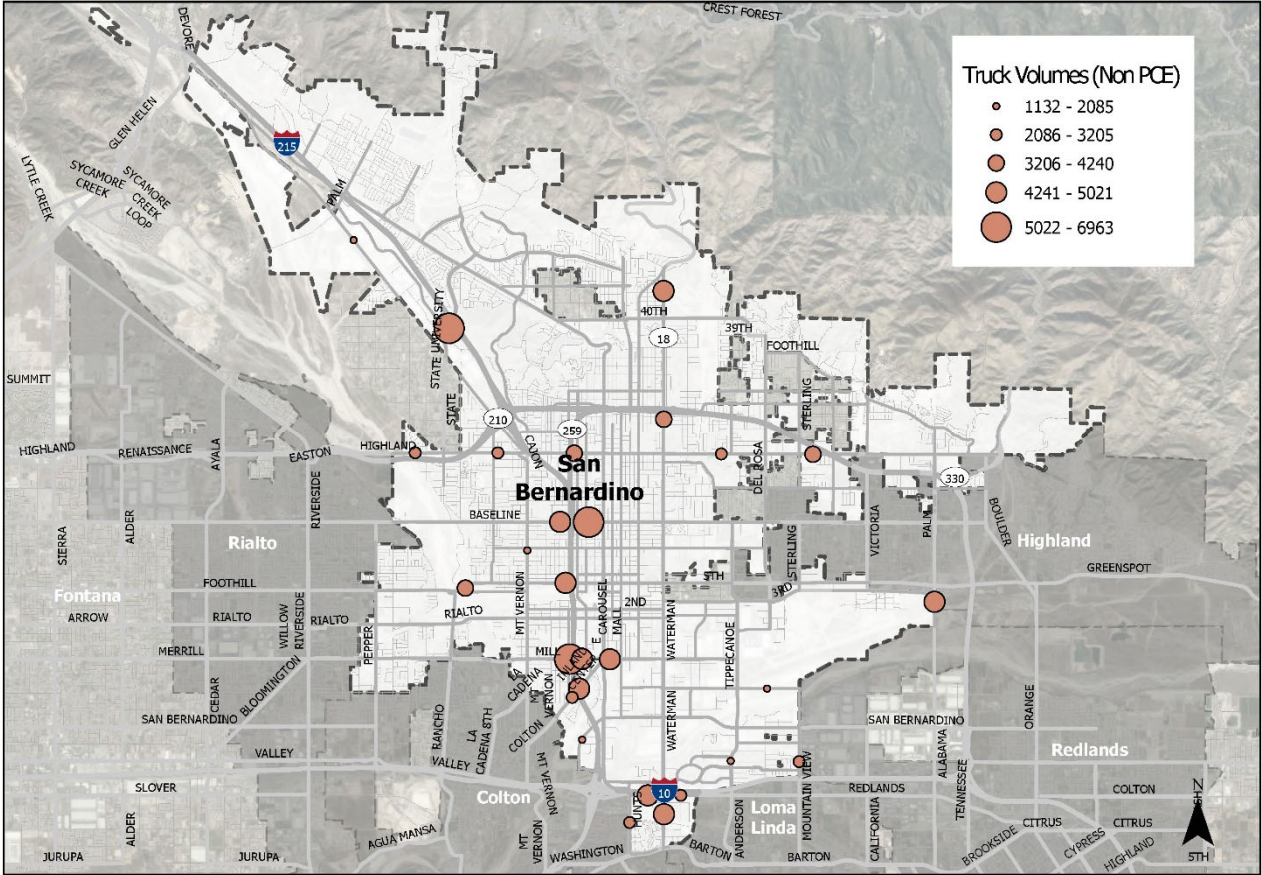


### 3.3 EXISTING ROADWAY VOLUMES

Roadway daily vehicle volumes were mapped, using data from the General Plan mobility analysis from the year 2021 and from new counts conducted for this study in 2022. The volumes are truck volumes only, without PCE (passenger car equivalency) factoring that is typically done for operations analysis.

The highest volumes are on State University Parkway, near the northern industrial corridors along Cajon Boulevard, on Waterman Avenue at the I-10 interchange and at the northern end of the city on the route to the mountain areas, on Baseline Avenue near the I-215 interchange, on 5<sup>th</sup> Street in the vicinity of the rail yards, on Mill Street near the I-215 interchange, and in the airport industrial areas on the southeast.

Figure 3-4 – Current Roadway Truck Travel and Parking Prohibitions



## 3.4 EXISTING TRUCK TRAVEL PATTERNS

Existing truck trip patterns were analyzed using data from the American Transportation Research Institute (ATRI), a company that compiles information from fleet GPS data. The data is aggregated, anonymized, and is non-customer specific. In order to have data across multiple seasons, to analyzed patterns across various time of the year, four time periods of data were acquired. The data attributes included a unique vehicle number, latitude, longitude, and speed.

The time periods of the dataset applied to this analysis were within the months of August 2021, November 2021, February 2022, and May 2022, for a two-week time period within each month. The geographic boundaries of the dataset was defined as a two-mile distance from the City of San Bernardino boundaries. The boundary was extended past the City limits, in order to include patterns within travel corridors that extend outward to other communities or regional connections. The data was used to identify major trucking routes and locations of terminals and other destinations, for the development of the proposed truck routes.

Figure 3-5 provides an illustration of the truck trip data points from one of the data sets, for the month where the level of trucking activity was the highest. Figure 3-6 provides a conglomeration of these data points, analyzing the data by density of trips and reducing the data down to major sites and corridors.

Two other elements of the analysis of existing truck trips that were applied to this study were a mapping of truck routing patterns provided by trucking mobile apps and in-field truck following. A summary of the analysis of the trucking mobile apps is provided in Appendix B, and a map of routes identified and the locations of terminals on these routes is provided in Appendix C. Results of the field following of trucks, over a three day period, is provided on the Appendix D figure. All of these efforts were used to define the proposed truck routes.

Figure 3-5 – Existing Truck Activity

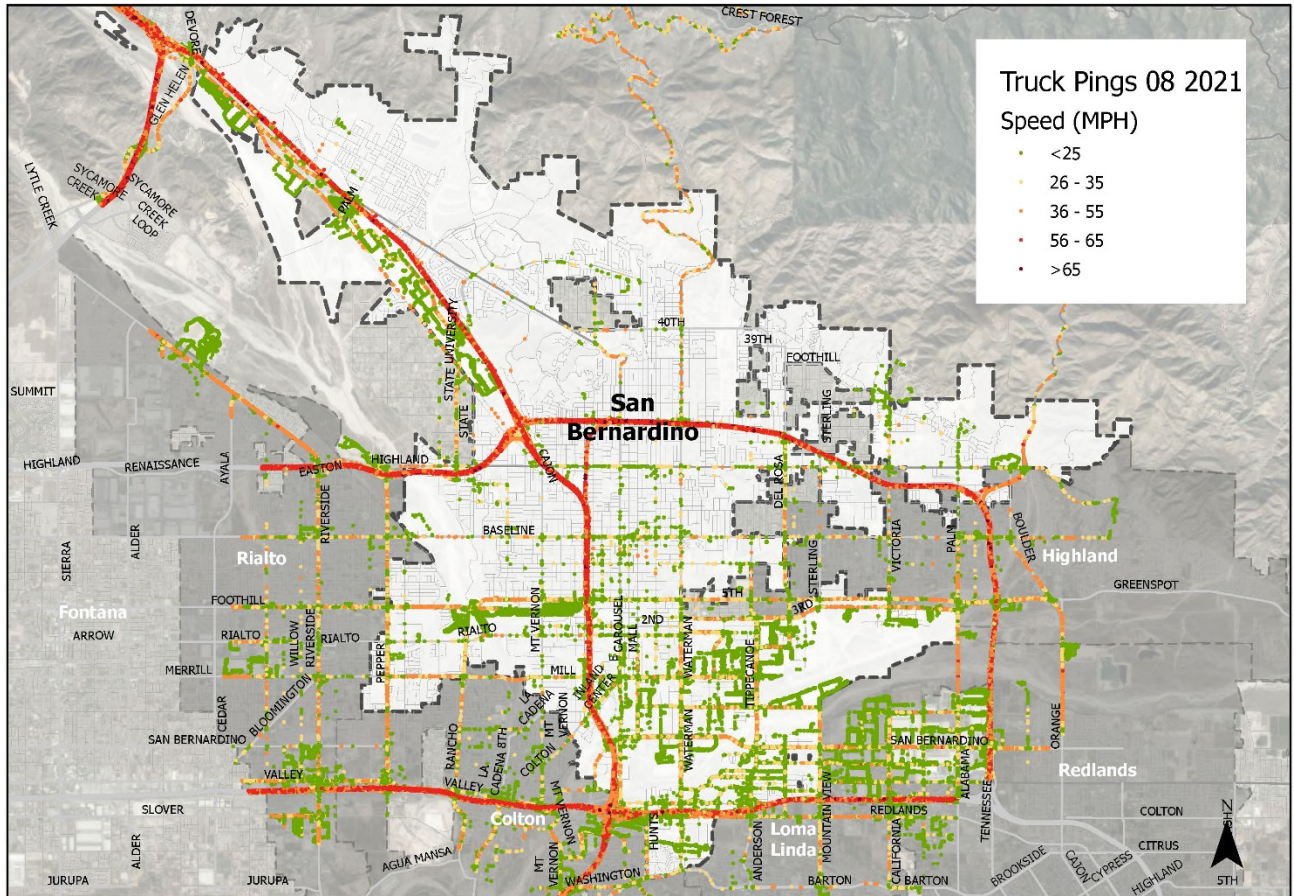
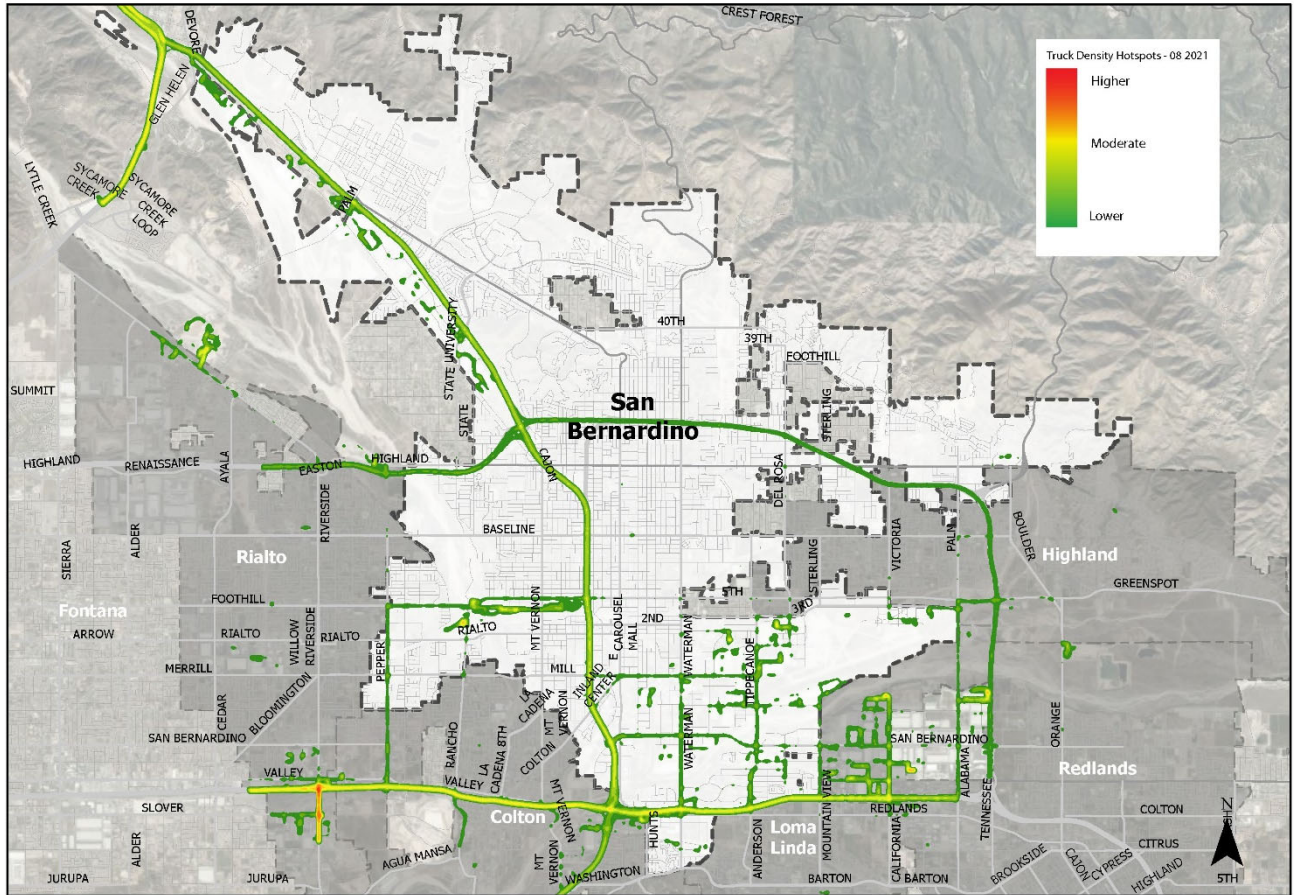


Figure 3-6 – Existing Truck Trip Density





# 4 IMPLEMENTATION

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Implementation of the proposed truck routes requires posting of route regulatory signs, modification of the Municipal Code, further evaluation of overall roadway and lane widths, further evaluation of turning radius issues and potential improvements, overlap of routes with proposed bicycle facility locations, and neighboring agency coordination. These implementation steps are discussed in the sections below.

## 4.1 SUMMARY OF RECOMMENDED TRUCK ROUTES

Based on the analysis of roadway characteristics and trucking activity summarized in Section 3, a set of recommended truck routes within the city was developed, and is provided in Figure 4-1.

Most of the proposed truck route segments connect to regional routes on State Route highways or freeway interchanges, or link into other routes in neighboring cities. Others end at industrial parcels that require access, but do not continue further into nearby residential areas. A summary table of all recommended truck route segments is provided later in this section.

Figure 4-2 provides a map of the proposed truck routes with the existing land use. The coverage of the truck routes includes all major commercial areas and industrial parcels. Internal road networks within commercial centers and industrial centers were not included, as those roads are generally private and not controlled by the City.

Figure 4-1 – Proposed Regulatory Truck Routes

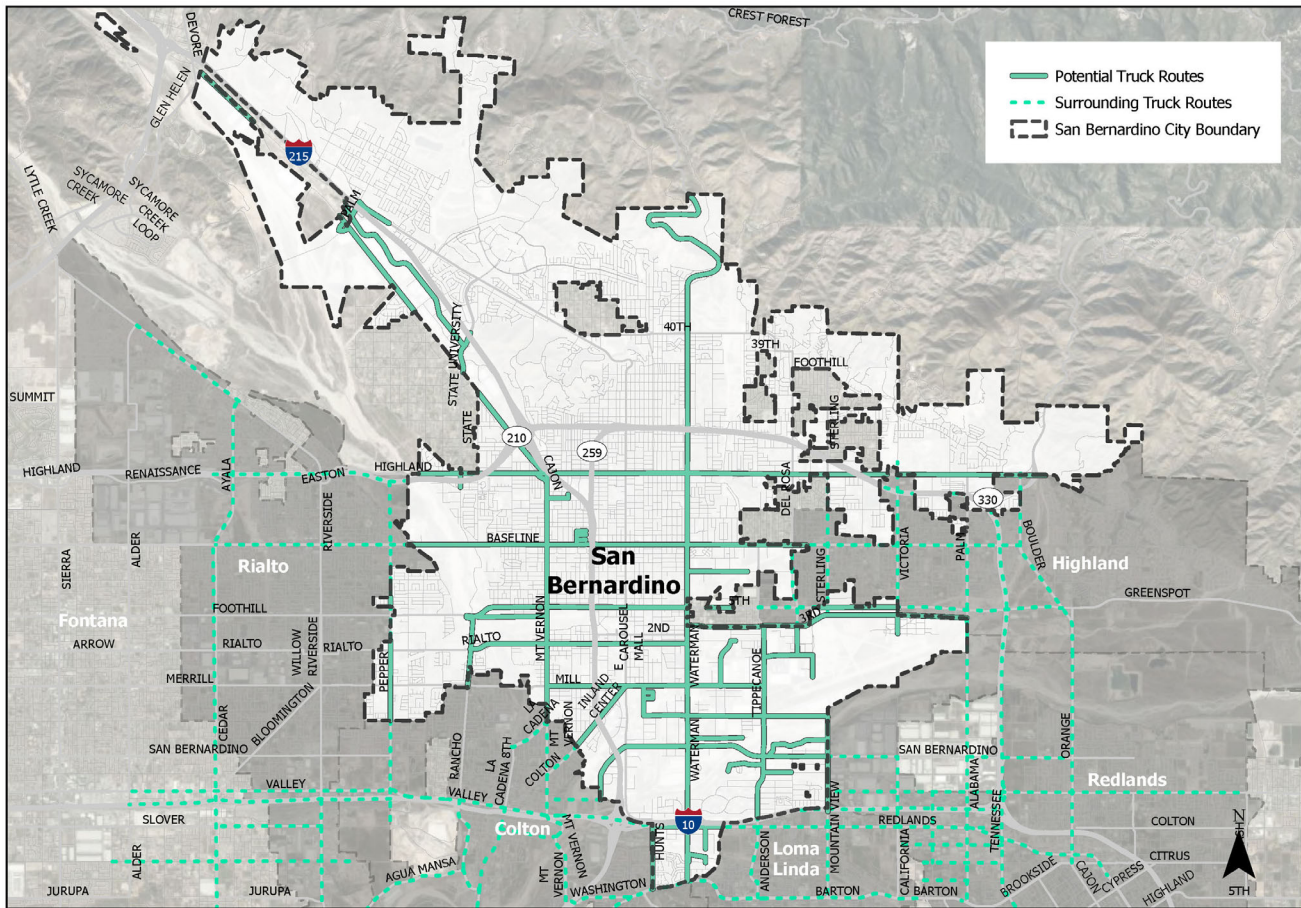


Figure 4-2 – Proposed Regulatory Truck Routes with Land use

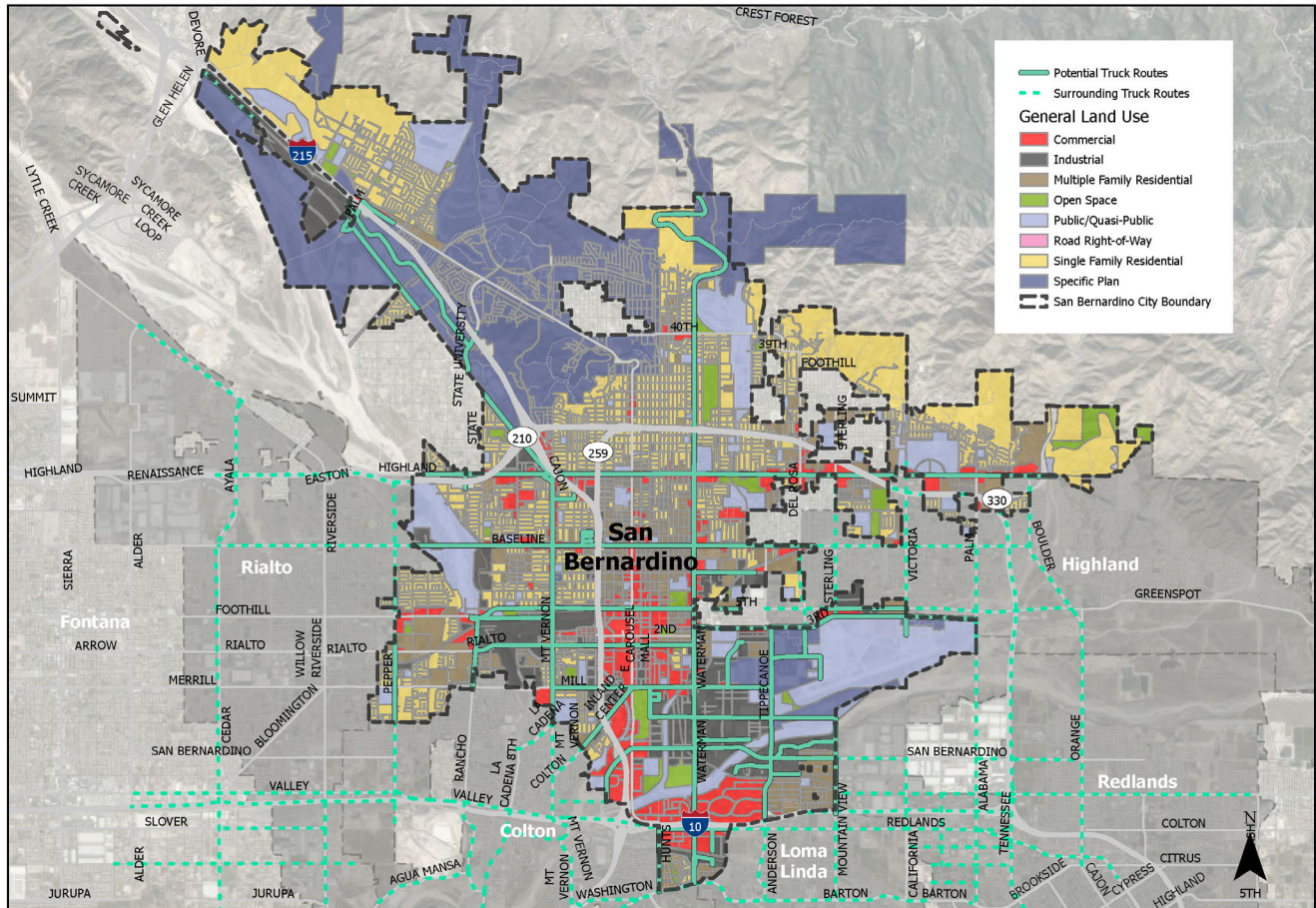


Table 4-1 provides a summary of all proposed truck routes with major categories of characteristics for each. Data on pavement quality from the City pavement management system is included, with high and low values across the total segments listed for each row of the table. The curb lane widths are also shown as high and low values across the segment. This width, minus areas permitted for on-street parking, should be 12 feet or wider for truck travel. Dimensions that are less than this are highlighted in blue in the table.

Proposed bicycle facilities from the Active Transportation Plan (ATP) of the City were included in the table, indicating where bicycle facility implementation may be in conflict with truck routes. If bicycle facilities are constructed within on-street parking areas, they would not affect lane widths. Reconfiguration of travel lanes for bicycle projects, however, could create lane widths that are less than 12 feet.

**Table 4-1 Truck Route Segment Characteristics**

ROADWAY SEGMENT	FROM	TO	PAVEMENT QUALITY (PCI) - LOW VALUE	PAVEMENT QUALITY HIGH VALUE	CURB LANE WIDTH LOW VALUE	CURB LANE WIDTH HIGH VALUE	CURB LANE WIDTH MINUS PARKING	PROPOSED BICYCLE FACILITY
13TH ST	PERRIS ST	END		46		18	10	
17TH ST	MT VERNON AV	MASSACHUSETTS AV		64		14	*	
3RD ST	WATERMAN AV	TIPPECANOE AV	64		16	17	11	
3RD ST	VICTORIA AV	ALABAMA ST				13	13	
3RD ST	TIPPECANOE AV	DEL ROSA AV	52		15	30	30	
3RD ST	DEL ROSA AV	VICTORIA AV	100	100		15	15	
4TH ST	5TH ST	TIA JUANA ST		52	18	18	10	
4TH ST	TIA JUANA ST	END ST		76		25	17	
5TH ST	CITY LIMIT AT WASH	CITY LIMIT NEAR PEDLEY RD	64		12	13	13	
5TH ST	I-215 NB	WATERMAN AV	64	82		17	9	II
5TH ST	RANCHO AV	MT VERNON AV		100	16	20	12	II
5TH ST	MT VERNON	I-215 SB				15	15	II
5TH ST	STERLING AV	VICTORIA AV		100		13	13	

**Table 4-1 Truck Route Segment Characteristics**

ROADWAY SEGMENT	FROM	TO	PAVEMENT QUALITY (PCI) - LOW VALUE	PAVEMENT QUALITY HIGH VALUE	CURB LANE WIDTH LOW VALUE	CURB LANE WIDTH HIGH VALUE	CURB LANE WIDTH MINUS PARKING	PROPOSED BICYCLE FACILITY
9TH ST	WATERMAN AV	760 FT EAST OF PEDLEY RD	64	70		16	8	II
ARROWHEAD AV	MILL ST	CENTRAL AV		70	12	14	14	II
AUTO CENTER RD	I-215 FWY	FAIRWAY DR		64		11	11	
BASELINE ST	WATERMAN AV	OSBUN RD	64	100	16	18	18	IV
BASELINE ST	I-215 NB	WATERMAN AV	64	88		16	16	IV
BASELINE ST	MEDICAL CENTER DR	I-215 SB	52	82	14	18	18	IV
BASELINE ST	WEST CITY LIMIT	MEDICAL CENTER DR	46	58	17	20	20	IV
CAJON BL	CALIFORNIA ST	MEDICAL CTR DR		76		12	12	IV
CAJON BL	MEDICAL CTR DR	HIGHLAND AV	70	76		12	12	IV
CAJON BL	REX COLE RD	KENDALL DR	64	100	12	16	16	
CAJON BL	PALM AV	JUNE ST	52	100		20	20	IV
CENTRAL AV	TIPPECANOE AV	MOUNTAIN VIEW AV		76		13	13	
CENTRAL AV	WATERMAN AV	TIPPECANOE AV	52	70	12	18	18	

**Table 4-1 Truck Route Segment Characteristics**

ROADWAY SEGMENT	FROM	TO	PAVEMENT QUALITY (PCI) - LOW VALUE	PAVEMENT QUALITY HIGH VALUE	CURB LANE WIDTH LOW VALUE	CURB LANE WIDTH HIGH VALUE	CURB LANE WIDTH MINUS PARKING	PROPOSED BICYCLE FACILITY
CENTRAL AV	ARROWHEAD AV	WATERMAN AV		64		20	20	
COMMERCIAL RD	WATERMAN AV	WATERMAN FRONTAGE RD		70		32	32	
COOLEY AV	SUNNYSIDE AV	TIPPECANOE AV		70	15	17	17	
COOLEY AV	END	SUNNYSIDE AV	52	64		22	14	
DEL ROSA DR	3RD ST	HARRY SHEPPARD BL		70	14	18	18	
ESPERANZA ST	ARROWHEAD AV	MOUNTAIN VIEW AV				16	*	
GARDENA ST	REDLANDS BLVD	END				14	*	
HARRY SHEPPARD BL	TIPPECANOE AV	DEL ROSA DR		70	15	16	16	
HARRY SHEPPARD BL	DEL ROSA DR	LELAND NORTON WY				13	13	
HIGHLAND AV	WEST CITY LIMIT	MT VERNON AV	64	76	13	20	20	IV
HIGHLAND AV	I-215 FWY	SR-259	58	100	12	14	14	IV
HIGHLAND AV	SR-259	WATERMAN AV	64	100	16	17	9	IV
HIGHLAND AV	WATERMAN AV	DEL ROSA AV	64	88	13	17	17	IV
HIGHLAND AV	DEL ROSA AV	VICTORIA AV	58	64	16	25	25	IV

**Table 4-1 Truck Route Segment Characteristics**

ROADWAY SEGMENT	FROM	TO	PAVEMENT QUALITY (PCI) - LOW VALUE	PAVEMENT QUALITY HIGH VALUE	CURB LANE WIDTH LOW VALUE	CURB LANE WIDTH HIGH VALUE	CURB LANE WIDTH MINUS PARKING	PROPOSED BICYCLE FACILITY
HIGHLAND AV	VICTORIA AV	PALM AV	52	58	16	20	12	IV
HIGHLAND AV	PALM AV	SUMMERT RAIL PL	58	64	12	15	15	IV
HOME AV	PERRIS ST	END		64		15	*	
HUFF ST	ARROWHEAD AV	MOUNTAIN VIEW AV		46			*	
HUNTS LN	REDLANDS BL	WASHINGTON ST	52	100		16	16	
INDUSTRIAL PKWY	KENDALL DR	UNIVERSITY PKWY		52		12	12	
INDUSTRIAL RD	WATERMAN FRONTAGE RD	STEELE RD		70		19	*	
INLAND CENTER DR	MILL ST	CITY LIMIT	58	100		14	14	
KENDALL DR	PALM AV	PINE AV		64	13	22	22	
LELAND NORTON WY	HARRY SHEPPARD BL	END			12	19	19	
LENA RD	RIALTO AV	MILL ST		64		13	13	
MASSACHUSETTS AV	MASSACHUSETTS DEVIATION TO BRIDGE	17TH ST			15	18	10	NS
MASSACHUSETTS AV	150 FT NORTH OF MASSACHUSETTS BRIDGE DEVIATION	MASSACHUSETTS AV			11	13	*	

**Table 4-1 Truck Route Segment Characteristics**

ROADWAY SEGMENT	FROM	TO	PAVEMENT QUALITY (PCI) - LOW VALUE	PAVEMENT QUALITY HIGH VALUE	CURB LANE WIDTH LOW VALUE	CURB LANE WIDTH HIGH VALUE	CURB LANE WIDTH MINUS PARKING	PROPOSED BICYCLE FACILITY
MILL ST	I-215	WATERMAN AV	52	64		17	17	II
MILL ST	WATERMAN AV	TIPPECANOE AV	52	64		12	12	II
MILL ST	MT VERNON AV	I-215 SB	58	58		13	13	II
MOUNTAIN VIEW AV	SAN BERNARDINO AV	I-10 WB		100	12	15	15	
MOUNTAIN VIEW AV	CENTRAL AV	SAN BERNARDINO AV	64			13	13	
MOUNTAIN VIEW AV	HUFF ST	ESPERANZA ST		52		17	*	
MT VERNON	MILL ST	GRANT AV	58	82	15	16	16	IV
MT VERNON AV	RIALTO AV	MILL ST	58	100		15	15	IV
MT VERNON AV	BASELINE ST	5TH	58	76		16	8	IV
MT VERNON AV	HIGHLAND AV	BASELINE ST	64	76		15	7	IV
MT VERNON AV	21ST ST	HIGHLAND AV		76	15	17	9	II
MT VERNON AVE	5TH ST	4TH ST		64	16	18	18	II
NORMAN RD	LENA RD	CLEVENGER DR		70		15	*	
NORMAN RD	WATERMAN AV	LENA RD	46	70	16	20	12	
ORANGE SHOW RD	E ST	WATERMAN AV	52	70		20	12	II
ORANGE SHOW RD	WATERMAN AV	TIPPECANOE AV	58	70	20	20	20	II
PALM AV	INDUSTRIAL PKWY	KENDALL DR	46	100		12	12	II



**Table 4-1 Truck Route Segment Characteristics**

ROADWAY SEGMENT	FROM	TO	PAVEMENT QUALITY (PCI) - LOW VALUE	PAVEMENT QUALITY HIGH VALUE	CURB LANE WIDTH LOW VALUE	CURB LANE WIDTH HIGH VALUE	CURB LANE WIDTH MINUS PARKING	PROPOSED BICYCLE FACILITY
PALM AV	PALM AV RAMP	CAJON BL		100	14	15	15	II
PEPPER AV	CITY LIMIT NORTH	RANDALL AV	52	100	15	18	18	II
PEPPER AV	6TH ST	SPRUCE ST		52	12	15	15	
PERRIS ST	HOME AV	BASELINE ST	52	76		14	*	
RANCHO AV	5TH ST	RIALTO AV	64	76	13	34	34	
RANCHO AV	RIALTO AV	MILL ST	46	100	20	24	16	
RANCHO AV	MILL ST	CITY LIMIT		100		15	15	
REDLANDS BL	HUNTS LN	EAST CITY LIMIT	52	64		21	21	
REECE ST	PERRIS ST	END		46		18	10	
RIALTO AV	RANCHO AV	MT VERNON AV	52	70	18	20	20	II
RIALTO AV	I-215 NB	WATERMAN AV	64	70	15	16	16	IV
RIALTO AV	MT VERNON AV	I-215 SB	52	70	17	18	10	IV
RIALTO AV	LENA RD	330 FT EAST OF LENA RD				12	*	III
RIVERVIEW DR	SAN BERNARDINO AV	MOUNTAIN VIEW AV		64	20	21	13	
SAN BERNARDINO AV	RICHARDSON ST	MOUNTAIN VIEW AV		52		20	12	
SAN BERNARDINO AV	TIPPECANOE AV	RICHARDSON ST	52	70		14	14	

**Table 4-1 Truck Route Segment Characteristics**

ROADWAY SEGMENT	FROM	TO	PAVEMENT QUALITY (PCI) - LOW VALUE	PAVEMENT QUALITY HIGH VALUE	CURB LANE WIDTH LOW VALUE	CURB LANE WIDTH HIGH VALUE	CURB LANE WIDTH MINUS PARKING	PROPOSED BICYCLE FACILITY
STATE ST	SR-210 EB	I-215 EB	52	100	11	12	12	II
STATE ST	HIGHLAND AV	SR-210 EB		100	11	12	12	
STEELE RD	INDUSTRIAL RD	COMMER CIAL RD				19	11	
TIPPECANOE AV	CENTRAL AV	SAN BERNARDINO AV	64	64	19	23	23	II
TIPPECANOE AV	MILL ST	CENTRAL AV	64		13	15	15	II
TIPPECANOE AV	ORANGE SHOW RD	I-10 WB	52	64	12	13	13	II
TIPPECANOE AV	3RD ST	MILL ST	70	76	14	21	21	II
VICTORIA AV	TIPPECANOE AV	RICHARDS ON ST		70		21	21	
VICTORIA AV	3RD ST	SABO WY			17	19	19	
VICTORIA AV	SABO WY	U ST			13	14	14	
WATERMAN AV	ORANGE SHOW RD	I-10 WB	64	100		20	20	II
WATERMAN AV	MILL ST	ORANGE SHOW RD	64	82	20	22	22	NS
WATERMAN AV	5TH ST	MILL ST	64	64		15	15	NS
WATERMAN AV	I-10 FWY	BARTON RD	64	100		12	12	II
WATERMAN AV	BASELINE ST	5TH ST		64	15	20	20	NS
WATERMAN AV	HIGHLAND AV	BASELINE ST	64	70		18	10	NS
WATERMAN AV	SR-210	HIGHLAN D AV	52	64	12	18	10	NS
WATERMAN AV	40TH ST	SR-210				14	14	NS

**Table 4-1 Truck Route Segment Characteristics**

ROADWAY SEGMENT	FROM	TO	PAVEMENT QUALITY (PCI) - LOW VALUE	PAVEMENT QUALITY HIGH VALUE	CURB LANE WIDTH LOW VALUE	CURB LANE WIDTH HIGH VALUE	CURB LANE WIDTH MINUS PARKING	PROPOSED BICYCLE FACILITY
WATERMAN AV	NORTH CITY LIMIT	ARROWHEAD RD		100		15	15	
WATERMAN AV	SIERRA WY	40TH ST			15	16	16	NS
WATERMAN FRONTAGE RD	INDUSTRIAL RD	COMMERCIAL RD		70		16	*	

\* Roadway is a local two-lane road with shared lane and parking space. This measurement does not apply.

Bikeway designations: II – Class II bicycle lane, III – Class III signed/sharrow route, IV – Class IV separate bikeway, NS – Neighborhood bikeway (sharrows, access restrictions)

## 4.2 TURNING RADIUS ANALYSIS

Selected intersections along the proposed truck routes were analyzed for potential truck turning issues. The analyzed locations are where four-lane roads meet two-lane roads, or where all approaching roadways are two-lane roads. The roadways were selected in this manner to identify potential restrictions in geometry at intersections on these smaller roadways, where trucks would be turning. The identified issues are potential curb overruns, where turning trucks may not have adequate space at corners to turn without going off the pavement or over curbs, based on the turning radius. These locations may have to be evaluated further and potentially improved as part of the implementation of the truck routes.

The truck turning radius analysis drawings are provided in Appendix E.

**Table 4-2 Truck Turning Radius Issues at Intersections**

ROADWAY	CROSS STREET	POTENTIAL CURB OVERRUN, BY CORNER LOCATION			
		NW	NE	SW	SE
Mountain View Ave	San Bernardino Ave *	X		X	
Waterman Ave	Rialto Ave	X			X
Mt Vernon Ave	Mill St	X	X		X
Rancho Ave	Rialto Ave	X	X		X
Rancho Ave	Foothill Blvd				X
Waterman Ave	5th St	X		X	X
Mt Vernon Ave	Highland Ave			X	X
Mt Vernon Ave	21st St (next to Cajon Blvd)				
Palm Ave	Cajon Blvd				
W 4th St	W 5th St				
State St	Highland Ave *				
Alabama St	E 3rd St *	X		X	X
Victoria Ave	5th St *	X		X	X
Redlands Blvd/E Steel Rd	S Hunts Ln *		X		X
N Del Rosa Dr	E Baseline St *		X	X	X

\* On or near City boundary

Note: Cajon Boulevard is also "Historic Route 66"

NW = northwest, NE = northeast, SW = southwest, SE = southeast

## 4.3 MUNICIPAL CODE UPDATES

Existing City truck prohibitions are defined by Municipal Code Section 10.24.190, "Commercial Vehicles Prohibited on Certain Streets. It is recommended that this Code section be amended to include the following two paragraphs:

*"The City Council finds that a city-wide truck route study has been completed in full compliance with the requirements of the California Vehicle Code and the recommendations in the study should be implemented. Based upon the review of the study and related information, the city council has identified by resolution those city roadways to become regulatory truck routes, and finds that all trucks within the city shall be operated only on the truck routes illustrated on the "Approved Truck Routes" map, attached hereto and made a part hereof, when appropriate route signs and end-of-route or no trucks signs (where necessary) are erected along the routes."*

*"Pursuant to Vehicle Code §§ 21101 and 35700 et seq., the city council prohibits any commercial vehicle exceeding a manufacturer's gross vehicle weight rating of 10,000 pounds (five tons) from using any identified city highways or identified CSA roads within a residential area for any duration of the day or from using any identified city highways or identified CSA roads if the use of such highways or roads may adversely affect traffic circulation or safety within a residential area."*

Specific truck travel prohibition signs can continue to be used in areas that may require it, based on City enforcement of the regulatory truck routes and neighborhood needs. This need can be documented in the Code amendment. The City Engineer should be allowed discretion, after implementation of the truck routes, in installing a minimum amount of truck prohibition signs (R5-2) required to provide adequate notice to truck drivers to instruct them which routes are restricted for trucks use. These signs should continue to be used, or should be erected as new signs, only if the following applies:

1. If trucks are repeatedly using a particular roadway in violation of the truck route policy, by cutting through a residential neighborhood when an alternate route on a designated truck route is available.
2. If repeated travel by trucks on a roadway has resulted in trucks becoming stuck or causing roadway or property damage due to inadequate roadway widths, tight turning radii, a lower tree canopy, or an excessive street grade.
3. If truck travel is prominent on roadways determined by the City to be inappropriate for truck traffic, based on adjoining land uses and/or the local nature of the roadway.

4. If the level of truck traffic on a roadway is consistently and noticeably higher than what would be typical for a facility of that classification.

## 4.4 AGENCY COORDINATION AND ENVIRONMENTAL REVIEW

Letters can be provided by the City of San Bernardino to the neighboring city managers, public works directors, and city engineers to provide notice on the planned truck route network. A review period can be provided before final City Council approval of the study and recommended truck routes. The recommended truck route network, however, has been developed to match the truck routes of adjacent cities on the same roadways that cross between jurisdictions. Therefore, no recommended San Bernardino truck route would send traffic into a neighboring city without the presence of a continuing truck route past the City boundary.

California Environmental Quality Act Guidelines (CEQA) Section 15301(c), permits categorical exemptions from CEQA for actions such as the regulatory truck routes. Adoption of a citywide truck route ordinance to amend existing sections with specified streets is exempt, as the truck routes formalize existing patterns of trucking activity, matching the use of the existing roadways currently used by trucks. No new segments of roads have been identified for truck routes that are not currently used by trucks, or are not currently one of multiple alternate and primary routes to an industrial or commercial parcel. Therefore, the adoption of the proposed truck routes would not change the distribution of truck traffic compared to existing conditions.

In addition, in accordance with CEQA Guidelines 15301, the recommended Code amendments are categorically exempt from CEQA in that they relate to operation of public streets and expansion of use would not occur.

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APPENDIX A:  
LOCAL TRUCKING DESTINATIONS ON ROADWAYS  
WITH LOW PAVEMENT RATINGS

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APPENDIX B:  
TRUCKING MOBILE APPS ANALYSIS RESULTS MAP



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APPENDIX C:  
ANALYSIS OF TRUCK ROUTING MOBILE APPS

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APPENDIX D:  
TRUCK FOLLOWING RESULTS MAP

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APPENDIX E:  
STAA/TERMINAL TRUCK TURNING RADII ANALYSIS