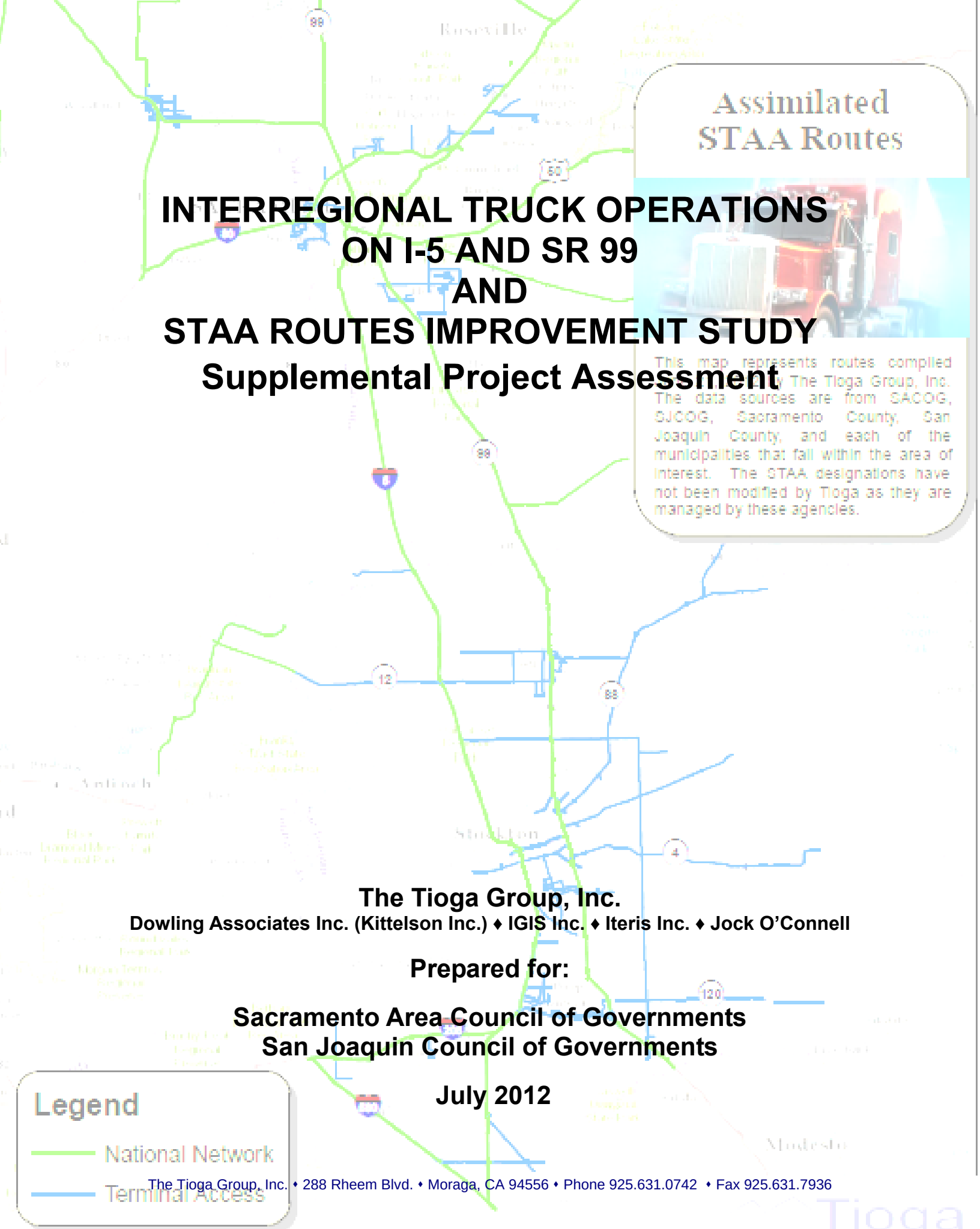

INTERREGIONAL TRUCK OPERATIONS ON I-5 AND SR 99 AND STAA ROUTES IMPROVEMENT STUDY

Supplemental Project Assessment

The Tioga Group, Inc.

Dowling Associates Inc. (Kittelson Inc.) ♦ IGIS Inc. ♦ Iteris Inc. ♦ Jock O'Connell

Prepared for:

Sacramento Area Council of Governments
San Joaquin Council of Governments

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The Tioga Group, Inc. ♦ 288 Rheem Blvd. ♦ Moraga, CA 94556 ♦ Phone 925.631.0742 ♦ Fax 925.631.7936

Contents

I. INTRODUCTION 1
Improvement Candidates and Screening Criteria 1
Sacramento County 1
San Joaquin County 1
II. PROJECTS WITHIN SACRAMENTO COUNTY 5
1: Del Paso Rd between I-5 and Norwood 5
2: Richards Blvd between I-5 and SR-160 8
3: West Sacramento Network 10
4: Mack/Elsie, Stockton Blvd. at SR-99 14
5: Twin Cities Road between I-5 and SR-99 15
III. PROJECTS WITHIN SAN JOAQUIN COUNTY 21
6: Liberty Road from SR-99 to SR-88 21
7: Turner Road between I-5 and SR-99 in Lodi 23
8: Airport Way/Roth Road 26
9: Austin/Moffatt Road between Spreckles access and SR-99 29
10: East Grant Line Road 32
Recommendations 35
APPENDIX A: PROJECT SUMMARY AND COSTING TABLES 36

Exhibits

Exhibit 1: Northgate and Del Paso Rd – South Leg of Northgate 6
Exhibit 2: Northgate and Del Paso Rd – Skid Marks 6
Exhibit 3: Sign Damage at Main St and Pell Dr 7
Exhibit 4: Map of Project Area – Del Paso Rd. 7
Exhibit 5: Map of Project Area – Del Paso Rd. – Proposed Routes in Red 8
Exhibit 6: Map of Project Area – Richards Blvd. 9
Exhibit 7: Map of Project Area – Richards Blvd. – Proposed Routes in Red 10
Exhibit 8: Map of Project Area – West Sacramento 13
Exhibit 9: Map of Project Area – West Sacramento – Proposed Routes in Red 13
Exhibit 10: Map of Project Area – Mack/Elsie/Stockton Blvd. 15
Exhibit 11: Map of Project Area – Mack/Elsie/Stockton Blvd. – Proposed Routes in Red 15
Exhibit 12: Locations of Signal Pole Damage 17
Exhibit 13: Signal Pole Damage 18
Exhibit 14: Signal Pole Damage 19
Exhibit 15: Twin Cities Road Project Area 20
Exhibit 16: Twin Cities Road Project Area – Proposed Routes in Red 20
Exhibit 17: STAA Truck at Liberty Road and SR-99 22
Exhibit 18: Map of Project Area – Liberty Road 22
Exhibit 19: Liberty Road Project Area – Proposed Routes in Red 23
Exhibit 20: “No Trucks” Sign - W Turner Rd and Lower Sacramento Rd 25
Exhibit 21: Turner Road Project Area 26
Exhibit 22: Turner Road Project Area – Proposed Routes in Red 26
Exhibit 23: Airport Way Project Area 28
Exhibit 24: Airport Way Project Area- Proposed Routes in Red 29
Exhibit 25: Tire Skid Marks 30
Exhibit 26: South Leg of Spreckles Left Turn Pocket 31
Exhibit 27: Austin/Moffatt/Spreckles Project Area 32
Exhibit 28: Austin/Moffatt/Spreckles Project Area – Proposed Routes in Red 32
Exhibit 29: East Grant Line Rd and Paradise Rd 34
Exhibit 30: East Grant Line Road Project Area plus Network 34
Exhibit 31: East Grant Line Project Area plus Network – Proposed Routes in Red 35
Exhibit 32: Summary and Costing for Sacramento County 37
Exhibit 33: Summary and Costing for San Joaquin County 38

I. Introduction

Improvement Candidates and Screening Criteria

Prior to identifying a refined short-list of STAA improvement areas, the consultant team developed a universe of improvement locations/areas based on field reviews, local agency interviews/inputs, and ATRI data. The consultant team introduced the following screening criteria for selecting candidate locations for STAA improvements. The screening criteria are listed in priority order below.

1. Non-STAA facility with presence of STAA trucks per ATRI data and personal observation by participants
2. Non-STAA facility reflects gap in STAA network
3. Non-STAA facility reflects CHP preferred route (i.e., enforcement problems or for detour routes)
4. Non-STAA facility serving historic business districts (primarily within the Cities of Sacramento and Stockton)
5. Non-STAA facility anticipated to serve future development
6. Non-STAA facility serving as parallel arterial or frontage road with I-5 or SR-99
7. Other observations unique to a specific route or location

Based on the above screening criteria approximately 30 improvement areas were identified by the consultant team. Upon further evaluation, the consultant team winnowed this list down to ten priority improvement areas for further evaluation. These ten priority improvement areas are listed below.

Sacramento County

- Del Paso Rd between I-5 and Norwood
- Richards Blvd between I-5 and SR-160
- West Sacramento Network (Harbor, West Capital Ave, Jefferson, I-80)
- Mack/Elsie, Stockton Blvd. at SR-99
- Twin Cities Road between I-5 and SR-99

San Joaquin County

- Liberty Road from SR-99 to SR-88
- Turner Road between I-5 and SR-99 in Lodi
- Airport Way between French Camp and SR-120
- Austin/Moffatt Road between Spreckles access and SR-99
- East Grant Line Road between interchange with I-5 and MacArthur Drive including Paradise Road and Pescadero Road

Generally, the ten projects above illustrate a number of principles that justify their inclusion in the prioritized list. Many of these principles, considered individually or bundled, can be considered valid building blocks for developing purpose and need statements for STAA improvements. These principles are as follows:

- Fill gaps in existing STAA routes.
- Adequately design STAA routes in new development areas.
- Need to keep STAA signage current. Compliance cannot be expected without proper signage. Creditability for the program suffers while driver confusion/frustration increases.
- Confusion with city truck routes is a complication.
- Conflict between the desires of neighboring jurisdictions should not be the basis for not considering a complete and logical route.
- STAA circulation needs that cannot be seen by a single applicant and, therefore, have to be applied for by a jurisdiction or other interested party.
- Logical additions to the network that can be revealed by looking at where a substantial number of STAA-sized trucks are being operated on non-STAA routes.
- A need to modify routes that are circuitous and create confusion for the truck driver.
- Need for logical STAA sub-networks to fill major gaps within specific areas.
- A need to take advantage of future programmed improvements at interchanges on the National Network that can enhance STAA route connectivity.
- A need to expand existing routes that suffer from a previous/original approval being very limited when more was needed and still is needed.
- A need for shortest route connections to the National Network.
- A need to use Caltrans' guidelines and guidance for applications that involve local roadways, local considerations, and unqualified evaluations of alleged safety consideration. Local personnel should not substitute their analysis or opinions in lieu of such guidance.
- Need to support requests that create complete and logical STAA networks which individual applications inherently may not.

Additional field work was performed at these ten locations by the consultant team. Based on these field reviews, the following generalized improvement types were identified and documented for each improvement area:

- Signage (installation of T or S signs)
- Intersection channelization (to allow appropriate turn radius for specific movements)
- Intersection widening
- Realignments (typically required at freeway on- or off-ramps)

- Relocation of utility pole or other structures (due to channelization/widening).
- Design considerations (applicable with future development or programmed infrastructure improvements).

Application of the above improvement types is to strategically allow a more logical and navigable STAA network which more efficiently and intuitively interfaces between the National Network and local area networks specifically in areas already characterized by significant usage by STAA-sized trucks. It should be noted that these improvement assessments were not based on detailed engineering assessments or fully supported by AutoTURN software analyses. Local agencies and Caltrans are encouraged to refine these improvement strategies with greater specificity and full engineering assessments. The identified projects should also be considered as just a start of the planning/programming process. As such, generalized planning level cost estimates for each category were developed to provide "ball park" cost estimates for each of the ten priority STAA improvement areas.

The following cost table was developed for purposes of estimating improvement costs. These were used to the greatest degree possible; however, several locations required more substantial cost considerations.

• Sign Installation (3'x3' sign)	$600/sign
• Change of Signage	$300/sign
• Restriping	$10,000/intersection
• Turn Movement Channelization	$25,000/ movement (no signal modifications)
• Intersection Widening	$250,000/intersection
• Realignment	$400,000/ramp
• Utility relocation and of structures	$25,000/approach
• Design Considerations	Cost would be incurred only if streetscapes were not designed to accommodate STAA trucks.

These cost estimates were based on reasonable lineal foot and square foot cost estimates for roadway reconstruction and a cost samples of like improvement types. For planning level estimates, typical unit costs of $20 per square foot for roadway on new alignment and $15 per square foot for widening were considered. Those rates include typical construction costs including the roadway, curbs, sidewalk, striping, signage, drainage, and minor earthwork. It doesn't include such things as major earthwork, walls, structures, utilities, and right-of-way.

Actual costs for implementing the identified improvements will vary by location and the unique circumstances at each location e.g., right of way constraints and costs, underground utilities etc. In particular, the widening and realignment improvements could vary significantly depending on the length and width of new roadway.

There are many more spot or improvement projects that could be added to plans and bundled into a number of consolidated STAA application requests. It is a recommendation of this study that jurisdictions not wait for private party applications to be submitted for such improvements. Rather, regional and local planning agencies should take a more proactive role in pursuing such improvements.

The description of the ten selected projects and the assessment from an investigation of each follows below. These read from north to south through the study area. There are five improvement areas in each of the two project counties of Sacramento and San Joaquin. The resulting identified improvements and costs can serve as the starting point for future planning/programming consideration by the two MPOs and their affected local agencies. A summary of the identified improvements for each of the ten priority improvement areas and their associated project costs is provided in Appendix A.

II. Projects within Sacramento County

1: Del Paso Rd between I-5 and Norwood

Purpose & Need

Selected for improvement for the following reasons:

1. Non-STAA facility with presence of STAA trucks per ATRI data and personal observation by participants.
2. Non-STAA facility reflects gap in STAA network.
3. Non-STAA facility reflects CHP preferred route (i.e., enforcement problems or for detour routes).
4. Non-STAA facility anticipated to serve future development.

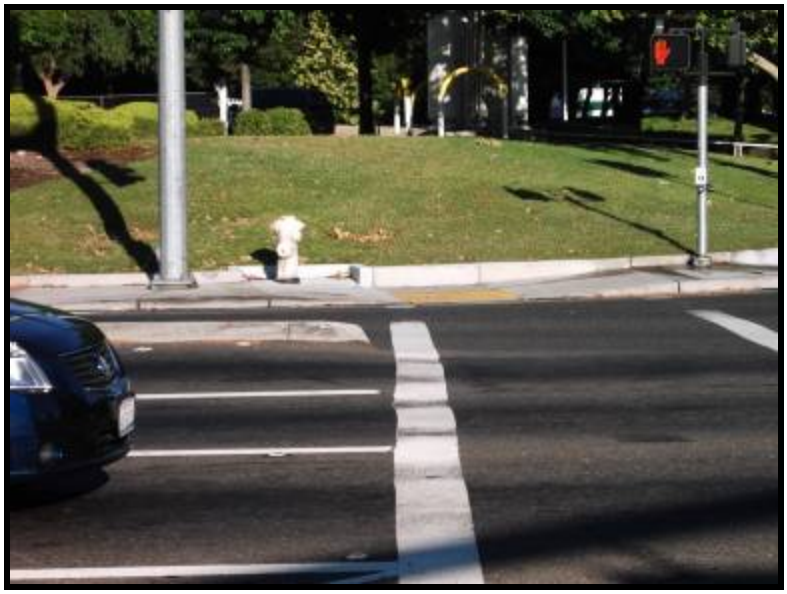
Additionally, there is a noticeable lack of an STAA route connecting I-5 with the industrial areas north of Sacramento.

Recommended Improvements

1. Del Paso Road/Northgate Boulevard – Remove about six feet of NB center lane median and place stop bar marking for NB inside left turn lane. $20,000.
2. Add/change signage as indicated on Proposed Changes inset map below.
   a. Change 1 signs. *$300.*
   b. Add 10 signs. *$6000.*

Note skid marks on median Northgate and Del Paso Rd.(Exhibit 1) Perhaps needs to be set back a few feet to accommodate left turn movements and receiving left turn movements from east leg.

Exhibit 1: Northgate and Del Paso Rd – South Leg of Northgate



Also note tire skid marks on SW curb in Exhibit 2. May be from either EB to SB right turns or WB to SB left turns.

Exhibit 2: Northgate and Del Paso Rd – Skid Marks

Note the sign knocked over at Main St and Pell Dr in Exhibit 3 (see left for "before" image taken from Google Maps)

Exhibit 3: Sign Damage at Main St and Pell Dr

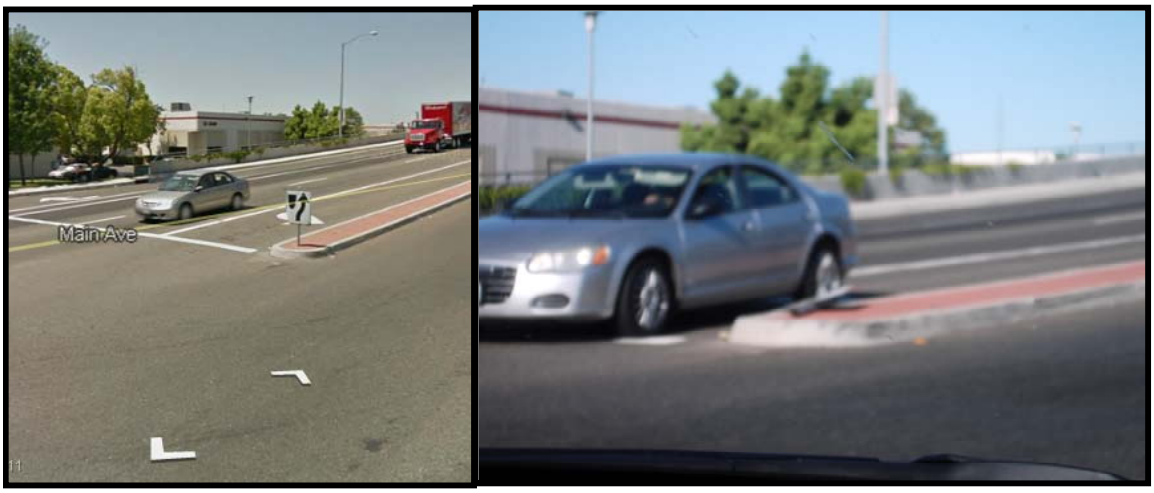


Exhibit 4: Map of Project Area – Del Paso Rd.

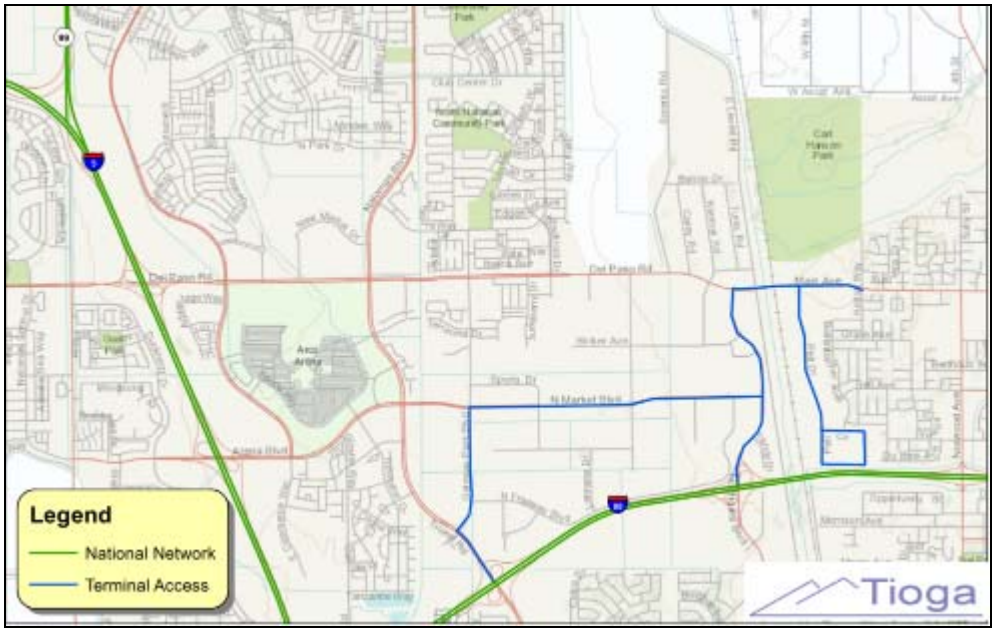
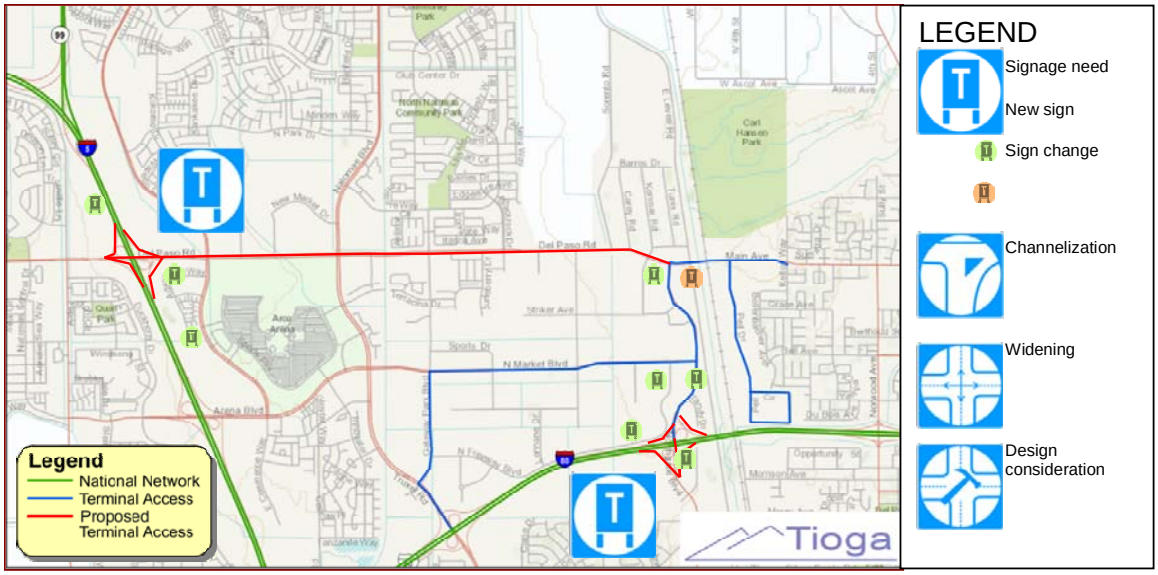


Exhibit 5: Map of Project Area – Del Paso Rd. – Proposed Routes in Red



2: Richards Blvd between I-5 and SR-160

This project includes the new 5th Street arterial between Richards and J and I Streets thence westerly on both J and I (one way) to I-5. Also may involve Q, 6th, 7th, 8th, Garden Highway.

Purpose & Need

Selected for improvement for the following reasons:

1. Non-STAA facility with presence of STAA trucks per ATRI data and personal observation by participants.

2. Non-STAA facility anticipated to serve future development.

Additionally, the I-5 interchange with Richards has just been upgraded to STAA standards. In combination, these facilities will be the major access routes to the Railyard redevelopment project.

Because of the current planning for the Railyard development, these routes were combined to evaluate the scope and logic for an integrated, network approach.

When identifying the uses in the new development area, planners need to ensure that the intersection connecting to Richards can accommodate STAA truck movements into and out of the Railyard site.

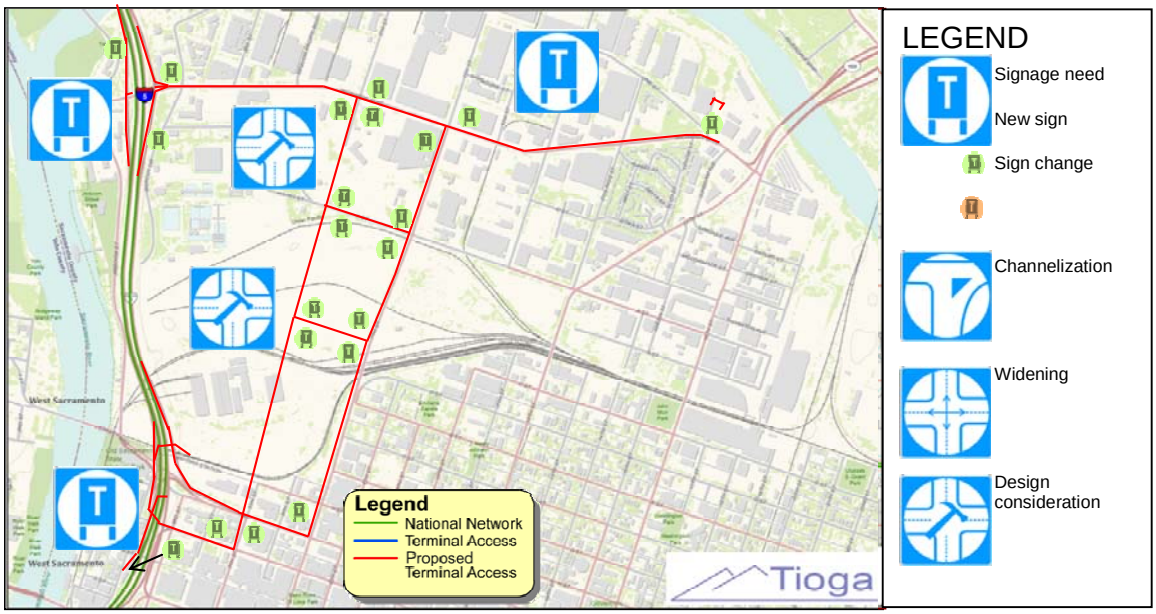
Recommended Improvements

1. Richards Boulevard/N 5th Street – SW and SE quadrants designed to accommodate STAA movements. *$250,000.*

2. Richards Boulevard/N 7th Street – SW and SE quadrants designed to accommodate STAA movements. *$250,000.*
3. New N 5th Street between Richards Boulevard and new 5th Street bridge built to STAA standards – approximately 3400 linear feet; cost not included because costs incorporated as design consideration.
4. New 7th Street between Richards Boulevard and J Street built to STAA standards – approximately 4400 linear feet; cost not included because costs incorporated as design consideration.
5. Two new east-west collectors between 5th and 7th Streets in the Railyards area to complete STAA network – approximately 1000 linear feet each; costs incorporated as design consideration.
6. Add signage to Richards Blvd, J St, I St, and he Railyard development area (including 5th St and 7th St) as indicated on Proposed Changes inset map below.
    a. Add 22 signs. $13,200 (additional signs required if 5th St and 7th St are converted from one-way couplet to two-way streets).

Exhibit 6: Map of Project Area – Richards Blvd.

Exhibit 7: Map of Project Area – Richards Blvd. – Proposed Routes in Red



3: West Sacramento Network

Purpose & Need

Selected for improvement for the following reasons:

1. Non-STAA facility with presence of STAA trucks per ATRI data and personal observation by participants.
2. Significant non-STAA facility gaps in STAA network.
3. Non-STAA facility reflects CHP preferred route (i.e., enforcement problems).
4. Non-STAA facility serving historic business districts.

Detailed List of Problems

1. On the National Network:

    a. On I-80 eastbound starting at the west city limits

        i. Approaching Enterprise/West Capitol exit, there is a broken S sign and no T sign (when there should be).

    b. On Business I-80 after I-80 exits to the north city bypass

        i. Approaching Harbor Blvd. there is a T sign followed by another T sign going south but not going north on Harbor (through to Sacramento Ave.) because northbound is not a T route but should be based on existing usage

by STAA trucks and the need to connect to other T routes at Capitol and Sacramento.

ii. Approaching SR-275 (unnamed) there is no S or T sign (even though SR-275 is a limited access road but too new to be a part of the National Network. On SR-275 there is no S or T sign at Jefferson even though there should be based on existing usage of Jefferson.

c. On I-80 Business westbound starting the east city limits (on the bridge over the Sacramento River) approaching Jefferson exit because Jefferson is not a S or T route but should be based on existing usage.

d. On I-80 westbound approaching West Capitol/Enterprise exit even though both West Capitol and Enterprise are both S and T routes.

e. On I-80 eastbound approaching Sacramento Ave. there is no S or T sign even though there should be based on existing usage.

f. On I-80 westbound approaching Sacramento Ave. there is no S or T sign even though there should be based on existing usage.

2. On Enterprise there is no S or T sign at the foot of the exit ramp from eastbound I-80 even though it is both a S and a T route.

a. Turning left onto Enterprise which becomes West Capitol there is no S or T sign even though it is both,

b. On West Capitol eastbound there is a “End” sign in blue near Northport Drive but it cannot be determined what it is the “end” of.

c. Continuing eastbound on West Capitol there is no signage at all even though existing usage is significant.

i. Including turning (in both directions) trucks at Harbor Blvd.

ii. Including existing usage continuing on West Capitol onto Jefferson both north and southbound.

iii. East of Glide Ave. West Capitol is neither a city truck route nor a STAA route even though there is existing usage. The geometry accommodates STAA sized vehicles and there is a need to service local industry and businesses plus access Jefferson Blvd. to access SR-275. This lack of approval forces compliant trucks to travel circuitous mileage to get to Jefferson Blvd.

3. On Jefferson Blvd. it is a city truck route but not an STAA route despite existing usage and no apparent geometric issues, and it does not connect to the existing STAA route where Jefferson crosses Lake Washington Blvd.

4. On Sacramento Avenue (which is Reed west of I-80).

    a. There are no S or T signs at the foot of the I-80 off ramps or indicating entry at the entrance ramps.

    b. At Harbor, southbound Harbor should be a T route based on existing usage, and there are no geometric reasons for it not to be T route through to I-80 Business.

    c. At Jefferson the T route turns east at F Street

        i. "End" signs appear on E and F Streets but there is no turn around at the point of the signage but the roadway continues which, if followed, has no logical truck outlet back to any established truck route.

        ii. There is a need for a T route to continue on Jefferson south all the way past Capitol, SR-275 and south to Lake Washington Blvd.

        iii. However, there are engineering complications at the on-ramps to SR-275 where Jefferson crosses beneath SR-275. This is aggravated because the City of West Sacramento's Truck Route Map dated August 2009 appears to not authorize this short portion underneath SR-275 even though to continue straight through on Jefferson presents no apparent issues.

        iv. There is a confusing issue with the left turn pocket entrance to SR275 westbound from northbound (but not southbound) Jefferson. That pocket is so short as to create a safety issue for almost any tractor-semi trailer combination of any length.

5. There are many city truck routes not specifically called out here each of which currently carries STAA sized vehicles.

6. The routes south of I-80 and surrounding the Port of West Sacramento, by contrast, show no difficulties. They evidence good planning and design by the City.

Recommended Improvements

1. Channelize turning movements as indicated on Proposed Changes inset map below.

    a. Channelize 7 turning movements, *$175,000.*

2. Widen intersections as indicated on Proposed Changes inset map below.

    a. Widen 4 intersections.\, *$1,000,000.*

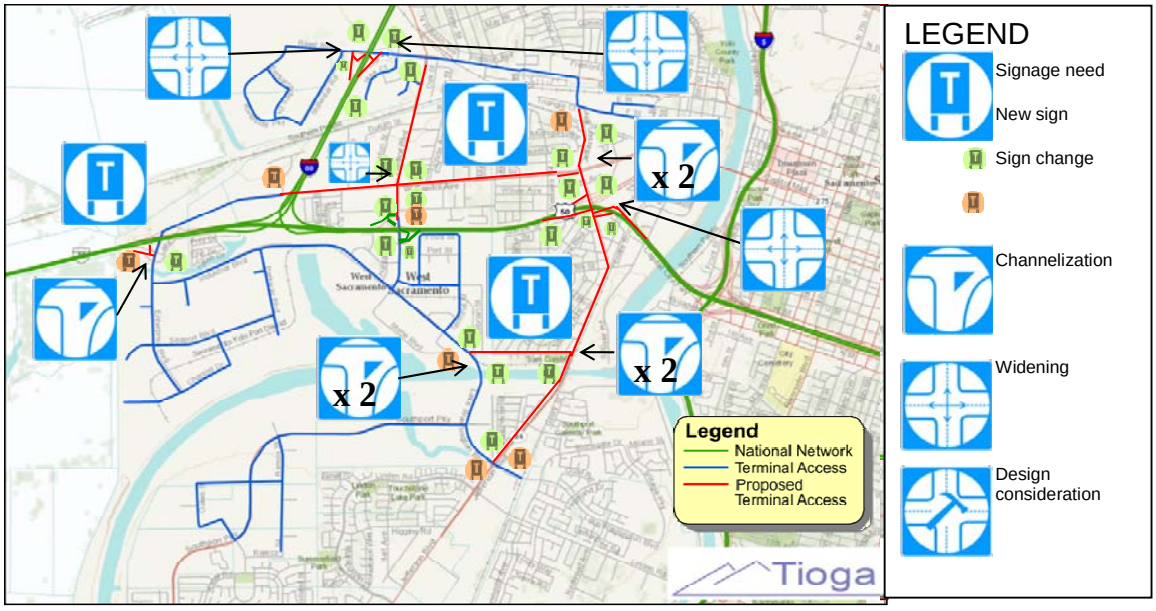
3. Add/change signage as indicated on Proposed Changes inset map below.

    a. Change 7 signs, *$2,100.*

    b. Add 23 signs, *$13,800.*

Exhibit 8: Map of Project Area – West Sacramento

Exhibit 9: Map of Project Area – West Sacramento – Proposed Routes in Red



4: Mack/Elsie, Stockton Blvd. at SR-99

This project includes the above plus Bruceville/Mack exit off Southbound SR-99 plus an incomplete network east to Watt Avenue and north to 47th Street/Elder Creek Blvd.

Purpose & Need

Selected for improvement for the following reasons:

1. Non-STAA facility with presence of STAA trucks per ATRI data and personal observation by participants

2. Non-STAA facility reflects gap in STAA network

3. Controversy between jurisdictions on opposite sides of South Stockton and Elsie.

Problems

The terminal access route "END" sign on Stockton Blvd at the SR-99 SB ramp may be confusing for truck drivers entering the national network. The recommendation is to change this sign from "END" to an arrow directing drivers onto SR-99. Also the jug handle curves onto Mack from southbound SR-99 and onto northbound SR-99 from Mack/Elsie may require widening.

Recommended Improvements

1. Approve NB Stockton Boulevard from NB SR-99 off ramp to STAA route.

2. Approve SB SR-99 off ramp to Mack/Elsie and Mack/Elsie Road to Stockton Boulevard to STAA route.

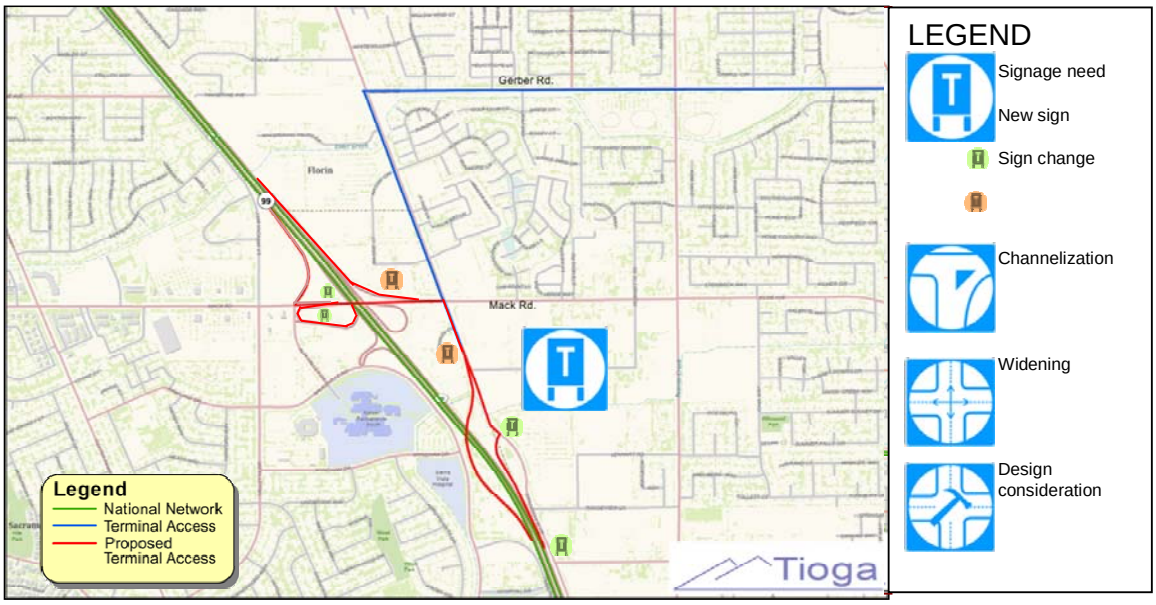
3. Add/change signage as indicated on Proposed Changes inset map below.

    a. Change 2 signs, *$600.*

    b. Add 4 signs, *$2,400.*

Exhibit 10: Map of Project Area – Mack/Elsie/Stockton Blvd.

Exhibit 11: Map of Project Area – Mack/Elsie/Stockton Blvd. – Proposed Routes in Red



5: Twin Cities Road between I-5 and SR-99

Purpose & Need

Selected for improvement for the following reasons:

1. Non-STAA facility with presence of STAA trucks per ATRI data and personal observation by participants

2. Non-STAA facility reflects CHP preferred route (i.e., enforcement problems or for detour routes)

This route is preferred by CHP as an authorized detour including STAA sized vehicles when there is an incident blocking either I-5 or SR-99. To do so has involved posting a CHP warning and officer on the route. When the detour is taken down, STAA sized trucks are prohibited once again. The interchange at SR-99 and Twin Cities Road is about to be improved to STAA standard. Also, this route is used by STAA vehicles east of SR-99 to the Rancho Seco power facility.

Recommended Improvements

1. Upgrade Twin Cities Road/SR-99 interchange to STAA design standards (traffic circle is programmed by Caltrans District 3).

2. Add signage at interchange facilities for both I-5 and SR-99 as indicated on Proposed Changes inset map below.

    a. Add 10 signs, *$6,000.*

Exhibit 12 documents the location of signal poles showing severe damage, which has likely been incurred by STAA-sized trucks.

Exhibit 13 shows a heavily damaged pole on NW corner of Twin Cities and SR-99. Likely due to trucks making SB right turn movements using Twin Cities as connection to I-5.

The SE corner signal pole (Exhibit 14) also shows signs of damage from NB to EB right turning STAA-sized trucks.

Exhibit 12: Locations of Signal Pole Damage

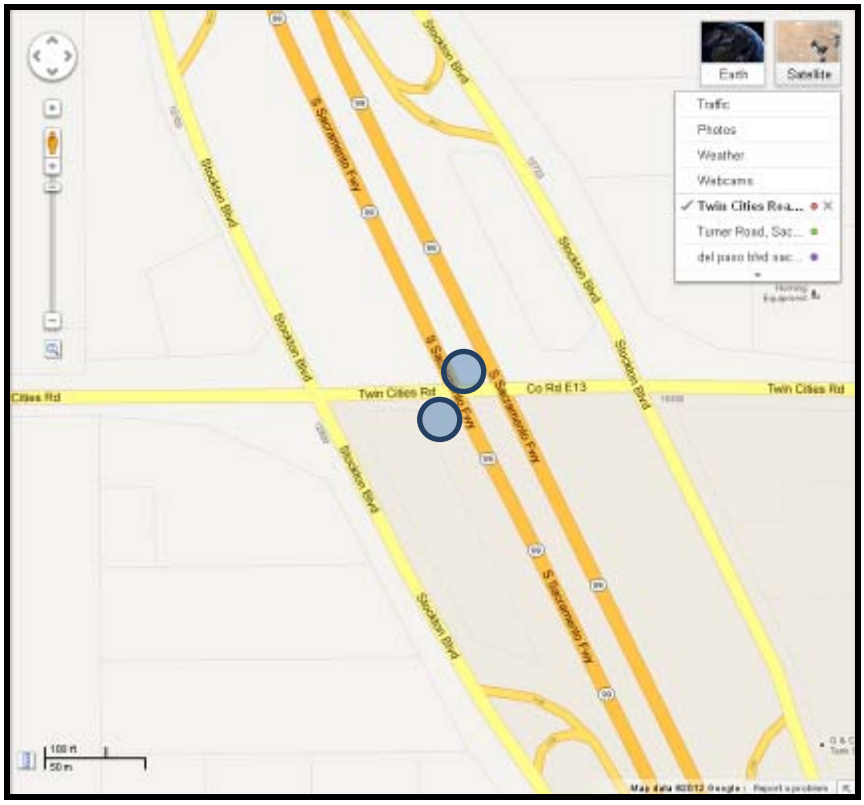


Exhibit 13: Signal Pole Damage

Exhibit 14: Signal Pole Damage

Exhibit 15: Twin Cities Road Project Area

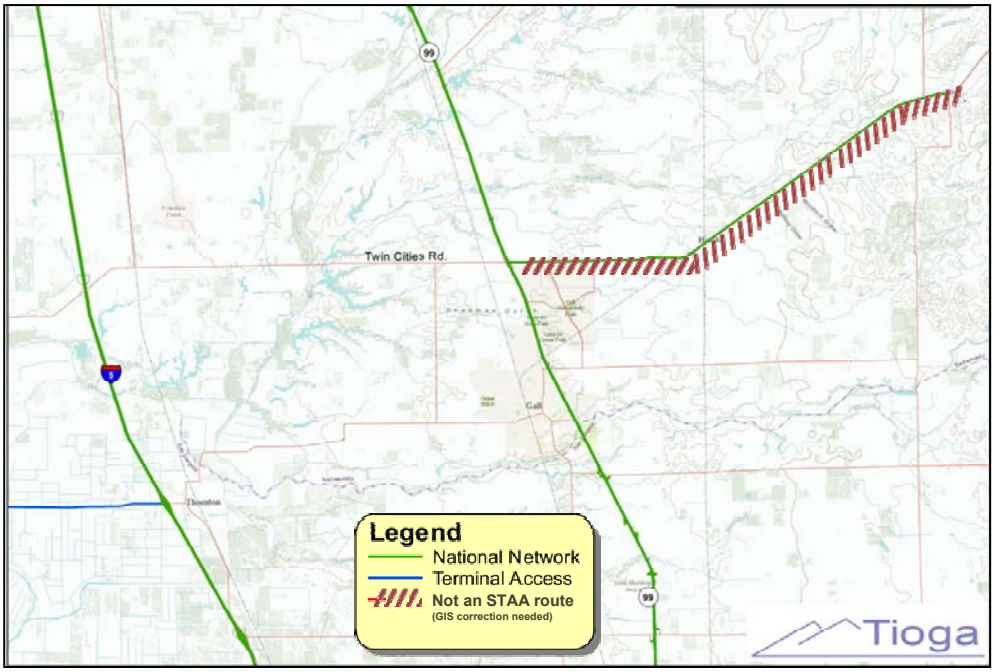
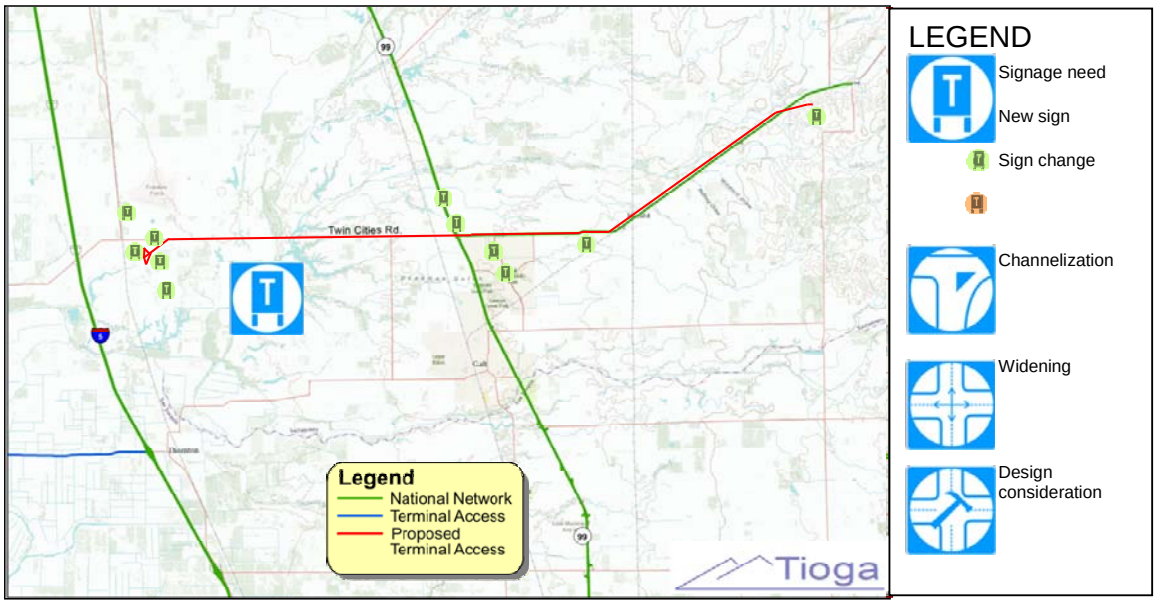


Exhibit 16: Twin Cities Road Project Area – Proposed Routes in Red



III. Projects within San Joaquin County

6: Liberty Road from SR-99 to SR-88

Purpose & Need

Selected for improvement for the following reasons:

1. Non-STAA facility with presence of STAA trucks per ATRI data and personal observation by participants

2. Non-STAA facility reflects CHP preferred route (i.e., enforcement problems or for detour routes)

Problems

This is one of about 8 possible east-west roads north of SR-4 in Stockton that have the same pattern. However, it has the added feature of the existence of so many STAA trucks is not understood and the fact that it connects easterly to SR-88.

Recommended Improvements

1. Channelize turn movements from SR-99 to Liberty Road, $*50,000.*

2. Add signage as indicated on Proposed Changes inset map below.

    a. Add 8 signs, *$4,800.*

Exhibit 17 shows STAA-sized truck preparing to make SB to WB left turn movement at Liberty Road and SR-99.

Exhibit 17: STAA Truck at Liberty Road and SR-99

Exhibit 18: Map of Project Area – Liberty Road

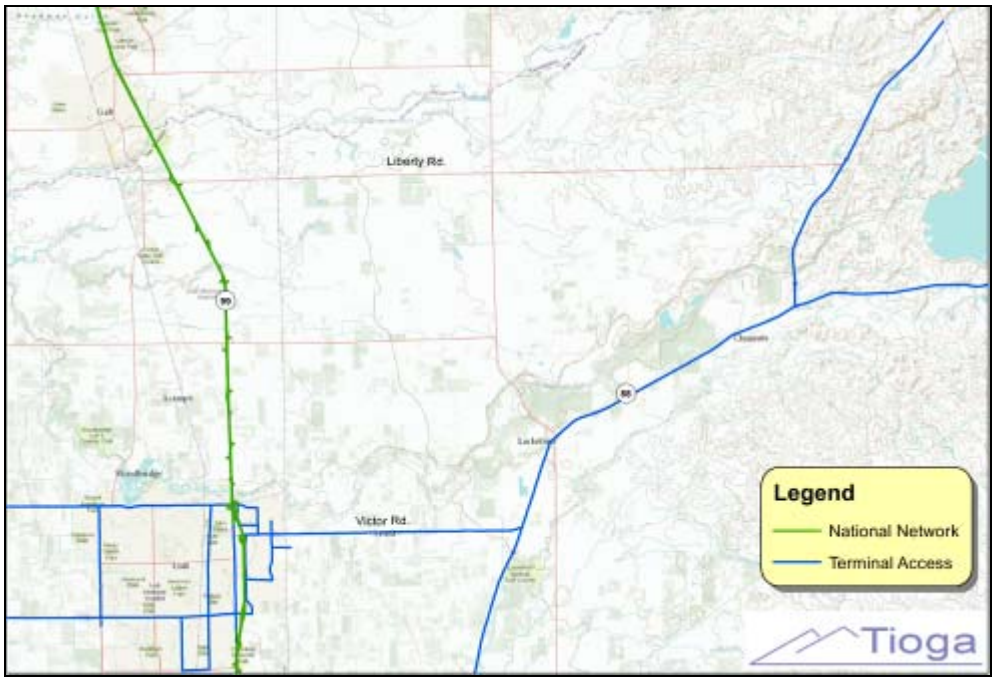
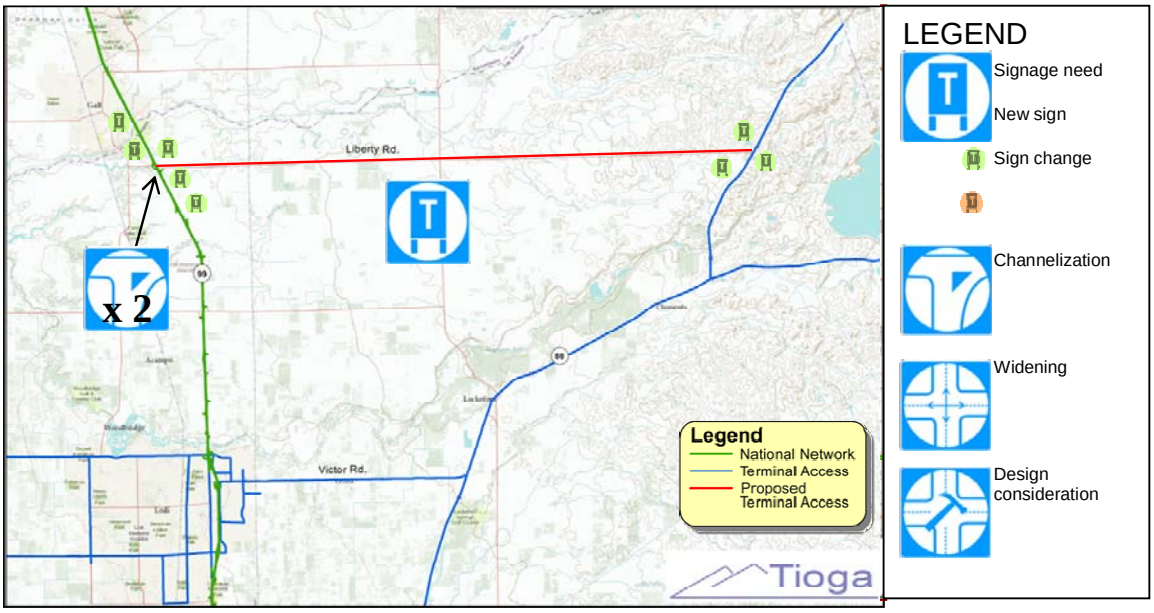


Exhibit 19: Liberty Road Project Area – Proposed Routes in Red



7: Turner Road between I-5 and SR-99 in Lodi

Purpose & Need

Selected for improvement for the following reasons:

1. Non-STAA facility with presence of STAA trucks per ATRI data and personal observation by participants.

2. Non-STAA facility reflects CHP preferred route (i.e., enforcement problems or for detour routes).

3. Non-STAA facility serving historic business districts

Problems

This is a route that has impediments to being used as a through route. In particular trucks with more than two axles are prohibited from Lower Sacramento Road (north) to SR 99 southbound. Circuitous miles are involved to access some points not presently accessible directly on Lower Sacramento Road north. Periodically CHP and Caltrans use it for a detour route thereby allowing STAA sized vehicles. On the west end at I-5 the area next to the off ramps are used by over dimensional loads to hold and wait for clearance. There are issues of compatibility with STAA design standards at both interchanges, at I-5 and SR-99.

Recommended Improvements

1. Extend STAA network from termination point on Turner Road approximately 1.5 miles to I-5 interchange.

2. Channelize NB to EB right turn movement from I-5 to Turner Road, $*50,000.*

3. Utility relocation at I-5 and Turner Road interchange as indicated by Caltrans AutoTURN analysis.

    a. Move 2 light poles, $*50,000.*

4. Ramp realignments for the SR-99 and Turner Road interchange.

    a. Realign 2 ramps, *$800,000.*

5. Add/change signage as indicated on Proposed Changes inset map below.

    a. Change 1 sign, *$300.*

    b. Add 5 signs, *$3,000.*

There is a "No trucks" sign posted just east of intersection of W Turner Rd and Lower Sacramento Rd. (Exhibit 20) and a General Mills warehouse located on this SE corner. There is no turnaround or warning provided for STAA trucks headed in this direction. However, WB on Turner is signed as an STAA route between SR-99 and N. Lower Sacramento Rd.

Exhibit 20: "No Trucks" Sign - W Turner Rd and Lower Sacramento Rd

Turner Rd is a designated STAA route from N Lower Sacramento Rd east to SR-99; however, this stretch is also mostly residential in nature (along with an elementary school), which makes this STAA route contentious. A possible fix would be to divert this traffic down to Lodi or Kettleman for the dense residential stretch to the east of Lower Sacramento and designate as a STAA route the Turner segment west of N Lower Sacramento on to I-5.

Exhibit 21: Turner Road Project Area

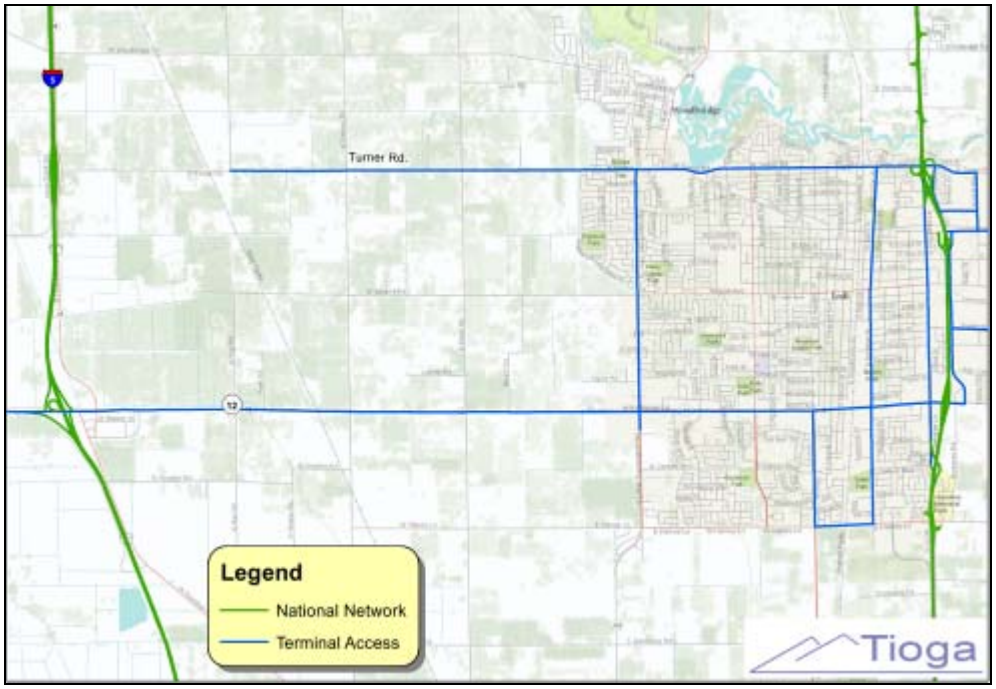
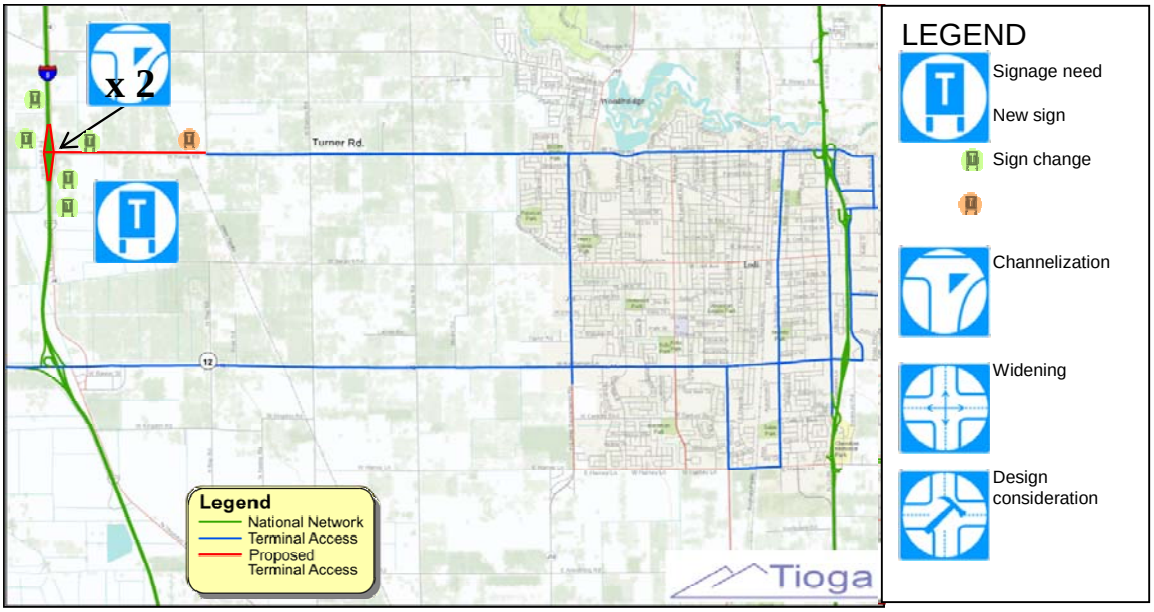


Exhibit 22: Turner Road Project Area – Proposed Routes in Red



8: Airport Way/Roth Road

Includes Airport Way between French Camp and SR-120 plus Roth Road from existing "End" at 1000 Roth to Airport, plus Lathrop from I-5 to SR-99, plus Louise from South Holland to

Airport, plus Yosemite between Spreckels and Guthmiller, plus Guthmiller between Yosemite and SR-120, plus D'Arcy between South Howland and Yosemite.

Purpose & Need

Selected for improvement for the following reasons:

1. Non-STAA facility with presence of STAA trucks per ATRI data and personal observation by participants.

2. Non-STAA facility reflects gap in STAA network.

3. Non-STAA facility reflects CHP preferred route (i.e., enforcement problems or for detour routes).

4. Non-STAA facility anticipated to serve future development.

Other Details

This takes advantage of the current programmed improvements on SR-99 at French Camp and Lathrop Roads which is make the ramps to/from SR-99 STAA compliant.

This involves completing an incomplete network to serve pending site developments and known truck trips. This includes a legacy design on Yosemite in town center Manteca.

Recommended Improvements

1. Designate Airport Way from French Camp down to SR-120.

2. Channelize Airport Way/Lathrop to meet STAA truck standards, *$25,000.*

3. Channelize Airport Way/Louise Ave (City of Manteca) to meet STAA truck standards, *$25,000.*

4. Channelize Airport Way/Yosemite (City of Manteca) to meet STAA truck standards, *$25,000.*

5. Approve STAA route from French Camp south to Yosemite, which includes the addition of STAA terminal route signage along Airport Way.

6. Add/change signage as indicated on Proposed Changes inset map below.

    a. Change 6 signs, *$1,800.*

    b. Add 12 signs, *$7,200.*

Exhibit 23: Airport Way Project Area

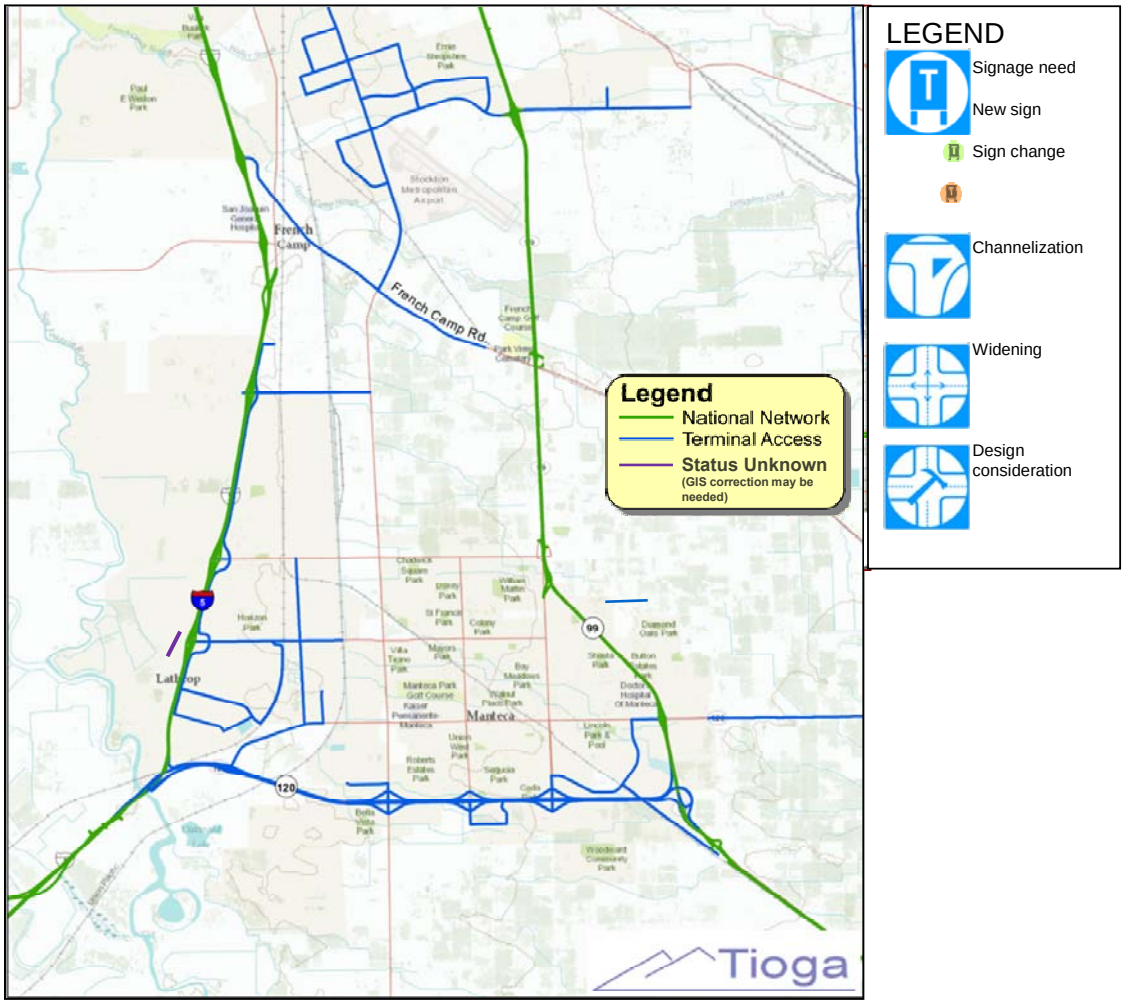
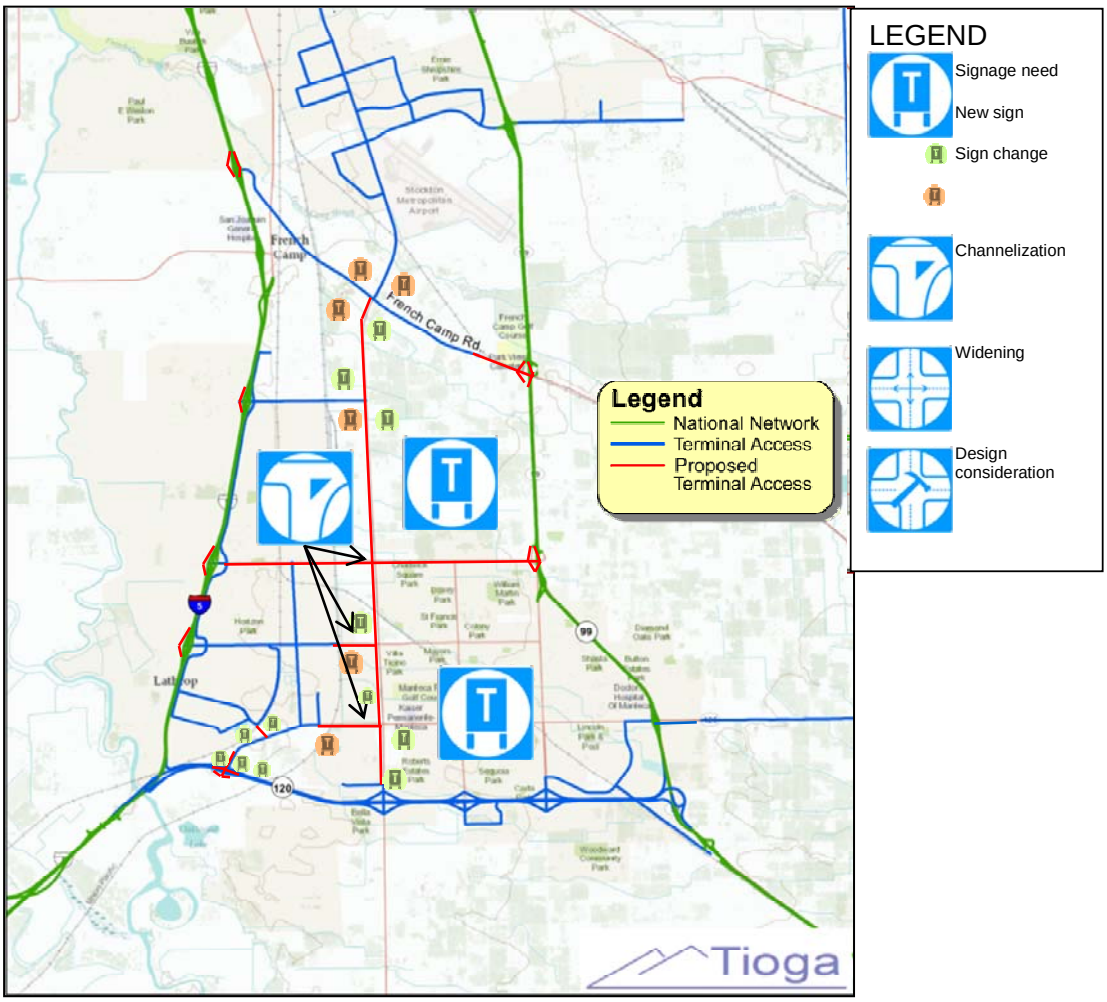


Exhibit 24: Airport Way Project Area- Proposed Routes in Red



9: Austin/Moffatt Road between Spreckles access and SR-99

Purpose & Need

Selected for improvement for the following reasons:

1. Non-STAA facility with presence of STAA trucks per ATRI data and personal observation by participants.

2. Non-STAA facility reflects gap in STAA network.

Additionally, there is a need to more efficiently connect to existing STAA routes when a new design for this area is created.

Other details

Current STAA route directs traffic to a congested route and will become circuitous. The rebuilding of the interchange at SR-99 and Moffatt is programmed.

Moffat from interchange with SR-99 to S Main St would become designated STAA route as well as S Main St between Moffat and Industrial Park Dr. This would complete the network and give STAA trucks a direct route to industrial activity without impacting downtown Manteca.

Recommended Improvements

1. Approve STAA route on Moffat Boulevard between SR-99 interchange and Main Street.

2. Approve STAA route on S Main Street between Moffat Boulevard and Industrial Park Drive.

3. Ensure that interchanges between SR-120 and SR-99 as well as between SR-99 and Moffatt/Austin that are planned for reconstruction are designed to accommodate STAA-sized trucks; costs incorporated as design consideration.

4. Improve Yosemite Avenue and Spreckles Avenue intersection to accommodate STAA movements – NB left turn stop bar restriping, and NB to EB right turn median modification.

5. Add/change signage as indicated on Proposed Changes inset map below.

    a. Change 5 signs, *$1,500.*

    b. Add 4 signs *$2,400.*

The two images in Exhibit 25 show a significant amount of tire skids along the channelizing island for NB right turn movements from Spreckles to Yosemite. Redesign consideration would be to narrow this island 3 or 4 feet to improve turning capability of large trucks.

Exhibit 25: Tire Skid Marks

Exhibit 26 shows the south leg of Spreckles – median stops approximately 20 feet short of edge of crosswalk/stop bar. Should a car stop at the edge of crosswalk, it would pose a challenge for a left-turning truck. Proposed recommendation would be to set back stop bar for the median-side left turn pocket on Spreckles to the end of the median (where blue arrow indicates).

Exhibit 26: South Leg of Spreckles Left Turn Pocket

Exhibit 27: Austin/Moffatt/Spreckles Project Area

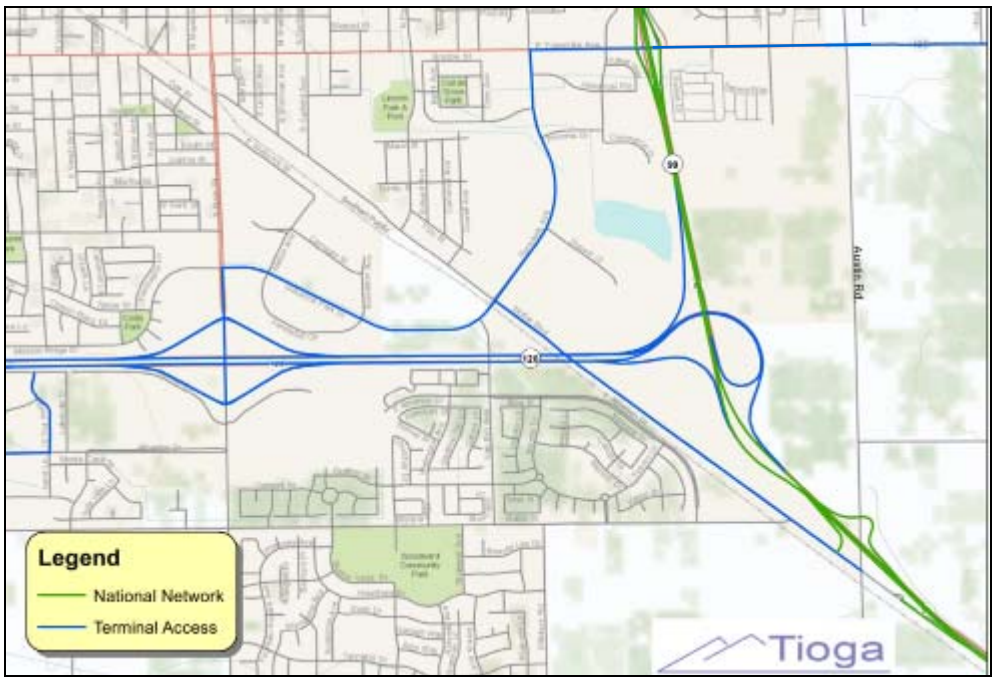
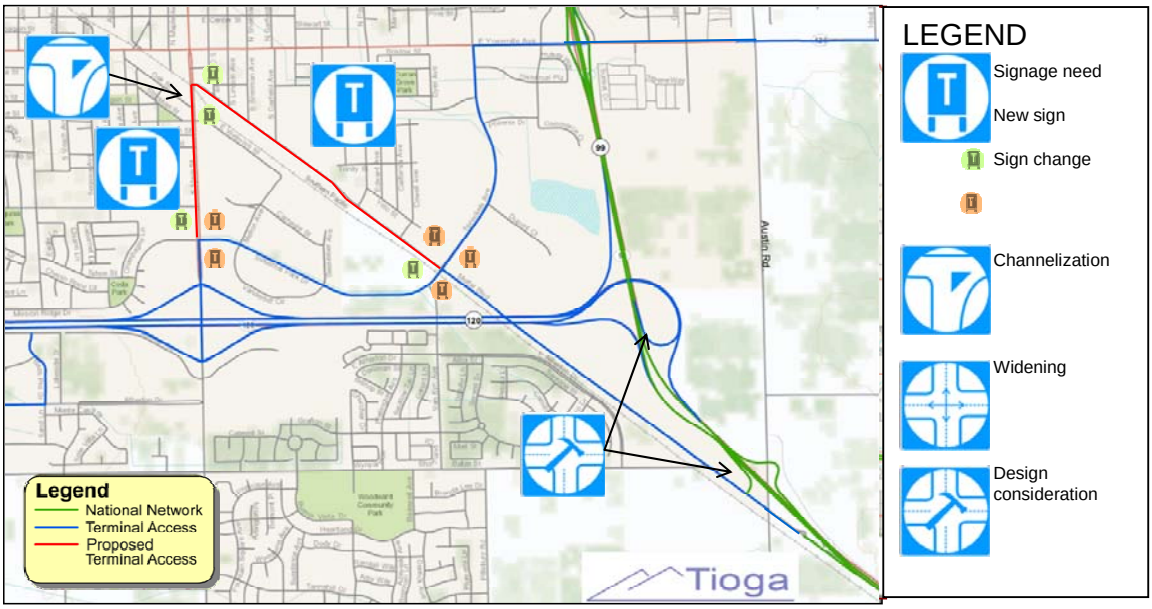


Exhibit 28: Austin/Moffatt/Spreckles Project Area – Proposed Routes in Red



10: East Grant Line Road

East Grant Line Road between interchange with I-5 and MacArthur Drive including Paradise Road, Pescadero Road, and Kasson Rd between 11th and I-5 interchange as well as 11th between Grant Line and I-5

Purpose & Need

Selected for improvement for the following reasons:

1. Non-STAA facility with presence of STAA trucks per ATRI data and personal observation by participants.

2. Non-STAA facility reflects gap in STAA network.

3. Non-STAA facility reflects CHP preferred route (i.e., enforcement problems or for detour routes).

4. Non-STAA facility anticipated to serve future development.

Other details

Materially lessen the distance to access the area to and from I-5 both northbound and southbound. Also, there is also a need to complete the loop around recent and pending new development.

Recommended Improvements

1. Widen Grant Line Road/Paradise Road intersection – WB to NB right turn movement and SB to WB right turn movement are both deficient, *$250,000.*

2. Pescadero/MacArthur intersection – restripe two MacArthur SB left turn lanes into only one left turn lane to remove possible conflict with left turning STAA-sized trucks (based on option provided by the public works department in San Joaquin county AutoTURN analysis), *$10,000.*

3. Restripe Paradise Rd median at Paradise/Pescadero intersection to better accommodate EB to SB right turn truck movements. (This improvement is based on AutoTURN analysis provided by the public works department in San Joaquin County) *$10,000.*

4. Add/change signage as indicated on Proposed Changes inset map below.

    a. Change 3 signs, *$900.*

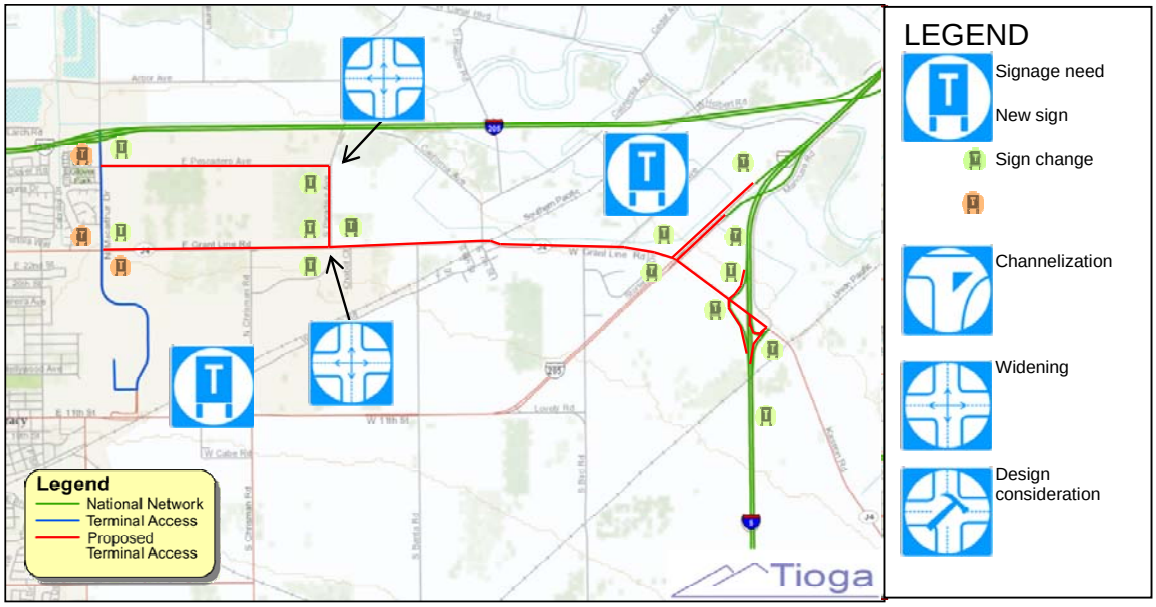
    b. Add 14 signs, *$8,400.*

At East Grant Line Rd and Paradise Rd (Exhibit 29) STAA-sized trucks encounter extreme difficulties when making WB to NB right turn and SB to WB right turn movements.

Exhibit 29: East Grant Line Rd and Paradise Rd

Exhibit 30: East Grant Line Road Project Area plus Network

Exhibit 31: East Grant Line Project Area plus Network – Proposed Routes in Red



Recommendations

In conformance with the recommendations in the full report, this is an opportunity for two things. First is to bundle all ten projects into a single funding application so has to increase the awareness of the need for funding the obstacles and complications of the current STAA route requirements. Second is the opportunity for the agencies involved to take the initiative to make the application so as not to have to await a patch quilt of disparate applications from multiple private parties that will not be sufficiently broad or understanding of all of the considerations involved.

Appendix A: Project Summary and Costing Tables

Location	Jurisdiction	Purpose & Need	Recommended Improvements	Preliminary Cost Estimate	Notes
Del Paso Road-Main Avenue between I-5 to Norwood Avenue	City of Sacramento	1. Approve STAA route on Del Paso Road-Main St. 2. Create STAA network between I-5 and I-80	1. Del Paso Road/Northgate Boulevard – Remove about six feet of NB center lane median and place stop bar marking for NB inside left turn lane. 2. Add/change signs	$20,000 $6300	Creates STAA Route along Del Paso Road-Main Avenue between I-5 and Northgate/Pell
Railyards Redevelopment Area	City of Sacramento	1. Approve STAA route on Richards Boulevard between I-5 and SR-160 2. Approve STAA designs on 5th and 7th Streets between Richards Boulevard and I/J Streets 3. Specify STAA routes in Railyards Redevelopment area prior to specific development plans	1. Richards Boulevard/N 5th Street – SW and SE quadrants designed to accommodate STAA movements 2. Richards Boulevard/N 7th Street – SW and SE quadrants designed to accommodate STAA movements 3. New N 5th St. between Richards Boulevard and new 5th St. bridget to STAA standards – approx. 3400 l.f. 4. New 7th Street between Richards Boulevard and J Street built to STAA standards – approx. 4400 l.f. 5. Two new east-west collectors between 5th and 7th Streets in the Railyards area to complete STAA network – approx. 1000 l.f. each 6. Add signs	$250,000 $250,000 N/A, design consideration N/A, design consideration N/A, design consideration $13,200	Provides STAA Route along Richards Boulevard between I-5 along the full extent of Richards Provides STAA routes and network within the Railyard redevelopment area
West Sacramento network	City of West Sacramento	1. Approve STAA route on Harbor Boulevard 2. Approve STAA route on W Capitol Avenue 3. Fill gaps in STAA network 4. Revise signage	1. Channelize 7 turning movements. 2. Widen 4 intersections. 3. Add/change signs	$175,000 $1,000,000 $15,900	Expands and completes STAA network in the area
Mack Road/Elsie Road/Stockton Boulevard	City of Sacramento	1. Fill gaps in STAA network 2. Provide full access from all four directions 3. Overcome local conflict between jurisdictions	1. Approve NB Stockton Boulevard from NB SR-99 off ramp to STAA route 2. Approve SB SR-99 off ramp to Mack Road and Mack Road to Stockton Boulevard to STAA route 3. Add/change signs	$3500	Expands and completes STAA network in area
Twin Cities Road between I-5 and SR-99	Sacramento County	1. Approve permanent STAA route on Twin Cities Road between I-5 and SR-99	1. Upgrade Twin Cities Road/SR-99 interchange to STAA design standards – programmed by Caltrans District 3 2. Add signs	$200,000 $6000	Provides permanent STAA route between I-5 and SR-99

Exhibit 32: Summary and Costing for Sacramento County

Location	Jurisdiction	Purpose & Need	Recommended Improvements	Preliminary Cost Estimate	Notes
Liberty Road	Caltrans	1. Non-STAA facility with presence of STAA trucks per ATRI data and field observation 2. Non-STAA facility reflects CHP preferred route	1. Channelize NB to EB right turn movement from SR-99 to Liberty Road. 2. Add/change signs	$100,000 $4800	Allows for access to nuclear facility Connects I-5 and SR-99 providing a detour route for trucks
Turner Road	San Joaquin County/City of Lodi	1. Non-STAA facility with presence of STAA trucks per ATRI data and personal observation by participants 2. Non-STAA facility serving historic business districts	1. Extend STAA network from termination point on Turner Road approx. 1.5 miles to I-5 interchange. 2. Realign 2 ramps. 3. Channelize NB to EB right turn movement from I-5 to Turner Road. $100,000 4. Add/change signs	$800,000 $50,000 $3300	Permits I-5 access to trucks already on Turner
Airport Way between French Camp and SR-120	San Joaquin County / City of Manteca	1. Non-STAA facility with presence of STAA trucks per ATRI data and personal observation by participants 2. Non-STAA facility reflects gap in STAA network 3. Non-STAA facility reflects CHP preferred route	1. Channelize Airport Way/Lathrop (San Joaquin Co. and City of Manteca) to meet STAA truck standards 2. Channelize Airport Way/Louise Ave (City of Manteca) to meet STAA truck standards 3. Channelize Airport Way/Yosemite (City of Manteca) to meet STAA truck standards 4. Approve STAA route from French Camp south to Yosemite, which includes the addition of STAA terminal route signage along Airport Way 5. Add/change signs	$25,000 $25,000 $25,000 $9000	Provides complete STAA connection between I-5 and SR-99 Creates STAA network from French Camp down to ST-120 Allows trucks at UP facility to access Airport Way and SR-120
Austin/Moffatt Road between Spreckles access and SR-99	City of Manteca	1. Fill gaps in STAA network 2. Improve STAA movements at intersection	1. Approve STAA route on Moffat Boulevard between SR-99 interchange and Main Street 2. Approve STAA route on S Main Street between Moffat Boulevard and Industrial Park Drive 3. Ensure that interchanges between SR-120 and SR-99 as well as between SR-99 and Moffatt/Austin that are planned for reconstruction are designed to accommodate STAA-sized trucks. 4. Improve Yosemite Avenue and Spreckles Avenue intersection to accommodate STAA movements – NB left turn stop bar restriping and NB to EB right turn median modification 5. Add/change signs	N/A, design consideration $25,000 $3900	Creates STAA network between industrial activity along Moffatt to SR-120 or SR-99 while avoiding downtown activity/traffic
East Grant Line Road between I-5 and MacArthur (including Paradise Road and Pescadero Road)	City of Tracy	1. Improve STAA movements at intersection 2. Non-STAA facility with presence of STAA trucks 3. Large capacity for industrial growth	1. Improve Grant Line Road/Paradise Road intersection – WB to NB right turn movement 2. Restripe intersections 3. Add/change signs	$250,000 $20,000 $9300	Creates STAA network connecting I-5 and I-205 Anticipates future growth

Exhibit 33: Summary and Costing for San Joaquin County