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Development Mitigation Nexus Study

Appendix K
of the
SANBAG Congestion Management Program

prepared by the
San Bernardino Associated Governments
(SANBAG)

January 2016

Preface to the SANBAG Development Mitigation Nexus Study

The SANBAG Development Mitigation Nexus Study was originally approved by the San Bernardino Associated Governments (SANBAG), acting as the San Bernardino County Congestion Management Agency (CMA), on October 5, 2005. It has been revised based on amendments approved by the SANBAG Board on July 5, 2006, October 4, 2006, November 1, 2006, January 10, 2007, March 7, 2007, November 7, 2007, November 4, 2009, November 2, 2011 and November 6, 2013. The Nexus Study has been incorporated into the SANBAG Congestion Management Program (CMP) as Appendix K. SANBAG serves as the Congestion Management Agency responsible for implementing and maintaining the CMP. This update includes a complete revision of project cost estimates, superseding prior updates that generally involved the use of escalation factors. This document serves as the final version for the 2015 update to the Nexus Study, which is required by the Development Mitigation Program implementation language included in Appendix J of the CMP and the Measure I 2010-2040 Strategic Plan. This update reflects comments from members of the Transportation Technical Advisory Committee (TTAC), will be presented to the SANBAG Metro Valley Study Session on December 10, 2015, the Mountain Desert Committee on December 11, 2015 and subsequently to the SANBAG Board of Directors on January 6, 2016.

Background

SANBAG staff began preparation of the Nexus Study in early 2004 at the direction of the SANBAG Board of Directors to support the development of Measure I 2010-2040. Measure I 2010-2040 was overwhelmingly approved by the voters of San Bernardino County on November 2, 2004. Included in the Measure I 2010-2040 Ordinance was language mandating development to pay its fair share for transportation improvements within San Bernardino County. The specific language governing the development contribution requirements of Measure I 2010-2040 are included in Section VIII of the ordinance as follows:

> *"SECTION VIII. CONTRIBUTIONS FROM NEW DEVELOPMENT. No revenue generated from the tax shall be used to replace the fair share contributions required from new development. Each local jurisdiction identified in the Development Mitigation Program must adopt a development financing mechanism within 24 months of voter approval of the Measure 'I' that would:*
>
> *"1) Require all future development to pay its fair share for needed transportation facilities as a result of the development, pursuant to California Government Code 66000 et seq. and as determined by the Congestion Management Agency.*
>
> *"2) Comply with the Land Use/Transportation Analysis and Deficiency Plan provisions of the Congestion Management Program pursuant to California Government Code Section 65089.*

> *"The Congestion Management Agency shall require fair share mitigation for regional transportation facilities through a Congestion Management Program update to be approved within 12 months of voter approval of Measure 'I'."*

The SANBAG Development Mitigation Program is collectively comprised of three documents - Chapter 4 ("Land Use/Transportation Analysis Program"), Appendix K and Appendix J of the CMP. The Development Mitigation Program was originally approved by the CMA on November 2, 2005, along with other revisions to the CMP. Appendix J of the CMP provides the specific requirements local jurisdictions must follow when implementing their development mitigation program for regional transportation facilities.

The San Bernardino County CMP implements the Land Use/Transportation Analysis Program with two distinct approaches, depending on geographic location within the County. The first approach addresses the cities and associated spheres of influence in the San Bernardino Valley and Victor Valley, to which the Nexus Study and related development mitigation requirements apply. The second approach applies to all other areas of the County. These two approaches are summarized below:

1. For San Bernardino Valley and Victor Valley cities and sphere areas: local jurisdictions implement development mitigation programs that generate development contributions for regional transportation improvements equal to or greater than fair share contributions determined through the SANBAG Development Mitigation Nexus Study. Regional transportation facilities addressed by the Nexus Study include freeway interchanges, railroad grade separations, and regional arterial highways on the Nexus Study Network. Local jurisdiction development mitigation programs must comply with requirements established in Appendix J of the CMP. Each local jurisdiction has adopted a compliant development mitigation program based on the requirements established in this appendix and implemented in accordance with Chapter 4 and Appendix J of the CMP.

2. For areas outside the San Bernardino Valley and Victor Valley cities and spheres: local jurisdictions must prepare Traffic Impact Analysis (TIA) reports for proposed development projects exceeding specified thresholds of trip generation. This is a continuation of a requirement established when the CMP was originally approved by the SANBAG Board in 1992. TIA reports must comply with requirements contained in Chapter 4 and Appendix C of the CMP.

At their discretion, jurisdictions outside the Valley and Victor Valley may adopt Approach 1, in coordination with and subject to the approval of the SANBAG Board. However, an amendment to the Nexus Study would be required for this to occur.

Overview of the Nexus Study

The SANBAG Nexus Study identifies the fair share contributions from new development for regional transportation improvements (freeway interchanges, railroad grade separations, and

regional arterial highways). The Nexus Study is updated biennially or as requested and in close coordination with local jurisdictions.

The Nexus Study identifies a Nexus Study Network, representing regional roadways in the urbanized areas of San Bernardino County. Roadway improvement projects must be located on this network for their costs to be included in the Nexus Study and to be eligible to receive or expend Measure I 2010-2040 Valley Freeway Interchange, Valley Major Street, Victor Valley Local Street (capacity enhancement projects only) and Victor Valley Major Local Highway funds. Additionally, projects not included in the Nexus Study are not eligible for SANBAG allocations of state or federal transportation funds included in the Measure I 2010-2040 Expenditure Plan. The Nexus Study only applies to the Victor Valley Local Street Program insofar as the jurisdiction intends to use Measure I Local Street funds to add capacity to projects on the Nexus Study Network, per Policy 40012/VVLS-8 of the Strategic Plan. A local jurisdiction may wish to identify other local or non-regional improvements (projects not on the Nexus Network) as part of its overall development mitigation program, but these local or non-regional projects are not eligible for inclusion in the Nexus Study.

The Nexus Study identifies specific improvement projects on the Nexus Study Network and includes a cost estimate for the projects. The cost estimates have been developed collaboratively, working with local jurisdictions to obtain the most up-to-date project cost data available. Costs may include planning, project development (including Project Study Reports, Project Reports, and environmental documents), design, construction, construction management, project management, right-of-way, and mitigation of impacts subject to the policy provisions contained in the Measure I Strategic Plan. Only those project phases for which costs are included in the Nexus Study are eligible for Measure I or other transportation funding allocated by SANBAG.

The Nexus Study also includes an estimate of growth in dwelling units and employment expected over the planning period of the Nexus Study (2004 to 2030). The percentage growth in trips associated with the new development is development's fair share for that geographic area. The growth estimates were prepared in collaboration with local jurisdictions, SANBAG and SCAG as part of the 2004 Regional Transportation Plan (RTP). The development mitigation fair share estimates contained in the Nexus Study represent a minimum fair share for regional transportation improvements for each local jurisdiction and for each jurisdiction's sphere area, based on the estimates of project costs and the growth data provided by those jurisdictions. San Bernardino County has provided the estimates of project costs and growth in dwelling units/employment for sphere areas and unincorporated sub-areas, such as the Redlands Donut Hole and Glen Helen/Devore. The Nexus Study calculates a fair share percentage attributable to new development for each local jurisdiction, sphere of influence, unincorporated County sub-area not contained within a sphere of influence and interchange traffic shed.

The Nexus Study does not dictate how local jurisdictions develop and implement their development mitigation programs to achieve the development contribution levels specified in this report. Local jurisdictions have substantial flexibility in their program approach. In addition, the SANBAG Nexus Study does not dictate per-unit contribution levels

(or development fees) by land use type. Each jurisdiction must develop its own schedule of fees or other per-unit mitigation levels that can be demonstrated to achieve the development contribution levels specified in this Nexus Study by facility type. Appendix J of the CMP also indicates that cities and the County may make arrangements to combine the required development contribution levels for each jurisdiction and its sphere and to develop a unified development mitigation program for the city and the sphere. For example, if a city is using a development impact fee (DIF) program to meet the SANBAG requirements, a common fee structure for the city and sphere could be established. The city and County would need to establish the appropriate legal agreements and administrative processes to manage such a joint program. The information in the SANBAG Nexus Study allows for either separate or joint city/County programs. If a joint program is pursued, the city and County would add the development contribution levels for the both the city and sphere area.

The methodology employed by the Nexus Study for calculating fair share development contributions was developed in early 2004 by the Nexus Study Task Force, consisting of staff representatives from local jurisdictions and from the private sector (principally the Building Industry Association and the National Association of Industrial and Office Properties). Individual meetings were also held with local jurisdictions and private entities, including representatives of the retail development industry. The implementation requirements contained in Chapter 4 and Appendix J of the CMP were developed in early 2005 by a working group of representatives from both local jurisdictions and the private sector. Chapter 4 and Appendix J were also reviewed by the SANBAG Comprehensive Transportation Plan Technical Advisory Committee (CTP TAC) prior to policy review and adoption by the SANBAG Board of Directors.

The Regional Transportation System

A "Nexus Study Network" has been defined as a basis for establishing the arterial roadways to be included in the Nexus Study. This network is regional in nature, but should not be confused with other systems, such as the existing Measure I Regional Arterial System in the Victor Valley. The system has been based on a generalized set of criteria involving roadway functional classification, propensity to carry inter-jurisdictional traffic, connection to the freeway system, etc. For example, every roadway that interchanges with a freeway is included on the Nexus Study Network. Figures 1 and 2 show the Nexus Study Network in the Valley and Victor Valley, respectively.

A list of interchanges has been compiled for inclusion in the Nexus Study. The list was originally based on the interchanges submitted by SANBAG and local jurisdictions for the 2004 Regional Transportation Plan (RTP) and then modified for the Nexus Study based on local jurisdiction input. The list was distributed to local jurisdictions for review and comment. A list of potential railroad grade crossing projects also has been compiled. Only the grade crossings on the Nexus Study Network are included in the analysis.

Figure 1 Nexus Network
San Bernardino Valley

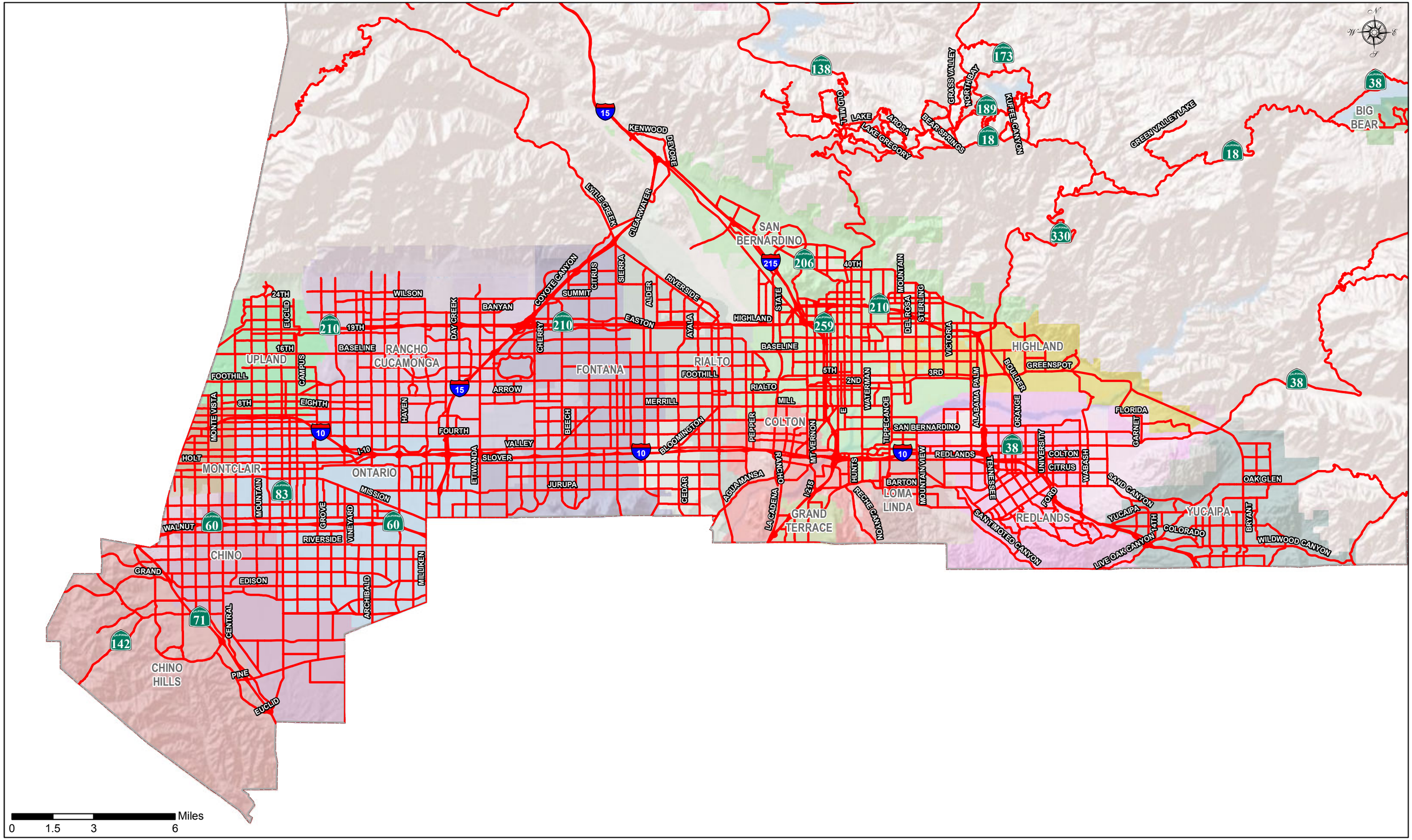
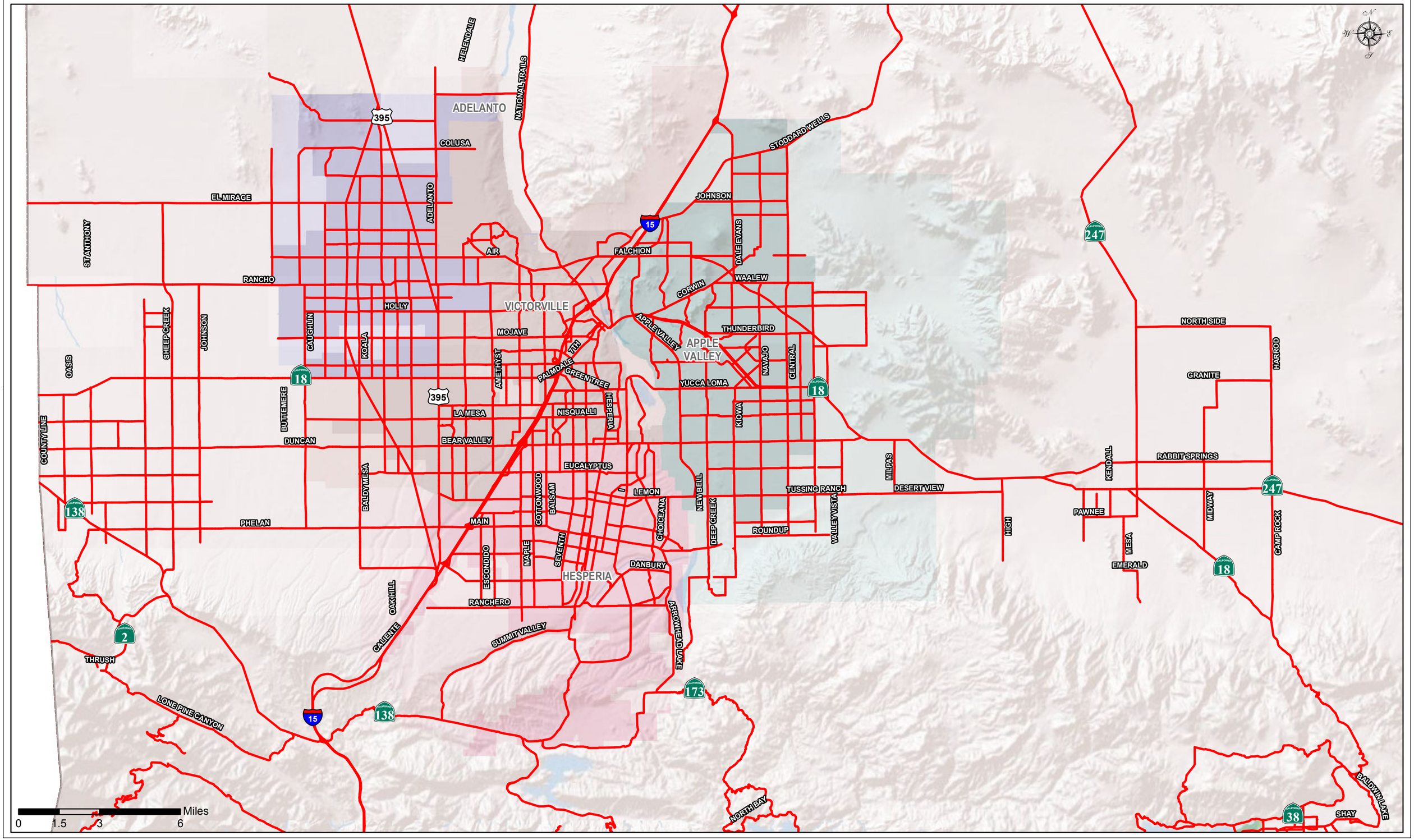


Figure 2 **Nexus Network**
Victor Valley



Forecast Growth by Jurisdiction

The calculation of fair share development contributions required an estimate of projected growth for residential and non-residential development. The data set used as the starting point for projection of residential development (single and multi-family dwelling units) and nonresidential development (retail and non-retail employment) was the 2030 local input provided as part of the growth forecasting process for the 2004 RTP. This iterative process, well-documented in the 2004 RTP of the Southern California Association of Governments (SCAG), generated an initial forecast for the entire Southern California region by jurisdiction, which was then given to local jurisdictions for review, comment, and possible modification. The "local input" 2030 data set was used for the Nexus Study because it was developed through the direct involvement of and review by each of the local jurisdictions. Each local jurisdiction signed off on its local input data in late 2002. These forecasts have been reviewed and updated by local jurisdictions in early and mid-2005. Three specific review and comment periods were provided to local jurisdictions in 2005 for both the growth forecasts and for the project lists. SANBAG staff was also available to meet with local jurisdictions individually and held such meetings with the majority of jurisdictions. The year 2004 was used as the base year for the analysis of growth forecasts. The 2004 dwelling unit totals by jurisdiction are based on California Department of Finance data. The 2004 employment data (retail and non-retail) was derived by adding one year of growth to the 2003 employment data reviewed by each of the local jurisdictions. The growth was estimated as 1/27th of the projected growth between 2003 and 2030.

Table 1 presents the 2004 and 2030 estimates of dwelling units and employment by jurisdiction. **Table 2** presents the growth estimates for unincorporated areas within each city sphere area. The tables show the projected growth over the entire 26-year period. By way of comparison, an average of approximately 8,000 new residential dwelling units were permitted annually by local jurisdictions in San Bernardino County between 1994 and 2010 (California Department of Finance Table I-6). The range in annual housing permits is large, from a high of approximately 18,000 in 2004 to a low of approximately 2,000 units in 2010. This period included two significant Southern California recessions plus the residential housing boom of the mid-2000s. The projected growth of about 290,000 dwelling units over the 26-year Nexus Study planning period equates to an average annual rate of about 10,700 units. Thus, the rate of growth contained in the projections for the Nexus Study would appear to be slightly higher than the historic rate, but the total growth would be achieved with additional years of growth beyond 2030.

Table 1. Summary of Growth Data for Cities

Jurisdiction	Single Family 2004	Single Family 2030	SF Growth	Multi-Family 2004	Multi-Family 2030	MF Growth	Retail Empl. 2004	Retail Empl. 2030	Retail Growth	Non-Retail Empl. 2004	Non-Retail Empl. 2030	Non-Retail Growth	Trip Ends 2004 in PCEs	Trip Ends 2030 in PCEs	Ratio of Trip Growth to 2030 Trips
Adelanto	3,866	11,524	21,480	1,462	4,238	4,892	375	707	511	2,775	5,148	3,673	61,704	326,643	63.5%
Apple Valley	15,870	32,849	16,979	4,170	4,518	348	3,285	9,967	6,682	12,790	35,029	22,239	270,012	600,556	55.0%
Chino	13,600	20,230	6,630	4,339	9,348	5,009	8,855	13,706	4,851	39,465	56,673	17,208	404,030	623,078	35.2%
Chino Hills	18,949	20,560	1,611	2,931	4,862	1,931	933	1,163	230	4,222	5,823	1,601	233,956	271,081	13.7%
Colton	9,228	11,979	2,751	5,541	13,959	8,418	7,176	13,492	6,316	19,038	35,003	15,965	287,549	509,440	43.6%
Fontana	33,002	46,393	13,391	8,338	11,947	3,609	9,451	15,818	6,367	41,435	59,868	18,433	638,669	940,825	32.1%
Grand Terrace	2,896	3,563	667	1,345	2,282	937	575	1,564	989	1,922	4,403	2,481	51,782	86,208	39.9%
Hesperia	17,808	43,008	25,200	3,610	9,690	6,080	4,743	11,008	6,265	14,833	37,974	23,141	312,374	760,574	58.9%
Highland	13,005	16,739	3,734	2,508	2,674	166	1,377	8,591	7,214	5,919	11,336	5,417	183,127	341,729	46.4%
Loma Linda	3,898	7,148	3,250	4,003	5,458	1,455	4,637	7,839	3,202	11,636	17,585	5,949	166,335	271,939	38.8%
Montclair	6,095	8,000	1,905	2,373	2,800	427	10,347	12,414	2,067	13,065	16,536	3,471	264,245	325,943	18.9%
Ontario	29,726	42,132	12,406	14,442	26,897	12,455	10,983	30,063	19,080	65,282	101,403	36,121	736,782	1,324,759	44.4%
Rancho Cuc.	34,856	36,443	1,587	12,630	22,519	9,889	6,552	14,108	7,556	51,751	79,342	27,591	673,040	943,897	28.7%
Redlands	16,525	19,252	2,727	7,902	9,862	1,960	6,369	9,345	2,976	20,803	30,524	9,721	369,511	480,572	23.1%
Rialto	19,474	34,335	14,861	7,083	10,563	3,480	4,390	7,181	2,791	17,461	29,255	11,794	355,016	600,270	40.9%
San Bernardino	35,957	48,311	12,354	20,844	23,077	2,233	9,344	21,417	12,073	69,188	99,051	29,863	829,782	1,227,184	32.4%
Upland	16,091	19,866	3,775	11,340	29,443	18,103	2,136	11,552	9,416	28,505	37,792	9,288	348,513	673,969	48.3%
Victorville	17,886	34,419	16,533	8,826	12,702	3,876	8,019	17,500	9,481	29,011	61,500	32,489	436,301	856,046	49.0%
Yucaipa	11,273	16,450	5,177	5,757	7,398	1,641	1,806	2,981	1,175	6,701	9,593	2,892	196,732	284,692	30.9%
Total	320,003	487,023	167,020	129,444	216,353	86,909	101,352	210,595	109,243	455,798	735,138	279,340	7,089,237	11,449,406	

Table 2. Summary of Growth Data for Spheres of Influence

Jurisdiction	Single Family 2004	Single Family 2030	SF Growth	Multi-Family 2004	Multi-Family 2030	MF Growth	Retail Empl. 2004	Retail Empl. 2030	Retail Growth	Non-Retail Empl. 2004	Non-Retail Empl. 2030	Non-Retail Growth	Trip Ends 2004 in PCEs	Trip Ends 2030 in PCEs	Ratio of Trip Growth to 2030 Trips
Adelanto Sphere	62	145	83	26	50	24	2	18	16	18	114	96	876	2,366	63.0%
Apple Valley Sphere	1,539	4,000	2,461	325	457	132	58	120	62	709	1,030	321	20,368	47,535	57.2%
Chino Sphere	1,243	1,837	594	357	513	156	626	1,078	452	694	1,200	506	25,879	40,865	36.7%
Colton Sphere	674	983	309	175	299	124	22	51	29	518	1,011	493	9,666	15,388	37.2%
Devore/Glen Helen	1,102	3,635	2,533	121	338	217	12	17	5	1,998	2,738	740	17,520	46,334	62.2%
Fontana Sphere	5,634	8,706	3,072	1,922	3,501	1,579	2,792	5,717	2,925	6,323	8,960	2,637	127,577	219,011	41.7%
Hesperia Sphere	1,667	3,019	1,352	372	524	152	99	134	35	456	648	192	21,856	37,385	41.5%
Loma Linda Sphere	245	1,173	928	122	281	159	9	27	18	417	889	472	4,558	16,464	72.3%
Montclair Sphere	1,289	1,949	660	830	1,160	330	670	1,155	485	1,010	1,744	734	31,108	49,072	36.6%
Redlands Sphere	2,307	3,910	1,603	735	1,233	498	30	64	34	6,253	8,183	1,930	45,819	71,052	35.5%
Redlands Donut Hole	3	10	7	11	11	0	7	1,612	1,605	399	5,457	5,058	1,317	38,866	62.0%
Rialto Sphere	5,805	9,459	3,654	876	1,344	468	237	411	174	4,579	6,799	2,220	79,939	128,208	37.6%
San Bernardino Sphere	6,838	8,662	1,824	2,142	2,853	711	229	304	75	5,018	7,171	2,153	100,031	130,151	23.1%
Upland Sphere	1,144	1,680	536	72	105	33	1,119	1,934	815	1,403	2,420	1,017	32,110	52,376	38.7%
Victorville Sphere	3,748	4,356	608	392	649	257	66	110	44	716	1,005	289	42,919	52,182	17.8%
Yucaipa Sphere	123	204	81	40	63	23	0	1	1	165	275	110	1,960	3,241	39.5%
Total	33,424	53,728	20,304	8,517	13,381	4,864	5,978	12,753	6,776	30,675	49,644	18,969	563,502	950,496	

Costs of Arterial, Interchange, and Railroad Grade Crossing Improvements

Cost estimates for many of the proposed improvements were originally obtained through jurisdiction submissions as part of the 2004 Regional Transportation Plan. This served as an initial foundation for the estimates of project cost. In other cases, the list was derived from projects contained in existing local jurisdiction development impact fee (DIF) programs. The initial list of projects and costs was again reviewed by each local jurisdiction in each biennial update of the Nexus Study. Costs have been updated through development of cost estimates as part of project development activities or through application of escalation factors. The cost estimates were generated as follows:

- **Arterial** costs were estimated as follows:
    - The local jurisdiction projects and cost estimates were accepted directly and entered into a database. These included only the arterial projects on the Nexus Study Network. Unless otherwise noted, the costs include project development, engineering, right-of-way and construction costs. In some cases, bridges, traffic signals, and other cost items are specified separately. Where these items are not separately identified, the costs are assumed to be included in the overall cost estimate for widening of each facility. The existing number of lanes and the number of lanes after improvement are also identified for projects where the information was available. Local jurisdictions may not include costs of improvements such as sidewalk, curb and gutter and match-up pavement along undeveloped frontages, for which developers would ordinarily be responsible. See Appendix J of the CMP for details on project cost eligibility. The costs included in the Nexus Study were reduced by the amount of federal earmarks for individual arterial projects contained in prior federal legislation or appropriations, where specifically identified, based on the development mitigation principles adopted by the SANBAG Board.
    - The Measure I Strategic Plan identified equitable share percentages for each jurisdiction in the San Bernardino Valley. Equitable shares are defined as the percentage of Measure I Arterial Sub-program funding guaranteed to each Valley jurisdiction over the life of Measure I 2010-2040. The percentage is the ratio of public share costs for each jurisdiction's list of arterial projects to the total Valley arterial public share costs in the Nexus Study as it was approved by the SANBAG Board in November 2007.
    - It should be recognized that the affordability of the arterial program, defined by the project cost estimates compared to the forecast revenue from both the development share and the public share, varies over time. When the Nexus Study was first prepared in 2005, the forecast revenue was approximately equal to the estimated costs. Although costs decreased during the recent recession, the estimated costs are higher than those estimated in 2005, and the Measure I revenue forecast has declined. This means that in this 2015 Nexus Study update it is estimated that Measure I revenue can fund only about half of the estimated public share cost. This does not necessarily mean that jurisdictions should reduce

their projects. The estimated Measure I revenue could increase faster than the increase in costs in the future, or additional revenue (state, federal, or local) may be identified to make up part of the public share gap. Alternatively, some of the arterials may not be constructed by 2040 but rather may still be constructed subsequent to the current Measure I using an as-yet unidentified public funding source.

  - Once arterial projects are completed, the final cost at completion is escalated to current year dollars for each subsequent biennial Nexus Study update to ensure the arterial program keeps pace with inflation.

- **Interchange** costs were estimated based on the following basic criteria:
  - The most recent Project Programming Request (PPR), Regional Transportation Improvement Program (RTIP) data, Project Study Report (PSR), or other updated costs from local jurisdictions. If necessary, these costs were updated to 2015 dollars through application of an escalation factor or through more recent cost estimation activities. In some cases, verified cost estimates for one interchange were used to estimate costs for other interchanges where the improvement needs were expected to be similar. The interchange costs were reduced by the amount of federal earmarks, where specifically identified.
  - It should be understood that these planning-level estimates are based on the best available information and represent costs for 2015. SANBAG will actively participate in project development activities for interchanges included in the Nexus Study.
  - Once interchange projects are completed, the final cost at completion is escalated to current year dollars for each subsequent biennial Nexus Study update to ensure the interchange program keeps pace with inflation.

- **Railroad grade crossing project** costs were estimated as follows:
  - The most recent project development activities by SANBAG and local jurisdictions. Costs were reduced based on federal earmarks, where specifically identified. Costs are consistent with the Trade Corridors Improvement Fund Project Programming Requests (PPRs) submitted to the California Transportation Commission.

The list of railroad grade crossing improvements is presented in a later section. The arterial project list is provided in Attachment 1 of this report. The interchange project list and associated cost estimates are provided in **Table 3**.

Table 3
Interchange Improvements and 2015 Costs,
Including a Comparison to 2013 Nexus Study Costs

Interchange	2013 Nexus Study Cost ($Millions)	Lead Agency	2015 Nexus Study Cost Update ($Millions)	Federal Earmark/ State Buy-Down ($Millions)	Source of Cost Estimate*	Year Estimate Prepared
SR-60 at:						
Ramona	$30	Chino	$30		SANBAG	2011
Central	$30	SANBAG	$21		SANBAG	2015
Mountain	$15	Ontario/Chino	$15		Ontario DIF & SANBAG	9/2012
Euclid - Phase 1 (Widen WB exit) - Phase 2 (Widen EB exit) - Phase 3 (Widen EB/ WB on-ramps)	$6 $2 $4	 Caltrans Ontario Ontario	$6 $2 $4		Ontario DIF & SANBAG	9/2012
Grove	$51	Ontario	$51		Ontario DIF & SANBAG	9/2012
Vineyard	$51	Ontario	$51		Ontario DIF & SANBAG	9/2012
Archibald	$8	SANBAG	$12.939		SANBAG Feasibility Study	2014
I-10 at:						
Monte Vista	$21.9	Montclair	$32		SANBAG	2015
Euclid	$9	Upland	$9		SANBAG	2015
Grove/4th	$128	Ontario	$128	$2.4 (Demo) $1.425 (IMD)	Ontario	2011
Vineyard	$84	Ontario	$84		SANBAG	2011
Cherry	$80.7	SANBAG	$80.7	$1.225 (IMD)	SANBAG	2013
Beech	$114	Fontana	$114		Fontana	2011
Citrus	$58.5	SANBAG	$58.5		SANBAG	2013
Alder	$99	Fontana	$99		Fontana	2011
Cedar	$60.4	County	$60.4		SANBAG	2013
Riverside (Ph 1 Complete) - Phase 1 (Ramps) - Phase 2 (Bridge)	 $27 $10	 SANBAG Rialto	 $27 $10	 $2.25 (Demo) $2.85 (IMD)	 PPR Rialto	 2011 2009
Pepper - Pepper/Valley - Ramps/Bridge	 $8.34 $7.7	 Colton/ County	 $8.34 $7.7	Ramps/Bridge: $6.192 (Demo) $0.904 (IMD)	 PAA SANBAG	 2011 2013
Mt. Vernon	$32	Colton	$35		SANBAG	2015
Tippecanoe	$78	SANBAG	$78	$33.9	SANBAG	2015
Mountain View	$51	Loma Linda	$24.5		SANBAG	2015
California	$45	Loma Linda	$45		SANBAG	2011
Alabama	$41.6	County	$9.5		County/10 Yr. Delivery Plan	2015
University	$5.2	Redlands	$5.2		SANBAG	2013
Wabash	$40	County	$40		County	2013
Live Oak (Complete)	$19	SANBAG	$19		PAA	2011
Wildwood	$35	Yucaipa	$35		Yucaipa	2011

Table 3, Continued
Interchange Improvements and 2015 Costs,
Including a Comparison to 2013 Nexus Study Costs

Interchange	2013 Nexus Study Cost ($Millions)	Lead Agency	2015 Nexus Study Cost Update ($Millions)	Federal Earmark/ State Buy-Down ($Millions)	Source of Cost Estimate*	Year Estimate Prepared
I-15 at:						
6th/Arrow	$91.3	Rancho	$91.3		FTIP	2013
Baseline	$58.4	Rancho	$56.6	$3.6 (Demo) $3.754 (IMD) $0.428 (Bridge) $1.0 (SLPP-C)	SANBAG/ Rancho	2015
Duncan Canyon	$35.8	Fontana	$35.8	$1.972 (SLPP-C)	Fontana	2013
Sierra - Phase 1 (Widen SB exit) - Phase 2	$13 $2.3 $10.7	Rialto	$13 $2.3 $10.7		Ph 1 – CT/County Ph 2 - Rialto	2011
Ranchero	$60	Hesperia	$58.9	$3.008 (IMD)	Hesperia	2015
Muscatel	$71	Hesperia	$71		Project DB	2011
Eucalyptus	$61	Hesperia	$61		FTIP	2013
Bear Valley	$25	Victorville	$25		Victorville	2009
La Mesa/Nisqualli (Complete)	$40.5	Victorville	$79.6		Victorville	2015
I-215 at:						
University	$28	SB City	$4.8	$0.735 (Demo) $5.0 (STP buy-down)	PSR	2015
Pepper/Linden	$57	SB City	$60		SB City	2015
Palm	$11	SB City	$11.6		SB City	2015
SR-210 at:						
Waterman	$51	SB City	$53.8		SB City	2015
Del Rosa	$36	SB City	$38		SB City	2015
Baseline	$15.6	SANBAG	$21.07		SANBAG	2015
5th	$8	Highland	$8		Highland	2009

Notes: * Cost estimates are from various sources.
PSR – Project Study Report
PPR – Project Programming Request provided by local jurisdiction or SANBAG
PAA – Project Advancement Agreement
FTIP – Federal Transportation Improvement Program
DIF – Development Impact Fee Program
Ecosys – Estimate incorporated into Ecosys project management tool from SANBAG and local input
No change means no additional information available since 2013 Nexus Study.

Methodology for Estimating Proportion of Costs Attributable to New Development

State law requires that new development not be charged to correct existing transportation deficiencies. An analysis was therefore conducted to estimate the cost of the identified improvements attributable to new development. It is important to note that there are different methodologies that could be used to estimate the proportion of cost attributable to new development. One approach would determine whether new development would require the widening or expansion of an existing facility to meet predetermined performance criteria (e.g. a specified "level of service"). New development could be deemed to be responsible for 100 percent of the cost of improving the facility to a level that would achieve the performance criteria, since that improvement would not be necessary if the development did not occur.

Another approach is to allocate new development's fair share based on the proportion of total traffic that the new growth represents. This would be calculated as a ratio of the estimated growth in traffic (between existing and future years) to the total traffic in the future year. The second approach is more conservative, as new development is held to be responsible for a share of the cost of facility expansion, not 100 percent of the cost. Even though the SANBAG Nexus Study takes the second approach, local jurisdictions may follow the first approach or any alternate approach that is consistent with California law and that achieves the minimum fair share development contribution levels specified in this Nexus Study. The methodology for arterials, interchanges, and railroad crossings involved the following steps:

Methodology for Arterial Project Fair Share

- Calculate trip growth (2004 to 2030) for each jurisdiction, based on growth data. Trips for each jurisdiction were estimated by applying vehicle trip generation rates per dwelling unit (single and multiple family) and per employee (retail and non-retail) to the previously described 2004 and 2030 dwelling unit and employment data. These are actually defined as "trip ends." The number of trips would be calculated as the number of trip ends divided by two. The trip generation rates are:
  - Single family dwelling unit – 9.57 vehicle trip ends (in and out) per day (based on the Institute of Transportation Engineers report *Trip Generation)*
  - Multi-family dwelling unit – 6.63 vehicle trip ends per day (based on the ITE report *Trip Generation)*
  - Retail – 19.5 vehicle trip ends per employee per day (based on per-employee rates used by SCAG)
  - Non-retail - 1.85 vehicle trip ends per employee per day (based on per-employee rates used by SCAG)
- Calculate total trip ends in passenger car equivalents (PCEs) for each jurisdiction and sphere area.
- Growth's fair share = ratio of growth in trip ends (2004 to 2030) to total 2030 trip ends. These percentages (for each jurisdiction and sphere) were previously illustrated in the last column of **Table 1** and **Table 2**. (Note: for the "Donut Hole" in unincorporated San Bernardino County, the ratio of trip growth to 2030 trips was based on trips taken from a January 2005 Traffic Impact Analysis entitled "County of San Bernardino Donut Hole Projects Cumulative Traffic Impact Analysis." The dwelling unit and employment data in

the Donut Hole were not adequately up-to-date for calculating this percentage.)

- Multiply fair share by Nexus Study Network arterial improvement cost for each jurisdiction

There is no allocation of arterial project costs to jurisdictions outside the jurisdiction in which the project is located. Each jurisdiction is responsible for the arterial improvements within its own jurisdiction.

Methodology for Interchange Project Fair Share

- Define "traffic sheds" for each interchange. A traffic shed represents the geographic area around the interchange from which most of the traffic using that interchange is likely to be drawn. In general, traffic will be drawn to an interchange following the roadways that cross the freeway. However, it is not expected that traffic within each traffic shed will exclusively use the interchange with which the traffic shed is associated. Where an arterial crosses the freeway at a perpendicular angle, the traffic shed was extended half way to the adjacent interchanges. Different configurations were required for traffic sheds in which the arterial was not perpendicular to the freeway. Further, the traffic sheds were generally extended laterally (i.e. perpendicular to the freeway) no farther than half way to the next parallel freeway. Traffic sheds used in the analysis are shown in Figures 3 and 4 for the Valley and Victor Valley, respectively. Several "select link" runs were conducted using the RIVSAN CTP model to verify the logic behind the definition of the traffic sheds. The traffic shed approach was accepted by the Nexus Study Task Force and CTP TAC through reviews of the methodology in 2004.
- Calculate the projected growth in trips (2004 to 2030) by jurisdiction within the traffic shed for each interchange. This analysis was conducted using SANBAG's GIS system, overlaying the traffic sheds on the traffic analysis zones (TAZs) containing the socio-economic data. Trip generation rates used in this analysis are discussed in a subsequent section.
- The fair share attributed to new development = ratio of traffic growth (2030 minus 2004) to total 2030 traffic. It should be noted that this approach will provide a conservatively low estimate of the fair share attributable to growth, compared to the alternate approach discussed earlier for arterials (i.e. assign 100 percent of the cost of the improvement to new development, if it were determined that the improvement would not be needed if no more growth were to occur). For new interchanges, a minimum fair share percentage of 50 percent was applied.
- Allocate the fair share cost among jurisdictions based on the calculations of trip growth within the traffic shed, by jurisdiction. For unincorporated areas, the fair share cost was estimated for each city sphere area.
- Multiply fair share by interchange improvement cost.

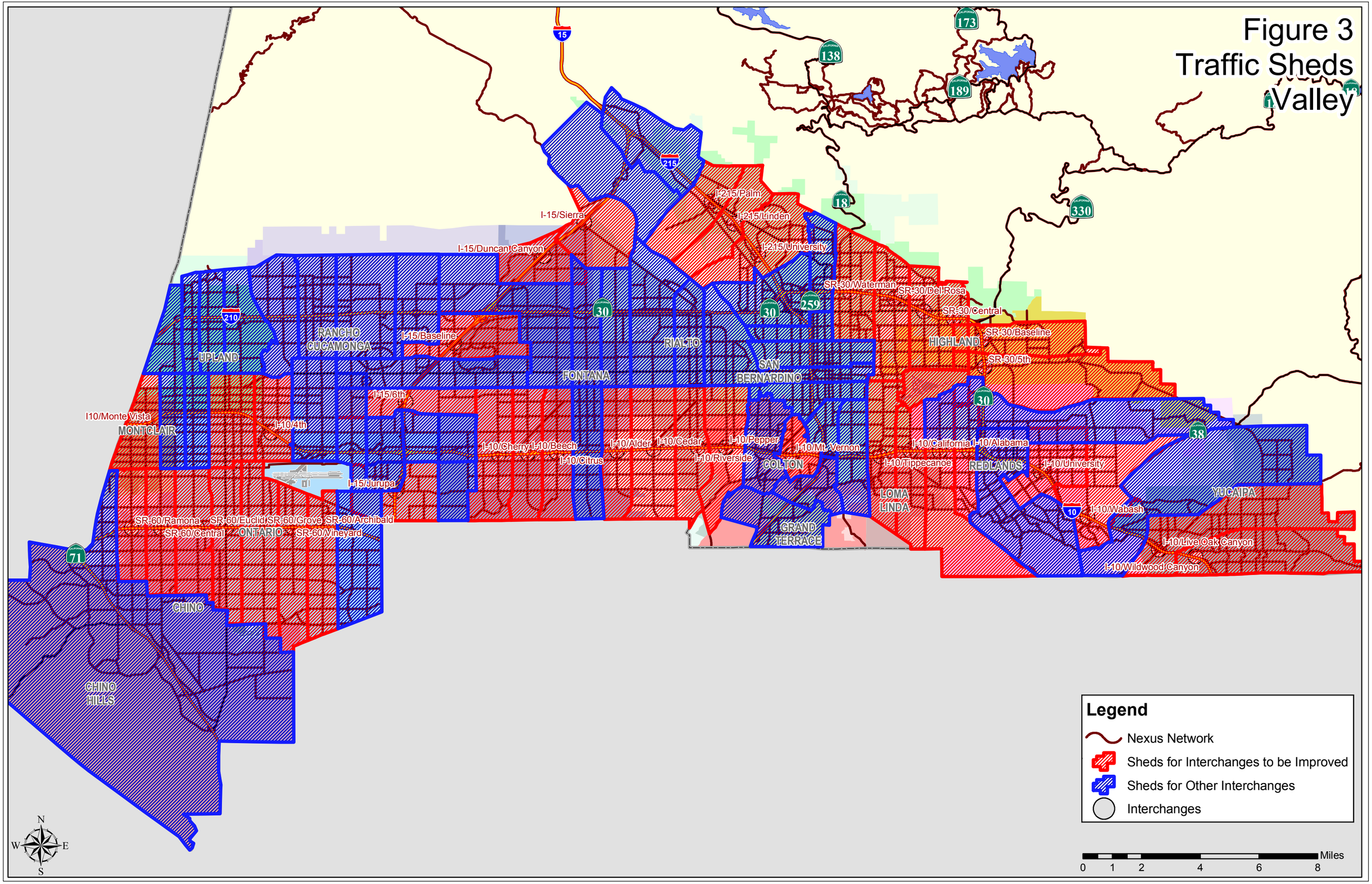


Figure 3
Traffic Sheds
Valley
I-15/Sierra
I-15/Duncan Canyon
I-215/Palm
I-215/Linden
I-215/University
SR-30/Waterman
SR-30/Del Rosa
SR-30/Central
SR-30/Baseline
SR-30/5th
I-15/Baseline
I-15/6th
I10/Monte Vista
I-10/4th
I-10/Cherry
I-10/Beech
I-10/Citrus
I-10/Alder
I-10/Cedar
I-10/Pepper
I-10/Riverside
I-10/Mt Vernon
I-10/California
I-10/Alabama
I-10/Tippecanoe
I-10/University
I-10/Wabash
I-10/Live Oak Canyon
I-10/Wildwood Canyon
I-15/Jurupa
SR-60/Ramona
SR-60/Euclid
SR-60/Grove
SR-60/Archibald
SR-60/Central
SR-60/Vineyard
RANCHO CUCAMONGA
UPLAND
RIALTO
SAN BERNARDINO
FONTANA
HIGHLAND
MONTCLAIR
COLTON
REDLANDS
LOMA LINDA
YUCAIPA
GRAND TERRACE
ONTARIO
CHINO
CHINO HILLS
Legend
Nexus Network
Sheds for Interchanges to be Improved
Sheds for Other Interchanges
Interchanges
Miles
0 1 2 4 6 8
N
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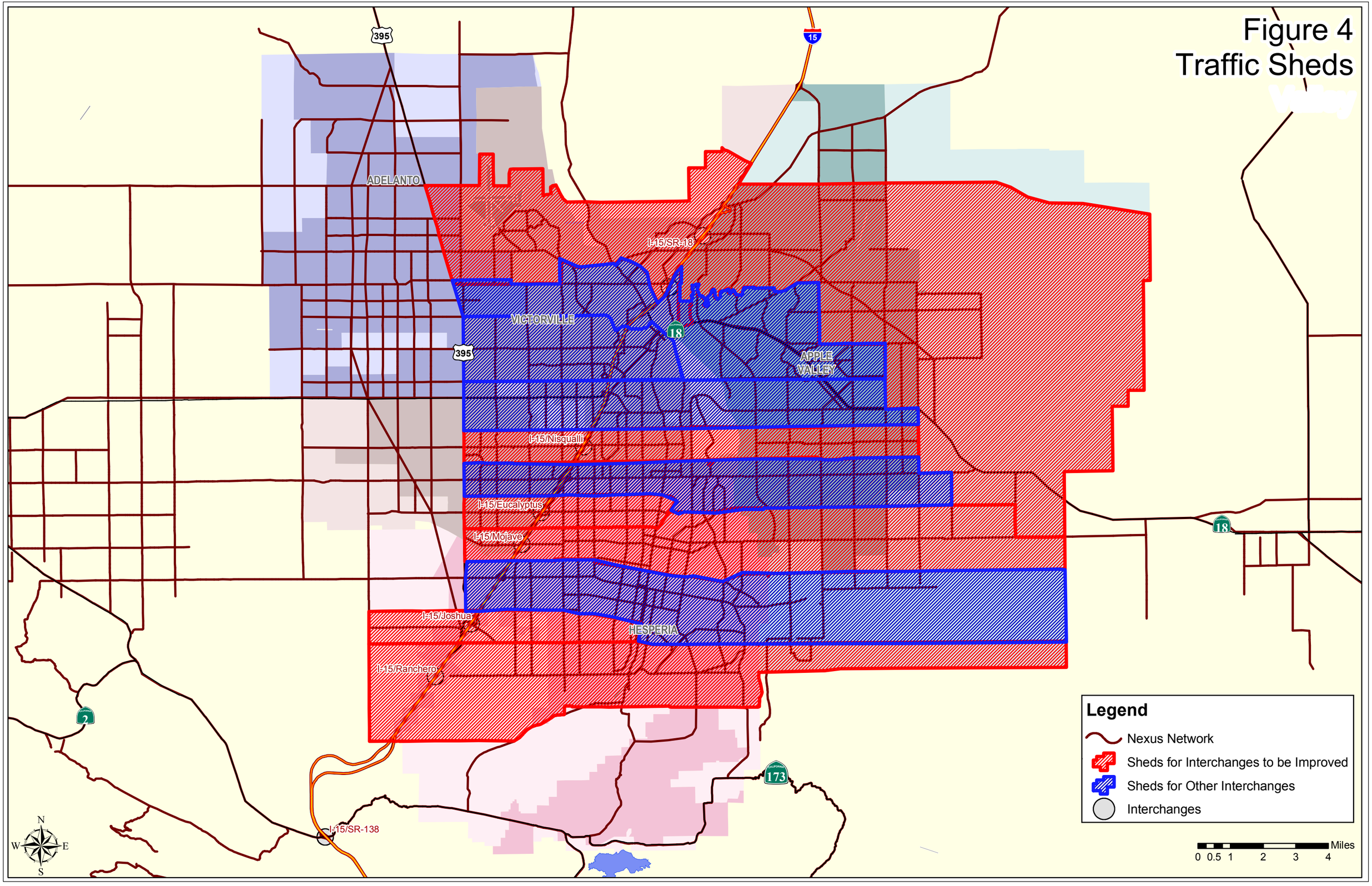
Figure 4
Traffic Sheds
ADELANTO
VICTORVILLE
APPLE VALLEY
HESPERIA
I-15/SR-138
I-15/Ranchero
I-15/Joshua
I-15/Mojave
I-15/Eucalyptus
I-15/Nisqualli
I-15/SR-18
395
15
18
173
Legend
Nexus Network
Sheds for Interchanges to be Improved
Sheds for Other Interchanges
Interchanges
Miles
0 0.5 1 2 3 4
N
S
E
W

- Calculate jurisdiction-level total fair share interchange costs. **Table 4** presents the calculations of percent responsibility by jurisdiction and jurisdiction sphere area. **Table 5** presents the fair share dollar allocation for jurisdictions and spheres. For example, the fair share allocation of interchange cost could be allocated as follows:
  - Interchange cost = $20 million
  - Ratio of growth (2030 trips within the traffic shed minus 2004 trips) to 2030 trips = 25%
  - Fair share cost = $5 million ($20 million x 25%)
  - 80% of "traffic shed" trips from Jurisdiction X = $4 million
  - 20% of trips from Jurisdiction Y = $1 million

Methodology for Railroad Grade Crossing Project Fair Share

- The ratio of trip growth to 2030 trips by jurisdiction (same as for the arterial analysis) was applied to the railroad grade crossing project cost.
- An assessment was made of the proportion of the growth in traffic delays attributable to train growth versus traffic growth. The fair share allocated to new development was reduced by the percentage of train growth. Growth in train volume was based on forecasts prepared for the Inland Empire Rail Mainline Study by Robert Leachman & Associates. Fair share costs are not assessed to new development for the proportion attributable to train growth.
- Only costs for railroad crossing projects on the Nexus Study network were included in the fair share calculation. Individual jurisdictions may include other projects in their own DIF programs. **Table 6** lists the railroad grade separation projects on the Nexus Study Network, their costs, ratio of train growth to 2030 train volume, ratio of traffic growth to 2030 traffic volume (at a jurisdictional level), and fair share cost for the railroad grade crossing projects.

Estimated Development Contribution Levels by Jurisdiction and Sphere Area

Table 7 summarizes the jurisdiction-by-jurisdiction costs and fair share amounts for regional arterials, interchanges, and railroad grade crossing projects. **Table 8** breaks down the fair share amounts by sphere of influence or County subarea. **Table 9** provides the equitable share percentages by jurisdiction for the Valley subarea. Provisions for the on-going maintenance and implementation of local jurisdiction development mitigation programs are contained in **Appendix J** of the CMP.

Table 4. Estimate of Development's Fair Share Percentage of Interchange Costs, by Jurisdiction and Sphere

Fwy.	Interchange	Fair Share %	2015 Cost ($mill)	Buy Down	Chino	Chino Sphere	Montclair	Montclair Sphere	Upland	Upland Sphere	Ontario	Fontana	Fontana Sphere	Rancho Cucamonga	Rialto	Rialto Sphere	Colton	Colton Sphere	San Bernardino	San Bernardino Sphere	Loma Linda	Loma Linda Sphere	Redlands	Donut Hole	Redlands Sphere	Highland	Yucaipa	Hesperia	Hesperia Sphere	Victorville	Victorville Sphere	Adelanto	Apple Valley	Apple Valley Sphere
SR-60	Ramona	31.3%	$30.240		53.6%	16.7%	7.7%	22.0%																										
	Central	58.8%	$21.000		91.8%	0.9%	0.6%	6.7%																										
	Mountain	46.2%	$15.000		49.6%						50.4%																							
	Euclid	44.5%	$6.000		43.0%						57.0%																							
	Grove	48.3%	$50.810		1.2%						98.8%																							
	Vineyard	60.3%	$50.810		6.7%						93.3%																							
	Archibald	66.1%	$12.939								100.0%																							
I-10	Monte Vista	24.1%	$32.000				73.5%			26.5%																								
	Euclid	17.4%	$9.030						60.0%		40.0%																							
	Grove/4th	17.1%	$128.000	($3.83)					13.7%		63.7%			22.6%																				
	Vineyard*	60.0%	$83.550								100.0%																							
	Cherry	35.4%	$80.700	($1.23)								36.0%	64.0%																					
	Beech	50.0%	$113.903									69.9%	30.1%																					
	Citrus	38.4%	$58.500									99.4%	0.6%																					
	Alder	50.0%	$99.450									71.2%				28.8%																		
	Cedar	30.0%	$60.400									11.9%			19.5%	68.6%																		
	Riverside, Phase I	27.4%	$27.300	($2.3)											65.9%	7.9%	26.2%																	
	Riverside, Phase II	27.4%	$10.000	($2.9)											65.9%	7.9%	26.2%																	
	Pepper, Phase I	34.0%	$8.340													1.8%	91.9%	2.2%	4.1%															
	Pepper, Phase II	34.0%	$7.700	($7.1)												1.8%	91.9%	2.2%	4.1%															
	Mt. Vernon	5.1%	$35.000														100.0%																	
	Tippecanoe	34.6%	$78.000	($33.9)															50.0%		50.0%													
	Mountain View	37.8%	$24.456																20.0%		70.0%	6.1%	3.9%											
	California	47.8%	$44.533																		37.9%	22.4%	14.6%	25.2%										
	Alabama	50.5%	$9.500																				34.9%	65.1%										
	University	17.9%	$5.200																				100.0%											
	Wabash	35.8%	$40.000																				12.5%		87.5%									
	Live Oak	37.0%	$18.630																				1.0%				99.0%							
	Wildwood	50.0%	$35.410																								100.0%							
I-15	6th/Arrow	50.0%	$91.300										10.0%	90.0%																				
	Baseline	50.0%	$56.600	($8.8)								33.4%		66.6%																				
	Duncan Canyon	77.3%	$35.800	($2.0)								99.1%	0.9%																					
	Sierra	80.3%	$12.724									27.9%	1.4%		64.6%	6.1%																		
	Ranchero	57.5%	$58.900	($3.0)																								93.2%	5.9%					0.9%
	Joshua/Muscatel	58.7%	$71.100																									95.0%	5.0%					
	Mojave	55.4%																										77.1%		7.9%			11.2%	3.8%
	Eucalyptus	57.4%	$61.000																									53.2%		46.8%				
	Bear Valley	31.3%	$25.000																									15.0%		53.0%			31.0%	1.0%
	La Mesa	50.0%	$79.600																											78.8%	1.6%		19.6%	
I-215	University	15.8%	$4.800	($5.7)												2.2%			42.9%	54.9%														
	Pepper/Linden	50.0%	$60.000																100.0%															
	Palm	35.7%	$11.600																50.0%	50.0%														
SR-210	Waterman	18.2%	$53.800																100.0%															
	Del Rosa	32.8%	$38.000																63.0%	9.0%						28.0%								
	Victoria	45.0%																	57.4%							42.6%								
	Baseline	41.9%	$21.070																							100.0%								
	5th	44.1%	$8.000																5.2%				1.4%			93.4%								
Total			$1,886	($70.6)																														

*Subject to make-up provision, with interchange having been added subsequent to the first Nexus Study

Table 5. Estimate of Development's Fair Share of Interchange Costs, by Jurisdiction and Sphere

Fwy.	Interchange	Fair Share %	2015 Cost ($mill)	Buy Down	Chino	Chino Sphere	Montclair	Montclair Sphere	Upland	Upland Sphere	Ontario	Fontana	Fontana Sphere	Rancho Cucamonga	Rialto	Rialto Sphere	Colton	Colton Sphere	San Bernardino	San Bernardino Sphere	Loma Linda	Loma Linda Sphere	Redlands	Donut Hole	Redlands Sphere	Highland	Yucaipa	Hesperia	Hesperia Sphere	Victorville	Victorville Sphere	Adelanto	Apple Valley	Apple Valley Sphere	Sum of Fair Shares
SR-60	Ramona	31.3%	$30.240		$5.07	$1.58	$0.73	$2.08																											$9.47
	Central	58.8%	$21.000		$11.33	$0.11	$0.07	$0.83																											$12.35
	Mountain	46.2%	$15.000		$3.44						$3.49																								$6.93
	Euclid	44.5%	$6.000		$1.15						$1.52																								$2.67
	Grove	48.3%	$50.810		$0.29						$24.25																								$24.54
	Vineyard	60.3%	$50.810		$2.05						$28.59																								$30.64
	Archibald	66.1%	$12.939								$8.55																								$8.55
I-10	Monte Vista	24.1%	$32.000				$5.67			$2.04																									$7.71
	Euclid	17.4%	$9.030						$0.94		$0.63																								$1.57
	Grove/4th	17.1%	$128.000	($3.83)					$2.91		$13.53			$4.80																					$21.23
	Vineyard*	60.0%	$83.550								$53.83																								$53.83
	Cherry	35.4%	$80.700	($1.23)								$10.13	$18.01																						$28.13
	Beech	50.0%	$113.903									$39.81	$17.14																						$56.95
	Citrus	38.4%	$58.500									$22.33	$0.13																						$22.46
	Alder	50.0%	$99.450									$35.40				$14.32																			$49.73
	Cedar	30.0%	$60.400									$2.16			$3.53	$12.43																			$18.12
	Riverside, Phase I	27.4%	$27.300	($2.3)											$4.52	$0.54	$1.80																		$6.86
	Riverside, Phase II	27.4%	$10.000	($2.9)											$1.29	$0.15	$0.51																		$1.96
	Pepper, Phase I	34.0%	$8.340													$0.05	$2.61	$0.06	$0.12																$2.84
	Pepper, Phase II	34.0%	$7.700	($7.1)												$0.00	$0.19	$0.00	$0.01																$0.21
	Mt. Vernon	5.1%	$35.000														$1.79																		$1.79
	Tippecanoe	34.6%	$78.000	($33.9)															$7.63		$7.63														$15.26
	Mountain View	37.8%	$24.456																$1.85		$6.47	$0.56	$0.36												$9.24
	California	47.8%	$44.533																		$8.06	$4.76	$3.10	$5.36											$21.29
	Alabama	50.5%	$9.500																				$1.67	$3.12											$4.80
	University	17.9%	$5.200																				$0.93												$0.93
	Wabash	35.8%	$40.000																				$1.79		$12.53										$14.32
	Live Oak	37.0%	$18.630																				$0.07				$6.82								$6.89
	Wildwood	50.0%	$35.410																								$17.71								$17.71
I-15	6th/Arrow	50.0%	$91.300										$4.57	$41.09																					$45.65
	Baseline	50.0%	$56.600	($8.8)								$7.99		$15.92																					$23.91
	Duncan Canyon	77.3%	$35.800	($2.0)								$25.91	$0.24																						$26.15
	Sierra	80.3%	$12.724									$2.85	$0.14		$6.60	$0.62																			$10.22
	Ranchero	57.5%	$58.900	($3.0)																								$29.95	$1.90					$0.29	$32.14
	Joshua/Muscatel	58.7%	$71.100																									$39.65	$2.09						$41.74
	Mojave	55.4%																										$0.00		$0.00			$0.00	$0.00	$0.00
	Eucalyptus	57.4%	$61.000																									$18.63		$16.39					$35.01
	Bear Valley	31.3%	$25.000																									$1.17		$4.15			$2.43	$0.08	$7.83
	La Mesa	50.0%	$79.600																											$31.36	$0.64		$7.80		$39.80
I-215	University	15.8%	$4.800	($5.7)												$0.00			$0.00	$0.00															$0.00
	Pepper/Linden	50.0%	$60.000																$30.00																$30.00
	Palm	35.7%	$11.600																$2.07	$2.07															$4.14
SR-210	Waterman	18.2%	$53.800																$9.79																$9.79
	Del Rosa	32.8%	$38.000																$7.85	$1.12						$3.49									$12.46
	Victoria	45.0%																	$0.00	$0.00						$0.00									$0.00
	Baseline	41.9%	$21.070																							$8.83									$8.83
	5th	44.1%	$8.000																$0.18				$0.05			$3.30									$3.53
Total			$1,886	($70.6)	$23.34	$1.69	$6.47	$2.91	$3.85	$2.04	$134.38	$146.58	$40.23	$61.81	$15.94	$28.12	$6.89	$0.07	$59.50	$3.19	$22.16	$5.33	$7.98	$8.48	$12.53	$15.61	$24.53	$89.40	$3.98	$51.90	$0.64	$0.00	$10.23	$0.37	$790.16

*Subject to make-up provision, with interchange having been added subsequent to the first Nexus Study

Table 6. Railroad Grade Crossing Projects on Nexus Study Network

Description	2015 Cost Estimate ($1,000s)	Buy Down	Location	Ratio Train Growth to 2030	Ratio Trip Growth to 2030	2013 Cost Allocation To Development ($1,000s)
Olive Street (Colton) on the San Bernardino Line	$0		Colton	55%	43.6%	$0
Valley Boulevard (Colton) on the San Bernardino Line	$0		Colton	55%	43.6%	$0
Laurel Street (Colton) - Replaces Valley Boulevard	$60,647	($10,334)	Colton	55%	43.6%	$9,861
Fogg Street (Colton) - Replaces Olive Street	$24,673		Colton	55%	43.6%	$4,836
Mount Vernon Avenue (Colton) grade separation widening on the Alhambra Line	$9,494	($1,600)	Colton	55%	43.6%	$1,547
Citrus Avenue (Fontana) At Santa Fe Railroad, Construct Undercrossing For Existing 4 Lanes	$0		Fontana	55%	32.1%	$0
Main Street (Grand Terrace) on the San Bernardino Line	$29,050		Grand Terrace	55%	39.9%	$5,220
Ranchero Road (Hesperia) - 7th Avenue To Danbury, realign and construct railroad undercrossing	$32,015	($9,070)	Hesperia	55%	58.9%	$6,084
Mauna Loa/Lemon (Hesperia) on the BNSF Line (costs from feasibility study)	$59,980		Hesperia	55%	58.9%	$15,906
Eucalyptus Road (Hesperia) on the BNSF Line	$0		Hesperia	55%	58.9%	$0
Beaumont Avenue (Loma Linda) on the Yuma Line	$24,901		Loma Linda	55%	38.8%	$4,352
Monte Vista Avenue (Montclair) at the UPRR Crossing	$31,460	($2,090)	Montclair	55%	18.9%	$2,502
Central Avenue (Montclair) grade separation widening on the Alhambra and Los Angeles Lines	$0		Montclair	55%	18.9%	$0
Archibald Avenue (Ontario) on the Los Angeles Line	$59,486		Ontario	55%	44.4%	$11,881
North Milliken Avenue (Ontario) on the Alhambra Line	$40,621	($7,161)	Ontario	55%	44.4%	$6,683
South Milliken Avenue (Ontario) on the Los Angeles Line	$63,835	($2,482)	Ontario	55%	44.4%	$12,254
Vineyard Avenue (Ontario) on the Alhambra Line	$45,180	($2,074)	Ontario	55%	44.4%	$8,609
Haven Avenue (Rancho Cucamonga) at Metrolink Crossing	$21,069		Rancho	55%	28.7%	$2,721
San Timoteo Road (Redlands) railroad crossing safety improvements on the Yuma Line	$1,961		Redlands	55%	23.1%	$204
Palm Avenue (San Bernardino) on the Cajon Line	$23,667	($7,130)	San Bernardino	55%	32.4%	$2,410
Rialto Avenue (San Bernardino) on the San Bernardino Line	$25,803		San Bernardino	55%	32.4%	$3,760
Hunts Lane (San Bernardino/Colton) on the Yuma Line	$28,866	($9,499)	S. Bern./Colton	55%	38.0%	$3,309
Glen Helen Parkway (San Bernardino County) on Cajon Line	$30,978	($2,320)	County	55%	62.2%	$8,021

Table 7. Summary of Fair Share Costs for Arterial, Interchange, and Railroad Grade Crossing Project Costs for Cities (through year 2030)
Cost in Millions of 2015 dollars

	2015						
Jurisdiction	**Ratio of Trip Growth to 2030 Trips (Development Fair Share)**	**Total Arterial Cost**	**Development Share of Total Arterial Cost**	**Public Share of Total Arterial Cost**	**Development Share Of Interchange Cost**	**Development Share Of Railroad Grade Crossing Cost**	**Development Share of Total Cost**
Adelanto	63.5%	$222.08	$141.02	$81.05	$0.00	$0.00	$141.02
Apple Valley	55.0%	$242.00	$133.20	$108.81	$10.23	$0.00	$143.43
Chino	35.2%	$142.90	$50.24	$92.66	$23.34	$0.00	$73.58
Chino Hills	13.7%	$16.62	$2.28	$14.34	$0.00	$0.00	$2.28
Colton	43.6%	$46.79	$20.38	$26.41	$6.89	$17.90	$45.17
Fontana	32.1%	$387.61	$124.49	$263.13	$146.58	$0.00	$271.07
Grand Terrace	39.9%	$35.23	$14.07	$21.16	$0.00	$5.22	$19.29
Hesperia	58.9%	$195.43	$115.16	$80.26	$89.40	$21.99	$226.56
Highland	46.4%	$129.77	$60.23	$69.54	$15.61	$0.00	$75.84
Loma Linda	38.8%	$80.50	$31.26	$49.24	$22.16	$4.35	$57.77
Montclair	18.9%	$10.00	$1.89	$8.11	$6.47	$2.50	$10.87
Ontario	44.4%	$205.13	$91.04	$114.09	$134.38	$39.43	$264.86
Rancho Cucamonga	28.7%	$103.78	$29.78	$74.00	$61.81	$2.72	$94.31
Redlands	23.1%	$72.05	$16.65	$55.40	$7.98	$0.20	$24.83
Rialto	40.9%	$108.06	$44.15	$63.91	$15.94	$0.00	$60.09
San Bernardino	32.4%	$164.01	$53.11	$110.90	$59.50	$7.82	$120.44
Upland	39.4%	$54.03	$21.29	$32.74	$3.85	$0.00	$25.15
Victorville	49.0%	$57.54	$28.21	$29.32	$51.90	$0.00	$80.11
Yucaipa	30.9%	$131.15	$40.52	$90.63	$24.53	$0.00	$65.05
Total		$2,381.38	$1,008.64	$1,372.74	$680.58	$102.14	$1,801.70

Table 8. Summary of Fair Share Costs for Arterial, Interchange, and Railroad Grade Crossing Project Costs for Sphere Areas (through 2030)
Costs in Millions of 2015 dollars

	2015						
Jurisdiction	**Ratio of Trip Growth to 2030 Trips (Fair Share %)**	**Total Arterial Cost**	**Development Share of Total Arterial Cost**	**Public Share of Total Arterial Cost**	**Development Share Of Interchange Cost**	**Development Share Of Railroad Grade Separation Cost**	**Development Share of Total Cost**
Adelanto Sphere	63.0%	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Apple Valley Sphere	57.2%	$10.95	$6.26	$4.69	$0.37	$0.00	$6.63
Chino Sphere	36.7%	$28.84	$10.57	$18.26	$1.69	$0.00	$12.27
Colton Sphere	37.2%	$6.95	$2.59	$4.37	$0.07	$0.00	$2.65
Devore/Glen Helen	62.2%	$17.69	$11.00	$6.69	$0.00	$8.02	$19.02
Fontana Sphere	41.7%	$57.31	$23.93	$33.39	$40.23	$0.00	$64.15
Hesperia Sphere	41.5%	$28.36	$11.78	$16.58	$3.98	$0.00	$15.76
Loma Linda Sphere	72.3%	$0.00	$0.00	$0.00	$5.33	$0.00	$5.33
Montclair Sphere	36.6%	$11.76	$4.30	$7.45	$2.91	$0.00	$7.21
Redlands Sphere	35.5%	$21.13	$7.50	$13.63	$12.53	$0.00	$20.03
Redlands Donut Hole	62.0%	$1.50	$0.93	$0.57	$8.48	$0.00	$9.41
Rialto Sphere	37.6%	$40.85	$15.38	$25.47	$28.12	$0.00	$43.50
San Bernardino Sphere	23.1%	$13.43	$3.11	$10.32	$3.19	$0.00	$6.30
Upland Sphere	38.7%	$7.15	$2.77	$4.39	$2.04	$0.00	$4.81
Victorville Sphere	17.8%	$21.31	$3.78	$17.53	$0.64	$0.00	$4.42
Yucaipa Sphere	39.5%	$0.88	$0.35	$0.53	$0.00	$0.00	$0.35
Total		$268.11	$104.25	$163.86	$109.58	$8.02	$221.85

Table 9. Valley Subarea Jurisdiction Equitable Share

Jurisdiction	Equitable Share
Chino	7.591%
Chino Hills	2.194%
Colton	2.534%
Fontana	19.400%
Grand Terrace	1.389%
Highland	6.777%
Loma Linda	4.074%
Montclair	0.597%
Ontario	12.272%
Rancho Cucamonga	5.044%
Redlands	4.854%
Rialto	3.831%
San Bernardino	7.857%
Upland	2.743%
Yucaipa	5.965%
County	12.878%
Arterial Allocation	**100.00%**

Update of Local Jurisdiction Fee Programs

Local jurisdiction development mitigation programs must be updated biennially to incorporate project cost escalation. The city council/Board of Supervisors must approve the adjustments on a biennial basis and reflect those adjustments in local development impact fees or other per-unit mitigation levels or assessments. The adjustments shall be in accordance with the total development share of the arterial, interchange and railroad grade crossing projects as presented on **Table 7** and **Table 8** of the biennial Nexus Study update. Local development impact fee programs must demonstrate the ability to collect the total development share considering fees collected to date and remaining projected growth.

Local jurisdictions must biennially adopt adjustments to their development mitigation programs to reflect the SANBAG Board adopted changes to the Nexus Study. The adjustment must be approved by the city council/Board of Supervisors by resolution on or before either January 1 or July 1, depending on the timeline chosen by the local jurisdiction. **Table 10** presents the list of local jurisdiction development mitigation program update timelines as submitted to SANBAG during the 2007 Nexus Study update.

Table 10. Local Jurisdiction Development Mitigation Program Update Schedule

Jurisdiction	July 1	January 1
Adelanto*	X	
Apple Valley		X
Chino		X
Chino Hills		X
Colton	X	
Fontana		X
Grand Terrace		X
Hesperia		X
Highland		X
Loma Linda		X
Montclair	X	
Ontario		X
Rancho Cucamonga	X	
Redlands	X	
Rialto		X
San Bernardino	X	
San Bernardino County	X	
Upland		X
Victorville		X
Yucaipa		X

***** Jurisdiction did not respond to the request for a development mitigation program update timeline. These jurisdictions are assumed to update their fees on a fiscal year basis.