SR 54 Corridor Study
Preliminary Findings and Analysis

SANDAG, in coordination with the County of San Diego, Caltrans, and City of El Cajon have performed focused analysis on the State Route 54 Corridor to determine the type of facility needed along the corridor to accommodate future traffic. The corridor is between SR125 and Interstate 8, where the existing traversable route follows Jamacha Boulevard, Campo Road, and then Jamacha Road to the El Cajon city limits. Jamacha Road continues north, becoming North 2nd Street as it runs up to an interchange with Interstate 8.

Several alternatives have been the subject of the analysis and include the No-Build, widening along the existing traversable route, and a 6 lane expressway or a 4 lane freeway on a new alignment. The freeway and expressway alignments generally follow the traversable route between SR125 and Campo Road (SR 94). The alignment veers northeast at Campo Road (SR 94), using a portion of Wieghorst Way in the county until it intersects again with Jamacha Road just north of Chase Avenue. In El Cajon the alignment continues north to Interstate 8, following 3rd Street to a full interchange at Interstate 8.

The traffic forecasts for each alternative were generated using the Series 10 land use, also used in the Mobility 2030 RTP. At the request of the county and El Cajon, the 2030 Revenue Constrained network was used to run the models. One model run used the network from the 2030 Reasonably Expected scenario in Mobility 2030, the standard assumed in other regional forecasts. Variations of the above alternatives looked at interchanges at Interstate 8 and State Route 94. Level of Service (LOS) analysis for each alternative was performed using SANDAG's standard methodology, with the county methodology included for comparative purposes. The county methodology is more conservative, resulting in more miles of unacceptable LOS along the corridor and in the study area. It was agreed to use SANDAG's LOS methodology, and it is required by Federal Highway Administration when applying for federal funding.

LOS Results

Following is a brief description of various alternatives and the LOS results for each alternative. LOS E and F were considered unacceptable. Common to all alternatives were several locations within the study area but off the corridor that had poor levels of service that did not change regardless of any upgrades to the State Route 54 corridor. Separate studies would be necessary to address these hot spot areas.

ALTERNATIVE 1 – No Build

The No-Build alternative is the existing traversable route of Jamacha Boulevard and Jamacha Road. This alternative includes widening projects on the route that are in El Cajon's and the County's short term improvement plans and are in the Regional Transportation Improvement Plan. Unacceptable Levels of Service on the corridor for this alternative emerge at only a few locations. Specifically, they are located on Apple Street (Jamacha Road) east of Grand Avenue in La Presa, on Jamacha Road and Jamacha Boulevard adjacent to State Route 125, on the segment of Jamacha Boulevard immediately west of Sweetwater Springs Boulevard.

ALTERNATIVE 2 – Improvements Included in the Adopted Circulation Elements

This alternative implements the improvements shown in the El Cajon and the County Circulation Elements including the widening of Jamacha Road from 4 to 6 lanes between Brabham Street and Chase Boulevard and Apple Street (Jamacha Road) east of Grand Avenue in the community of La Presa. The LOS for this alternative shows improvements over the No-Build alternative but some hotspots still remain along the corridor. The locations remaining with unacceptable LOS are on Jamacha Road and Jamacha Boulevard adjacent to State Route 125, the segment of Jamacha Boulevard immediately west of Sweetwater Springs Boulevard. Jamacha Boulevard at the El Cajon and County boundary is barley acceptable as this 4 lane section is a bottleneck on an otherwise 6 lane arterial.

ALTERNATIVE 3 – County Circulation Element Improvements with a Full Interchange @ Interstate-8 and East Main Street

The City of El Cajon requested an alternative that add the missing entrance and exit ramps at Interstate 8 with East Main Street to Alternative 2, with the purpose to analyze the relief to N. 2nd Avenue at Interstate 8. It should be noted that LOS is acceptable in the City of El Cajon using SANDAG's methodology and this analysis compares the resulting LOS using the county's methodology between Alternative 2 and Alternative 3. Although the unacceptable LOS on N. 2nd Street is relieved, 3rd Street between Madison Avenue and Oakdale degrades to an LOS E as well as East Main Street immediately south of I-8 indicating that congestion adjacent to Interstate 8 in the City of El Cajon is simply transferred from one location to another and that overall congestion is not significantly relieved. The results of this analysis show that a full interchange at 3rd Street and I-8 is not defensible and other solutions should be explored for the congestion at 2nd Street and Interstate 8.

ALTERNATIVE 4 – 6 Lane Expressway between State Route 125 and Washington to an upgraded 4 Lane 3rd Street with an interchange @ Interstate-8

This alternative is the first on a new alignment and is an expressway between State Route 125 and Jamacha Road just north of Chase Avenue where it becomes a 6 lane Prime Arterial along Jamacha Road to Washington Ave. North of Washington Ave., 3rd street in El Cajon becomes the through route, and is upgraded from 2 to 4 lanes with an interchange at Interstate 8. LOS is acceptable throughout the corridor with the exception of a segment immediately west of Sweetwater Springs Blvd. which exhibits a LOS F.

ALTERNATIVE 5 – Same as Alternative 4 with an Interchange at State Route 94

This alternative is the same as Alternative 4 except that State Route 94 is extended as a 4 lane conventional highway along the existing alignment to an interchange at State Route 54. Then SR 94 continues on new alignment intersecting with Campo Road (SR 94) west of Miller Ranch Road. The LOS results are substantially the same as Alternative 4 on the corridor with improvement from LOS F to E west of Sweetwater Springs Blvd. On State Route 94 immediately west of the corridor the LOS improves to an acceptable level. Minor reductions in congestion are exhibited throughout the study area when compared with Alternative 4

ALTERNATIVE 6 – 4 Lane Freeway on new alignment from State Route 125 to Interstate 8; Full interchanges at State Route 125, State Route 94, and Interstate-8

The freeway alternative upgrades the Alternative 4 expressway alignment to a 4 lane freeway and eliminates all at-grade intersections along the corridor. It provides an overall improvement in the Level of Service along the corridor and within the study area. In addition, as many as 12,000 daily trips are diverted away from the existing freeway system also improving the LOS in those corridors.

ALTERNATIVE 2A- 6 Lane Prime Arterial from Point Parkway to Sweetwater Springs Blvd. and from State Route 94 to Interstate 8

Alternative 2 shows minimal segments of the corridor with an unacceptable level of service using SANDAG methodology but some segments of significant length have unacceptable LOS using county LOS methodology. Alternative 2A is provided to help determine what is required to improve the LOS along the corridor when applying the county LOS methodology. With this alternative virtually all segments function at an acceptable county based LOS with the exception of localized hot spots on 2nd Street south of Interstate 8, on Jamacha Boulevard and Jamacha Road in La Presa immediately east in State Route 125, and on Jamacha Road between College Drive West and College Drive East .

ALTERNATIVE 2B- Alternative 2 using the 2030 Reasonably Expected Network

The standard assumed in other regional forecasts is the 2030 Reasonably Expected network of Mobility 2030. This alternative was run to maintain consistency with SANDAG standard methodologies used in other SANDAG planning studies. The corridor for this alternative is identical to Alternative 2 but the model run used the network from the 2030 Reasonably Expected scenario in Mobility 2030. The LOS results of this alternative along the corridor are similar to Alternative 2 with locations having unacceptable LOS being substantially the same. It should also be noted that this alternative eliminates the poor LOS when calculated using the county standards on Jamacha Boulevard north of Chase Ave.

Recommendations

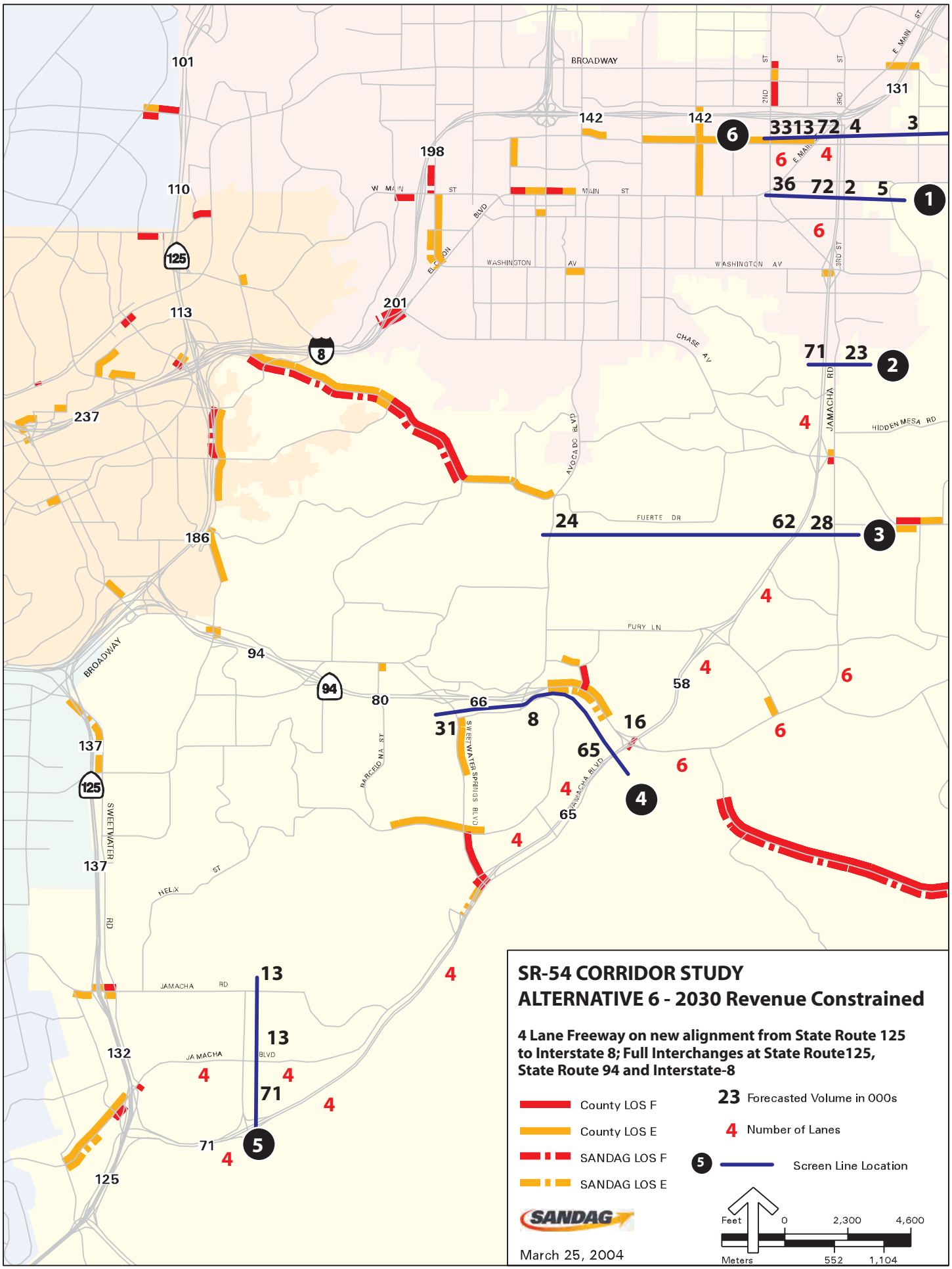
Based on the LOS analyses from the various alternatives, the conclusion of the study is that the planned improvements in the county and El Cajon circulation elements are adequate to handle the study area traffic in the horizon year of 2030 with the exception of a few hot spots areas. A new expressway or freeway is not warranted.

To further substantiate this conclusion a factor to evaluate the cost effectiveness of the alternatives has also been developed. A ratio of an alternative's cost to the number of Vehicle Hours Saved (VHS) within the study when compared against the No-Build alternative has been calculated for this purpose. The following are results of this analysis:

Alternative 2	$3,000/VHS
Alternative 3	Not calculated
Alternative 4	$59,000/VHS
Alternative 5	$65,000/VHS
Alternative 6	$37,000/VHS

The above analysis supports the conclusion that the expressway and freeway alternatives are not warranted since the investment for vehicle hours saved is significantly higher for the expressway and freeway alternatives

Although the expressway or freeway alternatives are not warranted the county has expressed interest in a determination of what improvements may be needed based on their own LOS methodology. Alternative 2 shows unacceptable LOS at several locations along the corridor's traversable route using the county's methodology. Since it appears that an incremental improvement between Alternative B and an expressway alternative would improve LOS on the corridor a variation of Alternative 2 was investigated. Improvements added to Alternative 2 include a 6 lane prime arterial from State Route 94 to Interstate 8 and between Pointe Parkway and Sweetwater Springs Blvd. on Jamacha Boulevard and is titled Alternative 2A. This alternative eliminates nearly all unacceptable levels of service using both county and SANDAG LOS methodologies. Further analysis would be necessary to reduce congestion on Jamacha Road and Jamacha Blvd adjacent to State Route 125 and 2nd Street south of Interstate 8. Other locations throughout the study area not improved by the various alternatives presented also will require separate study to determine how to reduce congestion to those areas.


SR-54 CORRIDOR STUDY
ALTERNATIVE 6 - 2030 Revenue Constrained
4 Lane Freeway on new alignment from State Route 125 to Interstate 8; Full Interchanges at State Route125, State Route 94 and Interstate-8
County LOS F
County LOS E
SANDAG LOS F
SANDAG LOS E
23 Forecasted Volume in 000s
4 Number of Lanes
Screen Line Location
SANDAG
March 25, 2004
Feet 0 2,300 4,600
Meters 552 1,104
BROADWAY
W MAIN ST
MAIN ST
E MAIN ST
WASHINGTON AV
CHASE AV
JAMACHA RD
HIDDEN MESA RD
AVOCADO BLVD
FUERTE DR
FURY LN
SWEETWATER SPRINGS BLVD
JAMACHA BLVD
SWEETWATER RD
HELIX ST
BLDG ON BLVD
2ND ST
3RD ST
101
110
113
125
201
8
237
186
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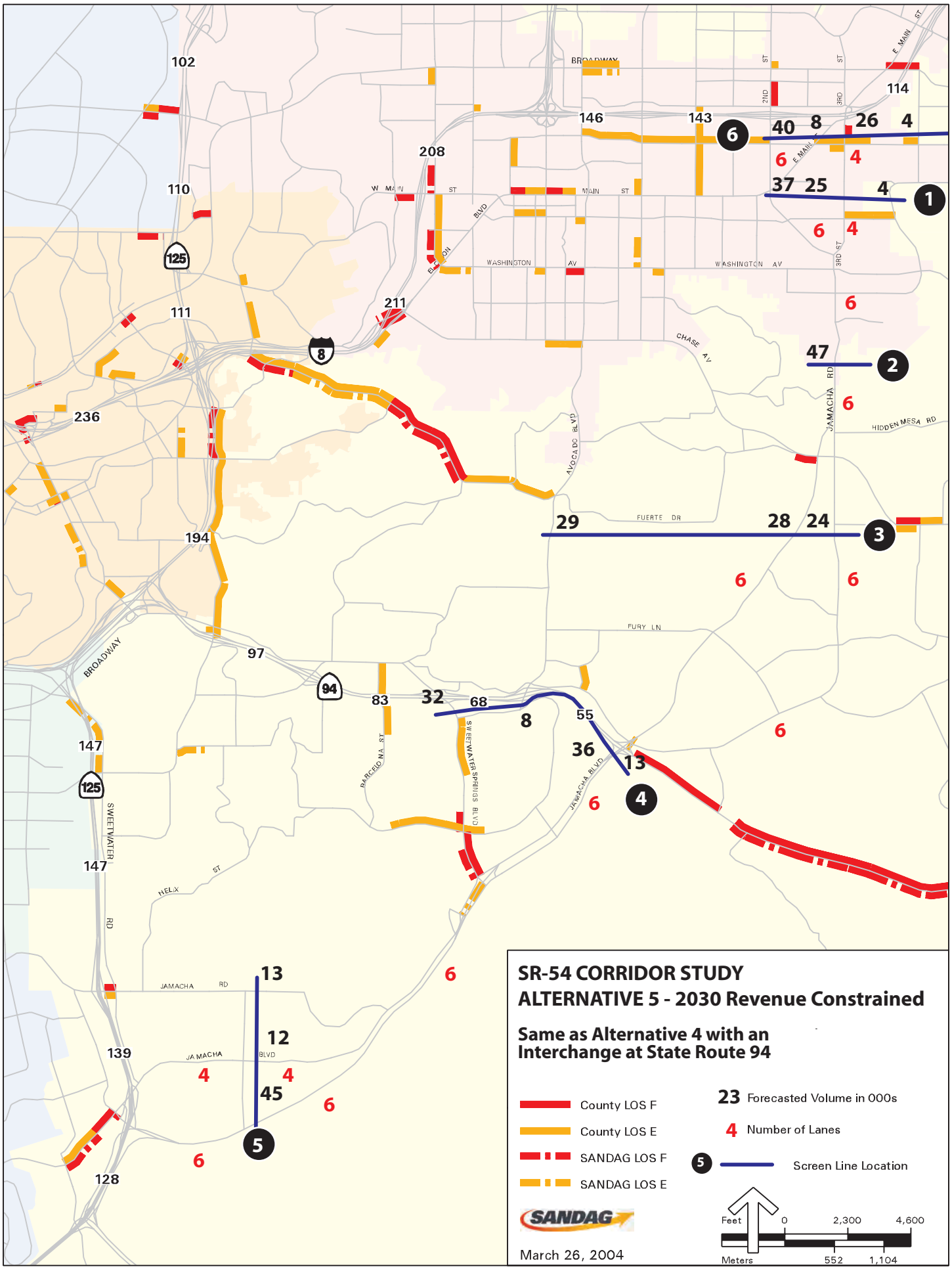
2
3
4
6


SR-54 CORRIDOR STUDY
ALTERNATIVE 5 - 2030 Revenue Constrained
Same as Alternative 4 with an Interchange at State Route 94
County LOS F
County LOS E
SANDAG LOS F
SANDAG LOS E
23 Forecasted Volume in 000s
4 Number of Lanes
Screen Line Location
SANDAG
March 26, 2004
Feet 0 2,300 4,600
Meters 552 1,104
BROADWAY
W MAIN ST
MAIN ST
E MAIN ST
WASHINGTON AV
CHASE AV
JAMACHA RD
HIDDEN MESA RD
AVOCADO BLVD
FUERTE DR
FURY LN
SWEETWATER SPRINGS BLVD
JAMACHA BLVD
PARCELONA ST
SWEETWATER RD
HELIX ST
JAMACHA BLVD
102
110
111
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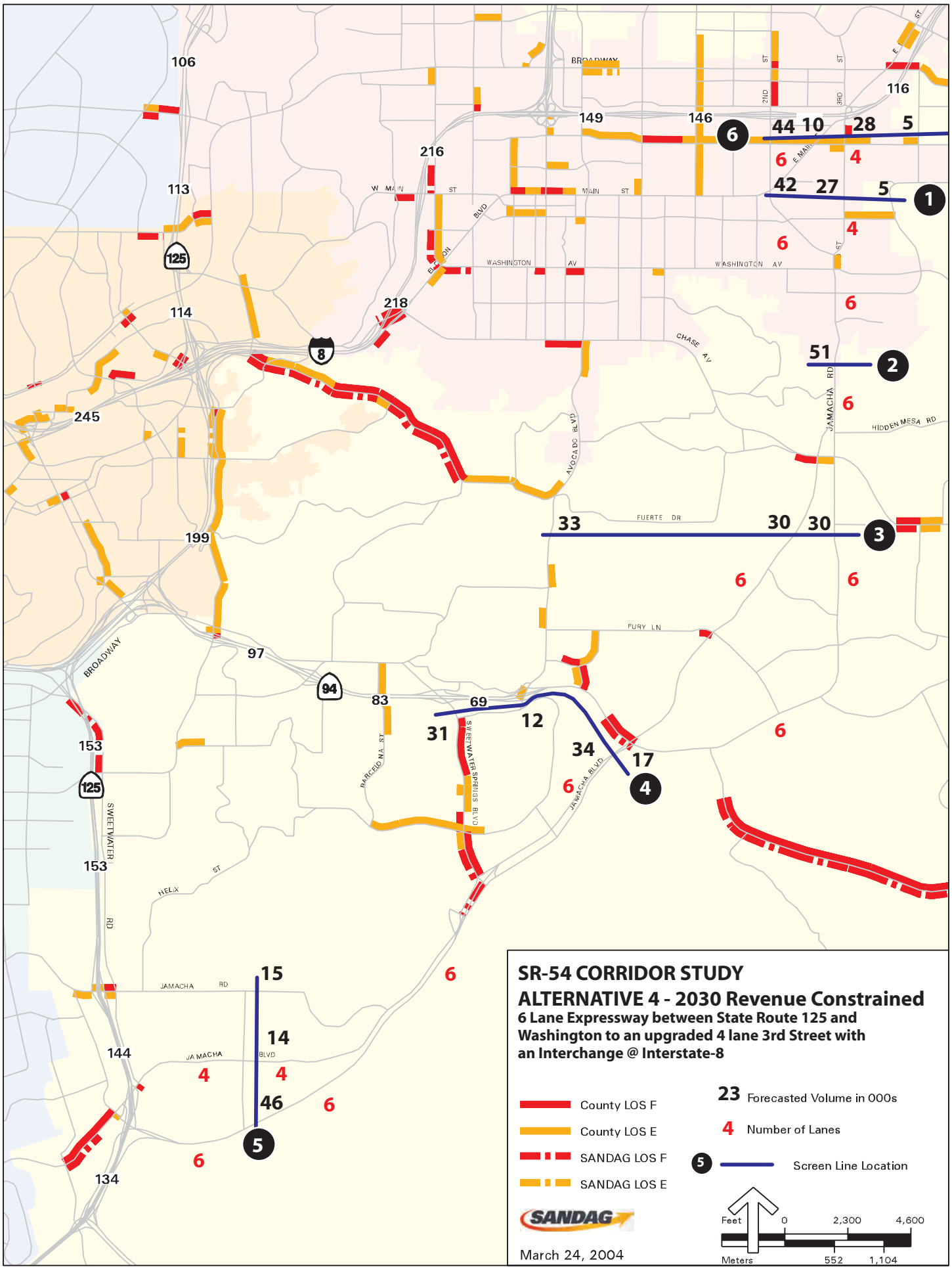
SR-54 CORRIDOR STUDY
ALTERNATIVE 4 - 2030 Revenue Constrained
6 Lane Expressway between State Route 125 and Washington to an upgraded 4 lane 3rd Street with an Interchange @ Interstate-8
County LOS F
County LOS E
SANDAG LOS F
SANDAG LOS E
23 Forecasted Volume in 000s
4 Number of Lanes
5 Screen Line Location
SANDAG
March 24, 2004
Feet 0 2,300 4,600
Meters 552 1,104
BROADWAY
W MAIN ST
MAIN ST
E MAIN ST
WASHINGTON AV
CHASE AV
JAMACHA RD
HIDDEN MESA RD
AVOCADO BLVD
FUERTE DR
FURY LN
SWEETWATER SPRINGS BLVD
JAMACHA BLVD
HELIX ST
SWEETWATER RD
JAMACHA BLVD
106
113
114
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153
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216
218
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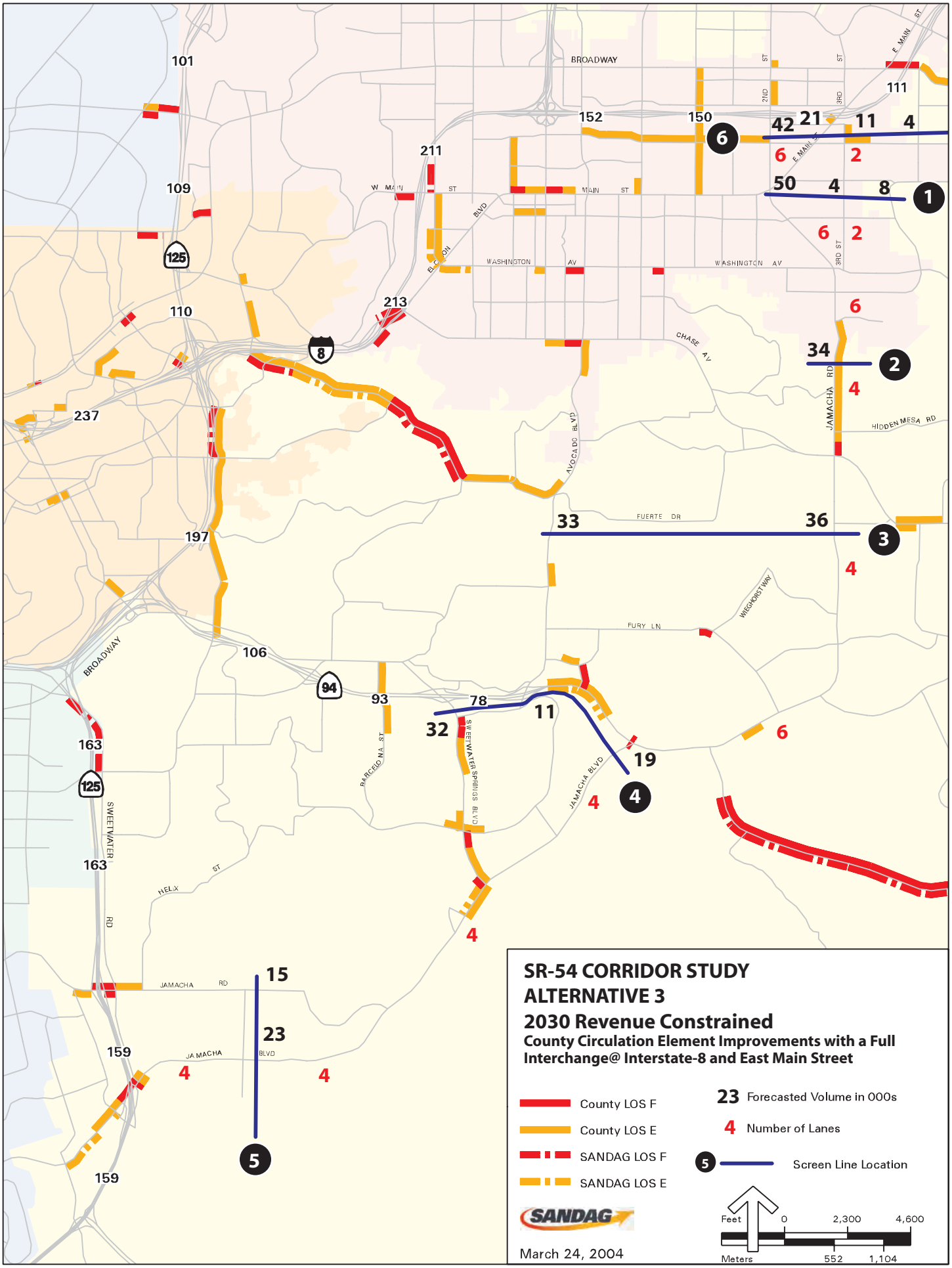
SR-54 CORRIDOR STUDY
ALTERNATIVE 3
2030 Revenue Constrained
County Circulation Element Improvements with a Full Interchange@ Interstate-8 and East Main Street
County LOS F
County LOS E
SANDAG LOS F
SANDAG LOS E
23 Forecasted Volume in 000s
4 Number of Lanes
5 Screen Line Location
SANDAG
March 24, 2004
Feet 0 2,300 4,600
Meters 552 1,104
BROADWAY
W MAIN ST
MAIN ST
E MAIN ST
WASHINGTON AV
CHASE AV
JAMACHA RD
HIDDEN MESA RD
AVOCADO BLVD
FUERTE DR
FURY LN
WIEGHORST WAY
SWEETWATER SPRINGS BLVD
BARCELONA ST
SWEETWATER RD
HELIX ST
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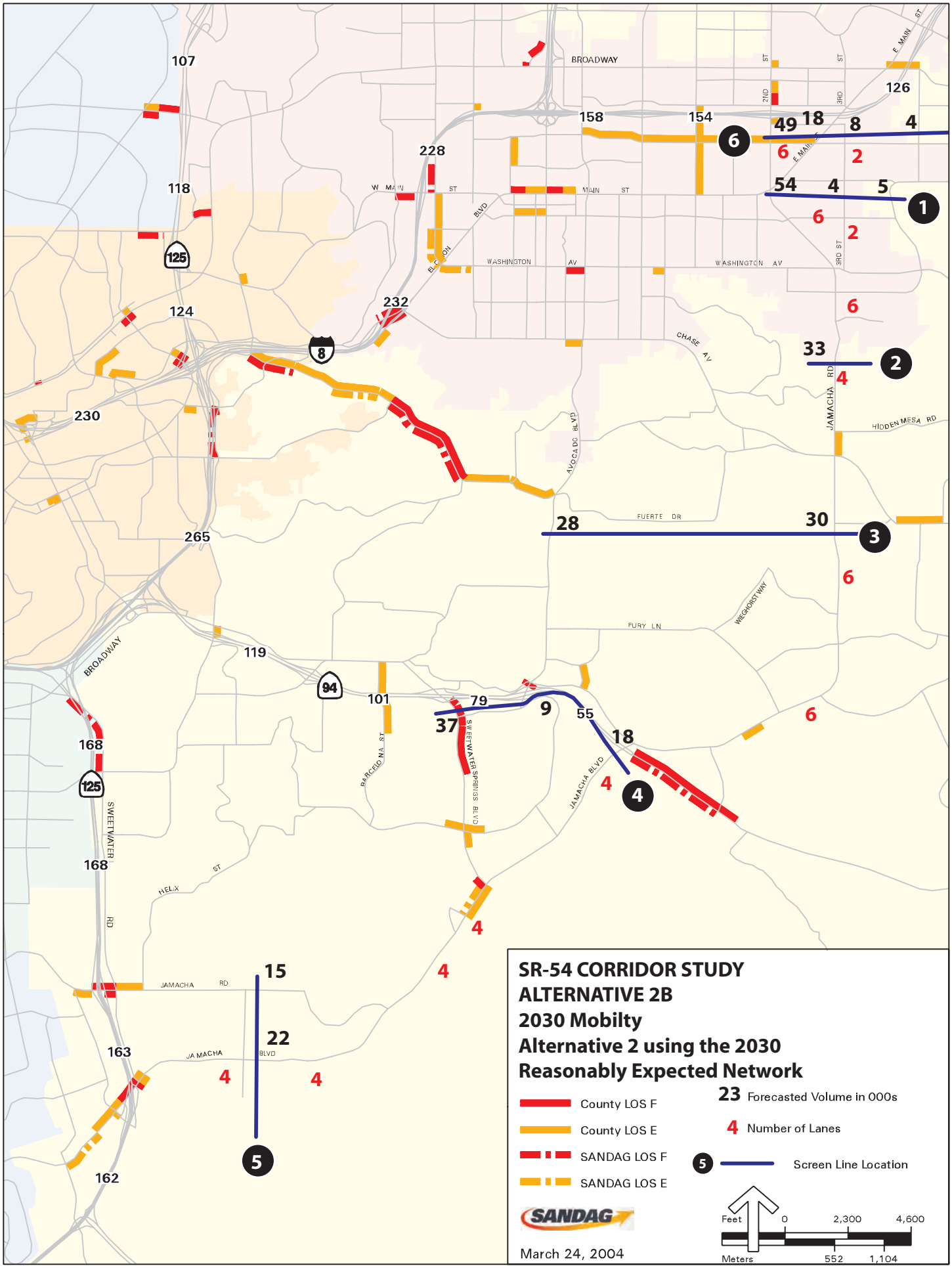
SR-54 CORRIDOR STUDY
ALTERNATIVE 2B
2030 Mobilty
Alternative 2 using the 2030
Reasonably Expected Network
County LOS F
County LOS E
SANDAG LOS F
SANDAG LOS E
23 Forecasted Volume in 000s
4 Number of Lanes
5 Screen Line Location
SANDAG
March 24, 2004
Feet 0 2,300 4,600
Meters 552 1,104
BROADWAY
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WASHINGTON AV
CHASE AV
JAMACHA RD
HIDDEN MESA RD
AVOCADO BLVD
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WIEGHORST WAY
SWEETWATER SPRINGS BLVD
JAMACHA BLVD
BARCELONA ST
SWEETWATER RD
HELIX ST
JAMACHA BLVD
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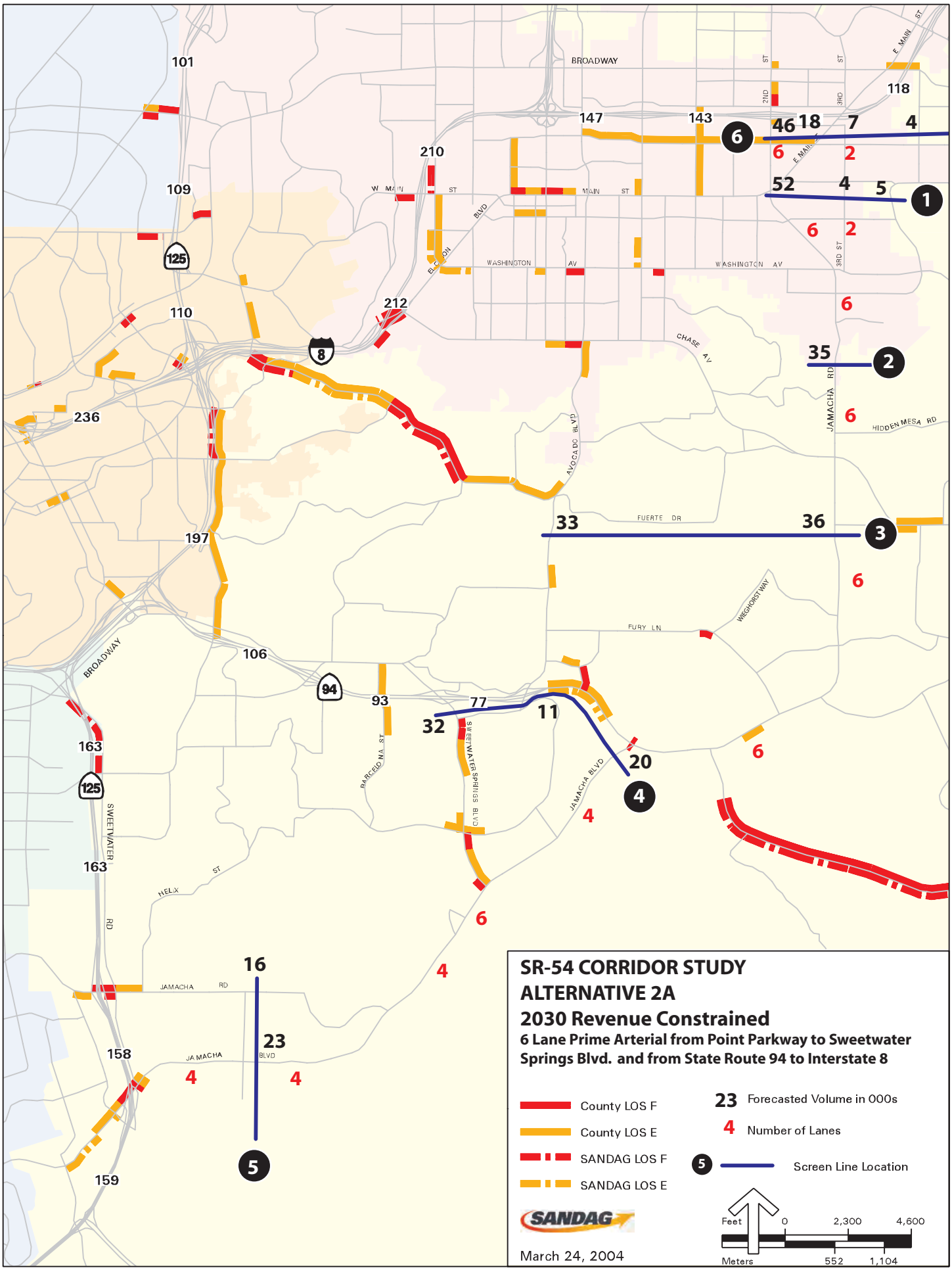
SR-54 CORRIDOR STUDY
ALTERNATIVE 2A
2030 Revenue Constrained
6 Lane Prime Arterial from Point Parkway to Sweetwater Springs Blvd. and from State Route 94 to Interstate 8
County LOS F
County LOS E
SANDAG LOS F
SANDAG LOS E
23 Forecasted Volume in 000s
4 Number of Lanes
5 Screen Line Location
SANDAG
March 24, 2004
Feet 0 2,300 4,600
Meters 552 1,104
BROADWAY
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W MAIN ST
MAIN ST
WASHINGTON AV
CHASE AV
JAMACHA RD
HIDDEN MESA RD
AVOCADO BLVD
FUERTE DR
FURY LN
WIEGHORST WAY
SWEETWATER SPRINGS BLVD
JAMACHA BLVD
HELIX ST
SWEETWATER RD
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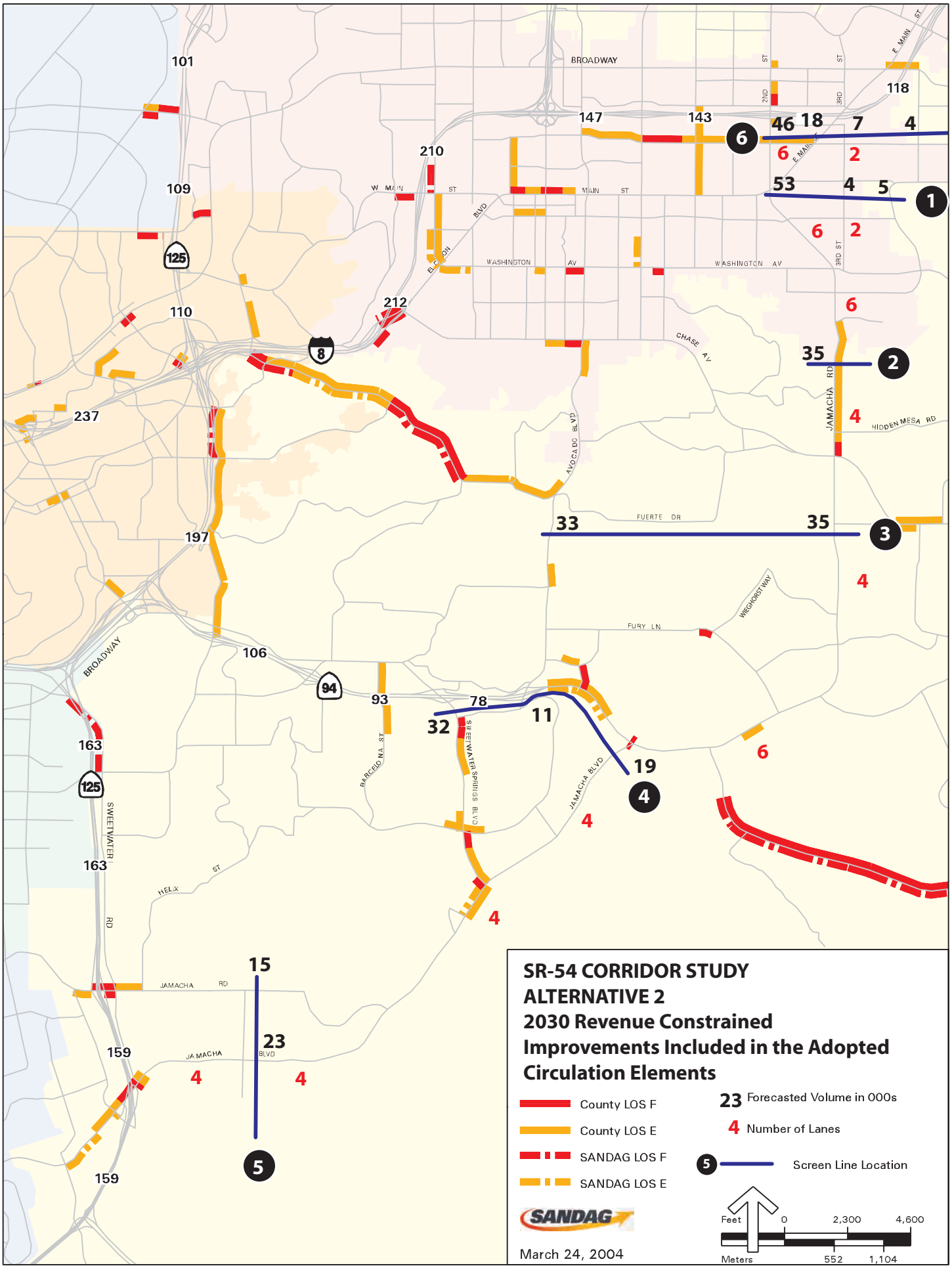
SR-54 CORRIDOR STUDY
ALTERNATIVE 2
2030 Revenue Constrained
Improvements Included in the Adopted
Circulation Elements
County LOS F
County LOS E
SANDAG LOS F
SANDAG LOS E
23 Forecasted Volume in 000s
4 Number of Lanes
5 Screen Line Location
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Meters 552 1,104
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AVOCADO BLVD
FUERTE DR
FURY LN
WIEGHORST WAY
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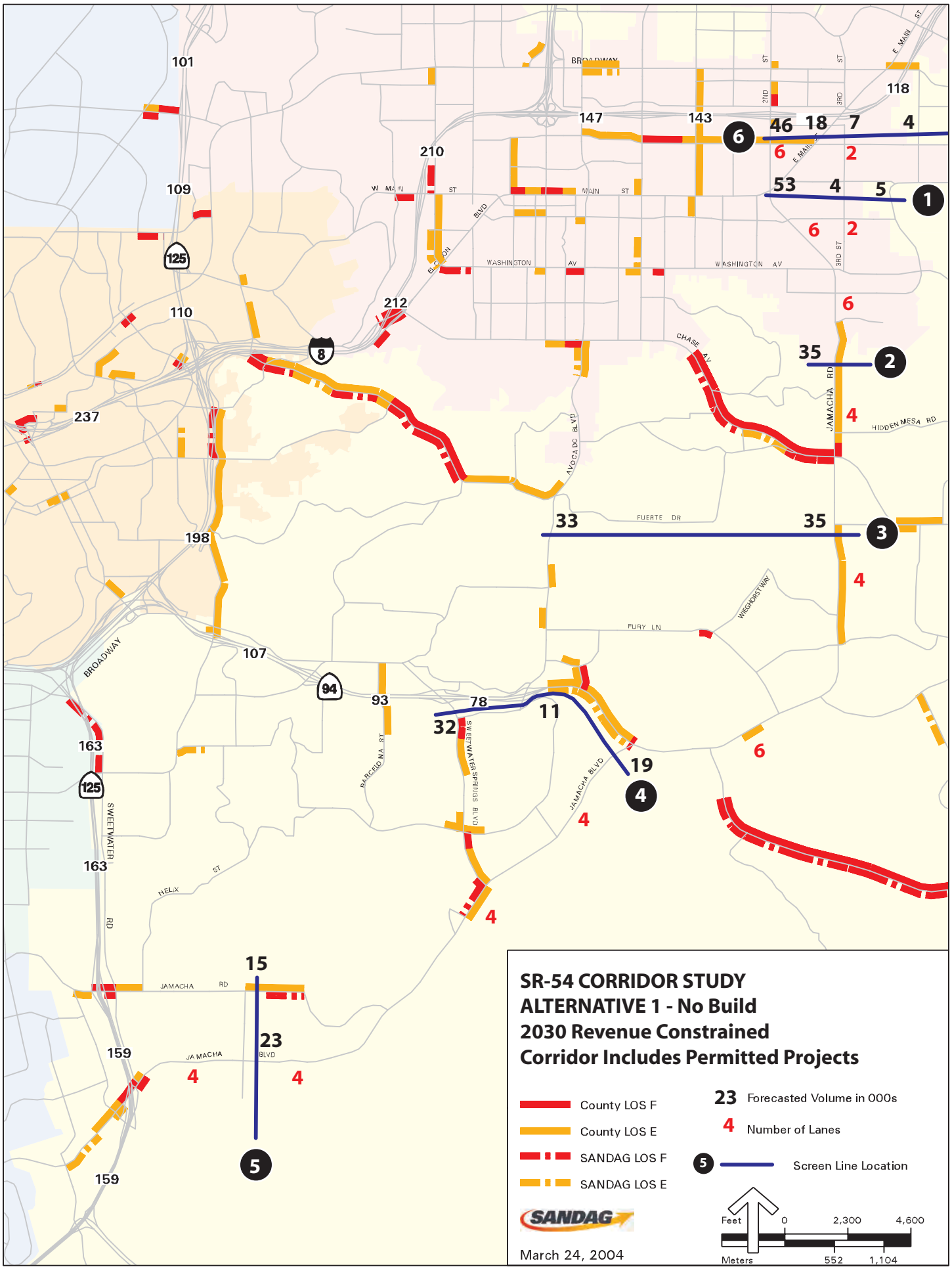
SR-54 CORRIDOR STUDY
ALTERNATIVE 1 - No Build
2030 Revenue Constrained
Corridor Includes Permitted Projects
County LOS F
County LOS E
SANDAG LOS F
SANDAG LOS E
23 Forecasted Volume in 000s
4 Number of Lanes
5 Screen Line Location
SANDAG
March 24, 2004
Feet 0 2,300 4,600
Meters 552 1,104
BROADWAY
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3RD ST
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JAMACHA RD
HIDDEN MESA RD
AVOCADO BLVD
FUERTE DR
FURY LN
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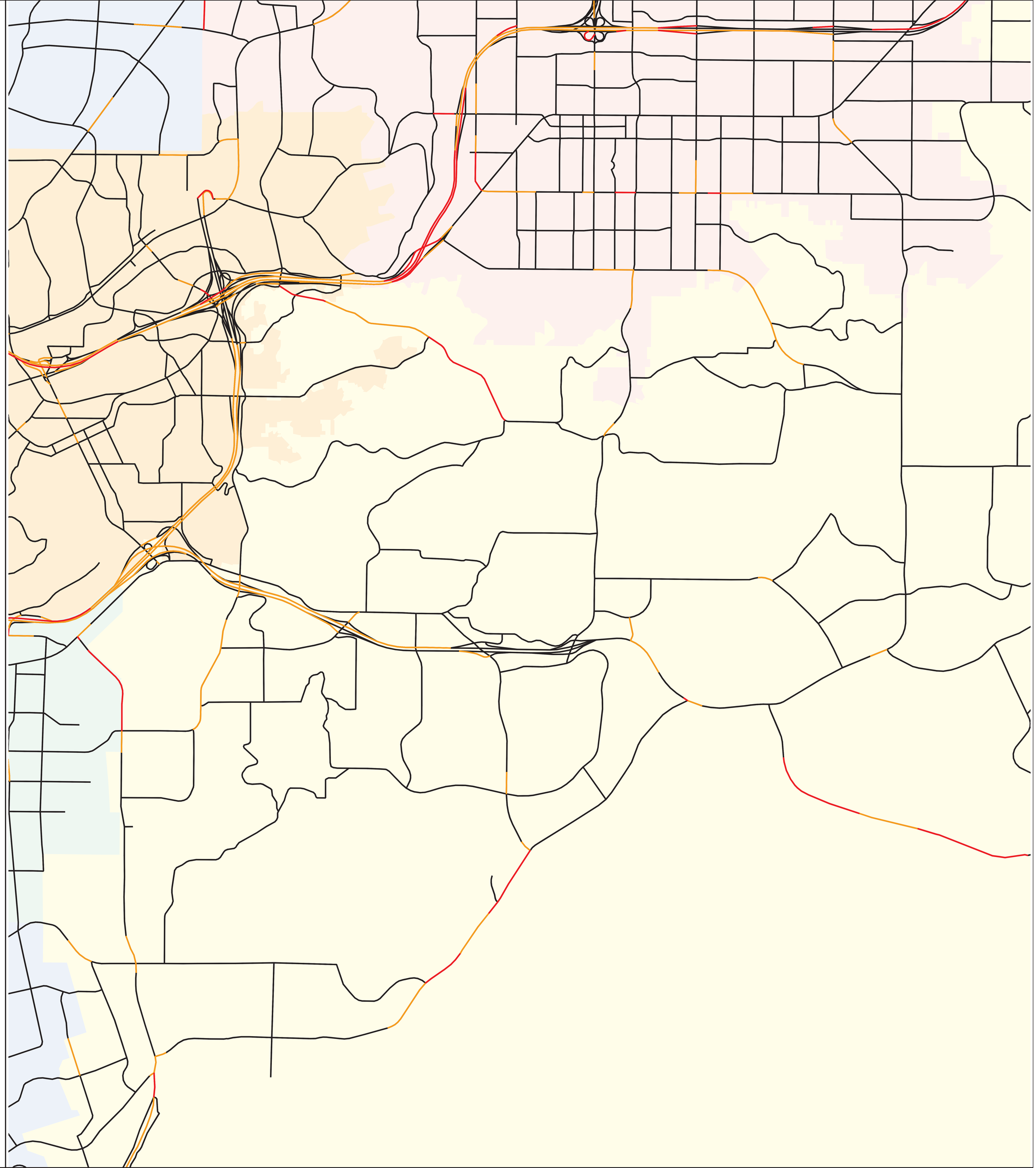
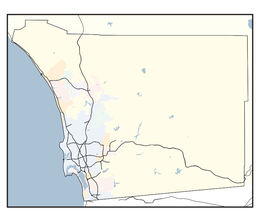


Level of Service

D and E

F and Greater



San Diego Region

SR-54 Corridor Study
2000 Highway Network

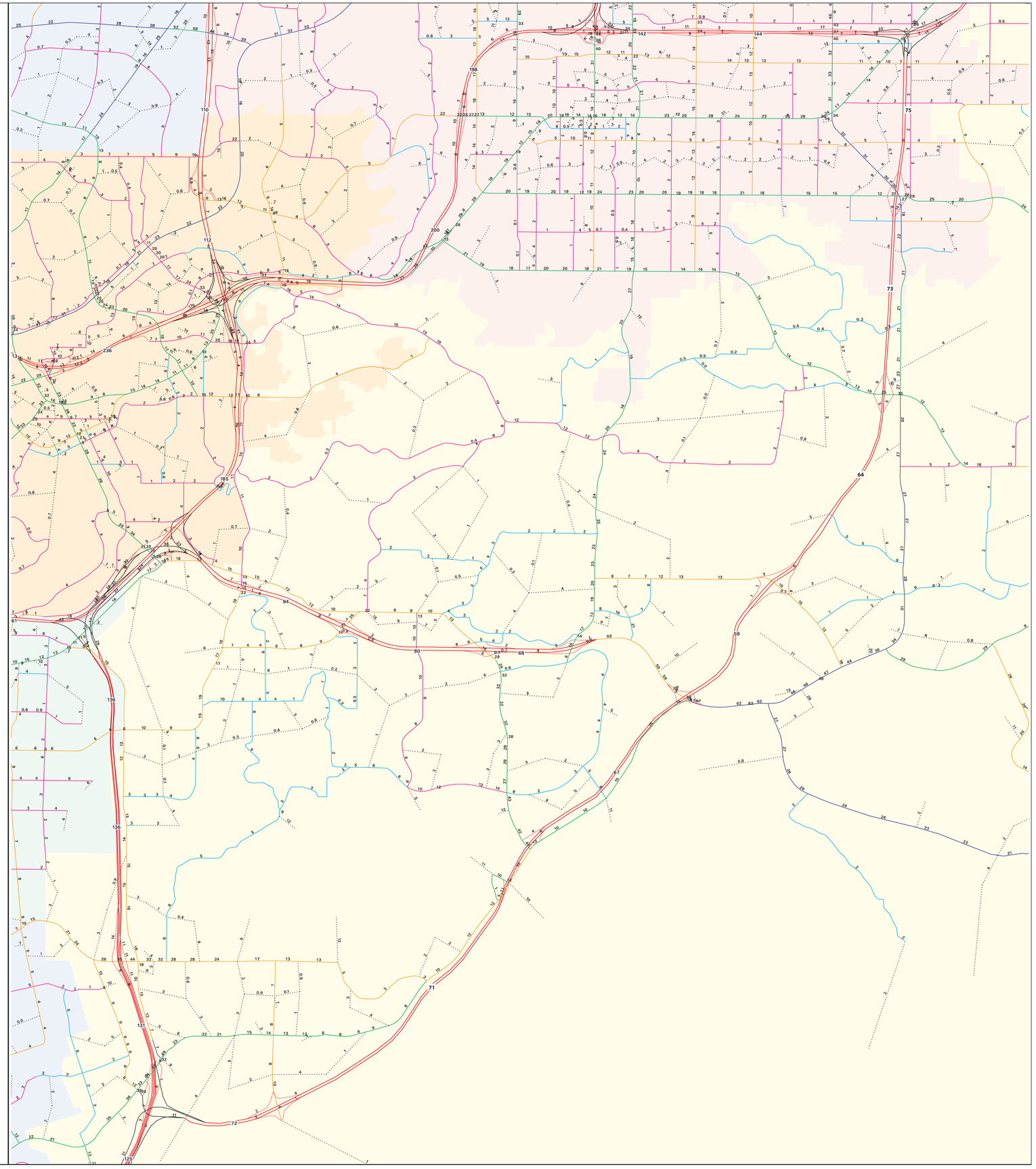
Feet 0 1,000 2,000

Meters 120 360 600

SANDAG

San Diego's Regional Planning Agency

August 13, 2003



Freeway
Prime
Major
Collector
Local Collector
Rural Collector
Local
Ramp
Zone Connector
Zone Boundary

Forecasted Volume in 000s

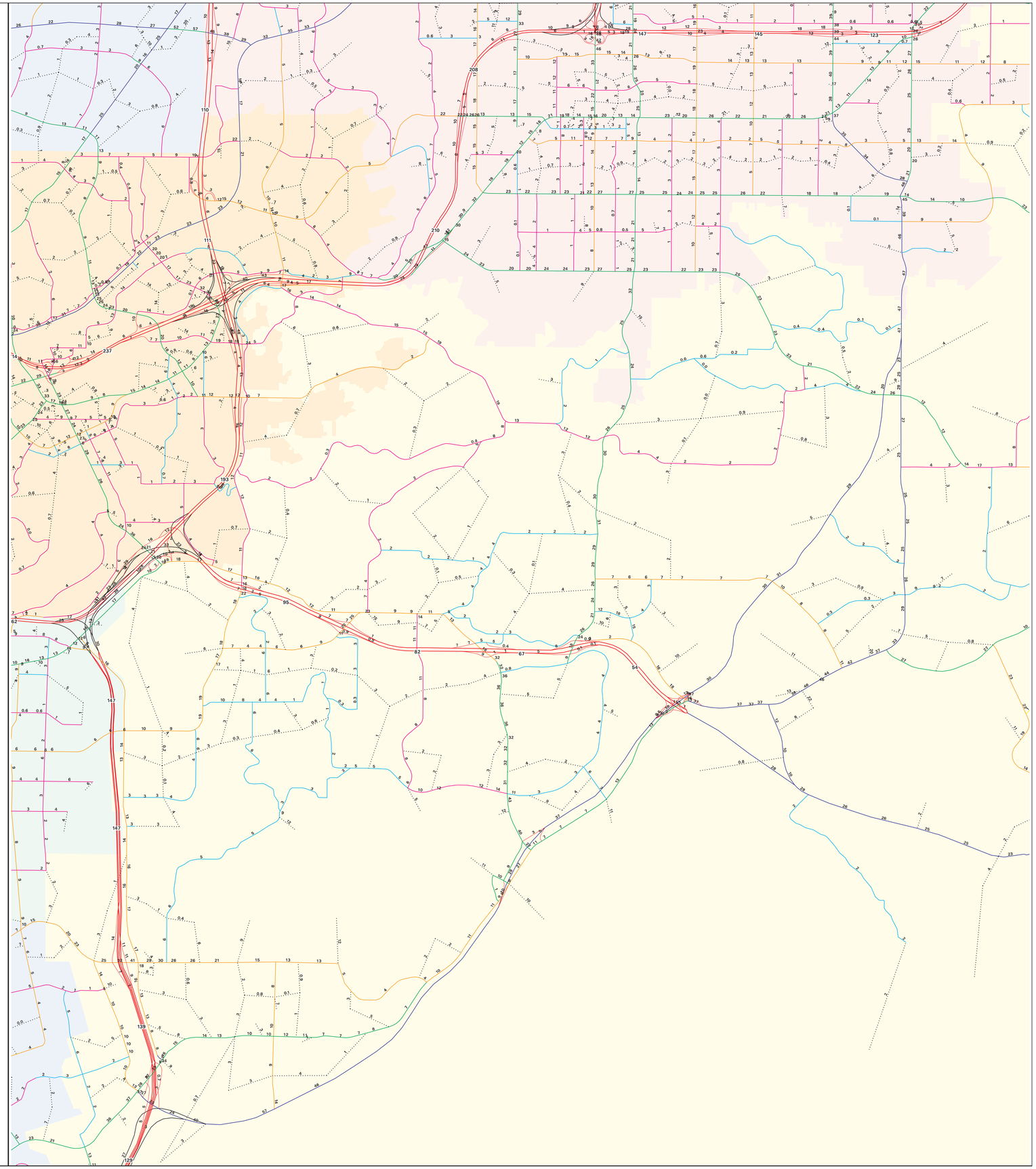
San Diego Region

SR-54 Corridor Study
Alternative 6
SR54 as 4 Lane Freeway
Forecasted Volumes

Feet 0 1,000 2,000
Meters 120 360 600

SANDAG
San Diego's Regional Planning Agency

July 22, 2003



Freeway
Prime
Major
Collector
Local Collector
Rural Collector
Local
Ramp
Zone Connector
Zone Boundary

Forecasted Volume in 000s

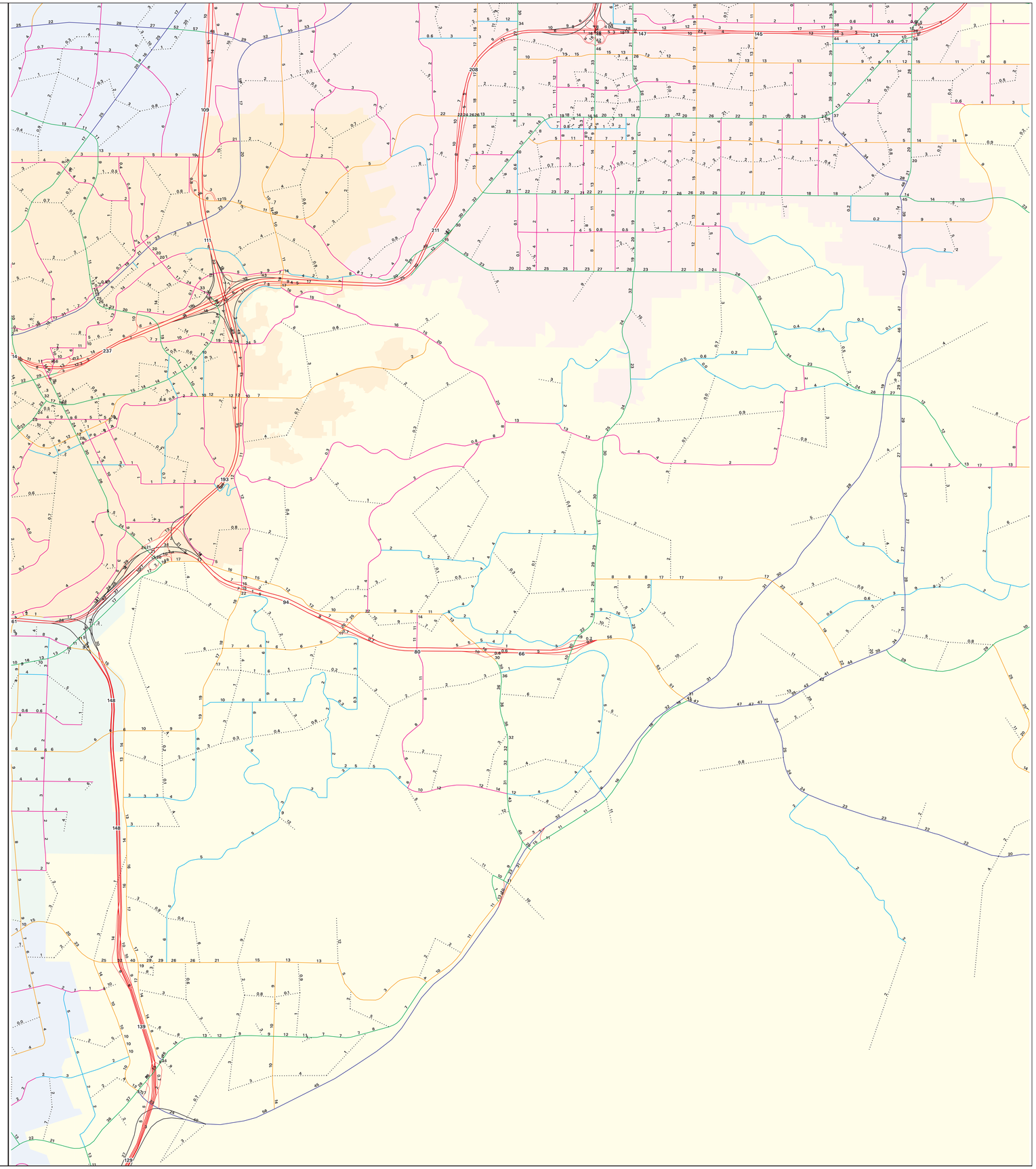
San Diego Region

SR-54 Corridor Study
Alternative 5
SR54 6 lane Expressway
w/Interchange @
SR94 & SR54
Forecasted Volumes

Feet 0 1,000 2,000
Meters 120 360 600

SANDAG
San Diego's Regional Planning Agency

July 22, 2003



Freeway
Prime
Major
Collector
Local Collector
Rural Collector
Local
Ramp
Zone Connector
Zone Boundary

Forecasted Volume in 000s

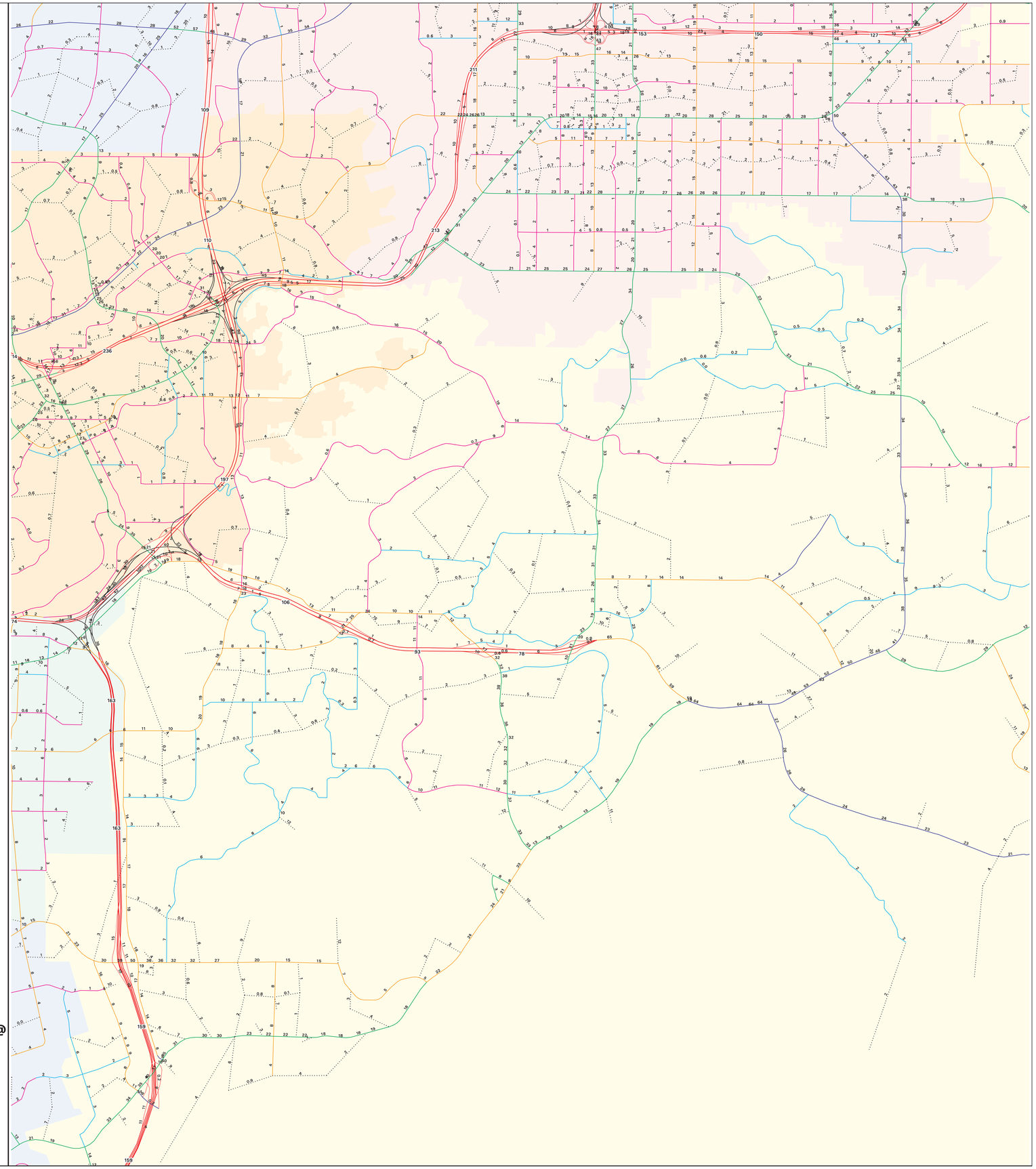
San Diego Region

SR-54 Corridor Study
Alternative 4
SR54 6 lane Expressway
w/o Interchange
Forecasted Volumes

Feet 0 1,000 2,000
Meters 120 360 600

SANDAG
San Diego's Regional Planning Agency

July 22, 2003



Freeway
Prime
Major
Collector
Local Collector
Rural Collector
Local
Ramp
Zone Connector
Zone Boundary

Forecasted Volume in 000s

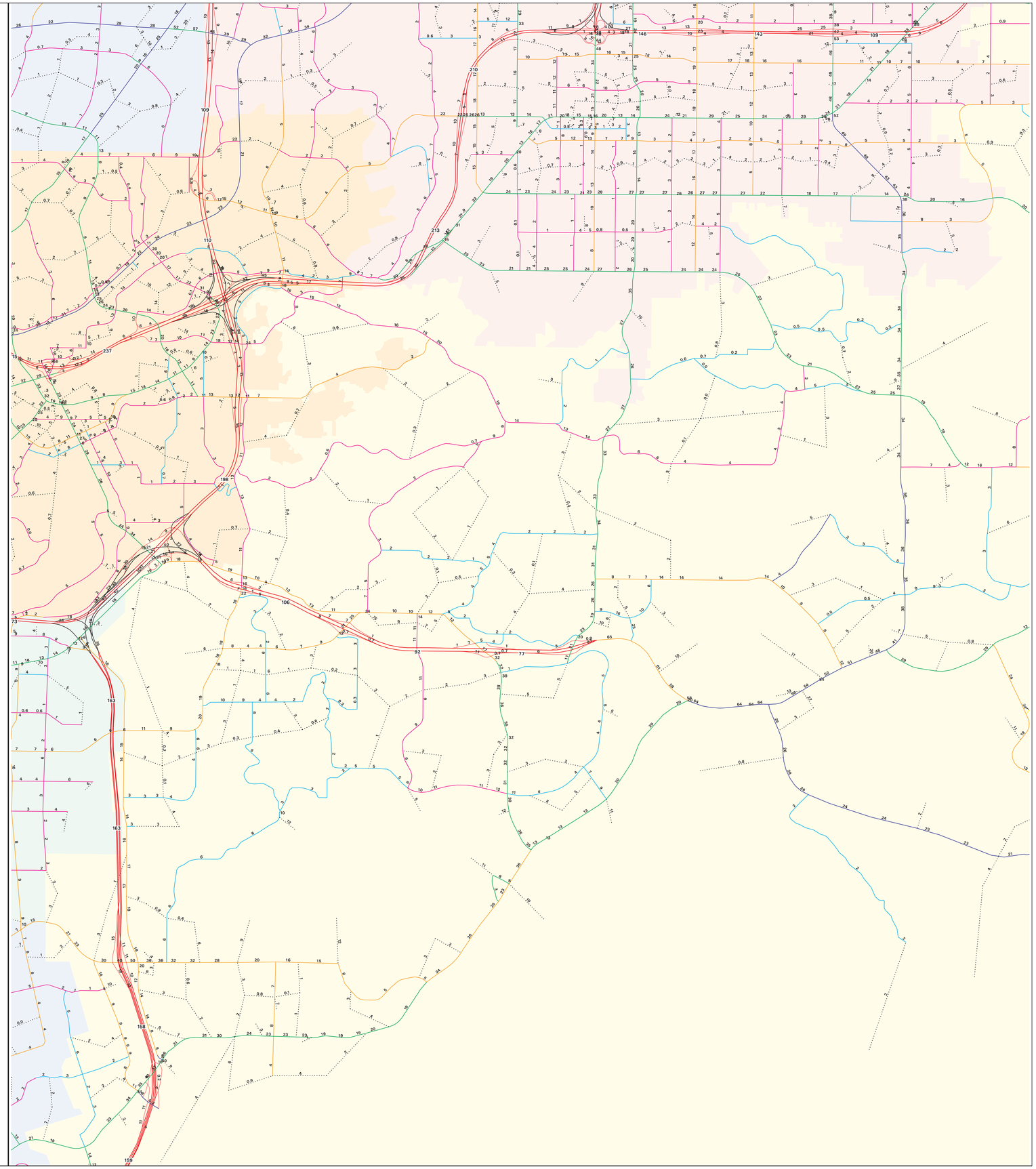
San Diego Region

SR-54 Corridor Study
Alternative 3
Upgrade to Exsiting Jamacha Blvd as 6 lane Improvements w/Intchage @ I8 and East Main Street
Forecasted Volumes

Feet 0 1,000 2,000
Meters 120 360 600

SANDAG
San Diego's Regional Planning Agency

July 22, 2003



Freeway
Prime
Major
Collector
Local Collector
Rural Collector
Local
Ramp
Zone Connector
Zone Boundary

Forecasted Volume in 000s

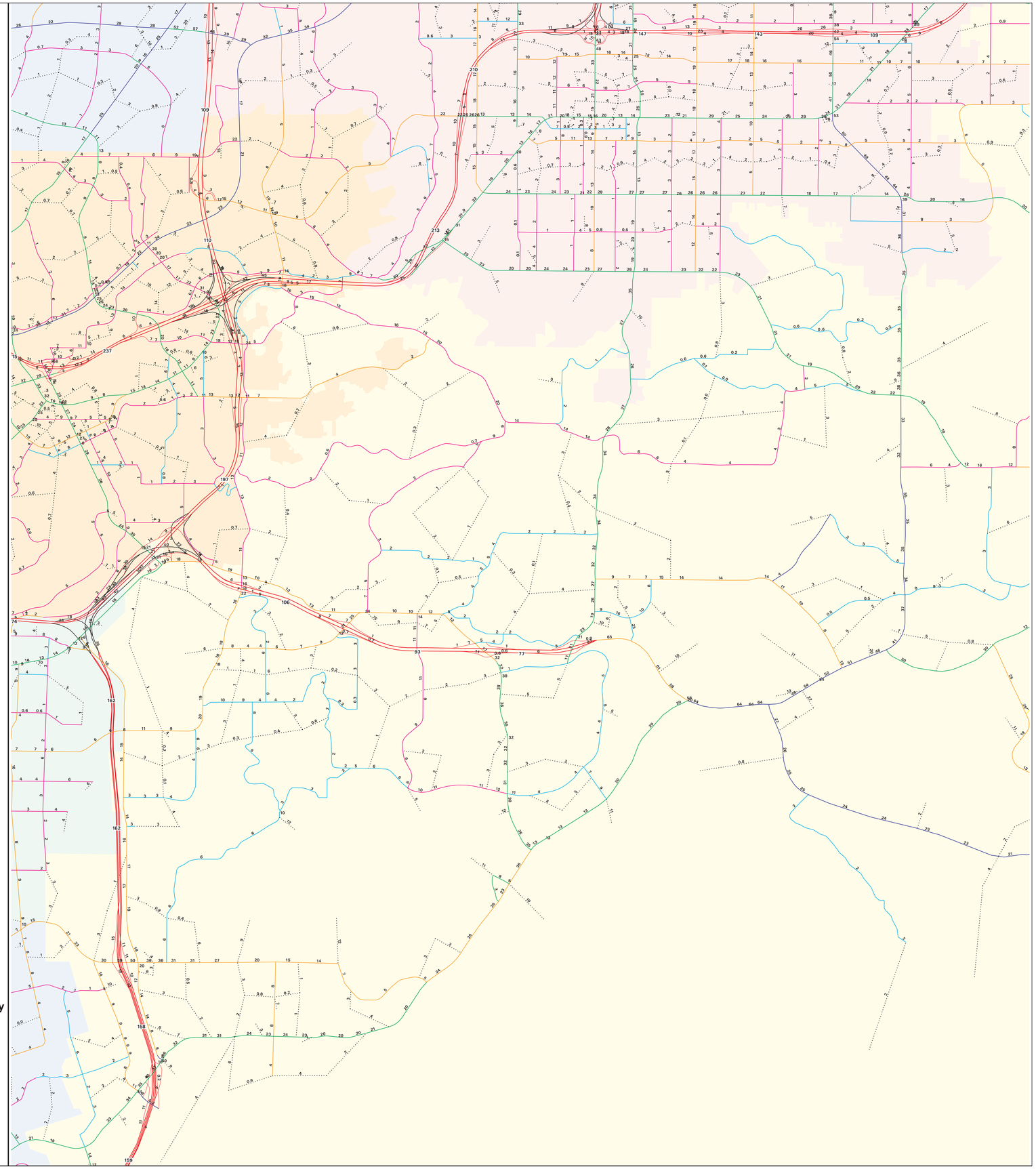
San Diego Region

SR-54 Corridor Study
Alternative 2
Upgrades to Existing Improvements
Forecasted Volumes

Feet 0 1,000 2,000
Meters 120 360 600

SANDAG
San Diego's Regional Planning Agency

July 22, 2003



Freeway
Prime
Major
Collector
Local Collector
Rural Collector
Local
Ramp
Zone Connector
Zone Boundary

Forecasted Volume in 000s

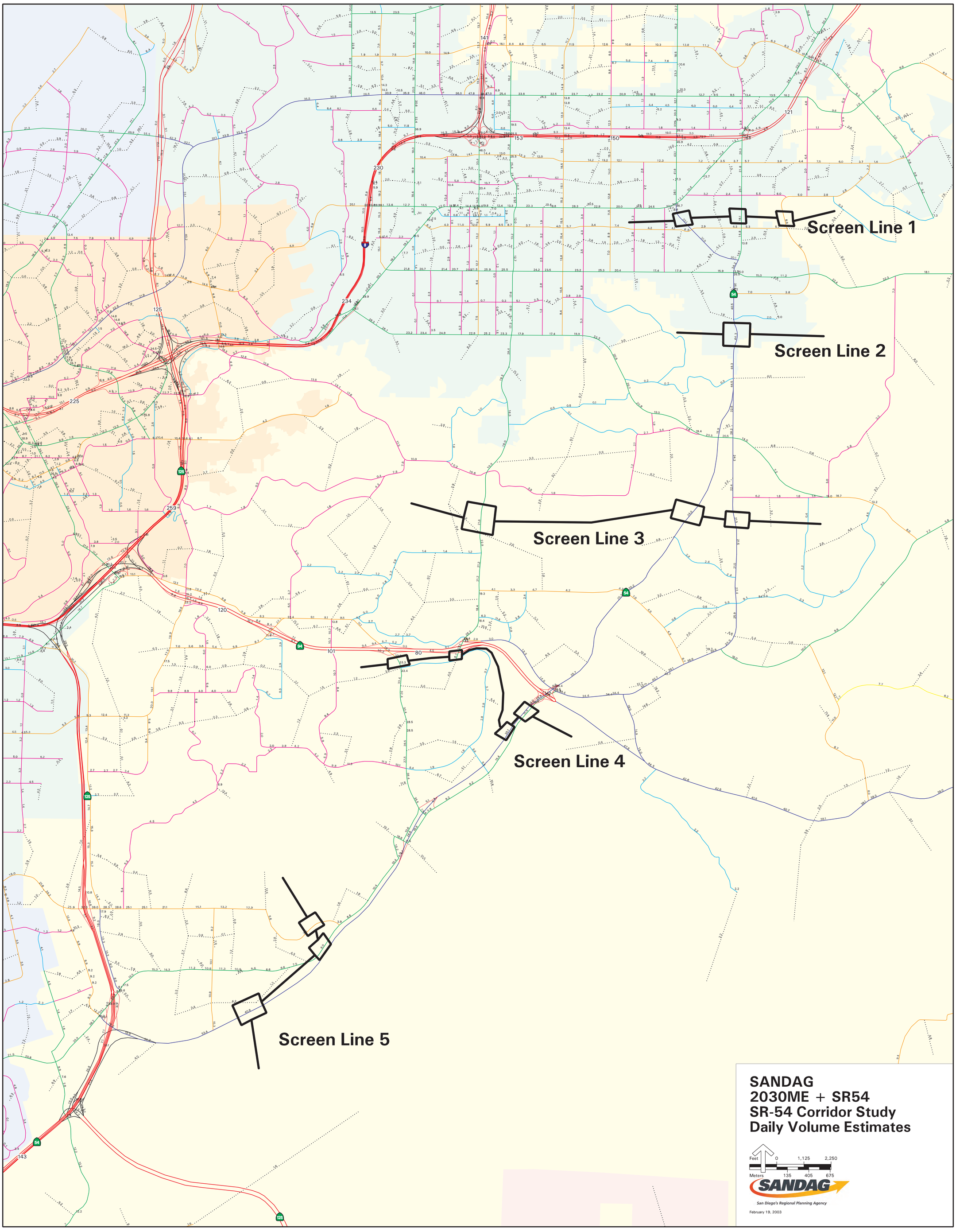
San Diego Region

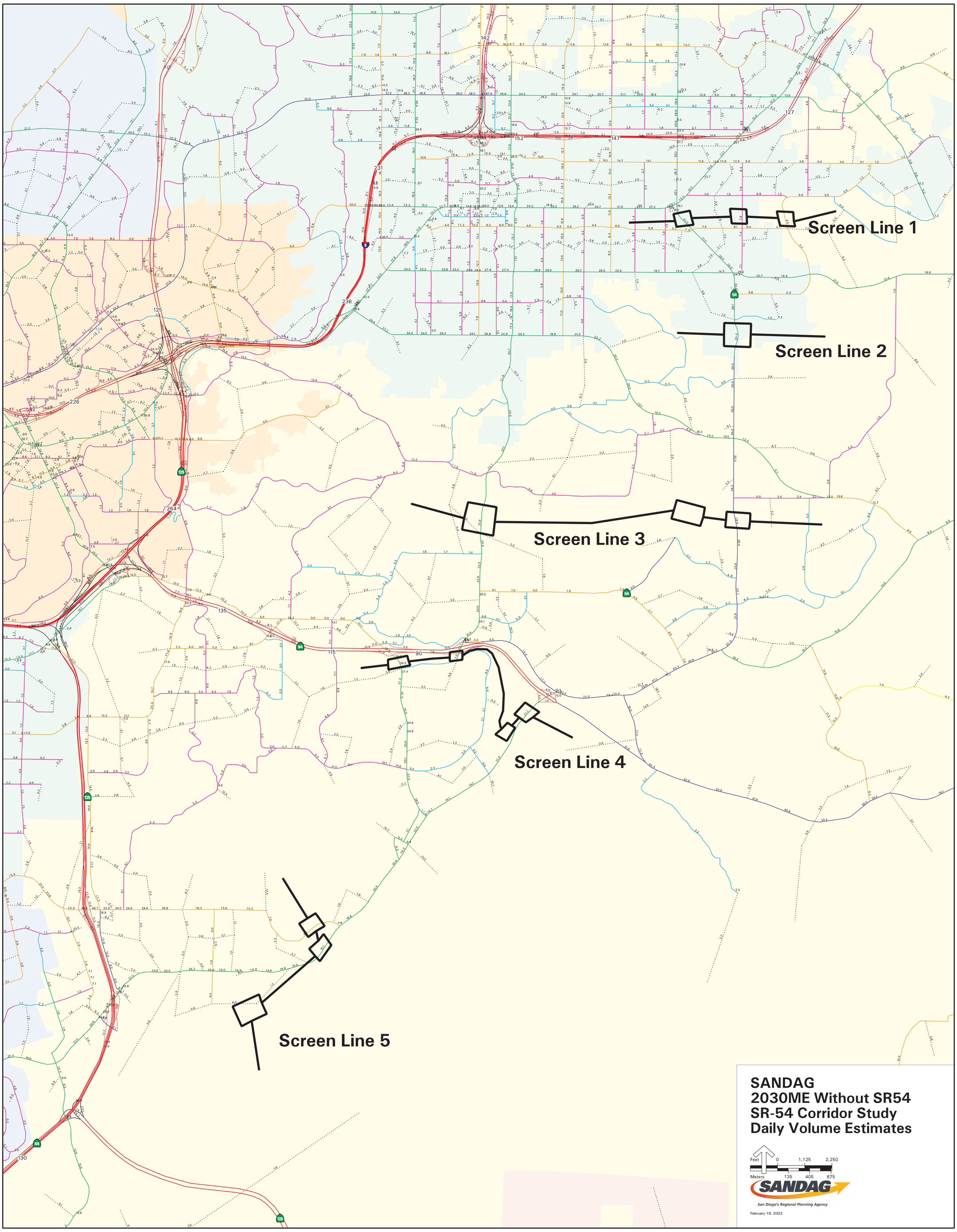
SR-54 Corridor Study
Alternative 1
2030 No Build-Corridor Only
Forecasted Volumes

Feet 0 1,000 2,000
Meters 120 360 600

SANDAG
San Diego's Regional Planning Agency

July 22, 2003


Screen Line 1
Screen Line 2
Screen Line 3
Screen Line 4
Screen Line 5
SANDAG
2030ME + SR54
SR-54 Corridor Study
Daily Volume Estimates
Feet 0 1,125 2,250
Meters 135 405 675
SANDAG
San Diego's Regional Planning Agency
February 19, 2003


Screen Line 1
Screen Line 2
Screen Line 3
Screen Line 4
Screen Line 5
SANDAG
2030ME Without SR54
SR-54 Corridor Study
Daily Volume Estimates
Feet 0 1,125 2,250
Meters 135 405 675
SANDAG
San Diego's Regional Planning Agency
February 19, 2003