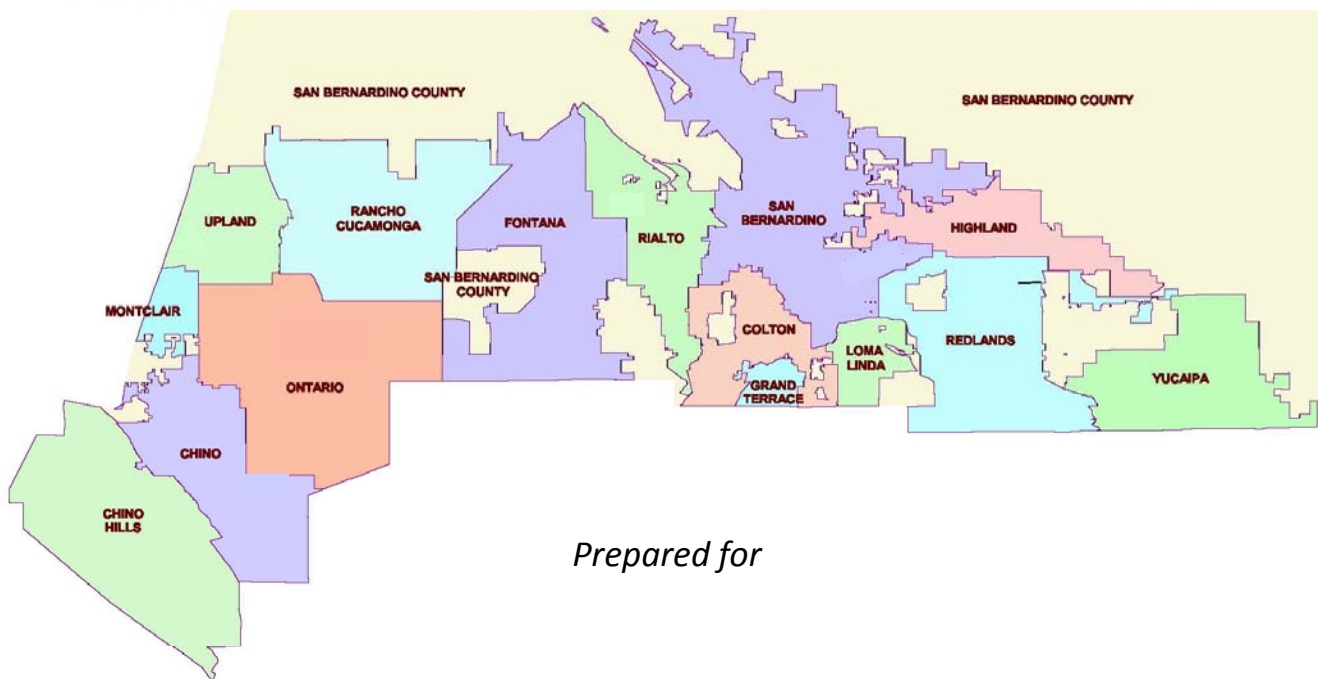


Final Report

San Bernardino Valley Coordinated Traffic Signal System Plan Tier 1 & 2 Project



Prepared for

San Bernardino Associated Governments



September 2009

Prepared by

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September 2009

Prepared by



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Executive Summary

Background/Objective

Recognizing the benefits of multijurisdictional traffic signal coordination, the San Bernardino Associated Governments (SANBAG) adopted a strategic plan for interconnecting and coordinating more than twelve hundred traffic signals in the San Bernardino Valley Area. The first two components of that plan – designated as Tier 1 and Tier 2 – involve the interconnect and coordination of 652 signalized intersections on approximately 150 miles of arterial highways under the jurisdiction of 14 separate cities, San Bernardino County, and Caltrans.

The goal of the Tier 1 & 2 Project is to reduce travel times and number of stops, and increase average speeds, along the coordinated routes, while also providing enhanced access to freeway interchanges. There were 48 Caltrans interchanges and three State highways included in the Tier 1 & 2 Project. Other agencies participating include the Cities of Chino, Chino Hills, Colton, Fontana, Grand Terrace, Highland, Loma Linda, Montclair, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, and Upland; the County of San Bernardino; and SANBAG.

Project Methodology

To develop, implement, and maintain coordination timing at the 652 signalized intersections, the following project tasks were completed:

- Update the hardware/software inventory at all project signalized intersections.
- Design needed infrastructure improvements to enable multijurisdictional traffic signal interconnect and coordination to be implemented.
- Collect traffic volume data.
- Conduct “before” field evaluations.
- Construct needed infrastructure improvements.
- Develop, implement, fine-tune, and monitor the coordination traffic signal timing plans.
- Conduct “after” field evaluations.

Improvements Implemented

To optimize the effectiveness of multijurisdictional traffic signal timing plans, it was first necessary to design and construct various infrastructure improvements at project intersections and along project routes. Improvements implemented include the construction of additional traffic signal interconnect links (via fiberoptic, hardwire, wireless, and/or cell phone technology) to enable communication between traffic operations control centers (at various local agencies) and project intersections, and between project intersections; the replacement of outdated signal controllers and field masters; the providing of GPS clocks to ensure consistent time at all intersections (a necessity for optimum traffic signal coordination between non-connected systems); and various other related infrastructure improvements as required. New signal controllers, cabinets, field masters, wireless spread spectrum interconnect links, hardwire interconnect links, fiberoptic interconnect links, telephone drops, cell phone modems, and communication modems/Ethernet switches were installed throughout the project area.

Project Results

Once infrastructure improvements were in place, the newly engineered coordination signal timing plans were implemented and fine-tuned. Performance measures for the “after” conditions were compared with those for “before” conditions. Improvements varied on an arterial-by-arterial basis, but system-wide averages amounted to approximately 22% reduction in travel time, approximately 47% reduction in number of stops, and approximately 27% improvement in travel speed during the AM and PM peak periods. Overall mobile source emission reductions are estimated at 15%, while fuel consumption reductions are estimated at 12%, resulting in a savings of millions of dollars per year for the motoring public. Coordinated efforts of the project team, coupled with excellent cooperation provided by all participating agencies, and implementation of various innovative traffic engineering solutions to optimize timing, together with the operation of signal control systems without regard to jurisdictional boundaries, resulted in a much greater than typical improvement expected.

Conclusions/Recommendations

In summary, the following key components were essential in the successful implementation of the Tier 1 & 2 coordinated traffic signal system:

1. Use of a common time source for exact time-of-day at each agency system.
2. Use of a common signal system cycle length when developing optimized coordination traffic signal timings between jurisdictions.

3. Implementation of upgraded traffic signal controllers and communication devices to integrate field devices with traffic operational centers.
4. Engineering development, implementation, and fine-tuning of optimized signal timing parameters based on prevailing traffic patterns, while recognizing heavy turning movements at freeway interchanges and at major crossing arterials.
5. Multi-agency common goal of increasing arterial thru-put volume with reduced stops and delays, thereby maintaining acceptable levels of service.
6. Cooperation and support from all participating cities, the County, and Caltrans.
7. Performance monitoring after project “Turn-on” via extensive signal timing fine-tuning adjustments, field reviews and equipment repair of the inter-jurisdictional coordinated traffic signal system.

In addition, the development of a Memorandum of Understanding for the project between SANBAG and participating agencies, specifically defining agency roles and responsibilities, is an essential component to the success of the project. Key elements of project success – including coordination with Caltrans, local agency support and cooperation, and performance monitoring of coordinated traffic signal systems – are aspects that need to be carried forward into future Valley-Wide signal synchronization efforts.

There are several recommendations for future actions that are critical to monitoring the improvements realized as a result of this project and to achieve additional future benefits. In addition to the ongoing system monitoring and maintenance previously noted, it is important that corridor-wide coordination signal timing plans to be updated on a regular basis – at least once

every three years, and more often if traffic conditions change substantially. It is also important that traffic signal infrastructure be updated on an as-needed basis, especially the communication and control components.

One final key recommendation to further improve traffic operational capability of intersections and arterial highways in the San Bernardino Valley relates to capacity enhancements. A follow-up project that identifies key “bottleneck locations” where physical roadway improvements, such as restriping or widening, need to occur, and the development of plans to enact such enhancements, is a necessary step to further increasing mobility throughout the Valley.

I. Introduction

In September 1999, the SANBAG Board of Directors authorized the development of a strategic plan for interconnecting and coordinating traffic signals in the San Bernardino Valley area. Study participants included the Cities of Chino, Chino Hills, Colton, Fontana, Grand Terrace, Highland, Loma Linda, Montclair, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Upland and Yucaipa; San Bernardino County; Caltrans District 8; and SANBAG. The consulting firm of Albert Grover & Associates (AGA) was selected by SANBAG to develop the plan. The adoption of that plan – the San Bernardino Valley Coordinated Traffic Signal System Plan – established the Master Plan for interconnect and coordination of more than 1,200 signalized intersections throughout the San Bernardino Valley.

Four phases, or Tiers, were recommended for implementation of this program. In 2002, AGA, under a subsequent contract with SANBAG, began the engineering design to develop construction plans for the implementation of required hardware and software improvements necessary for the interconnect and coordination of approximately 300 intersections (Tier 1). Subsequently, in late 2003, design efforts were begun for an additional 300 intersections (Tier 2). Eventually, 652 signalized intersections were included in Tier 1 & 2 Project, which included many new traffic signals that were added during the course of the project. Construction of Tier 1 & 2 improvements was begun in 2006 and completed in late 2008. With required hardware and software in place, coordination timing plans were developed, implemented, and fine-tuned. Monitoring and maintenance of the coordination timing for these first 652 intersections is currently scheduled to continue until June 2011.

SANBAG is planning to continue development of this Valley-wide project, with design of Tier 3 & 4 components planned to begin later this year. Tier 3 & 4 is expected to be completed in two years.

Funding for the Tier 1 & 2 Project was via Congestion Mitigation/Air Quality (CMAQ) funds and “Go California” – State Highway Operation and Protection Plan (SHOPP) funds. Funding for Tier 3 and 4 will be via a combination of CMAQ and Traffic Light Synchronization Program (TLSP) funds under California Proposition 1B Bonds.

Project Objectives and Description

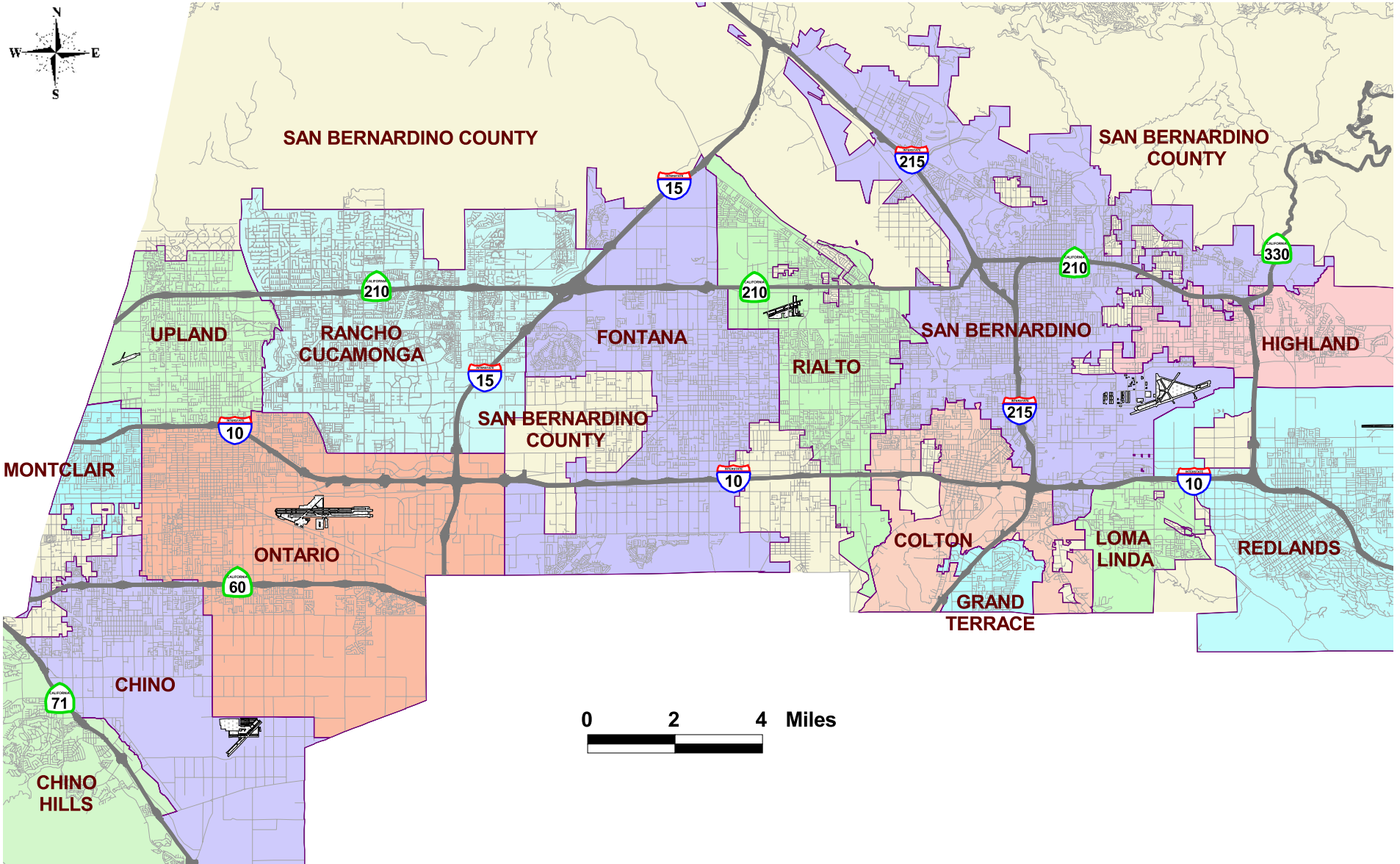
The overall objectives of the Tier 1 & 2 Project were to develop and implement multijurisdictional traffic signal coordination in the San Bernardino Valley to reduce stops, delay and travel times, while also reducing fuel consumption and improving air quality along all project routes. The general project location is depicted on Exhibit I-1, “Project Location” and Exhibit I-2, “Tier 1 & 2 Project Area.”

While the San Bernardino Valley Coordinated Traffic Signal System Plan identified nearly 1,200



Exhibit I-1: Project Location

Exhibit I-2: Tier 1 & 2 Project Area



signalized intersections in the study area, Tier 1 focused primarily on major east-west arterial highways and Caltrans freeway interchange areas, including City controlled intersections adjacent to/in the vicinity of interchange ramp signals. Tier 2 focused on north-south arterials and additional east-west arterials. Project routes and intersections are graphically displayed on Exhibit I-3. Project traffic signal distribution by agency is shown in Exhibit I-4.

To ensure improved communication and support for the Tier 1 & 2 Project, SANBAG developed a Memorandum of Understanding (MOU) that spells out agency responsibilities relative to multijurisdictional coordination signal timing policies and procedures. This MOU is presented in Appendix A.

Input to the project was provided via regularly scheduled meetings with technical staff from all participating agencies. In general, the project consisted of the following components:

- Via field evaluation, develop an updated inventory of hardware and software components in place at all study intersections.
- Develop plans, specifications, and estimates (PS&E) for construction of infrastructure improvements required to enable multijurisdictional coordination signal timing plans to be implemented.
- Collect Average Daily Traffic counts along selected areas on project arterials and AM, Midday, and PM Peak Hour Turning Movement Counts at key project intersections.

Exhibit I-3: Tier 1 & 2 Project Routes and Intersections

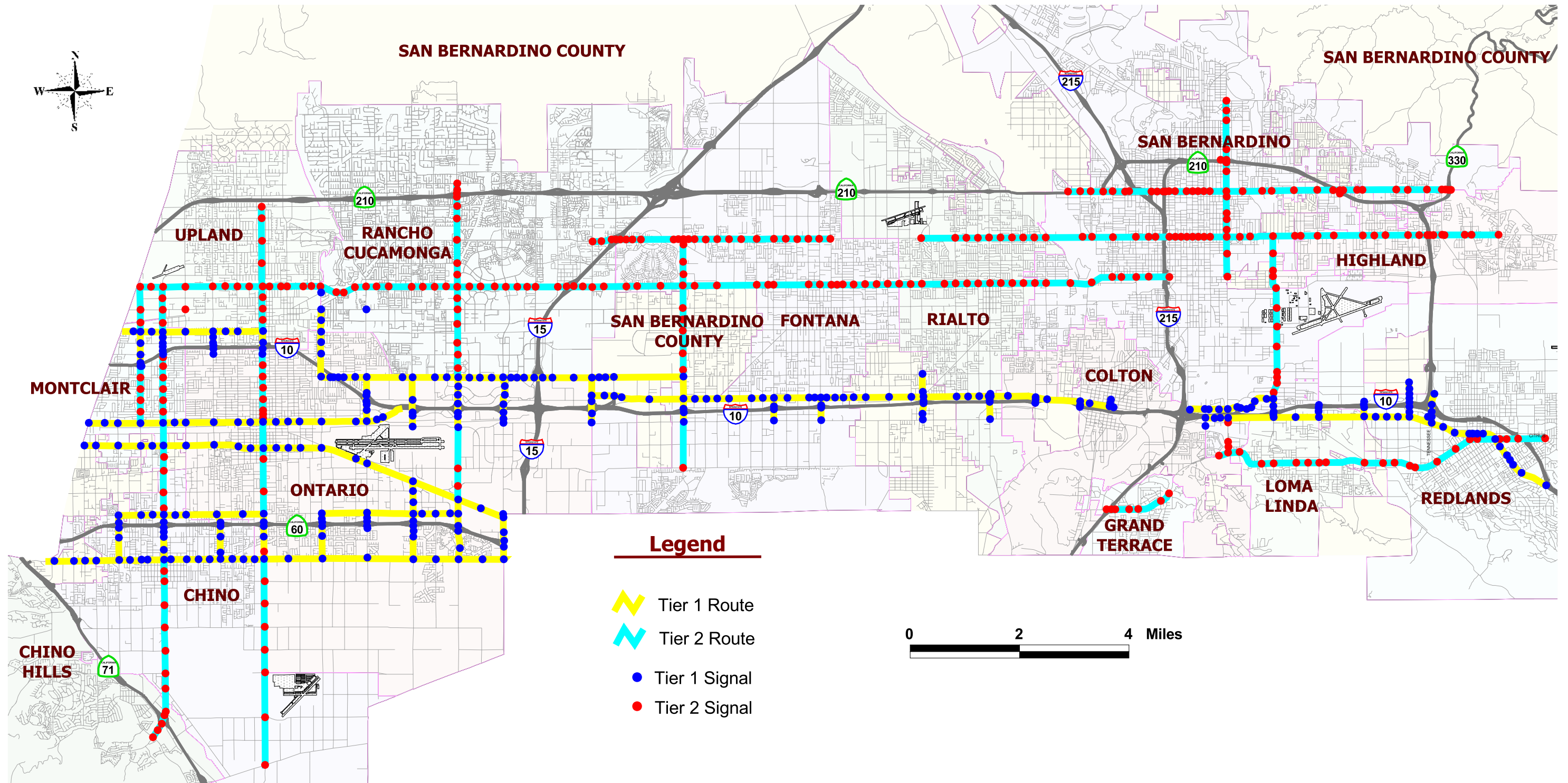
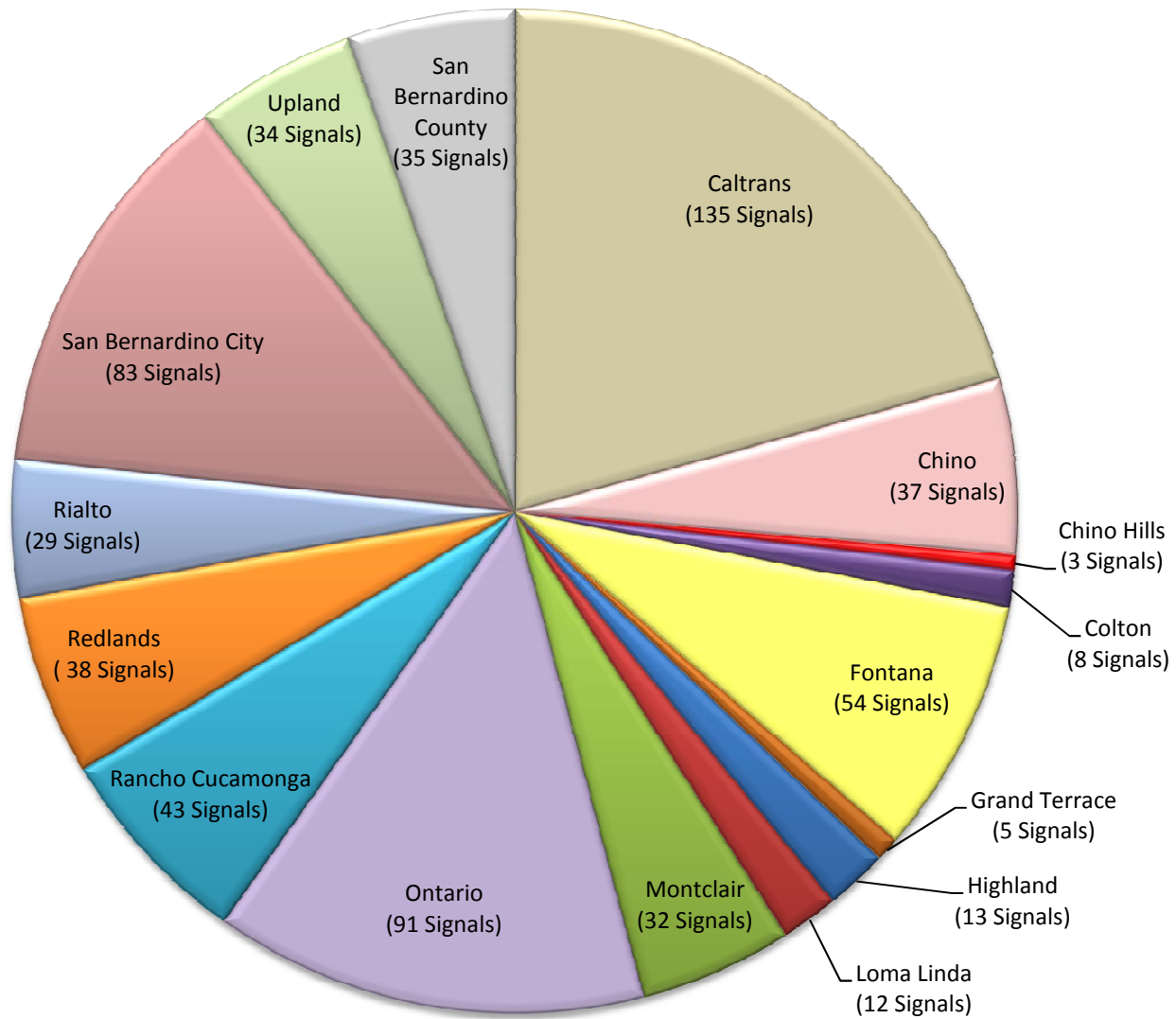


Exhibit I-4: Tier 1 & 2 Project Signal Distribution by Agency



- Conduct “Before” peak hour field evaluations to measure travel times, numbers of stops, and average speeds.
- Develop AM, Midday, and PM Peak Hour coordination timing plans and Time-Space Diagrams.
- Bid and award contracts for construction of required traffic signal infrastructure improvements.
- Upon completion of construction, implement and fine-tune the coordination signal timing plans.
- Conduct “After” peak hour field evaluations to measure travel times, numbers of stops, and average speeds.
- Develop recommendations to optimize continued operation of the coordinated traffic signal system.
- Install or upgrade traffic signal central systems at fourteen San Bernardino Valley Cities, the County, and Caltrans for enhanced traffic operational monitoring of the coordinated system.

The following sections provide details relating to data collection efforts, traffic signal systems infrastructure improvements that were implemented as part of the project, and signal timing

optimization and field evaluation studies conducted to evaluate the effectiveness of multijurisdictional traffic signal synchronization. This report also provides recommendations relative to future arterial capacity and traffic signal system improvements, along with signal system monitoring and maintenance efforts required to sustain benefits achieved via signal timing optimization and synchronization.

II. Data Collection

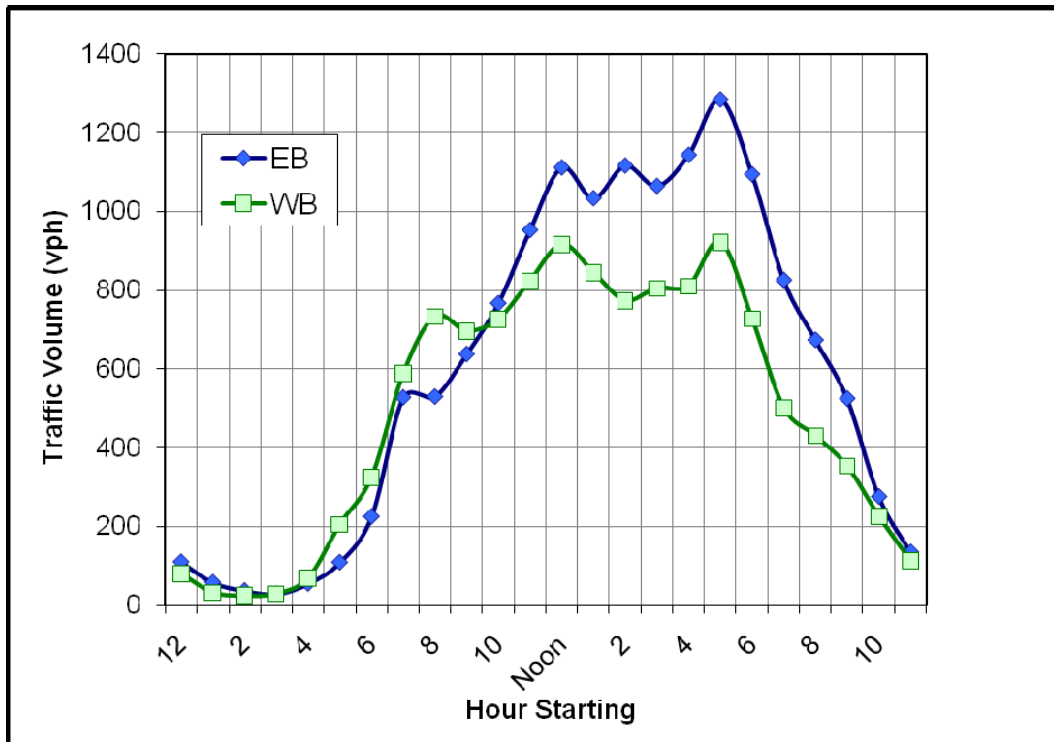
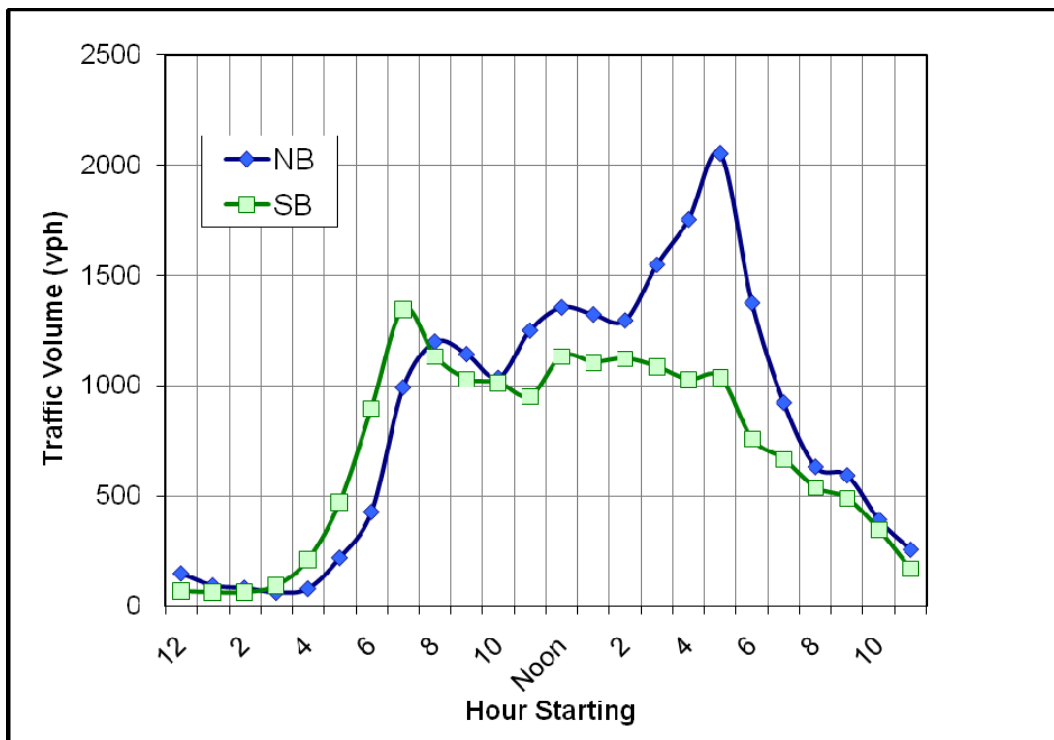
This section provides a summary of various data collection and field inventory efforts conducted as part of the Tier 1 & 2 San Bernardino Valley Coordinated Traffic Signal System Plan.

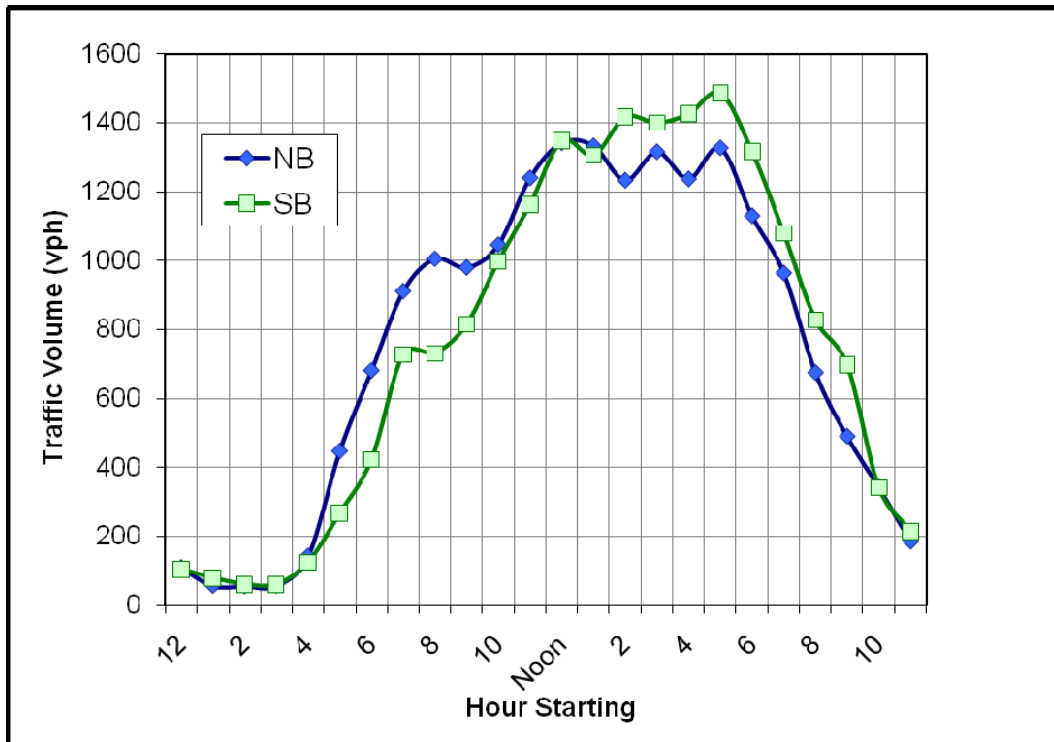
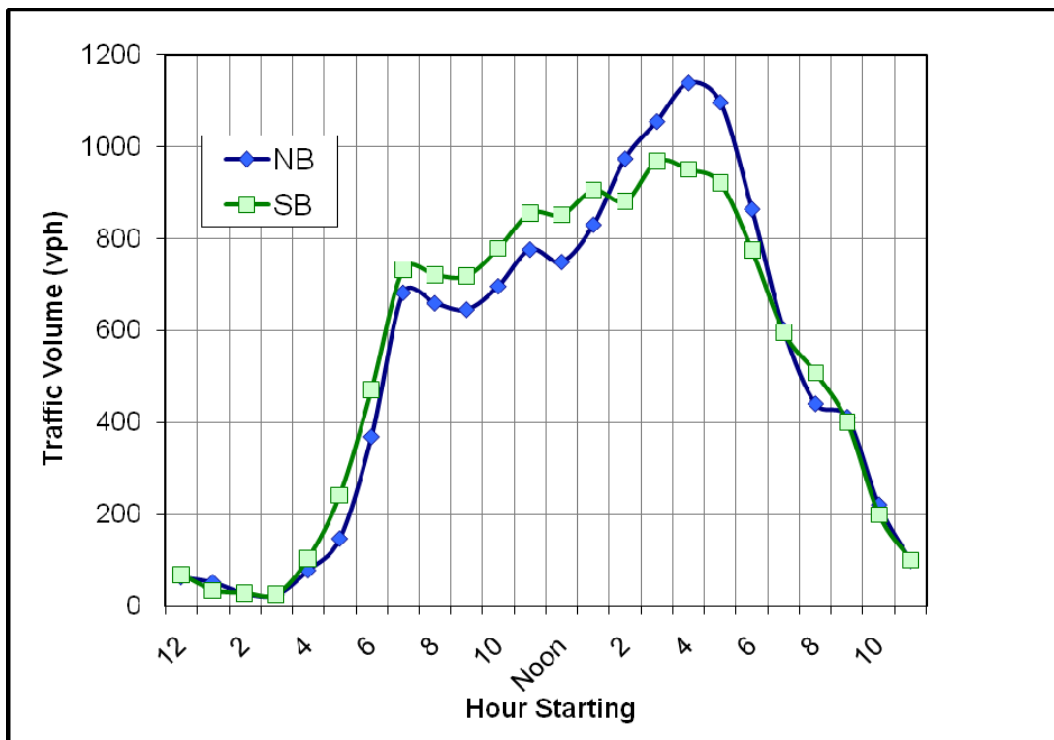
The data collection and field inventory efforts include:

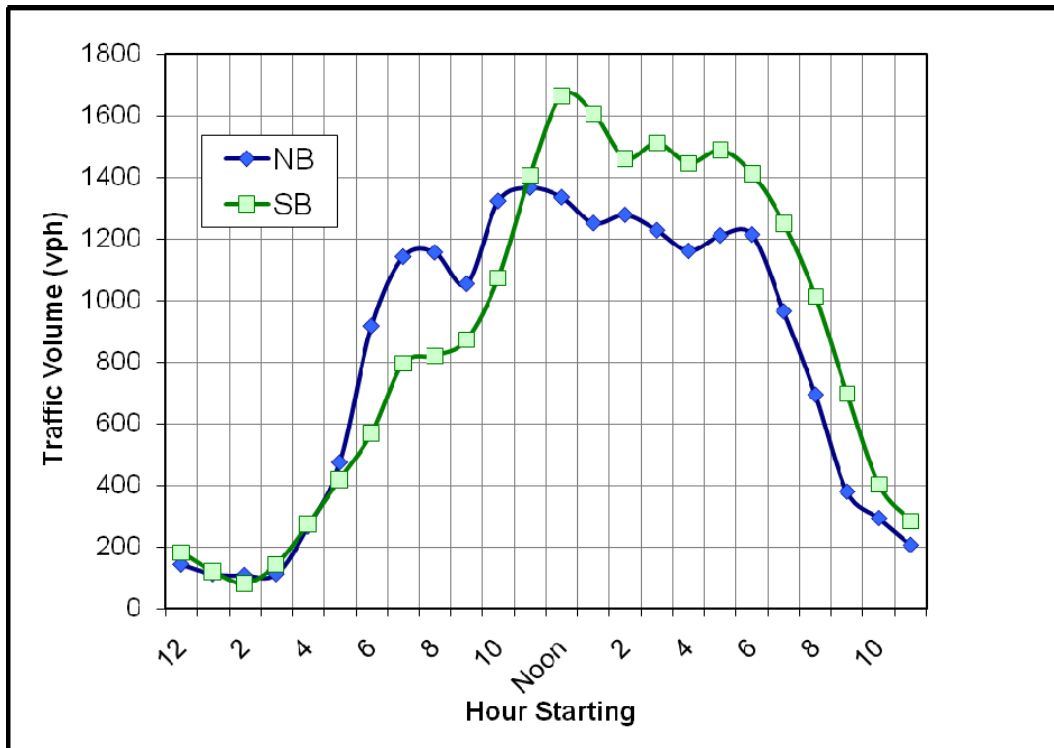
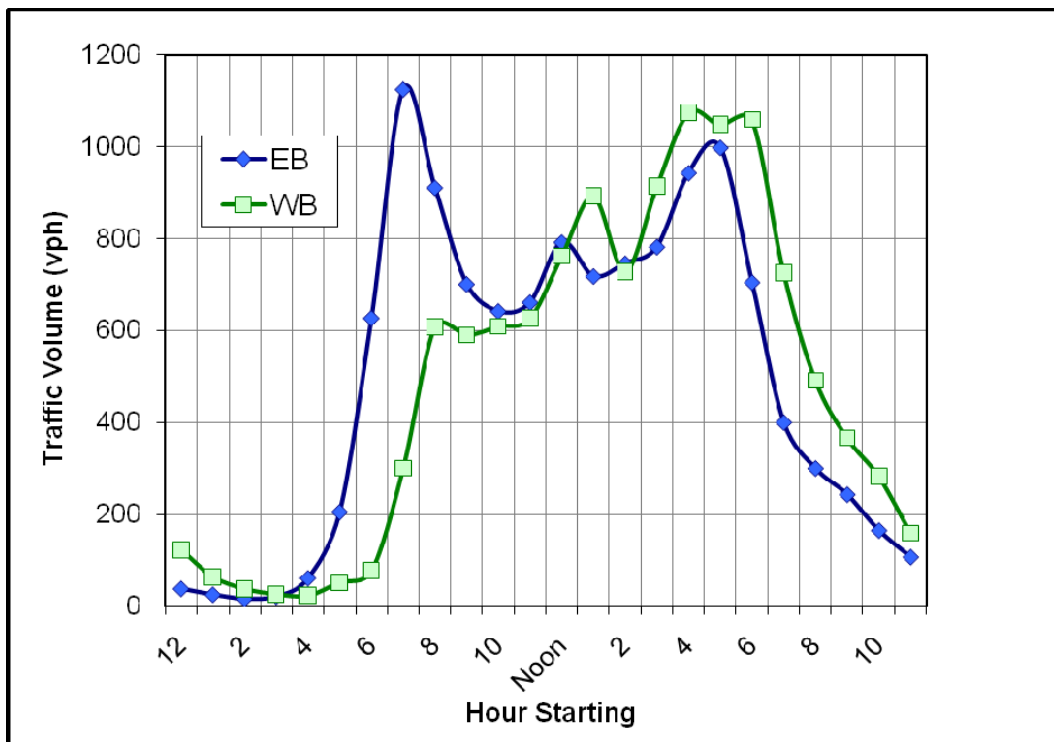
1. Hourly Traffic Volumes
2. Peak Hour Turning Movement Counts
3. Traffic Signal System Field Inventory

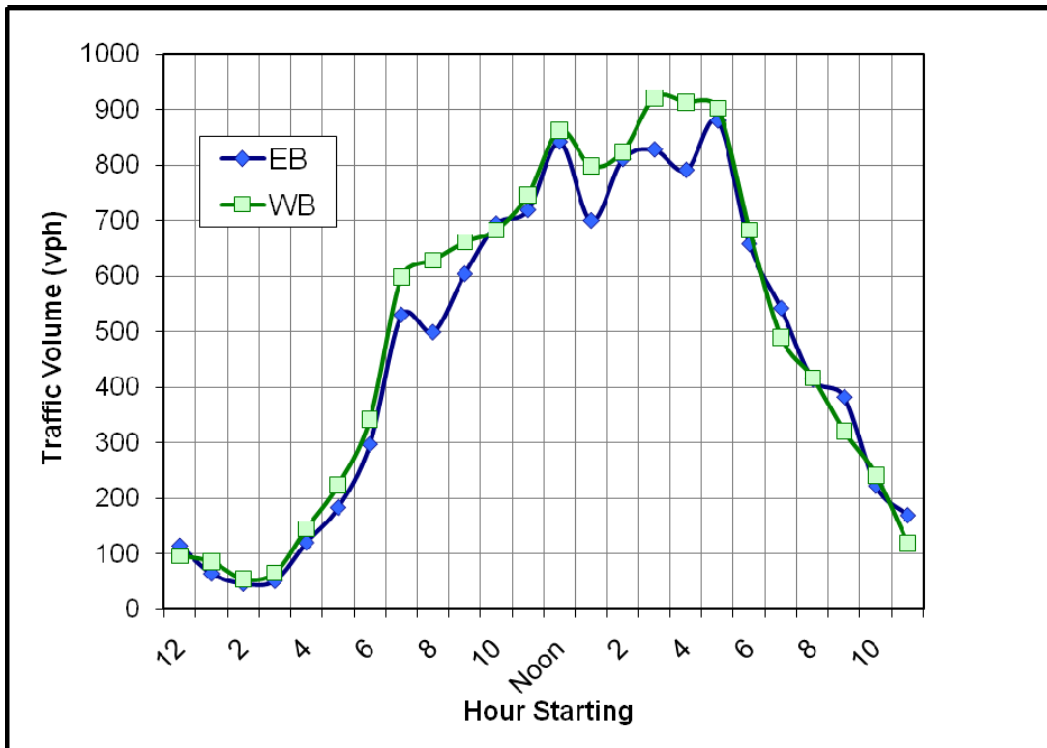
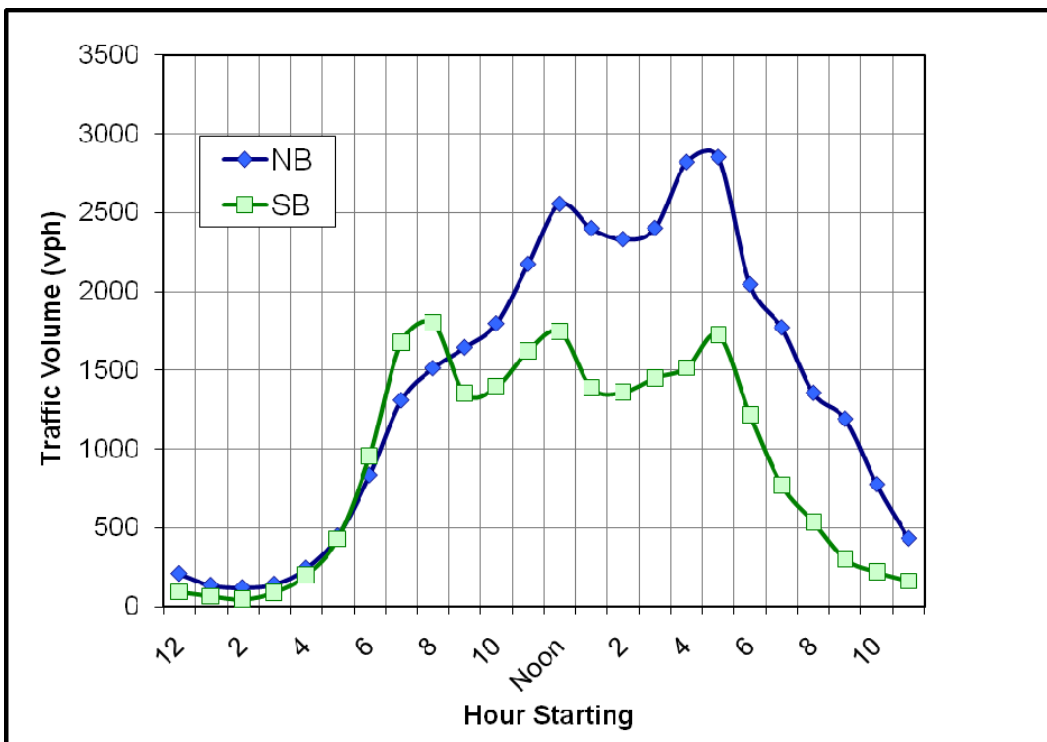
Hourly Traffic Volumes

Hourly daily traffic volumes were collected at various mid-block locations along various project arterial segments in order to determine the appropriate time periods to subsequently collect peak hour turning movement counts at project intersections, as well as to identify time periods for traffic signal coordination purposes. A sampling of hourly traffic volume variations at selected locations is presented on Exhibits II-1.1 through II-1.8. Figures depicting daily traffic volume variations at various locations throughout the project area were separately distributed to project participants on an agency-by-agency basis.

Hourly Traffic Volumes**Exhibit II - 1.1. Foothill Avenue: West of Mountain Avenue****Exhibit II - 1.2. Haven Avenue: Between Jersey Boulevard and Arrow Route**

Hourly Traffic Volumes**Exhibit II - 1.3. Central Avenue: South of Moreno Street****Exhibit II - 1.4. Euclid Avenue: North of D Street**

Hourly Traffic Volumes**Exhibit II - 1.5. Tippecanoe Avenue: South of Harriman Place/Laurelwood Drive****Exhibit II - 1.6. Barton Road: West of Campus Street**

Hourly Traffic Volumes**Exhibit II - 1.7. Baseline Street: West of Waterman Avenue****Exhibit II - 1.8. Waterman Ave: South of Hospitality Lane**

Peak Hour Turning Movement Counts

Peak hour turning movement counts were collected at key project intersections throughout the project area. Traffic counts were collected for two hours each for the AM, Midday, and PM peak periods on weekdays (Tuesday through Thursday only). Detailed printouts of peak hour turning movement counts were separately provided to the cities, county, Caltrans and SANBAG on an agency-by-agency basis.

The project team also evaluated existing traffic flow patterns during peak hours at critical locations, such as freeway interchange ramp intersections, to assist in the development of the coordination traffic signal timing plans.

Traffic Signal System Field Inventory

The Tier 1 & 2 Project involved a total of 652 traffic signals controlled and maintained by 16 separate governmental agencies. An additional 11 intersections on project routes are expected to be signalized in the immediate future. Exhibit II-2 identifies project signals by maintenance jurisdiction. A listing of total Tier 1 & 2 project intersections by Agency is presented in Exhibit II-3.

Field evaluations were conducted to identify appropriate intersection geometrics including usage of both striped and un-striped (but functional) travel lanes; traffic signal operational characteristics including signal phasing and type of operation; traffic signal communications and

Exhibit II-2: Tier 1 & 2 Signal Maintenance Jurisdiction

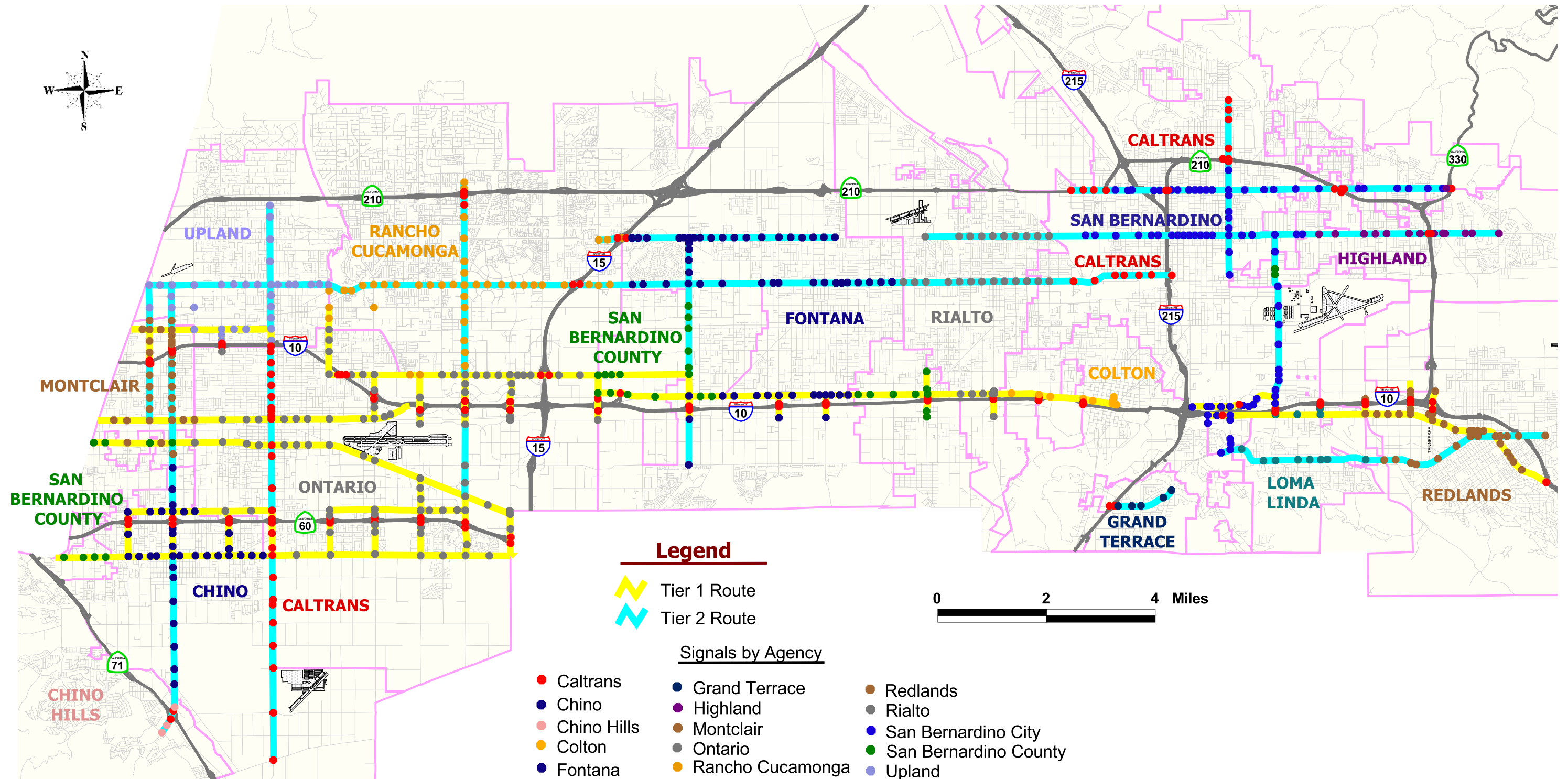


Exhibit II-3: Tier 1 & 2 Project Signal Totals by Agency

Agency	Tier 1	Tier 2	Total
Caltrans	73	62	135
Chino	25	12	37
Chino Hills		3	3
Colton	8		8
Fontana	14	40	54
Grand Terrace		5	5
Highland		13	13
Loma Linda	4	8	12
Montclair	19	13	32
Ontario	88	3	91
Rancho Cucamonga	4	39	43
Redlands	25	13	38
Rialto	7	22	29
San Bernardino City	16	67	83
Upland	8	26	34
San Bernardino County	28	7	35
Total	319	333	652

Note: An additional 11 traffic signals are expected to be installed within a year on the Tier 1 & 2 project routes.

controller equipment, traffic signal detection, etc. An evaluation of existing conditions was essential in preparing traffic signal infrastructure improvement plans and signal timing optimization plans.

Exhibits II-4 a & b, II-5, and II-6 a & b provide a summary by agency of traffic signal controller type and software/firmware, signal system type and traffic signal interconnect communication respectively. A detailed listing of this data for all 652 project intersections, on an agency-by-agency basis, grouped by project route, is included in Appendix B. A detailed listing of traffic signal phasing for all four directions at each project intersection was also provided to each agency.

Exhibit II-4a: Traffic Signal Controllers by Agency

Agency	Signal Controller Type						Total
	NEMA Type				Model 2070	Model 170/170E	
	Eagle	Econolite ASC/2	Econolite ASC/3	Econolite ASC-8000			
Caltrans					8	127	135
Chino		22	14	1			37
Chino Hills		3					3
Colton						8	8
Fontana		52	2				54
Grand Terrace						5	5
Highland					8	5	13
Loma Linda						12	12
Montclair						32	32
Ontario		81		9		1	91
Rancho Cucamonga		11	12			20	43
Redlands	30				7	1	38
Rialto		16	1			12	29
San Bernardino City						83	83
Upland					10	24	34
San Bernardino County	2	20	8			5	35
Total	32	205	37	10	33	335	652

Exhibit II-4b: Traffic Signal Controller Type by Agency

II-11

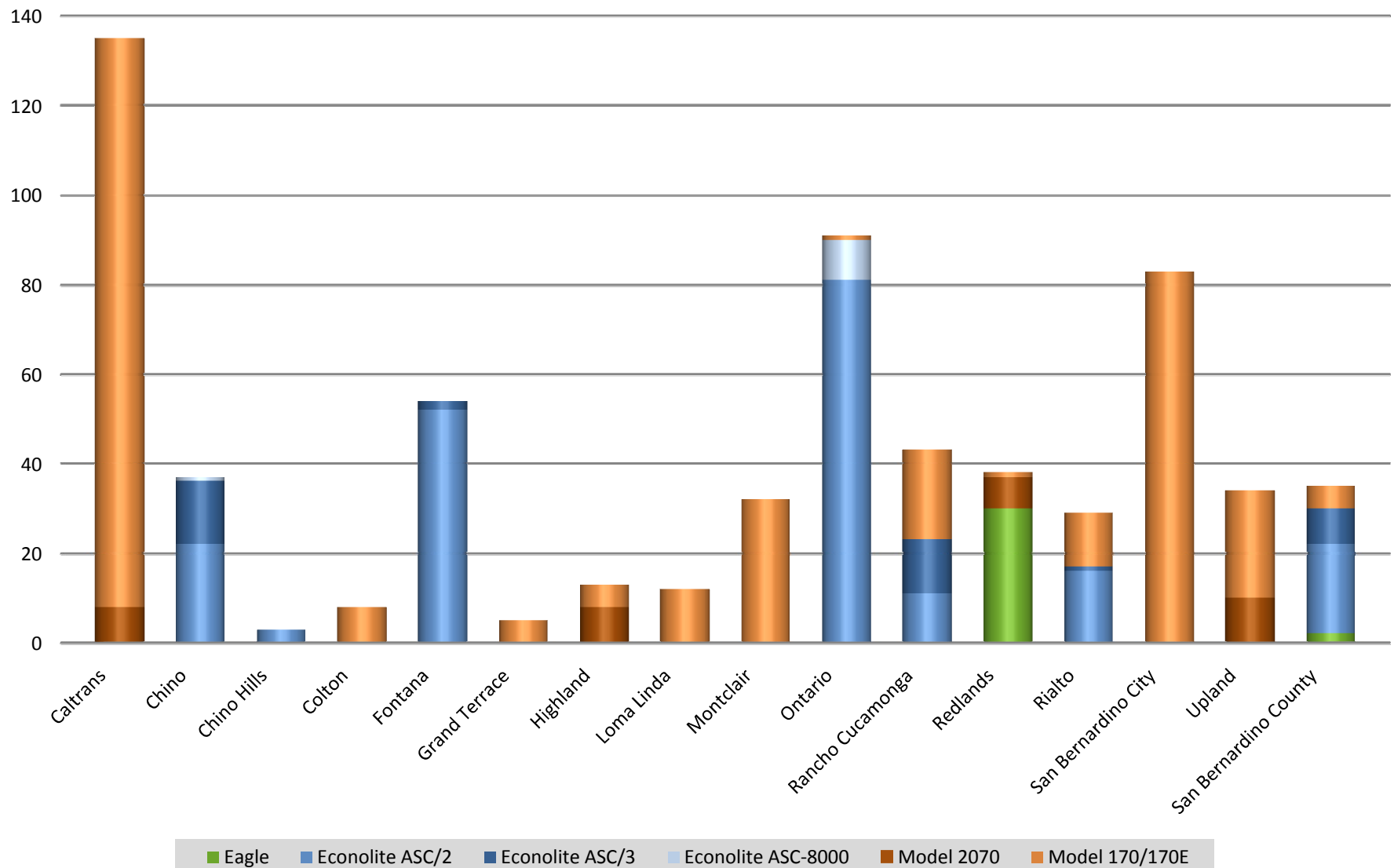


Exhibit II-5: Traffic Signal System by Agency

Agency	Signal System Make & Type				
	ACTRA (Siemens)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain)	CTNET (Caltrans)
Caltrans					130
Chino		37			
Chino Hills		3			
Colton				6	
Fontana		54			
Grand Terrace				5	
Highland				13	
Loma Linda				12	
Montclair				32	
Ontario		67	23		
Rancho Cucamonga		15			
Redlands	38				
Rialto		17		12	
San Bernardino City				83	
Upland				33	
San Bernardino County		28		5	
Total	38	221	23	201	130

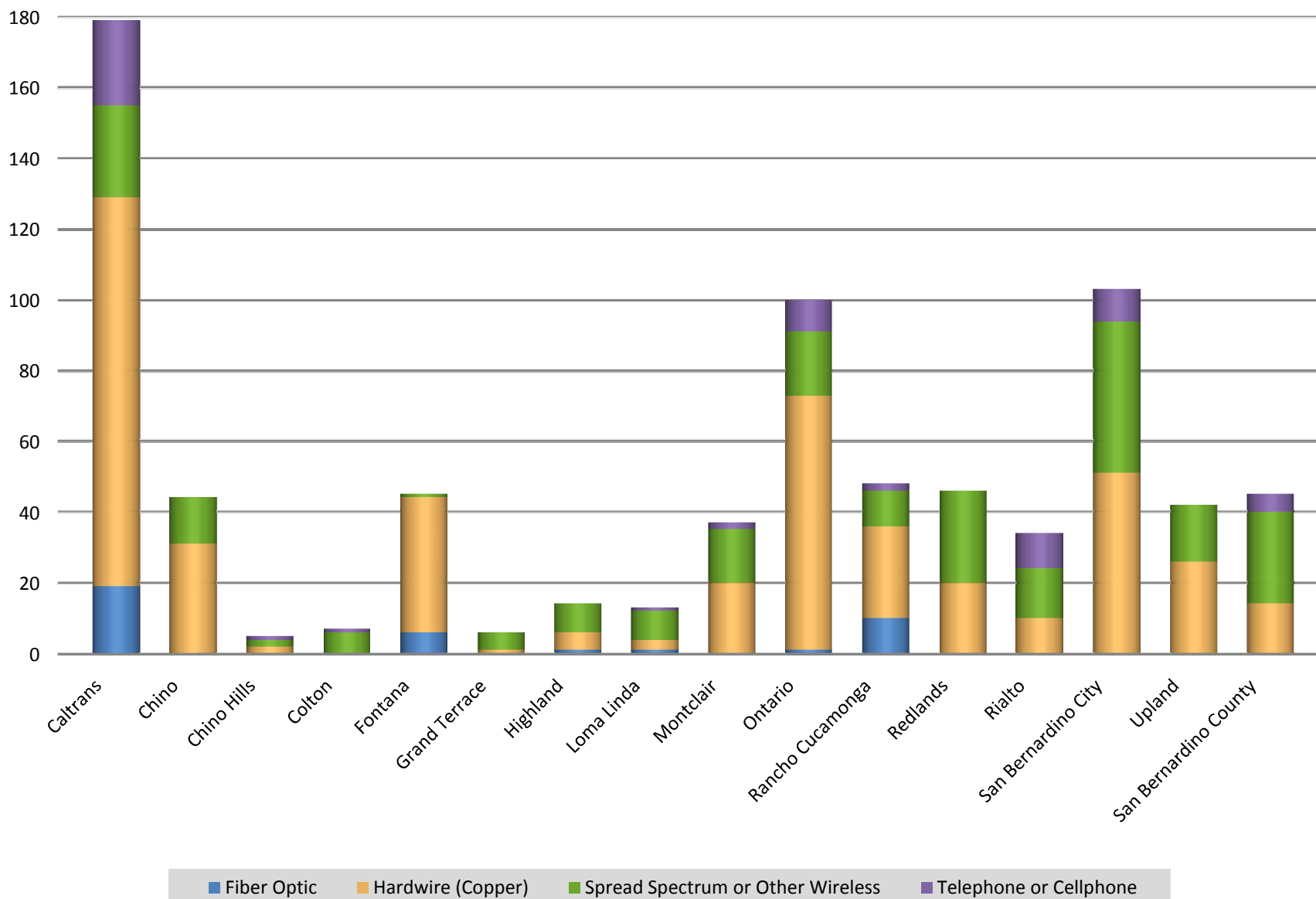
Exhibit II-6a: Traffic Signal Interconnect Communication by Agency

Agency	Type of Signal Interconnect Communication			
	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
Caltrans	19	110	26	24
Chino		31	13	
Chino Hills		2	2	1
Colton			6	1
Fontana	6	38	1	
Grand Terrace		1	5	
Highland	1	5	8	
Loma Linda	1	3	8	1
Montclair		20	15	2
Ontario	1	72	18	9
Rancho Cucamonga	10	26	10	2
Redlands		20	26	
Rialto		10	14	10
San Bernardino City		51	43	9
Upland		26	16	
San Bernardino County		14	26	5
Total	38	429	237	64

Note: The above totals include some locations that employ more than one signal interconnect communication media.

Exhibit II-6b: Traffic Signal Interconnect Communication by Agency

II-14



III. Traffic Signal Systems Infrastructure Improvements Implemented

While some of the 652 traffic signals included in the Tier 1 & 2 project already had signal interconnect in place, many did not. Traffic signal controller types utilized throughout the project area include Model 170/2070 types and NEMA types (Econolite and Eagle). Traffic signal controller software utilized includes: McCain BI Tran 200/223/2033, Econolite ASC/2 and ASC/3, Caltrans C8 and Traffic Signal Control Program (TSCP), and Siemens (Eagle) SEPAC Program. Communication technologies utilized include fiberoptic, hardwire, and wireless systems (cell phones and spread spectrum radios). Ethernet and Serial communication protocols were used to integrate the newly interconnected traffic signal systems with existing systems.

Central traffic signal system software upgrades utilized include Econolite ARIES Systems for Chino, Chino Hills, Fontana, Ontario, Rialto, Rancho Cucamonga and San Bernardino County; a Siemens ACTRA/TACTICS System for Redlands; McCain QuicNet Systems for Colton, Grand Terrace, Highland, Loma Linda, Montclair, Rialto, San Bernardino City and Upland; and a CTNET System for Caltrans.

To optimize the communication capability of the various agencies' traffic signal control systems, various signal system infrastructure improvements were designed, constructed, tested and made operational as a part of the project. These improvements were necessary to ensure that the interconnect and subsequent coordination of the project signals was not only achievable but also sustainable. Since the various agencies operated different traffic signal systems, it was important to use a common time source such as WWV or GPS to eliminate the possibility of inconsistencies in

the various local and master signal controller internal clocks. Common time source is required to maintain coordination across jurisdictional boundaries for systems without physical connections.

Following is a discussion of the various improvements that were implemented for each agency. Included is a brief discussion of various specific problems encountered which were subsequently resolved. Detailed plans were prepared for improvements along each project route and at each project intersection. These plans were then utilized by the SANBAG selected contractor for construction of required improvements. Construction management and inspection of improvements was conducted by a separate SANBAG selected contractor; however, significant construction engineering assistance and oversight was provided by AGA. As-built plans prepared by AGA were then distributed to each agency for project routes/signals under their jurisdiction.

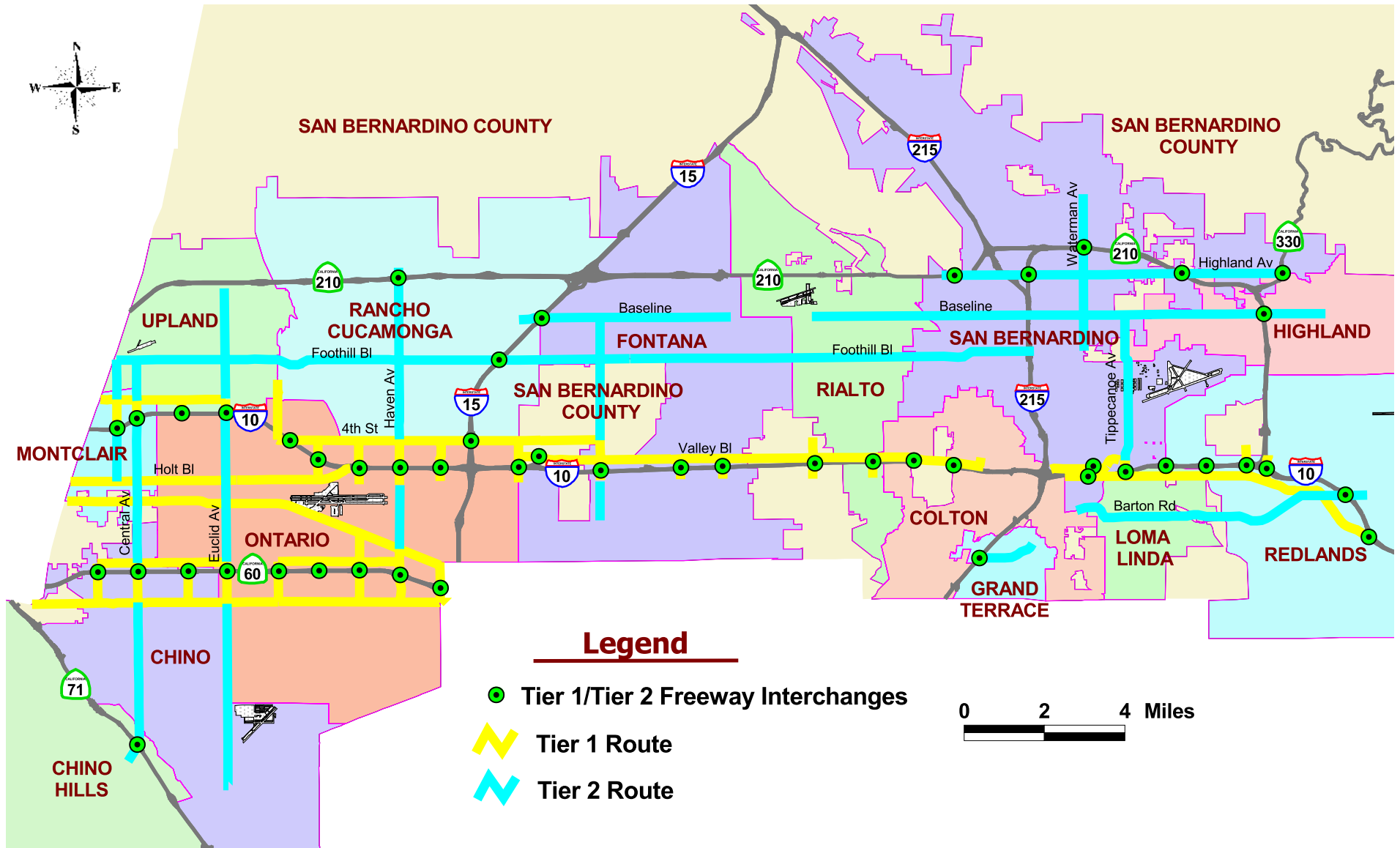
Caltrans

Various improvements were made both at freeway interchanges and along State Highways. A total of 134 Caltrans controlled signals were included in the project. Following is a generalized summary of improvements made at 48 Caltrans controlled freeway interchanges, including interchanges on I-10, I-15, I-215, SR-30, SR-60, SR-71, SR-210, SR-259, and SR-330 freeways. The 48 freeway interchanges are identified in Exhibit III-1.

- Traffic signal communication between the Caltrans District 8 Traffic Management Center (TMC) in San Bernardino and various Caltrans project intersections was provided (in part) via utilization of the existing fiber optic backbone communication system along the San Bernardino County freeways. The fiber optic communication system available at the freeway ramp meters was extended to interchange traffic signals. A self healing Gigabit

Exhibit III-1: Tier 1 & 2 Project Freeway Interchanges

III-3



Ethernet fiber ring was implemented by connecting the interchange traffic signals to the Caltrans TMC via the fiber optic communications backbone along the freeways. Ethernet fiber switches were installed at Caltrans communication hubs, Traffic Operation System (TOS) cabinet locations, ramp meter cabinets, existing Closed Circuit Television (CCTV) Camera cabinets and traffic signal cabinets to tap into the fiber backbone and integrated with a new CTNET central system at the Caltrans TMC. Exhibit III-2 identifies Gigabit Ethernet Fiber Optic Switch installation locations. Additionally, cell phone modems were installed at locations where no fiber optic was in place.

- New Traffic Responsive Field Masters (TRFM's) were installed at various locations.
- Upgraded local controllers (Model 2070 and Model 170E) and/or software (C-8, Version 4) were provided at various locations.

Following is a summary of improvements made along the three State Highways - Waterman Avenue (SR-18), Euclid Avenue (SR-83) and Foothill Boulevard (SR-66) – not involving freeway interchanges.

- Wireless spread spectrum and hardwire interconnect were installed on Waterman Avenue (SR-18) to communicate with the field master at Waterman Avenue/30th Street.
- New Model 2070 controllers and cabinets were installed at various locations on Waterman Avenue (SR-18).
- Wireless spread spectrum and hardwire interconnect, new cabinets, field masters, and new/upgraded controllers were installed at various locations on Euclid Avenue (SR-83).
- On Foothill Boulevard (SR-66) in the City of San Bernardino, a new field master and cell phone modem were installed at Foothill Boulevard/Macy Street, and wireless spread

Exhibit III-2: Ethernet Fiber Ring for Caltrans Traffic Signal System

Legend

GIGABIT ETHERNET FIBER SWITCH LOCATIONS

COMMUNICATION HUB

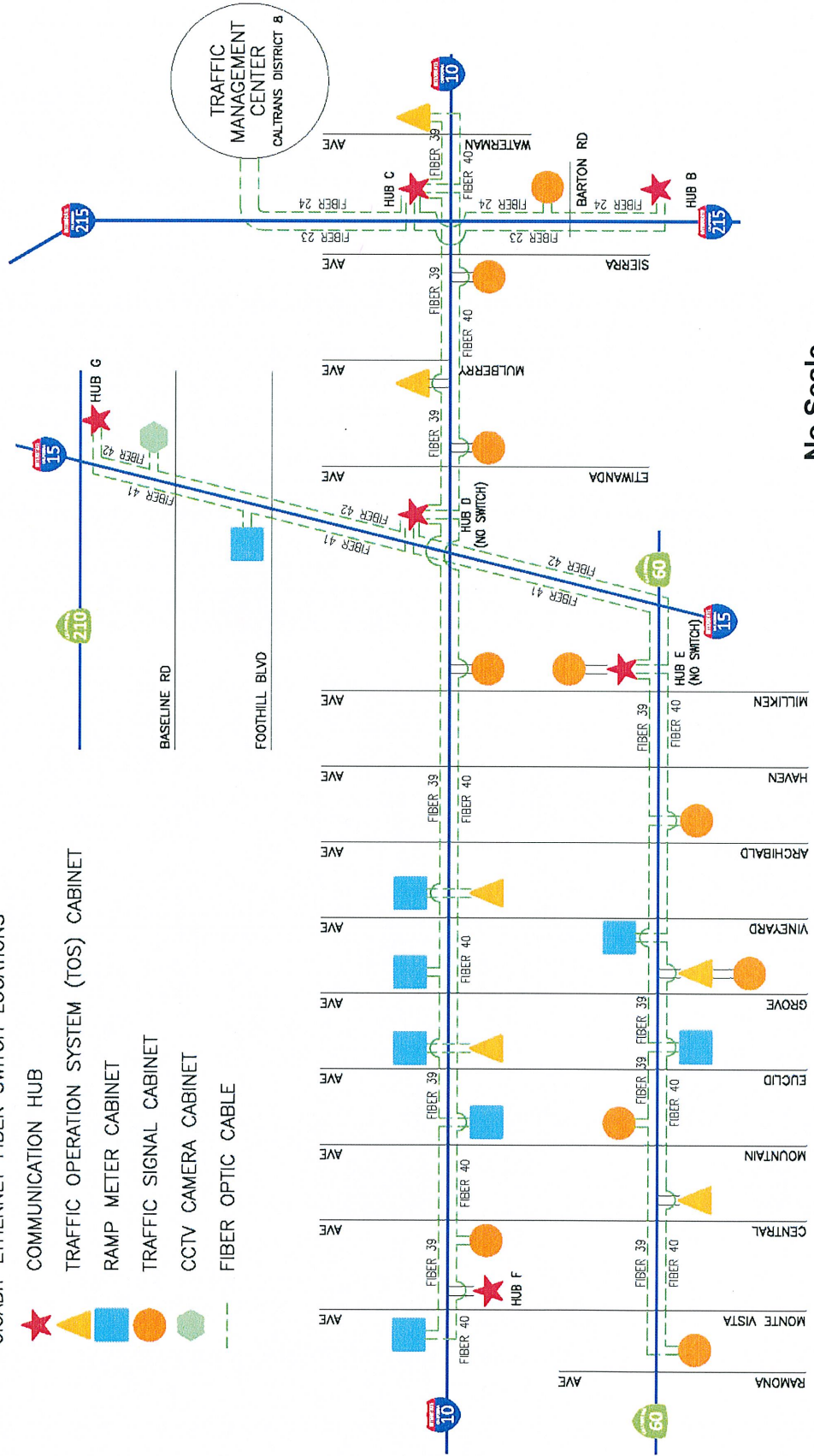
TRAFFIC OPERATION SYSTEM (TOS) CABINET

RAMP METER CABINET

TRAFFIC SIGNAL CABINET

CCTV CAMERA CABINET

FIBER OPTIC CABLE



No Scale

spectrum was installed at Foothill Boulevard (5th Street)/H Street. Upgraded controllers were installed at various locations.

- During the course of the project, portions of Foothill Boulevard (previously SR-66) was relinquished to the cities of Fontana, Rancho Cucamonga, Rialto and Upland respectively. Additionally, a portion of Euclid Avenue (previously SR-83) in the City of Upland was also relinquished by Caltrans. Appropriate signal system improvements, which were previously designed and implemented for Caltrans, were subsequently configured/modified to operate with the respective agency signal system.
- To help maintain accurate time base between Caltrans signal systems and individual agency signal systems, GPS time source receivers were also required to be installed at all Caltrans field master controllers located at the 48 freeway interchanges and the three State Highways.

City of Chino

- East-west project arterials include Philadelphia Street and Riverside Drive.
- North-south project arterials include Euclid Avenue, Central Avenue, and portions of Mountain Avenue to Ramona Avenue.
- Wireless interconnect installed includes intersections on Philadelphia Street from Benson to Ramona, on Central Avenue from Philadelphia to Francis, and on Riverside Drive from Mountain Avenue to Fern Avenue.
- Hardwire interconnect was installed on Central Avenue from Riverside to Philadelphia (excluding the freeway bridge). Since traffic signal interconnect cable in the conduit at the SR-60/Central Avenue bridge could not be upgraded due to physical constraints, Caltrans co-operated by agreeing to share its spare cables for City use.

- The four San Bernardino County signals on Riverside Drive between Reservoir Street and Pipeline Avenue were tied in to the City's system via wireless spread spectrum interconnect.
- Traffic signal controllers/cabinets were upgraded at various locations. Two field master controllers were installed at City Hall.
- Communication problems resulting from subsequent replacement of other signal controllers were resolved.
- The Econolite ARIES central system at Chino City Hall needed to be upgraded for improved operations.

City of Chino Hills

- All project intersections were on Soquel Canyon Parkway.
- Wireless spread spectrum interconnect was installed from the Butterfield Ranch Road/Soquel Canyon Parkway field master to the Fairfield Road/Central Avenue intersection. Additionally, hardwire signal interconnect was installed to the Pomona Rincon Road intersection from the Butterfield Ranch Road/Soquel Canyon Parkway intersection.
- A field master was installed at the Butterfield Ranch/Soquel Canyon intersection.
- Problems with contractor installed phone drops and wireless spread spectrum radios were resolved.
- The Econolite ARIES central system at Chino Hills City Hall needed to be upgraded for improved operations.

City of Colton

- Project arterials include Valley Boulevard and portions of Rancho Avenue, Pepper Avenue, and La Cadena Drive.
- Wireless spread spectrum interconnect was installed from Valley Boulevard/Wild Rose Avenue to Valley Boulevard/9th Street.
- Obsolete microwave signal interconnect on Valley Boulevard was replaced by spread spectrum interconnect.
- A telephone drop was installed at the field master at Valley Boulevard/La Cadena Drive.
- New traffic signal controllers were installed at three locations.
- The project team worked with City staff to re-establish communication to the Valley Boulevard/Pepper Avenue traffic signal after the intersection was relocated.
- The McCain QuicNet Pro central system needed to be installed at City Corporate Yard for improved operations.

City of Fontana

- Project arterials include Baseline Road, Foothill Boulevard, Valley Boulevard, Cherry Avenue, portions of Citrus Avenue, and Sierra Avenue.
- Traffic signal interconnect communication was already in place on a majority of project routes.
- Significant efforts were expended to resolve clock issues at the City's central server to guarantee consistent controller clock settings.
- Special efforts were required to coordinate with a separate City project for wireless communication on Cherry Avenue.

- Due to various roadway construction projects, extensive fine tuning of coordination signal timing was required.
- The Econolite ARIES central system at Fontana City Hall needed to be upgraded for improved operations.

City of Grand Terrace

- All project intersections were on Barton Road.
- Prior to this project, there was no signal interconnect communication between City Hall and project intersections.
- Hardwire signal interconnect was installed from City Hall to the Preston Street/Barton Road intersection.
- A new traffic signal was installed at Barton Road/Honey Hill Drive.
- A field master controller was installed at City Hall.
- Wireless spread spectrum radios were installed at 5 locations on Barton Road.
- New controller assemblies (cabinets and controllers) were installed at Barton Road/Canal Street and Barton Road/Mount Vernon Avenue.
- The McCain QuicNet Pro central system needed to be installed at Grand Terrace City Hall for improved operations.

City of Highland

- All project intersections were on Baseline Street between Sterling Avenue and Church Street, including the SR-210 interchange.
- Wireless spread-spectrum radios were installed at 8 locations.

- Existing communication (fiberoptic cable and hardwire) was utilized to access City Hall.
- Existing traffic signal controller assemblies (cabinets, controllers, etc.) were replaced at three locations. Old Multisonics and Traconex controllers were replaced by new 2070 controllers.
- The McCain QuicNet Pro central system needed to be installed at Highland City Hall for improved operations.

City of Loma Linda

- Project routes included Redlands Boulevard, Barton Road, and portions of Mountain View Avenue (between Redlands Boulevard and I-10 Freeway).
- Communication between intersections is currently via spread spectrum radios. The City is separately extending the existing fiberoptic communication backbone system on Redlands Boulevard and Barton Road to connect project traffic signals.
- Traffic signal controllers were upgraded (from Model 170 to Model 170E) and made Ethernet-ready for integration with the City's fiberoptic communication system.
- The McCain QuicNet Pro central system needed to be installed at Loma Linda City Hall for improved operations.

City of Montclair

- East-west project arterials included Arrow Highway, Holt Boulevard and Mission Boulevard.
- North-south project arterials included Central Avenue and Monte Vista Avenue.

- Wireless spread spectrum interconnect was installed at 9 locations including the Mission/Roswell, Mission/Pipeline and Mission/Central intersections to tie these San Bernardino County intersections to the City system.
- Hardwire interconnect was installed on Monte Vista Avenue from Benito Street to the I-10 Freeway ramps and integrated with the existing Caltrans interconnect at the ramps and the existing City interconnect system north of the freeway.
- New traffic signal controllers were installed at eight locations. A new traffic signal controller assembly was installed at Central Avenue/Arrow Highway.
- A GPS time source receiver was installed at City Hall.
- A new cabinet/controller assembly was installed at Central/Arrow Highway.
- Wireless spread spectrum radio installations incorrectly installed by the contractor were subsequently resolved.
- All interconnect was carefully examined to ensure compatibility with the City's QuicNet System.
- The City's QuicNet system needed to be upgraded to McCain QuicNet Pro central system for improved operations.

City of Ontario

- East-West project arterials include Riverside Drive, Philadelphia Street, Mission Boulevard, Holt Boulevard, and 4th Street.
- North-South project arterials include Euclid Avenue and Haven Avenue. Additionally, portions of Grove Avenue, Vineyard Avenue, Archibald Avenue, and Milliken Avenue are also included.

- Wireless interconnect was installed on 4th Street at signals shared with Rancho Cucamonga to tie into the Field Master at the Concours Drive/Haven Avenue intersection in Ontario.
- Existing interconnect was not functional- communication was not possible to approximately half of all project intersections. This required implementing new coordination signal timing directly at each project intersection instead of implementing all from City Hall. Working together with City staff, the project team resolved most of the City's traffic signal interconnect problems.
- Ongoing construction on Holt Boulevard prevents traffic signal coordination from east of Euclid Avenue to Grove Avenue.
- The Econolite ARIES/ICONS central system at Ontario City Hall needed to be upgraded for improved operations.

City of Rancho Cucamonga

- East-West project arterials include Foothill Boulevard and 4th Street.
- North-South project arterials include Haven Avenue and a portion of Grove Avenue.
- Wireless spread spectrum interconnect was installed on Haven Avenue from Church Street to 6th Street, for a total of seven intersections. Additionally, wireless spread spectrum interconnect was installed on Grove Avenue from Arrow Route to 9th Street to the Field Master at the Vineyard Avenue/Arrow Route intersection.
- Fiberoptic interconnect was installed from City Hall to the Haven/Civic Center intersection, and on Haven Avenue between Baseline Road and Church Street.
- New Econolite ASC/3 signal controllers were installed at seven locations. A new Econolite ASC/3 controller assembly was installed at the 4th Street/Archibald Avenue intersection.

- New field master controllers were installed at the Haven Avenue/Civic Center and Foothill Boulevard/Market Place intersections. A telephone drop was also installed at the Foothill Boulevard/Market Place intersection.
- When the City took over Foothill Boulevard from Caltrans, there were compatibility issues between the Caltrans controllers/signal control system and the City's system. The Project team worked with City staff to get the existing systems working together. A future City project will replace the Model 170 controllers on Foothill Boulevard with Econolite controllers.
- Various communication issues were identified and resolved via updating of traffic signal controller software and system configurations at various locations.
- The Econolite ARIES central system at Rancho Cucamonga City Hall needed to be upgraded for improved operations.

City of Redlands

- East-West project routes included Redlands Boulevard, Brookside Avenue, Citrus Avenue, and Barton Road.
- North-South project routes included Alabama Street and Tennessee Avenue (both in the Redlands Boulevard/I-10 area only).
- Interconnect conduit and cable was installed from City Hall to the Redlands Boulevard/Orange Street intersection.
- Originally planned telephone interconnect was instead replaced by wireless spread spectrum radios at 24 locations.
- Existing hardwire interconnect was utilized at various locations.

- Existing Naztec signal controllers were replaced with new Eagle signal controllers at several locations. Model 2070 controllers with the SEPAC program were installed at two locations. Additionally, traffic signal controller assemblies were installed at several locations along the project routes.
- Traffic signal communication telemetry modules were added at various locations to enable coordination.
- All local timing was redone prior to implementation of coordination signal timing.
- City staff were trained relative to newly installed hardware and software systems.
- The Siemens ACTRA/TACTICS central system needed to be installed at Redlands City Hall for improved operations.

City of Rialto

- East-West project arterials include Valley Boulevard, Foothill Boulevard and Baseline Road. North-South project arterials include portions of Riverside Avenue.
- Wireless spread spectrum interconnect was installed at three locations on Baseline Road. Additionally, wireless spread spectrum interconnect was installed from the Slover/Riverside intersection to the Valley Center/Riverside intersection, where hardwire interconnect was installed to the Field Master at the Valley/Gateway Plaza intersection. Traffic signal controller software was upgraded at the wireless interconnect locations.
- Working with City staff, many vehicle detection problems were identified and investigated. City staff subsequently resolved the detection problems.

- On Foothill Boulevard in Rialto, wireless spread spectrum interconnect was installed at 8 locations from Cactus Avenue to Pepper Avenue. There were already 4 intersections interconnected via hardwire.
- Traffic signal controllers were upgraded at several locations on Foothill Boulevard, Baseline Road and Riverside Avenue. A new Field Master controller was installed at Baseline Road and Willow Avenue intersection.
- Since the City of Rialto operates both Econolite controllers and Model 170/2070 controllers at different parts of the City, both Econolite ARIES and QuicNet central are needed.
- The Econolite ARIES central system at Rialto City Hall needed to be upgraded for improved operations.
- The McCain QuicNet Pro central system needed to be installed at Rialto City Hall for improved operations.

City of San Bernardino

- East-West project arterials include Barton Road, Baseline Street, Highland Avenue, Hospitality Lane and Redlands Boulevard.
- North-South arterials include Tippecanoe Avenue and portions of Waterman Avenue.
- Wireless spread spectrum radios were installed at 45 locations and upgraded at 2 locations. Many locations required significant modifications due to contractor installation problems.
- Traffic signal controllers were upgraded to Type 170E at several locations.
- Extensive coordination efforts with City staff were necessary as many of the existing interconnected signal systems needed to be reconfigured.
- City staff was trained in use of new hardware and software.

- The City's QuicNet system needed to be upgraded to McCain QuicNet Pro central system for improved operations.

City of Upland

- East-West project arterials included Foothill Boulevard and 8th Street.
- North-South project arterials included Euclid Avenue, Monte Vista Avenue and Central Avenue.
- Several intersections previously controlled by San Bernardino County (Monte Vista Avenue/Arrow Route, Central Avenue/Arrow Route and Central Avenue /11th Street) were tied in via wireless signal interconnect to the City's system at the Benson Avenue/Arrow Highway intersection.
- On Foothill Boulevard in Upland, updated traffic signal controllers were installed at various locations. Wireless spread spectrum signal interconnect was installed at 14 locations from Monte Vista Avenue to Grove Avenue.
- The City's QuicNet system needed to be upgraded to McCain QuicNet Pro central system for improved operations.

San Bernardino County

- Project arterials were located at various County controlled locations throughout the San Bernardino Valley.
- Field masters were installed at various locations.
- County controlled intersections were tied in to various City systems (e.g., 4 locations in Chino, 3 locations in Montclair, 2 locations in Redlands and 2 locations in the City of San

Bernardino). While the County is still responsible for signal timing at these locations, the cities signal systems provide communication between signals and enable coordination along the project arterials. Traffic signal interconnect communication was designed to be compatible with the local City systems.

- Existing hardwire interconnect was bridged via wireless spread spectrum interconnect at various locations, including Valley Boulevard/Calabash Avenue, Valley Boulevard/Locust Avenue, and San Bernardino Avenue/Cherry Avenue.
- New traffic signal controllers and updated controller software were installed where needed to enable communication with City signals at various locations.
- The Econolite ARIES central system at San Bernardino County needed to be installed for improved operations.

The importance of recognizing infrastructure shortfalls and developing cost-effective improvement solutions cannot be emphasized enough. Given budgeting constraints faced by all agencies, and considering potential disruptions to both business and residents, wholesale widening of arterial highways will not occur. It is incumbent upon traffic engineers to develop innovative solutions, based on real world operational experience, that optimize existing infrastructure via low cost, quickly implementable modifications wherever possible. Only then can the full benefits of signal coordination be realized by the traveling public.

One key to developing low cost signal interconnect is utilization of wireless radio interconnect instead of fiber or hardwire interconnect. Depending on signal spacing, wireless interconnect can be substantially more cost-effective than other methodologies. However, it is critical that

contractors installing wireless interconnect have a thorough understanding of the technology. It is imperative that any contractor (and outside inspector) employed to install/inspect wireless interconnect have extensive experience in such technology. A System Integrator needs to be a member of both the construction and inspection team to avoid significant installation and operational issues.

IV. Signal Timing Optimization

The Tier 1 & 2 Project arterial routes and study intersections consist of two primary components. Tier 1 components consisted primarily of Caltrans controlled signals (and adjacent local agency signals) at interchanges along the I-10 and SR-60 Freeways, and major east-west arterial highways running parallel to the I-10 and SR-60 freeways. Several major north-south arterials were also included in this project. Tier 2 routes consisted of both east-west and north-south arterials. For traffic signal coordination to be effective and meet the project goals of reduced travel times and number of stops and increased speeds in the San Bernardino Valley, it was recognized that a key project component was improving the movement of vehicles to and from the freeways. Additionally, in developing optimized coordination signal timing for the east-west arterials included in the project, existing crossing arterial coordination signal timings needed to be considered.

Critical Intersections

Critical intersections, which typically control the coordination signal timing parameters for an arterial, were identified. Critical intersections are defined as those with high volumes, heavier turning movements, offset or unusual lane geometry; that may operate at or over capacity; utilize multiphase signals or are operating with split phases, etc. Critical intersections are graphically displayed on Exhibit IV-1a and are listed in Exhibit IV-1b.

Exhibit IV-1a: Tier 1 & 2 Project Critical Intersections

IV-2

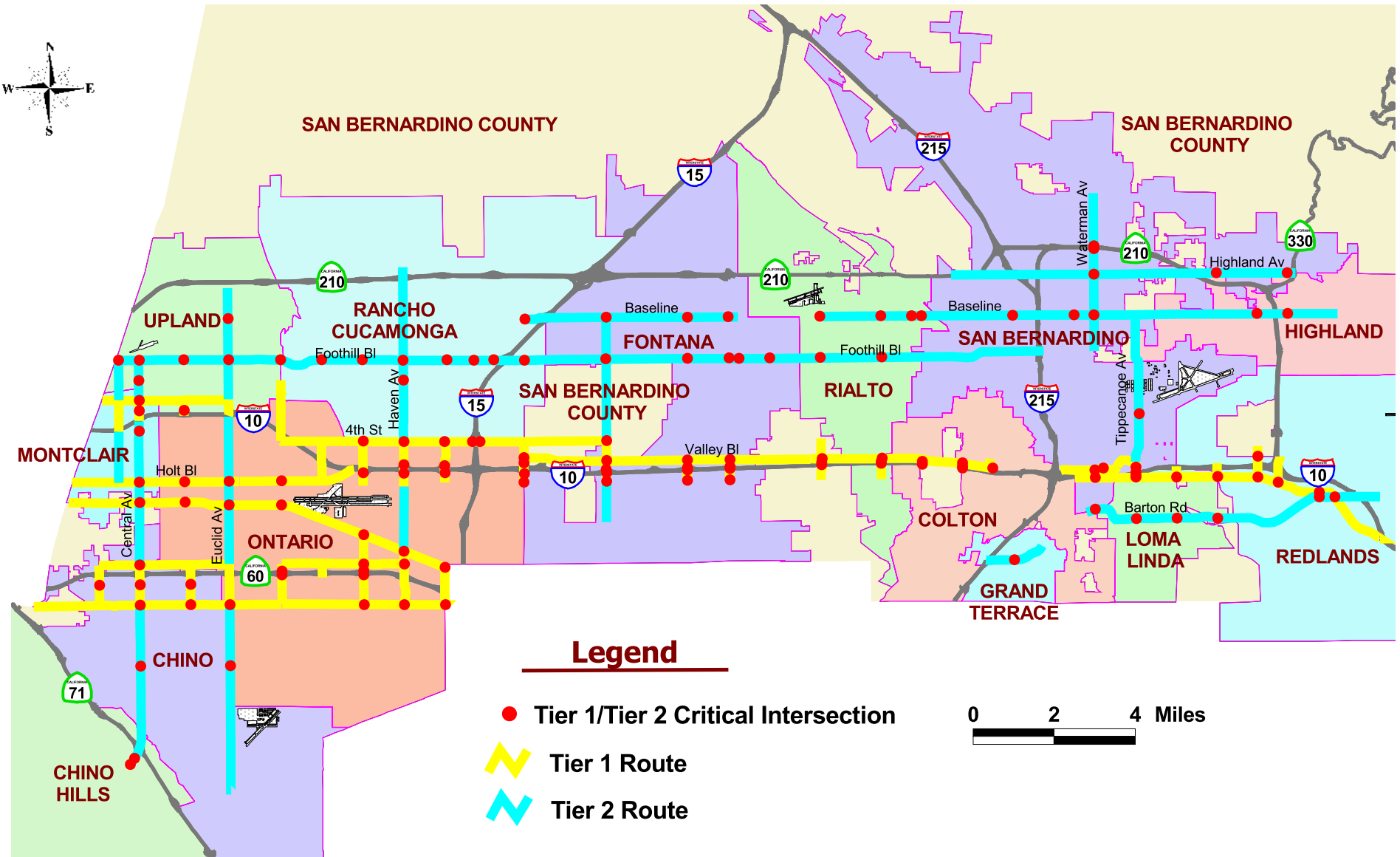


Exhibit IV-1b: List of Critical Intersections

No.	Location
Caltrans (27 Locations)	
1	Archibald Ave @ SR-60 EB Ramps
2	Archibald Ave @ SR-60 WB Ramps
3	Cedar Ave @ Foothill Blvd
4	Cedar Ave @ I-10 EB Ramps
5	Cedar Ave @ I-10 WB Ramps
6	Central Ave @ Foothill Blvd
7	Cherry Ave @ I-10 EB Ramps
8	Cherry Ave @ I-10 WB Ramps
9	Citrus Ave @ I-10 EB Ramps
10	Citrus Ave @ I-10 WB Ramps
11	Euclid Ave @ Edison Ave
12	Euclid Ave @ Holt Blvd
13	Euclid Ave @ Mission Blvd
14	Euclid Ave @ Riverside Dr
15	Grove Ave @ Foothill Blvd
16	Grove Ave @ SR-60 EB Ramps
17	Grove Ave @ SR-60 WB Ramps
18	Haven Ave @ I-10 EB Ramps
19	Haven Ave @ I-10 WB Ramps
20	Hospital Ln/Carnegie Dr @ I-10 WB Ramps
21	Milliken Ave @ I-10 EB Ramps
22	Milliken Ave @ I-10 WB Ramps
23	Monte Vista Ave @ Foothill Blvd
24	Mountain Ave @ Foothill Blvd
25	Riverside Ave @ Foothill Blvd
26	Waterman Ave @ 30th St
27	Waterman Ave @ EB SR 210 Ramps
Chino (7 Locations)	
28	Central Ave @ Edison Ave
29	Central Ave @ Philadelphia St
30	Central Ave @ Riverside Dr
31	Central Ave @ Walnut Ave
32	Mountain Ave @ Riverside Dr
33	Mountain Ave @ Walnut Ave
34	Ramona Ave @ Walnut Ave

Exhibit IV-1b: List of Critical Intersections
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No.	Location
Chino Hills (2 Locations)	
35	Soquel Canyon Pkwy @ Butterfield Ranch Rd/Los Serranos Country Club Dr
36	Soquel Canyon Pkwy @ Pomona Rincon Rd
Colton (3 Locations)	
37	Valley Blvd @ 9th St
38	Valley Blvd @ Pepper Ave
39	Valley Blvd @ Rancho Ave
Fontana (14 Locations)	
40	Alder Ave @ Foothill Blvd
41	Cherry Ave @ Baseline Ave
42	Cherry Ave @ Foothill Blvd
43	Cherry Ave @ Slover Ave
44	Cherry Ave @ Valley Blvd
45	Citrus Ave @ Baseline Ave
46	Citrus Ave @ Foothill Blvd
47	Citrus Ave @ Slover Ave
48	Citrus Ave @ Valley Blvd
49	Mango Ave @ Foothill Blvd
50	Sierra Ave @ Baseline Ave
51	Sierra Ave @ Foothill Blvd
52	Sierra Ave @ Slover Ave
53	Sierra Ave @ Valley Blvd
Grand Terrace (1 Location)	
54	Mount Vernon Ave @ Barton Rd
Highland (2 Locations)	
55	Base Line St @ Boulder Ave
56	Base Line St @ Palm Ave
Loma Linda (5 Locations)	
57	Barton Rd @ Anderson St
58	Barton Rd @ California St
59	Mountain View Ave @ Barton Rd
60	Mountain View Ave @ Redlands Blvd
61	Tippecanoe Ave @ Redlands Blvd

Exhibit IV-1b: List of Critical Intersections
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No.	Location
Montclair (4 Locations)	
62	Central Ave @ Arrow Highway (8th St)
63	Central Ave @ Holt Blvd
64	Central Ave @ Moreno St
65	Central Ave @ Palo Verde St
Ontario (14 Locations)	
66	Archibald Ave @ Mission Blvd
67	Archibald Ave @ Philadelphia St
68	Archibald Ave @ Riverside Dr
69	Etiwanda Ave @ Airport Dr/Slover Ave
70	Grove Ave @ 4th St
71	Grove Ave @ Holt Blvd
72	Grove Ave @ Mission Blvd
73	Haven Ave @ 4th St
74	Haven Ave @ Mission Blvd
75	Haven Ave @ Philadelphia St
76	Milliken Ave @ 4th St
77	Milliken Ave @ Mission Blvd
78	Mountain Ave @ Holt Blvd
79	Mountain Ave @ Mission Blvd
Rancho Cucamonga (11 Locations)	
80	Archibald Ave @ 4th St
81	Archibald Ave @ Foothill Blvd
82	East Ave @ Base Line Rd
83	Etiwanda Ave @ Base Line Rd
84	Etiwanda Ave @ Foothill Blvd
85	Foothill Blvd @ Day Creek Blvd
86	Haven Ave @ Arrow Rte
87	Haven Ave @ Foothill Blvd
88	Milliken Ave @ Foothill Blvd
89	Rochester Ave @ Foothill Blvd
90	Vineyard Ave @ Foothill Blvd

Exhibit IV-1b: List of Critical Intersections
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No.	Location
Redlands (7 Locations)	
91	Alabama St @ Lugonia Ave
92	Alabama St @ Redlands Blvd
93	California St @ Redlands Blvd
94	Orange St @ Citrus Ave
95	Orange St @ Redlands Blvd
96	Redlands Blvd @ Citrus Ave
97	Tennessee St @ Redlands Blvd
Rialto (5 Locations)	
98	Baseline Rd @ Cedar Ave/Ayala Dr
99	Baseline Rd @ Eucalyptus Ave
100	Baseline Rd @ Pepper Ave
101	Baseline Rd @ Riverside Ave
102	Valley Blvd @ Riverside Ave
San Bernardino City (9 Locations)	
103	Boulder Ave @ Highland Ave
104	Mount Vernon Ave @ Base Line St
105	Tippecanoe Ave @ Laurelwood Dr/Harriman Pl
106	Victoria Ave @ Highland Ave
107	Waterman Ave @ Barton Rd/Washington St
108	Waterman Ave @ Base Line St
109	Waterman Ave @ Highland Ave
110	Waterman Ave @ Hospitality Ln
111	Waterman Ave @ Redlands Blvd
San Bernardino County (3 Locations)	
112	Cedar Ave @ Valley Blvd
113	Central Ave @ Mission Blvd
114	Cherry Ave @ San Bernardino Ave (W) (4th Street)
Upland (2 Locations)	
115	Mountain Ave @ 7th St
116	Euclid Ave @ Foothill Blvd

The capacity and intersection operational analyses conducted for critical intersections allowed the project team to identify what specific movements need additional signal phase time, as well as to quantify queuing and congestion, both to evaluate available storage for right and left turns and to develop alternatives to provide additional capacity for improved traffic signal coordination along project arterials.

System Cycle Lengths

The system cycle length determination is extremely important, as the cycle length must be optimal to achieve maximum benefits. The project team conducted detailed capacity and delay analyses at critical intersections using Highway Capacity Manual based delay optimization routines to help establish system and subsystem cycle lengths. Understanding traffic patterns, natural barriers, and what was optimum given the characteristics of a certain time period were all important in evaluating if local, arterial or system-wide optimization was desired.

Based on a review of existing traffic volumes and patterns, an analysis of critical intersections, results of signal system timing optimization utilizing Synchro and WEBSTER software for various time periods, and an evaluation of crossing arterial traffic signal coordination systems, cycle length groupings were developed for the AM, Midday, and PM peak periods. Cycle lengths of 90 seconds and 100 seconds were predominant, with some selected areas operating as low as 65-70 seconds, and some others at 110-120 second cycle lengths. Results of these analyses are graphically displayed on Exhibits IV-2, IV-3 and IV-4, respectively.

Exhibit IV-2: AM Period Coordination System Cycle Lengths

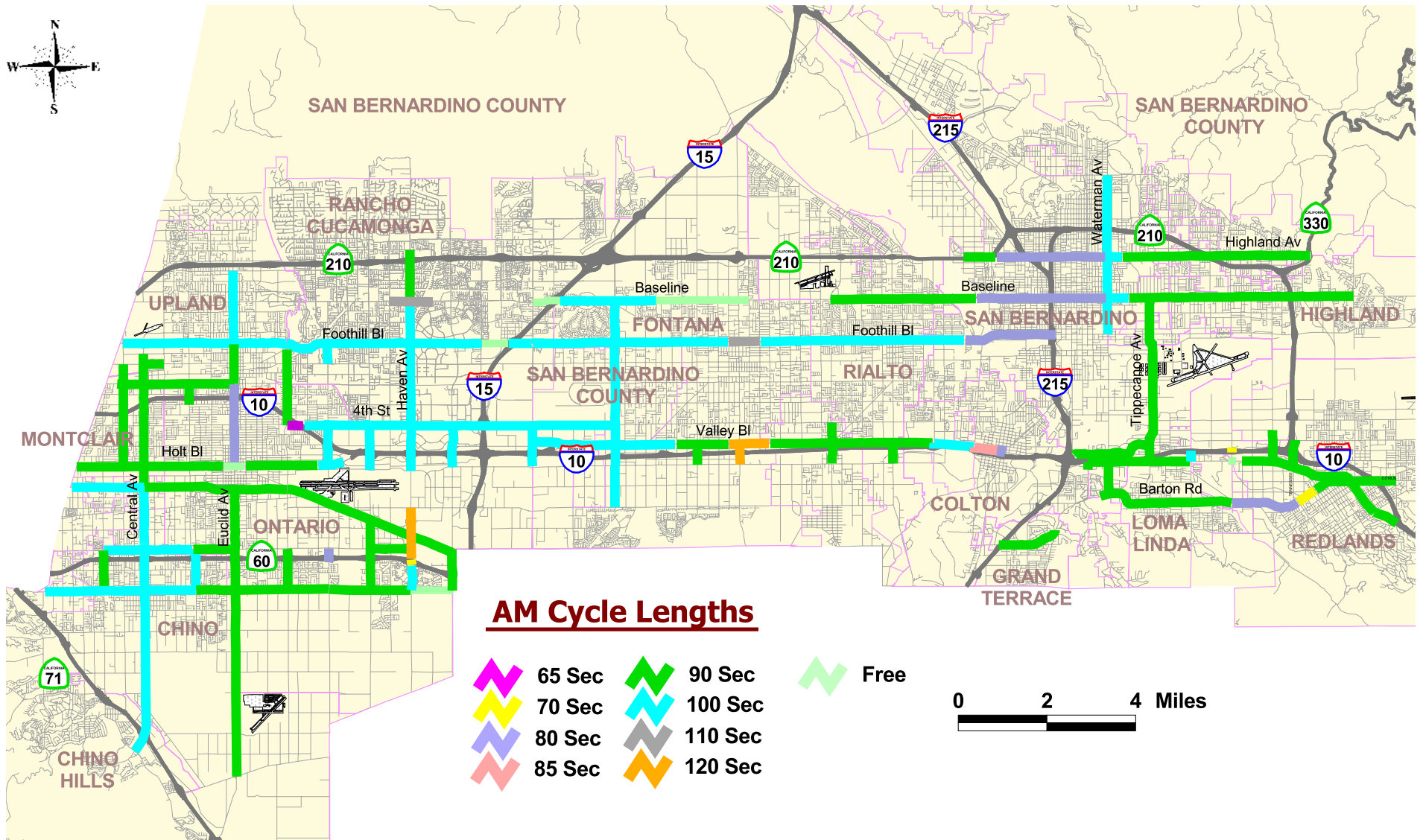


Exhibit IV-3: MD Period Coordination System Cycle Lengths

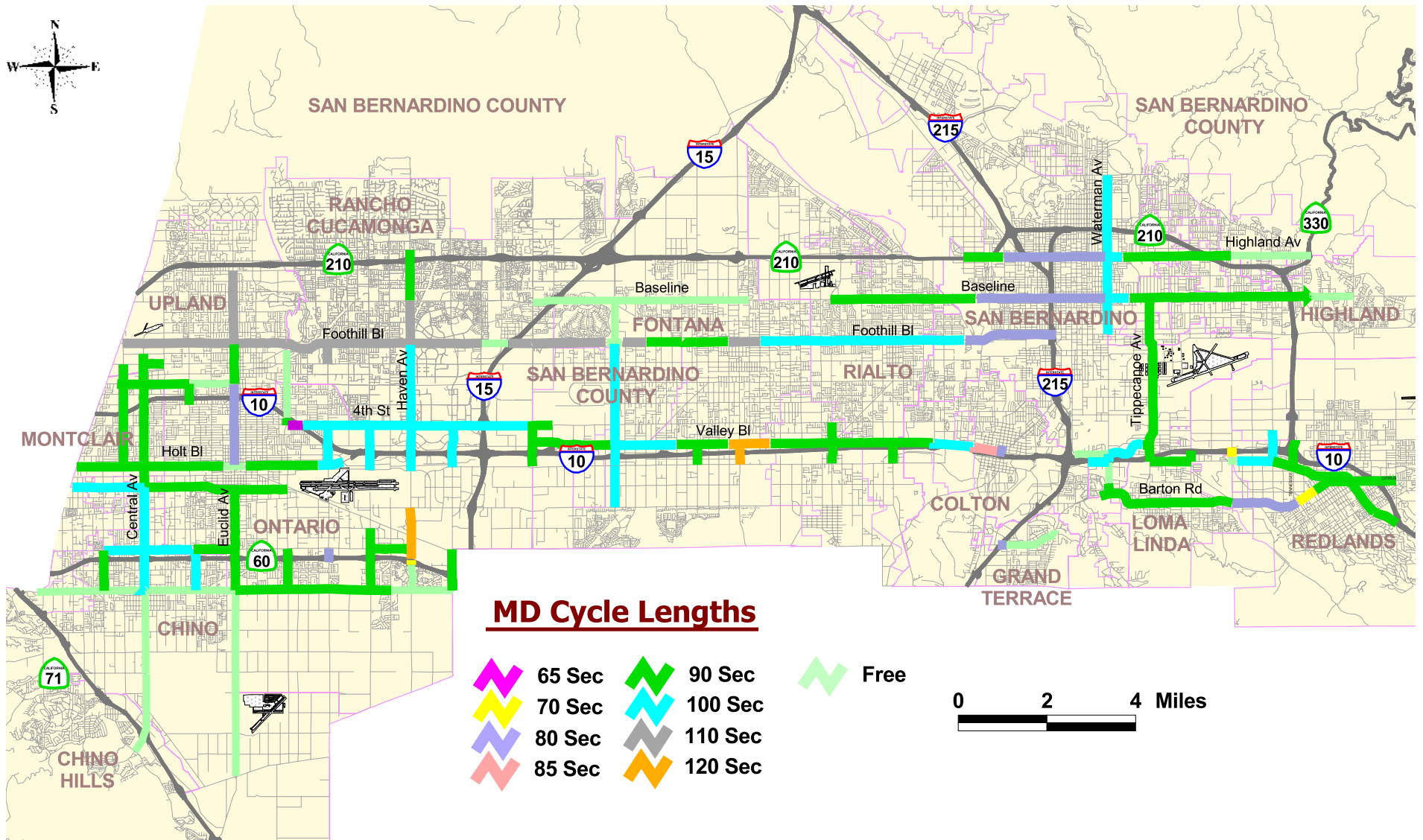
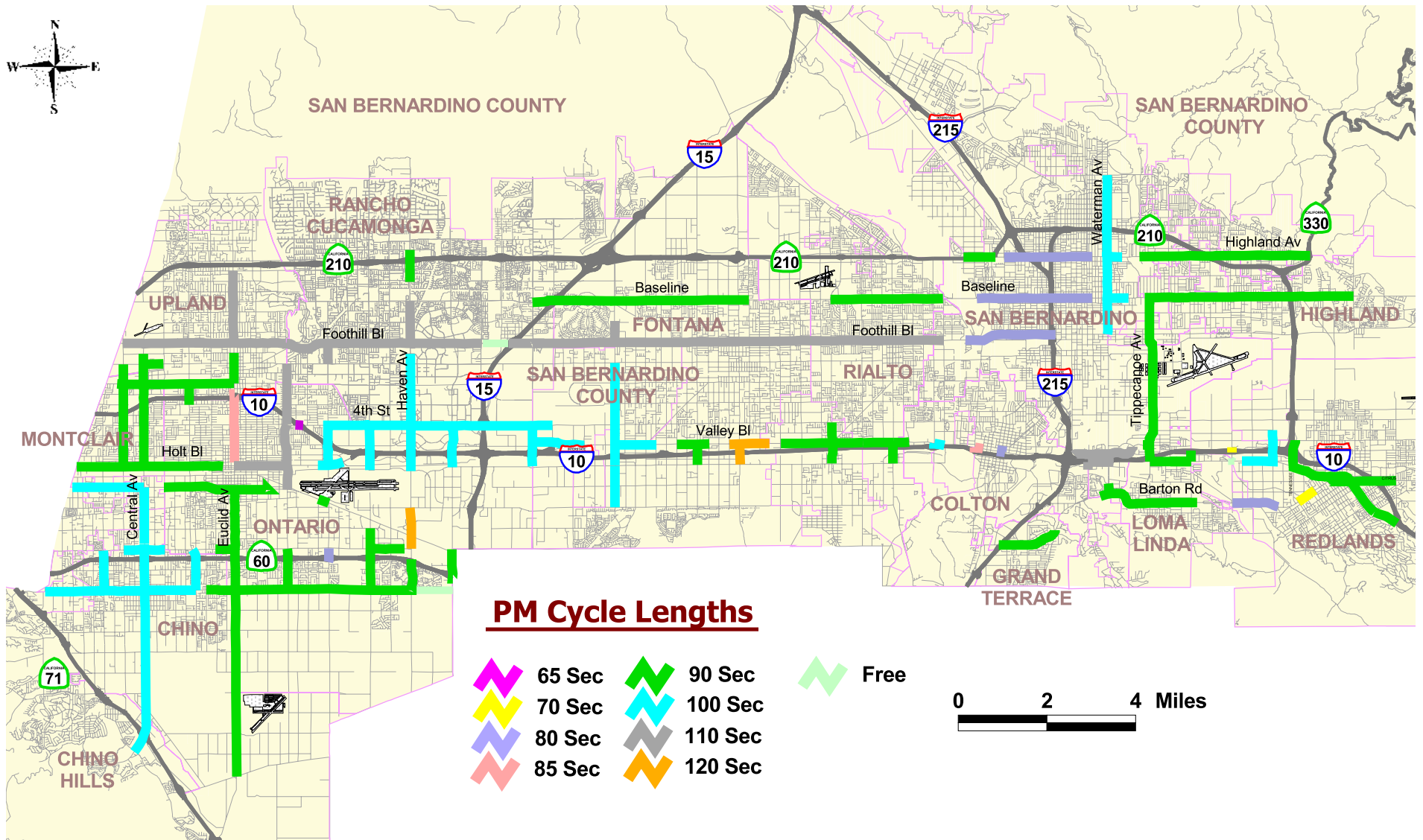


Exhibit IV-4: PM Period Coordination System Cycle Lengths



Coordination signal timing parameters were developed using several traffic engineering software programs including Synchro, SimTraffic, Webster, and Time-Space Platoon Progression Draft. Lead-lag signal phasing was recommended at certain locations with protected left-turn phasing to provide improved arterial band-width during peak hours. Double (or half) cycles were used at minor intersections to minimize delays to side streets.

Several different coordination signal timing plans were developed to accommodate weekday AM, midday and PM peak hour, and weekend and off-peak traffic conditions at selected locations. After initial development of all signal timing plans, they were submitted to the appropriate city, the County and/or Caltrans for review. Plans were revised as required, and any necessary new signal controller timing sheets were developed. Time-space diagrams were prepared for all coordination timing plans.

After coordinated signal timing plan development and appropriate agency approval, the new signal timing plans were implemented, either from each agency's central computer or directly in the field. The signal timing implementations were completed in late 2008. Appendix C provides a detailed listing of coordination system cycle lengths and the signal coordination schedule for each project signal. The intersections are grouped by agency and arterial.

One key item to note during implementation is that while the use of WWV or GPS time source receivers eliminates the possibility of inconsistencies in the various local and master controller internal clocks, it was critical that all the cities, the County and Caltrans agreed to synchronize the system clocks at a common agreed upon time (midnight daily), so that the offset reference

time is the same for all systems. A common time base is critical for successful multijurisdictional signal coordination, whenever cycle lengths are anything other than 60 seconds.

The newly implemented coordinated signal timings were fine-tuned and adjustments were made based on field observations during all coordination periods. Signal system monitoring and additional fine-tuning of coordination signal timing plans has continued since the initial implementations of optimized timings, and will continue through June 2011. The extended monitoring of signal timings is essential in ensuring that the San Bernardino Valley coordination system is maintained.

It should be noted that extensive cooperation from agency personnel was very critical in accomplishing a successful multi-jurisdictional traffic signal synchronization project.

V. “Before” and “After” Study Results

Travel Times, Number of Stops and Average Speeds

“Before” and “After” studies were conducted to evaluate improvements along project arterials with the implementation of new signal timing parameters and various associated hardware enhancements. Measurements for the “before” condition were completed generally in Fall 2007, and “after” condition in Fall 2008/Spring 2009. “Before” field studies were conducted for the AM and PM peak periods for which coordinated signal timing plans were developed. Measures of Effectiveness (MOE) parameters, which provide a quantitative basis for determining traffic signal coordination benefits, include number of stops, travel times, and average speeds. MOE’s were compiled via field measurements using the floating-car technique. According to the floating-car technique, the driver floats with the traffic by passing as many vehicles as pass the test car. An average of five floating car runs was conducted for each arterial for each direction for each signal coordination time period. The Project Team also conducted an “after” field study for each peak period for which coordinated signal timing plans were developed. The “after” study was conducted similar to the “before” study and contained the same MOE parameters. The MOEs were then compared to determine the improvements in efficiency of traffic flow resulting from the multi-jurisdictional traffic signal coordination.

The Tier 1 & 2 Project resulted in a significant reduction in travel times, number of stops, and average speed on the coordinated arterials. System-wide average improvements amount to an approximate 22% reduction in travel time, approximate 47% reduction in number of stops, and

over 27% improvement in average speed. System-wide average improvements, by arterial, are summarized in Exhibit V-1. The results of the “before” and “after” studies for each project arterial are presented in Exhibits V-2 a & b through V-31 a & b. Project arterials are listed alphabetically, and results are shown for both directions of travel (eastbound/westbound or northbound/southbound) for both the AM and PM peak periods. Results are presented in both table and graph formats. It should be noted that the results presented do not include changes in side street delay at minor intersections, which was determined to be negligible, given the relative traffic volumes of the side streets compared to the project arterials.

The development and implementation of optimized coordination signal timing on a multi-jurisdictional basis, coupled with appropriate traffic signal controller and communication equipment upgrades at project intersections, resulted in improved operations on project arterials. The use of common coordination system cycle lengths, a common time base achieved via GPS time source units, and successful implementations and fine-tunings of optimized signal timings were also critical. Since many of the project arterials had many jurisdictional changes, it was important to coordinate and time signals as if they operate as one single system. Coordination and support from all participating agencies was essential, particularly Caltrans as the project involved several Caltrans locations including the freeway ramp traffic signals at the 48 freeway interchanges. As noted above, there was a very significant reduction (47%) in number of stops. This is due in part to the coordination of signals across jurisdictional boundaries and indicates the tremendous benefit of multi-jurisdictional coordination projects. In addition to saving motorists time, such a reduction in stops can be associated with an improvement in safety, as it is well known that stops are always a safety issue.

"Before and After" Study Results
Exhibit V-1: Systemwide Average Improvements

Arterial	Agency(s)	Distance (Miles)	Number of Signals	Average Improvements (AM/PM)		
				Travel Time	Number of Stops	Average Speed
4th Street (Vineyard Ave - Barrington Ave)	ONT, RCA, CAT	4.6	17	20%	48%	27%
Alabama Street (Industrial Park - Citrus Plaza)	RED,SBO,CAT	0.5	6	46%	66%	35%
Archibald Avenue (4th Street -Guasti Rd)	ONT, RCA, CAT	0.9	4	15%	30%	17%
Archibald Avenue (Riverside Dr - Francis St)	ONT	1.5	8	21%	54%	30%
Arrow Hwy/8th Street (Monte Vista Ave - Euclid Ave)	MONT, UPL	2.7	8	7%	29%	8%
Barton Road (Preston St - I-215 Ramps)	GTX, CAT	1.2	6	30%	80%	44%
Baseline Street (I-15 SB Ramps - Almeria Avenue)	RCA, FON, CAT	3.2	16	9%	28%	11%
Baseline Street (Cedar Ave - Walgreens)	RIA, SBC, HIL, CAT	11.6	42	11%	43%	13%
Cedar Avenue (San Bernardino Ave - Slover Ave)	SBO, CAT	1	7	25%	37%	42%
Central Avenue (Arrow Rte - Chino Hills Pkwy)	UPL, MONT, SBO, CHINO, CAT	8.1	33	25%	57%	25%
Euclid Avenue (11th Street - Riverside Drive)	ONT, UPL, CAT	5.8	26	16%	42%	19%
Foothill Boulevard (Monte Vista Ave - Masi Dr)	UPL/RCA	8.6	32	27%	66%	37%
Foothill Boulevard (Almeria Ave - Meridian Ave)	RIA, FON, CAT	6.4	25	14%	40%	18%
Grove Avenue (Philadelphia St - Riverside Dr)	ONT, CAT	1	6	31%	67%	46%
Haven Avenue (19th St - Riverside Dr)	ONT, RCA, CAT	7.8	28	13%	33%	15%
Highland Avenue (Medical Center Dr - SR 330 Ramps)	SBC, CAT, HIL	7.6	31	15%	36%	18%
Holt Boulevard (Amherst Ave - Mountain Ave)	MONT, ONT	2.4	7	20%	52%	26%
Hospitality Lane (Hunts Lane - Harriman Pl)	SBC, CAT	1.1	8	20%	41%	31%
Milliken Avenue (4th Street - I-10 Ramps)	ONT, CAT	0.8	5	12%	23%	15%
Monte Vista Ave (Holt Blvd - Richton St)	MONT, CAT	2.2	11	12%	31%	13%
Mountain Avenue (8th St - I-10 Ramps)	UPL, CAT	0.4	5	26%	48%	22%
Mountain Avenue (Riverside Dr - Philadelphia St)	ONT, CHINO, CAT	1	6	37%	74%	62%
Redlands Boulevard (New Jersey St - Highland Ave)	RED	3.7	17	23%	62%	31%
Riverside Avenue (San Bernardino Ave - Slover Ave)	RIA, CAT	1	7	39%	49%	66%
Riverside Drive (Reservoir St - Fern Ave)	CHINO	4.4	17	11%	50%	13%
Tennessee Street (Redlands Blvd - Lugonia Ave)	RED, CAT	0.7	5	14%	46%	15%
Tippecanoe Avenue (Redlands Blvd - 5th Street)	LLA, SBC, SBO, CAT	3.2	14	8%	56%	9%
Vineyard Avenue (4th Street - Holt Blvd)	ONT, CAT	1	7	15%	46%	19%
Vineyard Avenue (Philadelphia St - Pep boys)	ONT, CAT	0.3	5	19%	32%	22%
Washington/Barton Road (Weir Rd - Cajon St/Orange St)	SBC, LLA, RED	5.9	17	14%	51%	16%
Systemwide Average Improvement: (Weighted Average)				22%	47%	27%

CAT - Caltrans, CHINO - City of Chino, CHINOH - City of Chino Hills, COL - City of Colton, FON - City of Fontana, GTX - City of Grand Terrace, HIL - City of Highland, LLA - City of Loma Linda, MOT - City of Montclair, ONT - City of Ontario, RCA - City of Rancho Cucamonga, RED - City of Redlands, RIA - City of Rialto, SBC - City of San Bernardino, SBO - County of San Bernardino, UPL - City of Upland.

"Before and After" Study Results
Exhibit V-2a: 4th Street
(Vineyard Avenue - Barrington Avenue)

<div style="display: inline-block; transform: rotate(-45deg);">Direction Time Period</div>	Eastbound						Westbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	9.61	7.00	5.0	1.0	28.76	39.34	10.03	10.12	5.8	5.4	27.52	27.21
AM Improvement (%)	27%		80%		37%		1%		7%		0%	
PM Period	11.76	8.77	7.0	2.8	23.50	31.40	12.52	9.07	8.2	4.0	22.05	30.37
PM Improvement (%)	25%		60%		34%		28%		51%		38%	

Length (miles): 4.6

Number of Signals: 17

Number of Agencies: 3

Average Corridor-wide Improvements:

Combined Average of Eastbound and Westbound

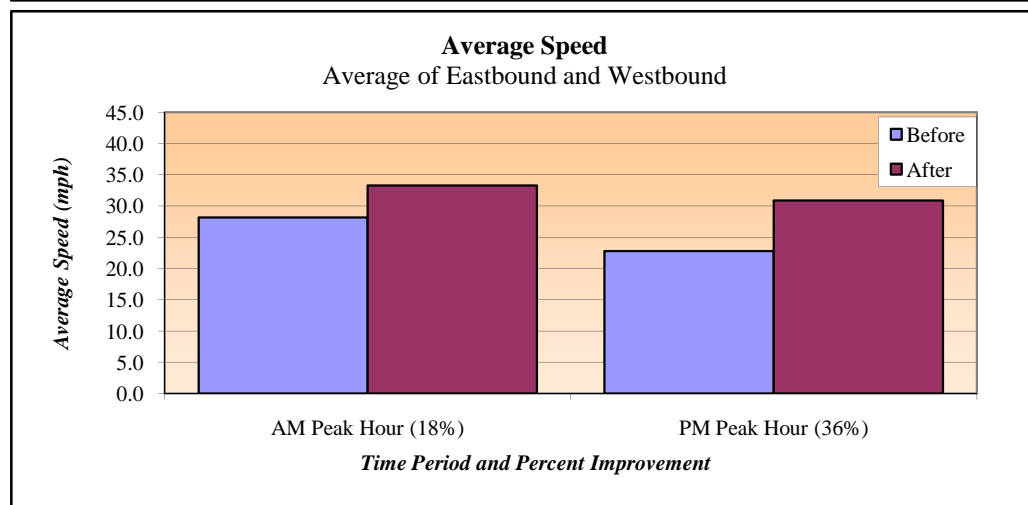
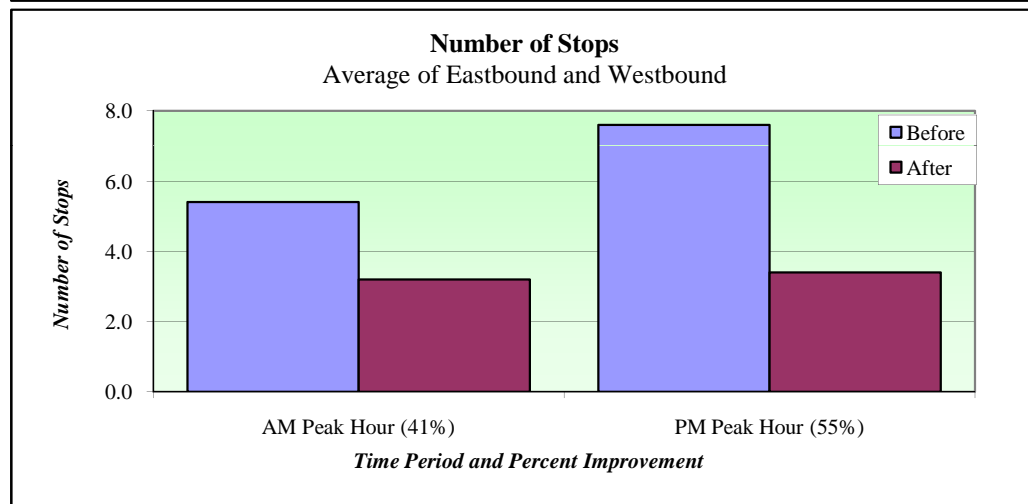
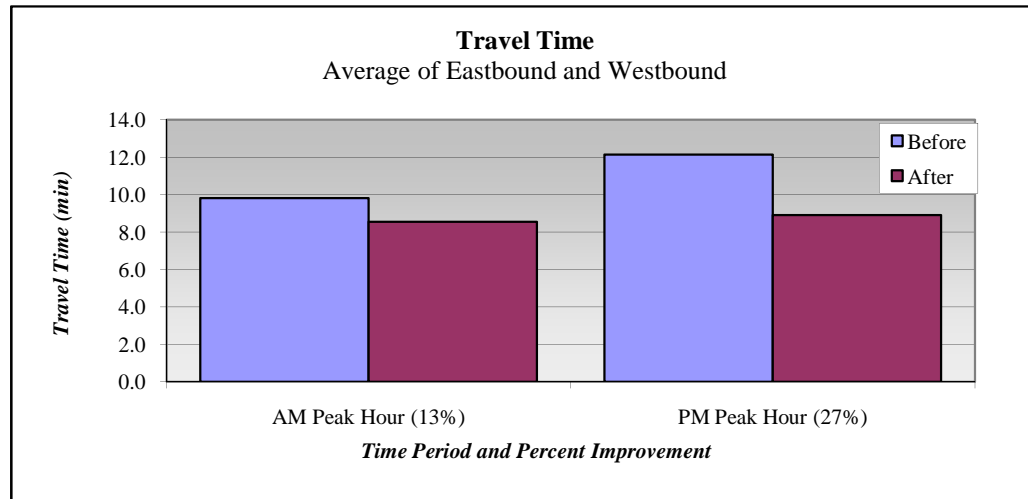
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	13%	41%	18%
<i>PM Peak Hour</i>	27%	55%	36%
Average Improvements:	20%	48%	27%

Agencies operating traffic signals along this corridor: Ontario, Rancho Cucamonga, Caltrans

Before Study was conducted on 10/16/07 and 10/17/07.

After Study was conducted on 09/30/08 and 10/02/08.

"Before and After" Study Results
Exhibit V-2b: 4th Street
(Vineyard Avenue - Barrington Avenue)



"Before and After" Study Results
Exhibit V-3a: Alabama Street
(Redlands Boulevard - Lugonia Avenue)

<div style="text-align: center;"> Direction Time Period </div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	2.75	1.38	3.0	0.6	11.26	22.46	2.34	1.44	1.8	0.6	19.68	21.94
AM Improvement (%)	50%		80%		99%		38%		67%		11%	
PM Period	3.77	1.82	4.0	1.0	12.29	17.01	3.81	2.23	3.0	2.0	12.03	13.95
PM Improvement (%)	52%		75%		38%		41%		33%		16%	

Length (miles): 0.5

Number of Signals: 6

Number of Agencies: 3

Average Corridor-wide Improvements:

Combined Average of Northbound and Southbound

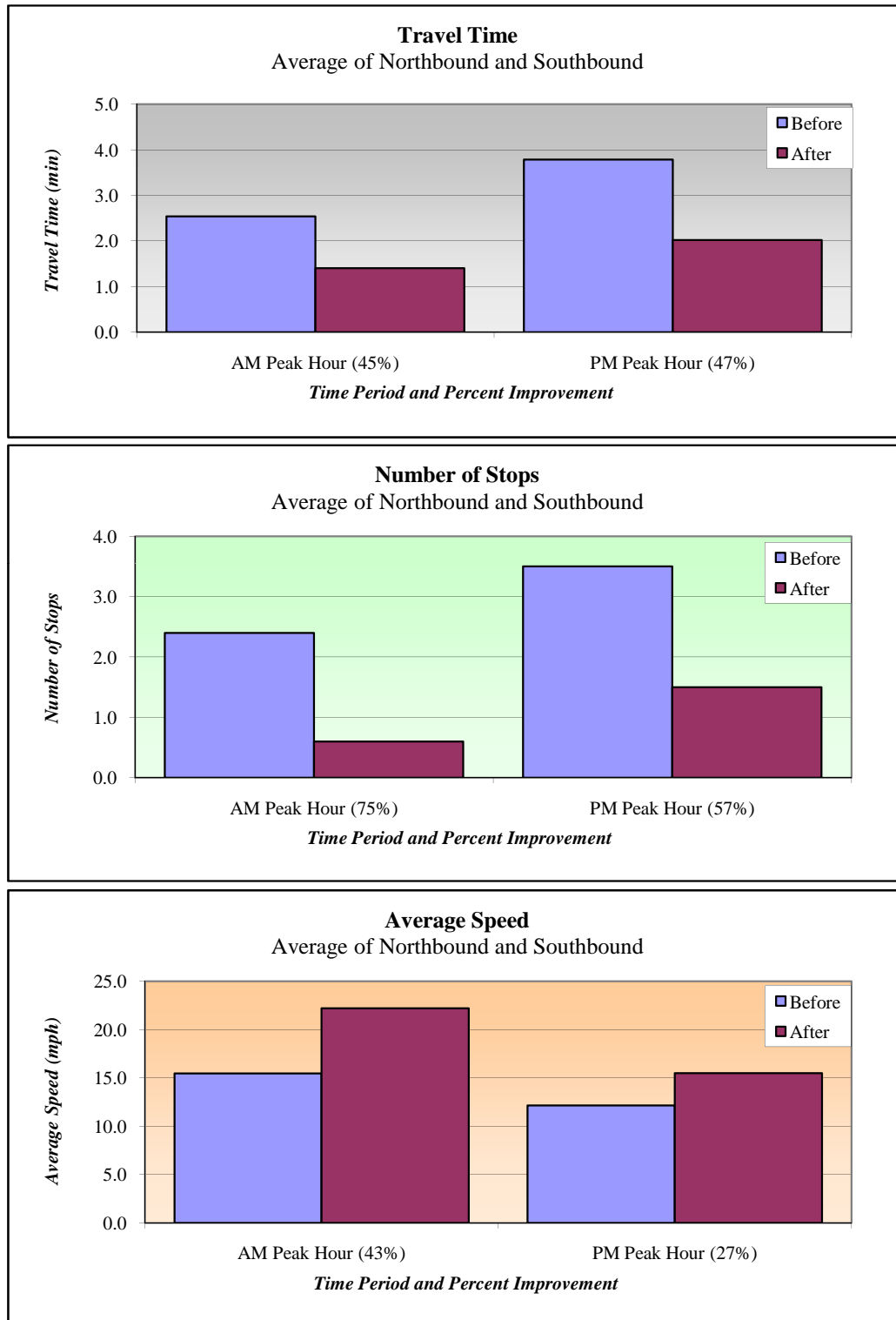
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	45%	75%	43%
<i>PM Peak Hour</i>	47%	57%	27%
Average Improvements:	46%	66%	35%

Agencies operating traffic signals along this corridor: Redlands, San Bernardino County, Caltrans

Before Study was conducted on 11/27/07 and 12/06/07.

After Study was conducted on 02/11/09.

"Before and After" Study Results
Exhibit V-3b: Alabama Street
(Redlands Boulevard - Lugonia Avenue)



"Before and After" Study Results
Exhibit V-4a: Archibald Avenue
(4th Street - Guasti Road)

<div style="display: inline-block; transform: rotate(-45deg);">Direction Time Period</div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	2.13	1.98	1.6	1.0	24.81	26.74	2.07	1.89	1.4	1.2	25.56	27.53
AM Improvement (%)	7%		38%		8%		9%		14%		8%	
PM Period	2.82	2.27	2.0	1.6	18.80	23.07	2.71	2.09	2.2	1.2	19.38	24.92
PM Improvement (%)	20%		20%		23%		23%		45%		29%	

Length (miles): 0.9

Number of Signals: 4

Number of Agencies: 3

Average Corridor-wide Improvements

Combined Average of Northbound and Southbound

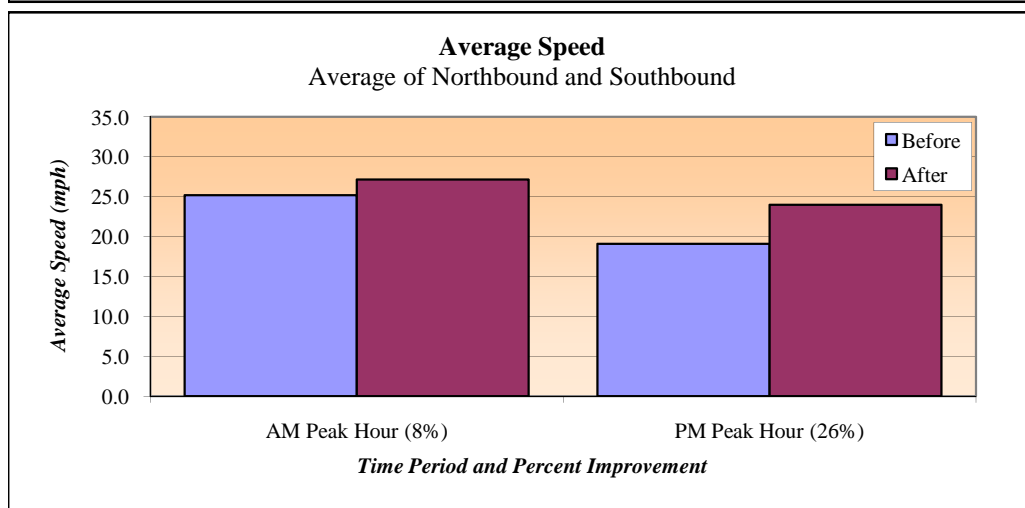
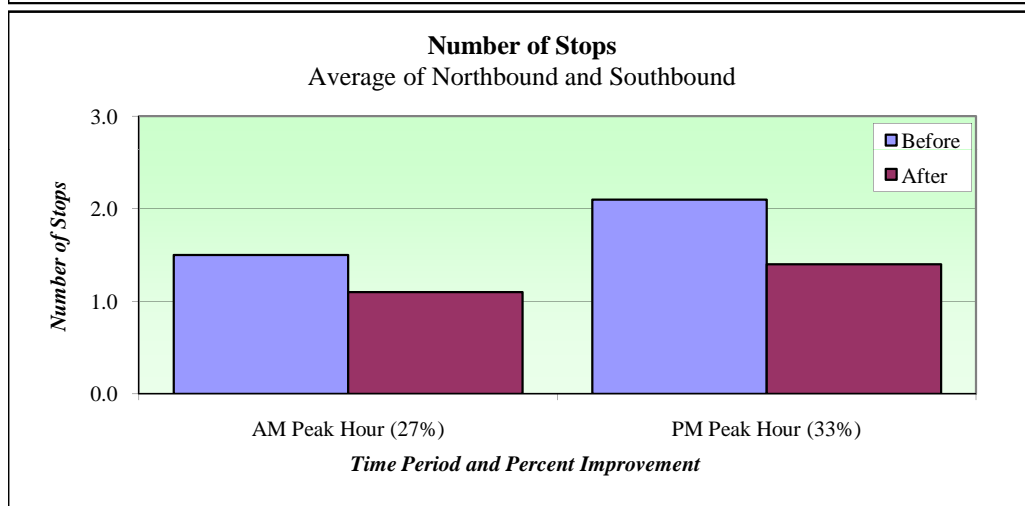
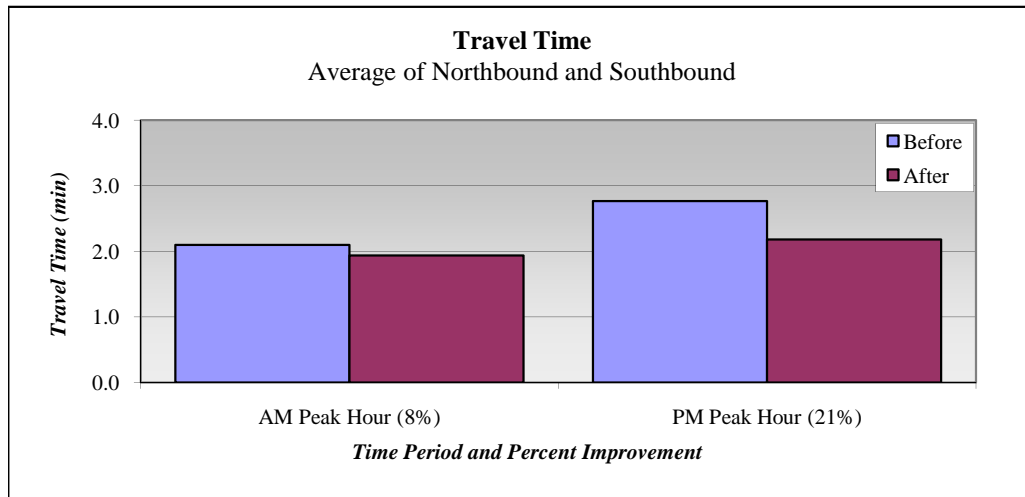
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	8%	27%	8%
<i>PM Peak Hour</i>	21%	33%	26%
Average Improvements:	15%	30%	17%

Agencies operating traffic signals along this corridor: Ontario, Rancho Cucamonga, Caltrans

Before Study was conducted on 10/25/07.

After Study was conducted on 10/01/08, 10/02/08, and 01/08/09.

"Before and After" Study Results
Exhibit V-4b: Archibald Avenue
(4th Street - Guasti Road)



"Before and After" Study Results
Exhibit V-5a: Archibald Avenue
(Riverside Drive - Francis Street)

<div style="text-align: center;"> Direction Time Period </div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	3.85	2.48	2.4	0.6	23.01	36.87	3.29	3.02	2.2	1.4	26.98	30.04
AM Improvement (%)	36%		75%		60%		8%		36%		11%	
PM Period	3.65	3.10	2.6	1.2	24.26	29.48	4.33	3.36	4.3	2.2	20.44	27.04
PM Improvement (%)	15%		54%		22%		22%		49%		32%	

Length (miles): 1.5

Number of Signals: 8

Number of Agencies: 1

Average Corridor-wide Improvements:

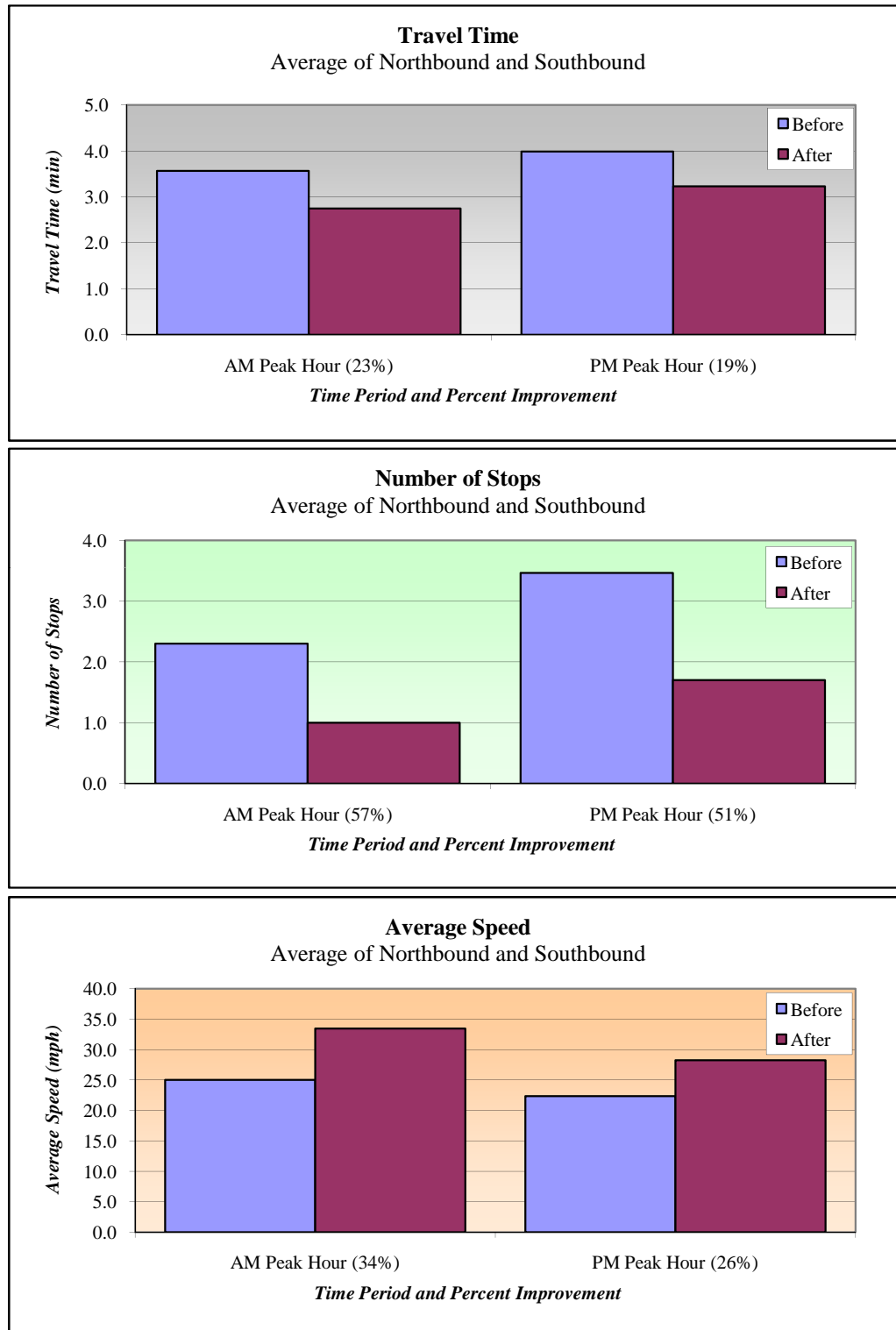
Combined Average of Northbound and Southbound

	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	23%	57%	34%
<i>PM Peak Hour</i>	19%	51%	26%
Average Improvements:	21%	54%	30%

Agencies operating traffic signals along this corridor: Ontario

After Study was conducted on 01/13/09, 01/14/09 and 01/15/09.

"Before and After" Study Results
Exhibit V-5b: Archibald Avenue
(Riverside Drive - Francis Street)



"Before and After" Study Results
Exhibit V-6a: Arrow Highway/8th Street
(Monte Vista Avenue - Euclid Avenue)

<div style="display: inline-block; transform: rotate(-45deg);">Direction Time Period</div>	Eastbound						Westbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	6.61	6.00	4.0	2.6	24.71	27.07	6.46	5.45	3.2	2.2	25.27	29.83
AM Improvement (%)	9%		35%		10%		16%		31%		18%	
PM Period	6.28	6.21	3.8	3.0	25.90	26.14	6.10	5.87	3.2	2.2	26.64	27.66
PM Improvement (%)	1%		20%		1%		4%		31%		4%	

Length (miles): 2.7

Number of Signals: 8

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Eastbound and Westbound

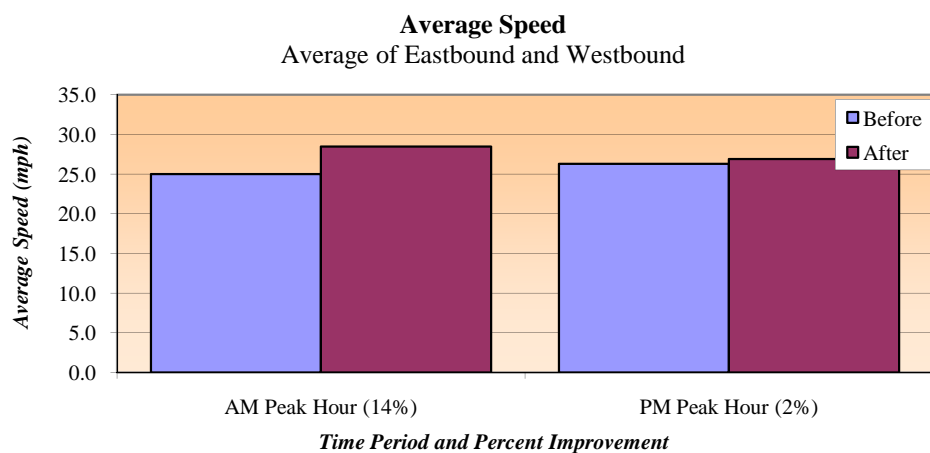
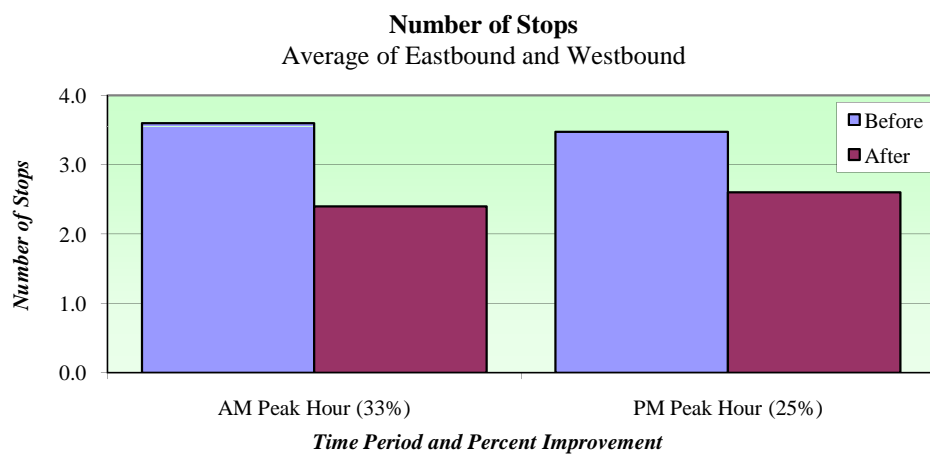
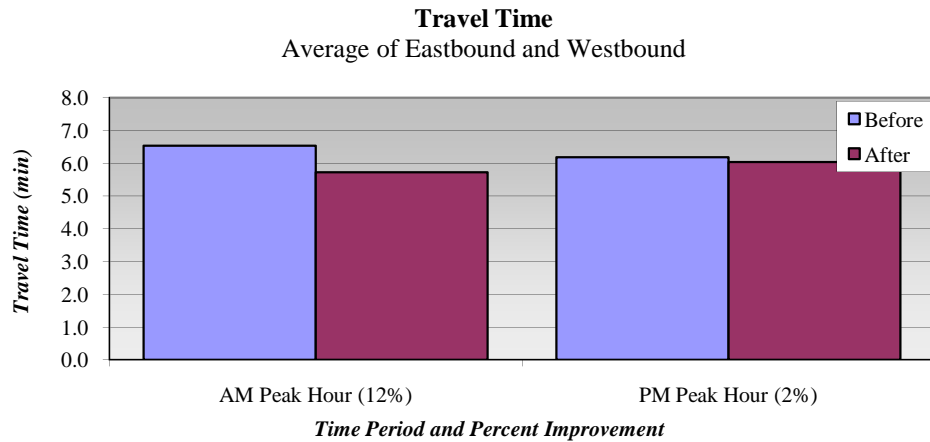
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	12%	33%	14%
<i>PM Peak Hour</i>	2%	25%	2%
Average Improvements:	7%	29%	8%

Agencies operating traffic signals along this corridor: Upland, Montclair

Before Study was conducted on 10/09/07, 10/11/07, and 10/16/07.

After Study was conducted on 12/11/08.

"Before and After" Study Results
Exhibit V-6b: Arrow Highway/8th Street
(Monte Vista Avenue - Euclid Avenue)



"Before and After" Study Results
Exhibit V-7a: Barton Road
(Preston Street - I-215 Ramps)

<div style="display: inline-block; transform: rotate(-45deg);">Direction Time Period</div>	Eastbound						Westbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	2.70	1.96	1.6	0.0	27.61	38.25	2.79	2.04	1.2	0.6	26.69	36.84
AM Improvement (%)	27%		100%		39%		27%		50%		38%	
PM Period	3.01	2.02	1.4	0.0	24.82	36.87	3.07	2.03	1.8	0.6	24.27	36.93
PM Improvement (%)	33%		100%		49%		34%		67%		52%	

Length (miles): 1.2

Number of Signals: 6

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Eastbound and Westbound

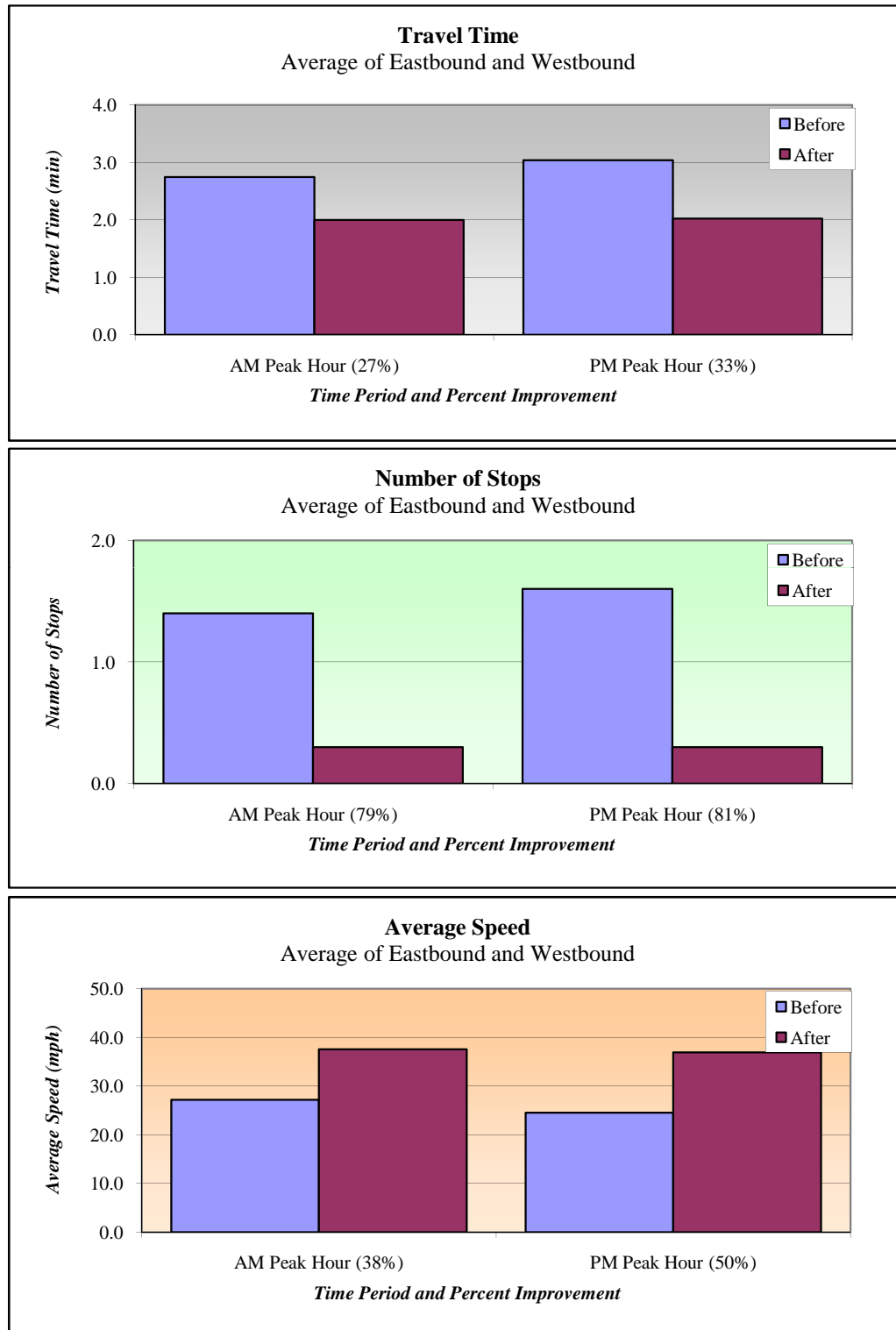
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	27%	79%	38%
<i>PM Peak Hour</i>	33%	81%	50%
Average Improvements:	30%	80%	44%

Agencies operating traffic signals along this corridor: Grand Terrace, Caltrans

Before Study was conducted on 10/03/07.

After Study was conducted on 01/06/09.

"Before and After" Study Results
Exhibit V-7b: Barton Road
(Preston Street - I-215 Ramps)



"Before and After" Study Results
Exhibit V- 8a: Baseline Street
(I-15 SB Ramps - Almeria Avenue)

<div style="text-align: center;"> Direction Time Period </div>	Eastbound						Westbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	7.07	6.64	5.2	4.6	27	29	6.88	6.55	4.6	3.0	28	29
AM Improvement (%)	6%		12%		7%		5%		35%		4%	
PM Period	6.84	5.53	4.0	2.0	28	35	7.45	6.93	4.8	3.8	26	28
PM Improvement (%)	19%		50%		24%		7%		21%		8%	

Length (miles): 3.2

Number of Signals: 16

Number of Agencies: 3

Average Corridor-wide Improvements:

Combined Average of Eastbound and Westbound

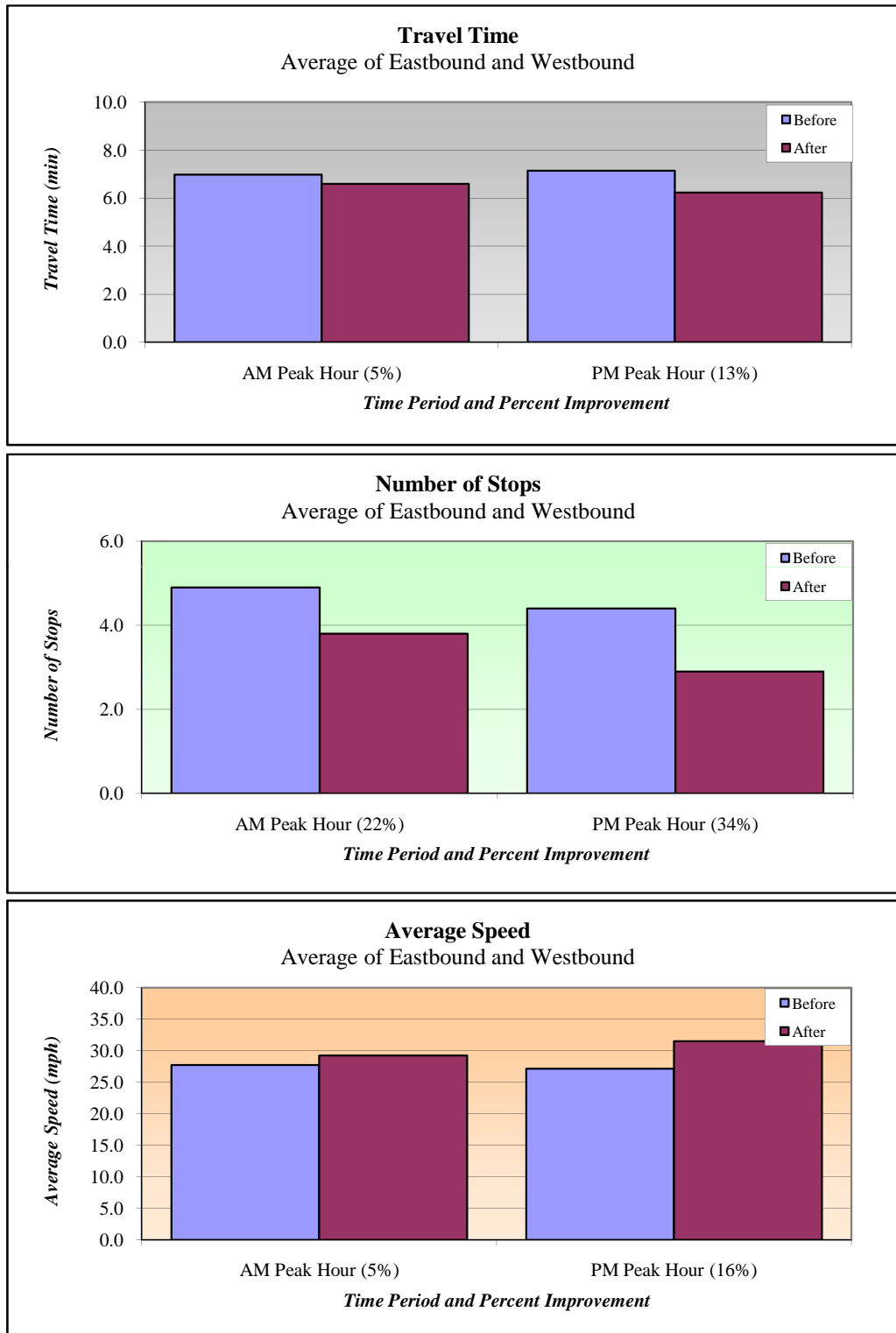
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	5%	22%	5%
<i>PM Peak Hour</i>	13%	34%	16%
Average Improvements:	9%	28%	11%

Agencies operating traffic signals along this corridor: Rancho Cucamonga, Fontana, Caltrans

Before Study was conducted on 11/07/07, and 11/08/07.

After Study was conducted on 5/14/09, and 5/19/09.

"Before and After" Study Results
**Exhibit V- 8b: Baseline Street
(I-15 SB Ramps - Almeria Avenue)**



"Before and After" Study Results
Exhibit V- 9a: Baseline Street
(Cedar Avenue - Walgreens)

<div style="text-align: center;"> Direction Time Period </div>	Eastbound						Westbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	27.45	24.63	17.8	12.0	25	28	26.58	25.58	18.2	12.0	26	27
AM Improvement (%)	10%		33%		11%		4%		34%		3%	
PM Period	27.66	23.60	18.4	8.2	25	30	28.48	23.72	17.4	8.4	25	29
PM Improvement (%)	15%		55%		17%		17%		52%		19%	

Length (miles): 11.6

Number of Signals: 42

Number of Agencies: 4

Average Corridor-wide Improvements:

Combined Average of Eastbound and Westbound

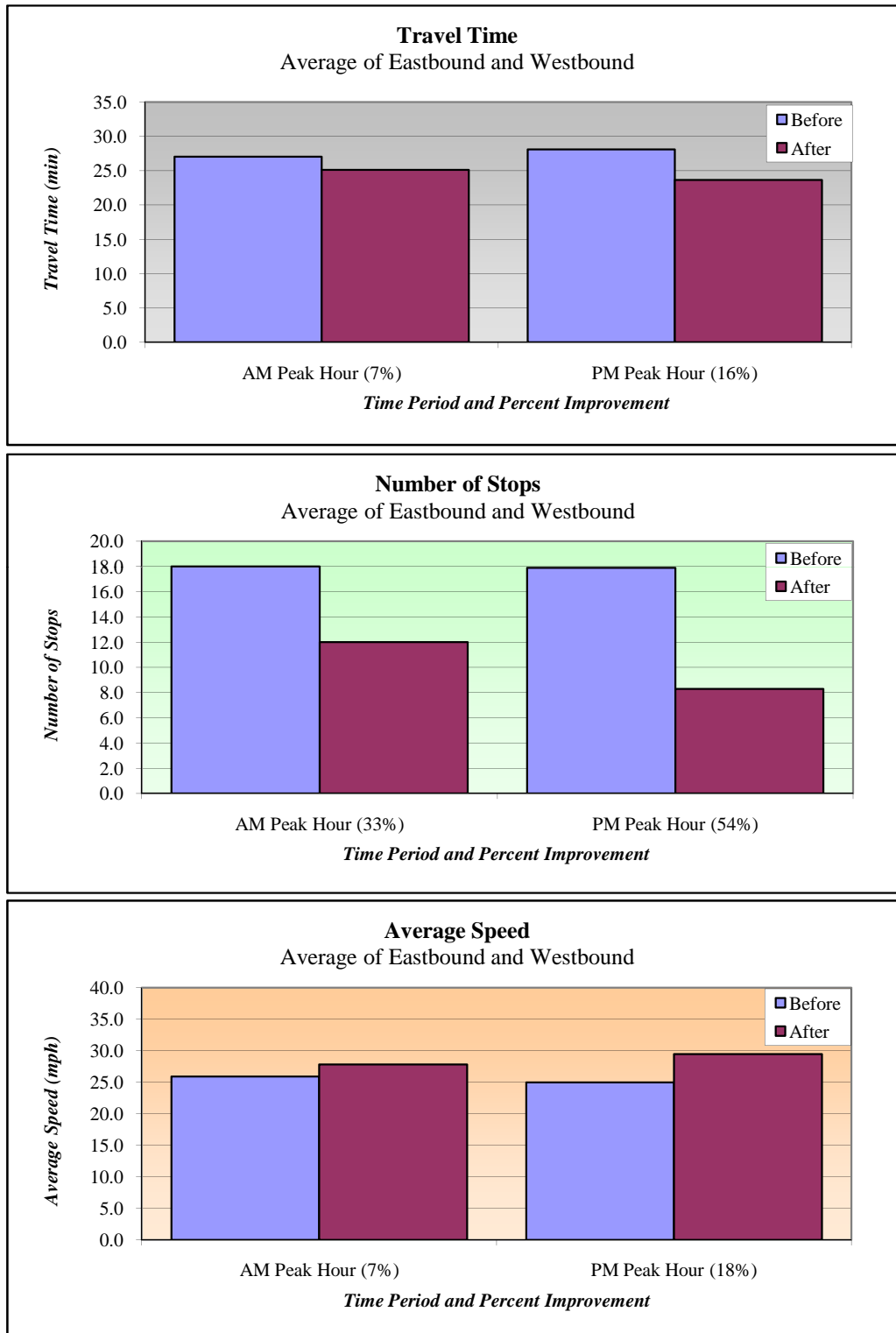
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
AM Peak Hour	7%	33%	7%
PM Peak Hour	16%	54%	18%
Average Improvements:	11%	43%	13%

Agencies operating traffic signals along this corridor: Rialto, San Bernardino City, Highland, Caltrans

Before Study was conducted on 12/4/07, 12/05/07, 12/10/07, 12/11/07, 12/12/07, 12/13/07, 12/18/07, 12/19/07, and 12/20/07.

After Study was conducted on 10/16/08, 10/21/08, and 10/22/08.

"Before and After" Study Results
Exhibit V- 9b: Baseline Street
(Cedar Avenue - Walgreens)



"Before and After" Study Results
Exhibit V- 10a: Cedar Avenue
(San Bernardino Avenue - Slover Avenue)

<div style="display: inline-block; transform: rotate(-45deg);">Direction Time Period</div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	3.59	3.40	3.0	2.4	17.03	17.79	4.11	3.73	4.2	3.5	14.94	16.28
AM Improvement (%)	5%		20%		4%		9%		17%		9%	
PM Period	8.64	5.10	9.0	5.0	7.06	11.88	4.11	2.23	4.8	1.0	14.90	27.15
PM Improvement (%)	41%		44%		68%		46%		79%		82%	

Length (miles): 1.0

Number of Signals: 7

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Northbound and Southbound

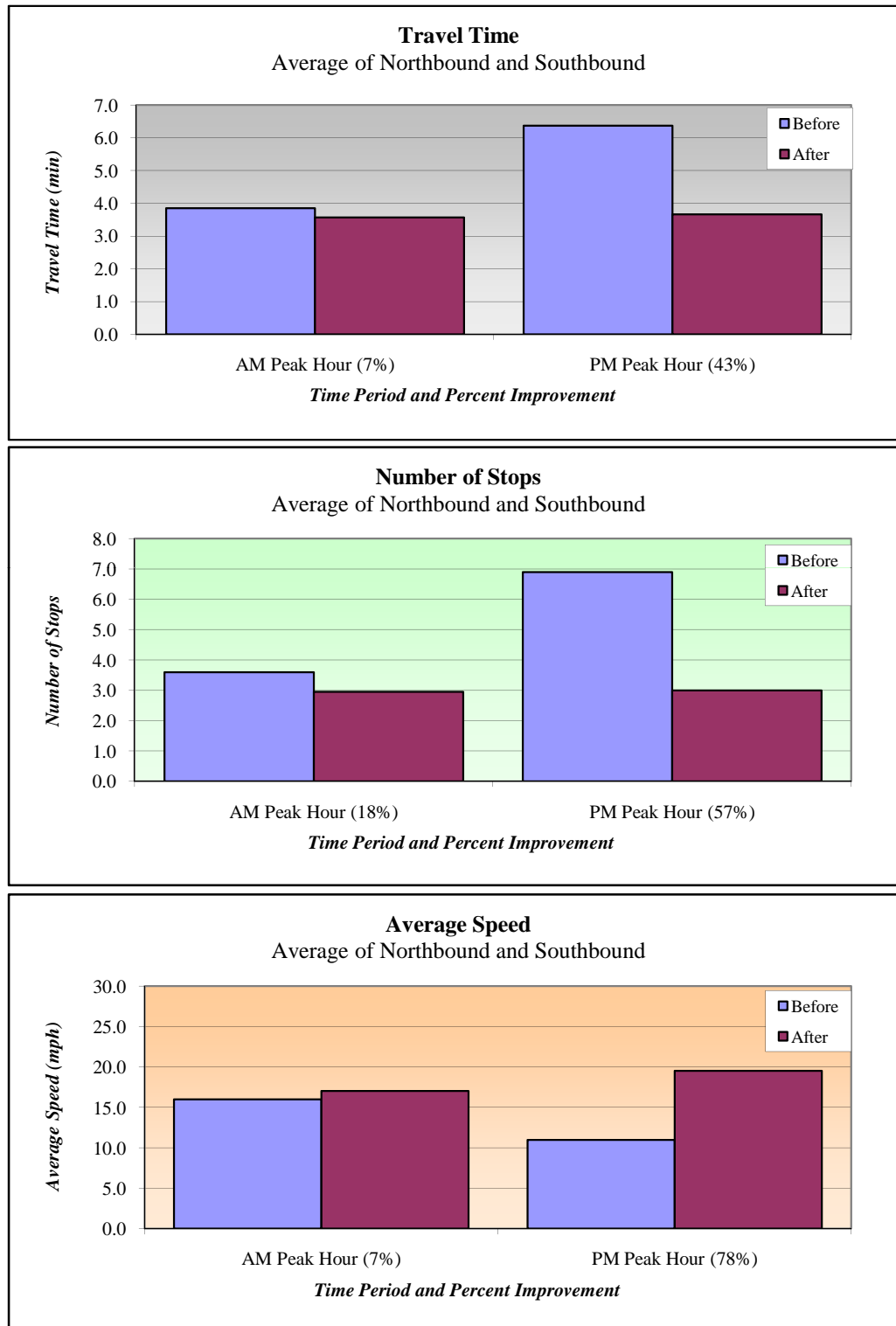
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	7%	18%	7%
<i>PM Peak Hour</i>	43%	57%	78%
Average Improvements:	25%	37%	42%

Agencies operating traffic signals along this corridor: San Bernardino County, Caltrans

Before Study was conducted on 11/07/07, and 12/11/07.

After Study was conducted on 04/09/09.

"Before and After" Study Results
Exhibit V- 10b: Cedar Avenue
(San Bernardino Avenue - Slover Avenue)



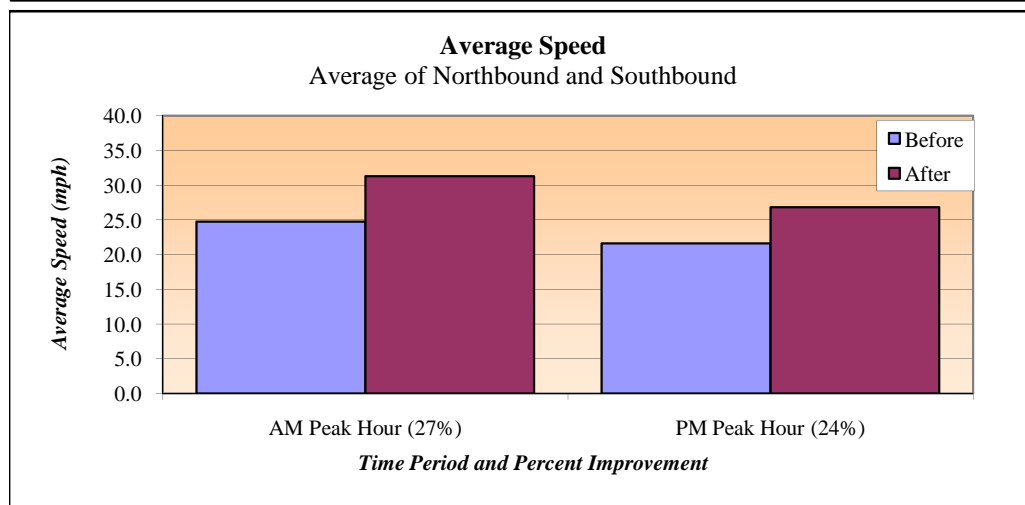
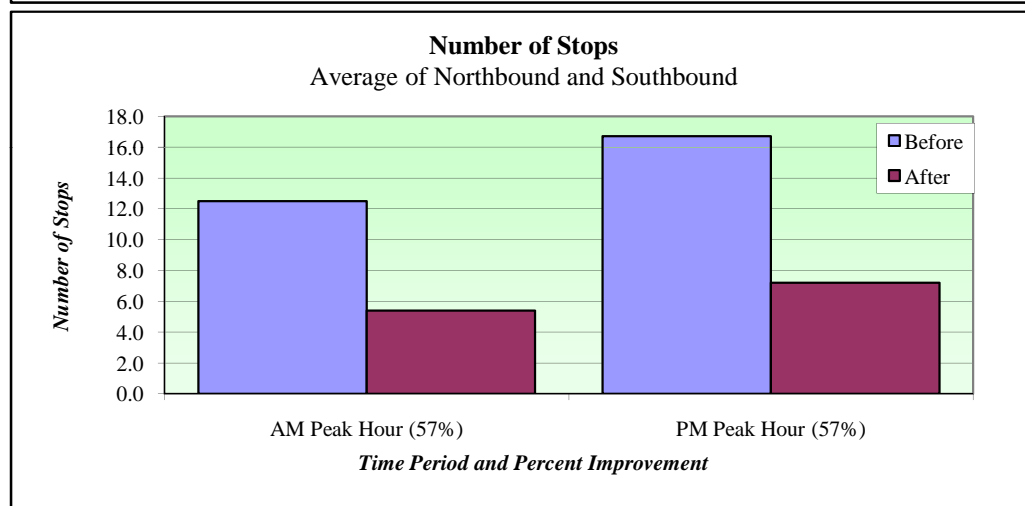
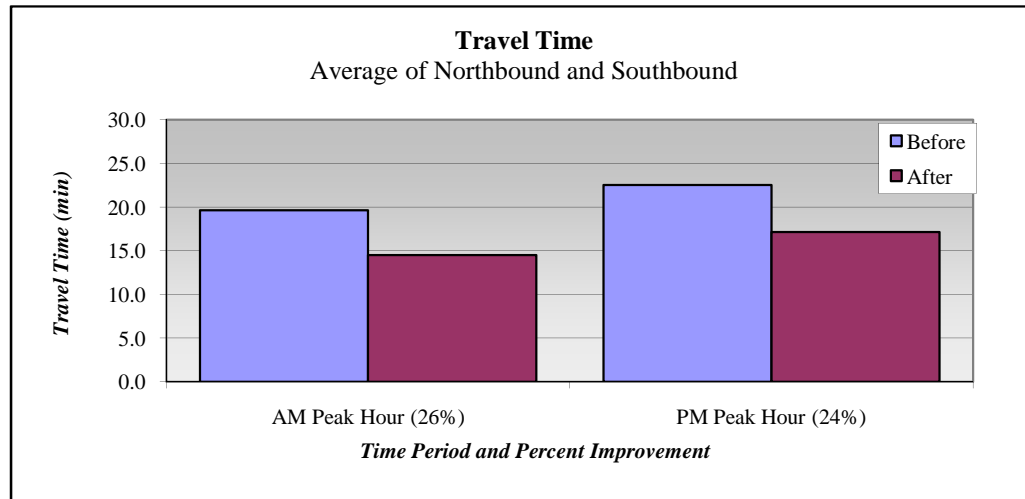
"Before and After" Study Results
Exhibit V- 11a: Central Avenue
(Arrow Route - Chino Hills Parkway)

<div>Direction</div> <div>Time Period</div>	Northbound						Southbound																					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)																	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After																
AM Period	19.39	15.24	12.0	6.6	25.07	29.75	19.90	13.82	13.0	4.2	24.38	32.81																
AM Improvement (%)	21%		45%		19%		31%		68%		35%																	
PM Period	23.78	18.26	18.2	8.8	20.43	25.44	21.33	16.07	15.2	5.6	22.74	28.21																
PM Improvement (%)	23%		52%		25%		25%		63%		24%																	
<div>Length (miles):8.1</div> <div>Number of Signals:33</div> <div>Number of Agencies:5</div> <div>Average Corridor-wide Improvements:</div> <div>Combined Average of Northbound and Southbound</div> <table><thead><tr><th></th><th>Travel Time</th><th>Number of Stops</th><th>Average Speed</th></tr></thead><tbody><tr><td>AM Peak Hour</td><td>26%</td><td>57%</td><td>27%</td></tr><tr><td>PM Peak Hour</td><td>24%</td><td>57%</td><td>24%</td></tr><tr><td>Average Improvements:</td><td>25%</td><td>57%</td><td>25%</td></tr></tbody></table> <div>Agencies operating traffic signals along this corridor: Upland, Montclair, San Bernardino County, Chino, Caltrans</div>														Travel Time	Number of Stops	Average Speed	AM Peak Hour	26%	57%	27%	PM Peak Hour	24%	57%	24%	Average Improvements:	25%	57%	25%
	Travel Time	Number of Stops	Average Speed																									
AM Peak Hour	26%	57%	27%																									
PM Peak Hour	24%	57%	24%																									
Average Improvements:	25%	57%	25%																									

Before Study was conducted on 10/03/2007, 10/04/2007, 10/09/07, 10/10/07 and 10/11/07.

After Study was conducted on 11/20/2008, 12/04/2008 and 12/09/2008.

"Before and After" Study Results
Exhibit V- 11b: Central Avenue
(Arrow Route - Chino Hills Parkway)



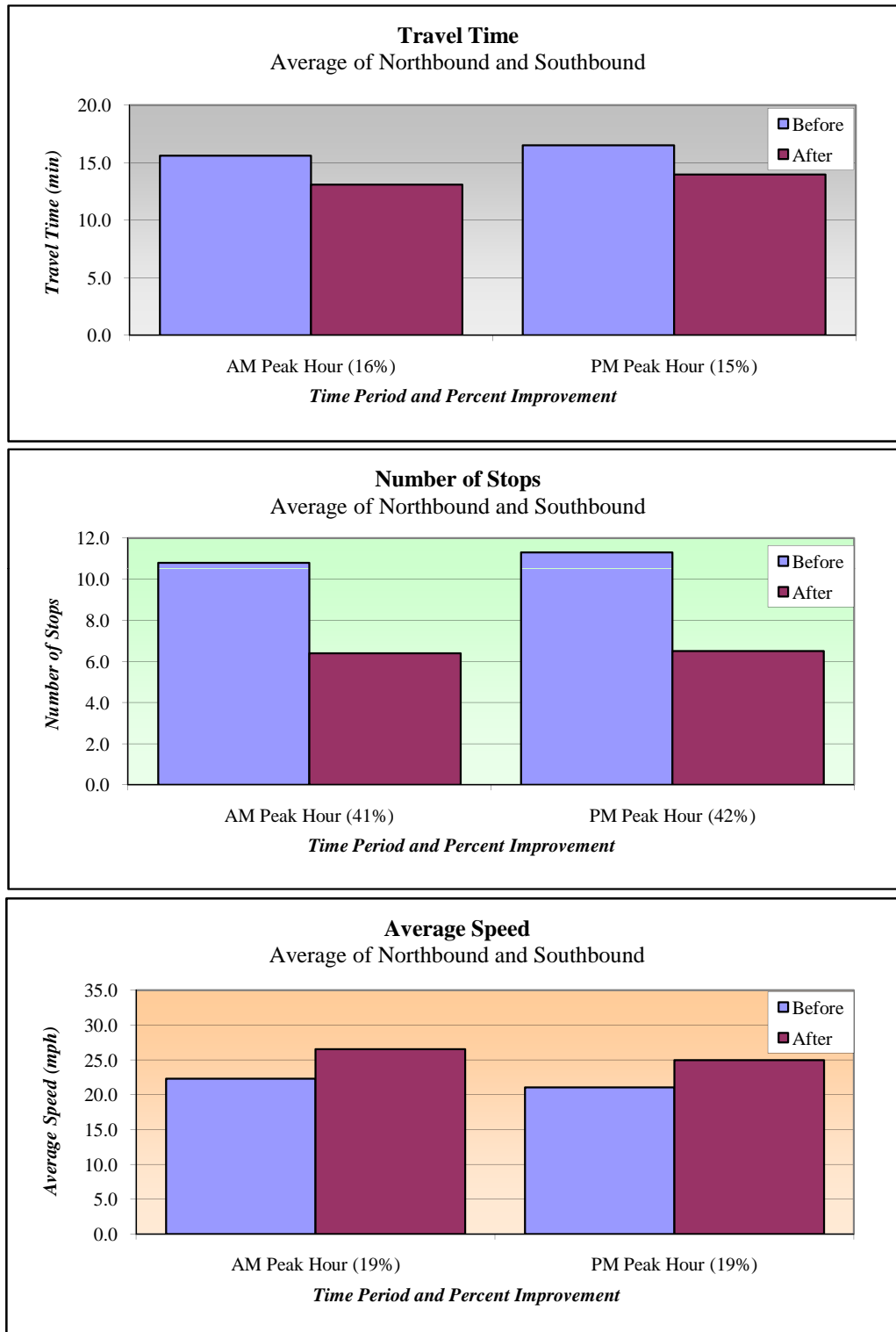
"Before and After" Study Results
Exhibit V- 12a: Euclid Avenue
(11th Street - Riverside Drive)

<div>Direction</div> <div>Time Period</div>	Northbound						Southbound																					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)																	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After																
AM Period	16.49	12.68	11.4	4.8	21.02	27.37	14.76	13.54	10.2	8.0	23.58	25.67																
AM Improvement (%)	23%		58%		30%		8%		22%		9%																	
PM Period	16.60	14.84	10.2	7.2	20.89	23.42	16.45	13.11	12.4	5.8	21.21	26.51																
PM Improvement (%)	11%		29%		12%		20%		53%		25%																	
<div>Length (miles):5.8</div> <div>Number of Signals:26</div> <div>Number of Agencies:3</div> <div>Average Corridor-wide Improvements:</div> <div>Combined Average of Northbound and Southbound</div> <table><thead><tr><th></th><th>Travel Time</th><th>Number of Stops</th><th>Average Speed</th></tr></thead><tbody><tr><td>AM Peak Hour</td><td>16%</td><td>41%</td><td>19%</td></tr><tr><td>PM Peak Hour</td><td>15%</td><td>42%</td><td>19%</td></tr><tr><td>Average Improvements:</td><td>16%</td><td>42%</td><td>19%</td></tr></tbody></table> <div>Agencies operating traffic signals along this corridor: Upland, Ontario, Caltrans</div>														Travel Time	Number of Stops	Average Speed	AM Peak Hour	16%	41%	19%	PM Peak Hour	15%	42%	19%	Average Improvements:	16%	42%	19%
	Travel Time	Number of Stops	Average Speed																									
AM Peak Hour	16%	41%	19%																									
PM Peak Hour	15%	42%	19%																									
Average Improvements:	16%	42%	19%																									

Before Study was conducted on 10/30/07, 10/31/07, 11/01/07, and 11/7/07.

After Study was conducted on 06/03/09, 06/10/09, and 06/11/09.

"Before and After" Study Results
Exhibit V- 12b: Euclid Avenue
(11th Street - Riverside Drive)



"Before and After" Study Results
Exhibit V - 13a: Foothill Boulevard
(Monte Vista Avenue - Masi Drive)

<div style="text-align: center;"> Direction Time Period </div>	Eastbound						Westbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	19.93	14.42	13.0	2.6	26.07	36.06	18.03	14.81	9.2	3.4	28.67	34.92
AM Improvement (%)	28%		80%		38%		18%		63%		22%	
PM Period	25.79	18.66	17.4	8.2	20.14	27.89	24.23	16.31	15.2	5.4	21.34	31.73
PM Improvement (%)	28%		53%		38%		33%		64%		49%	

Length (miles): 8.6

Number of Signals: 32

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Eastbound and Westbound

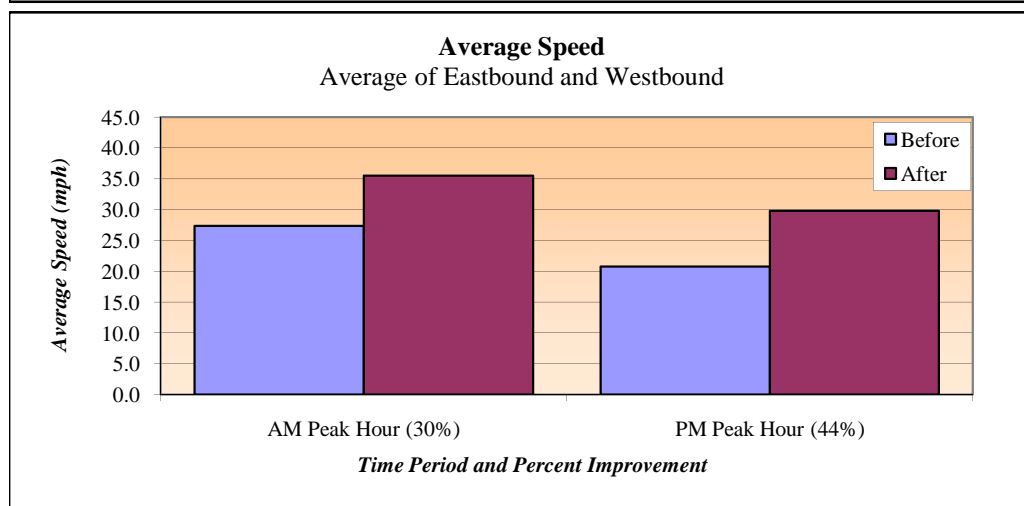
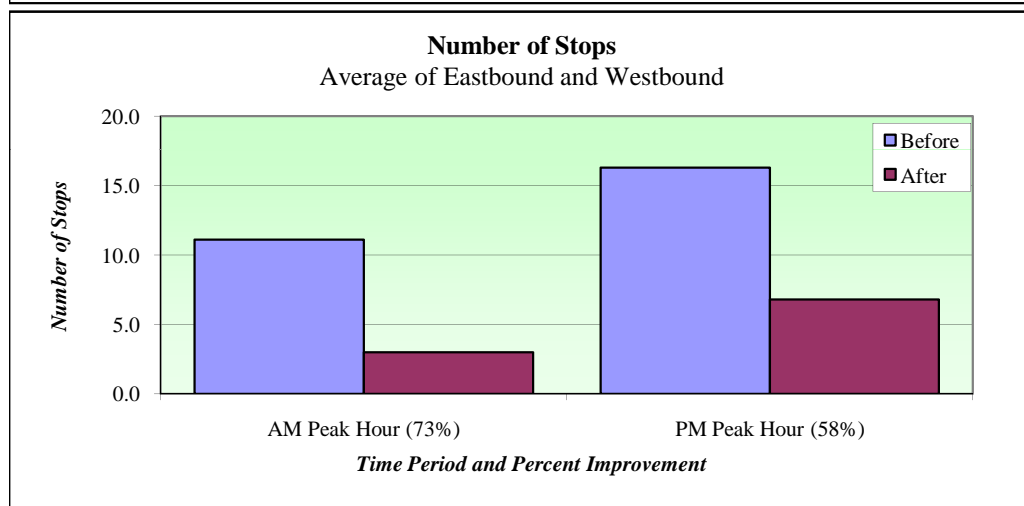
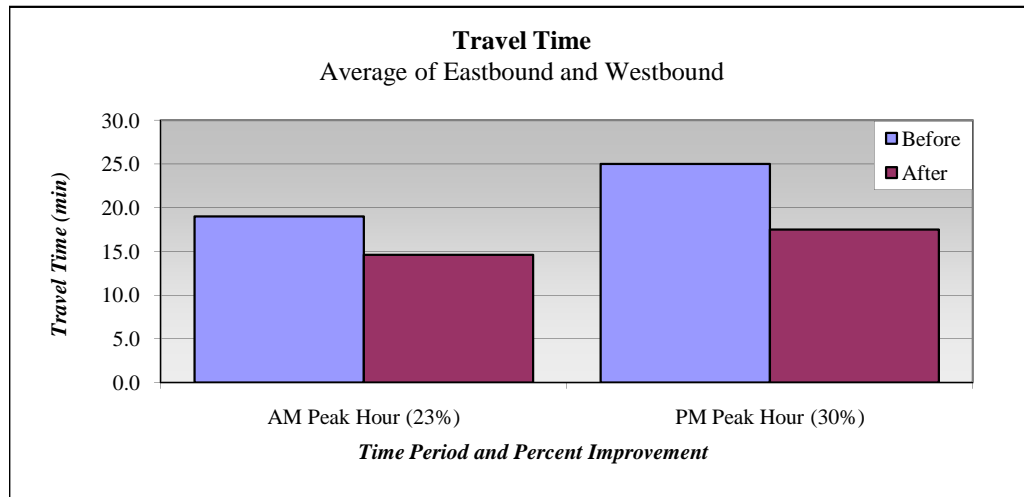
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	23%	73%	30%
<i>PM Peak Hour</i>	30%	58%	44%
Average Improvements:	27%	66%	37%

Agencies operating traffic signals along this corridor: Upland, Rancho Cucamonga

Before Study was conducted on 11/07/07, 11/08/07, and 11/15/07.

After Study was conducted on 09/10/08.

"Before and After" Study Results
Exhibit V - 13b: Foothill Boulevard
(Monte Vista Avenue - Masi Drive)



"Before and After" Study Results
Exhibit V- 14a: Foothill Boulevard
(Almeria Avenue - Meridian Avenue)

<div style="display: inline-block; transform: rotate(-45deg);">Direction Time Period</div>	Eastbound						Westbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	14.21	14.13	8.6	7.2	27.17	27.26	13.67	12.93	7.4	5.2	28.25	29.68
AM Improvement (%)	1%		16%		0%		5%		30%		5%	
PM Period	17.92	12.86	11.8	3.4	21.53	29.97	19.08	14.88	11.2	6.4	20.22	25.81
PM Improvement (%)	28%		71%		39%		22%		43%		28%	

Length (miles): 6.4

Number of Signals: 25

Number of Agencies: 3

Average Corridor-wide Improvements:

Combined Average of Eastbound and Westbound

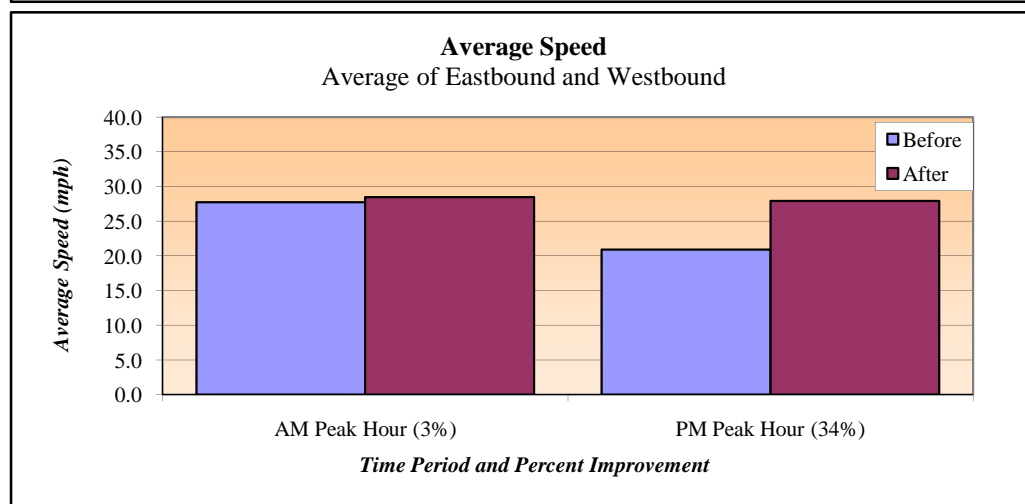
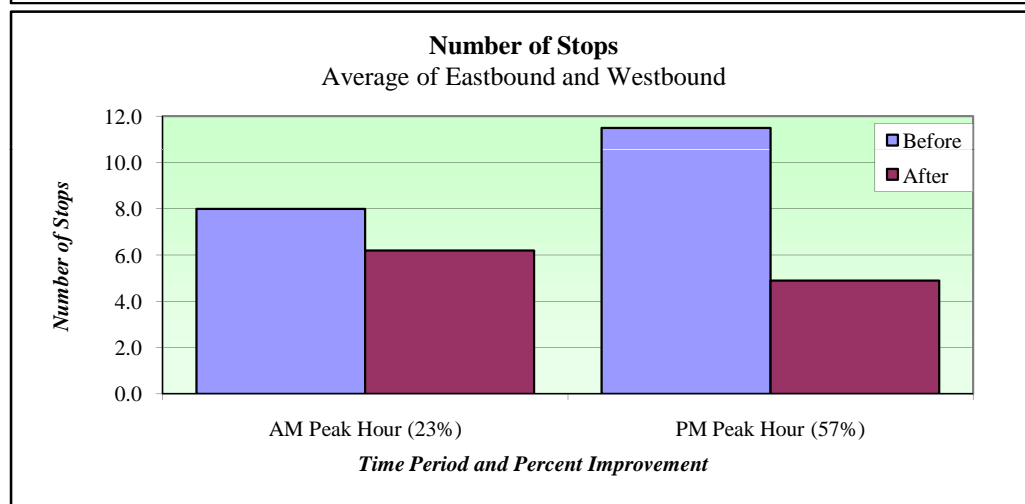
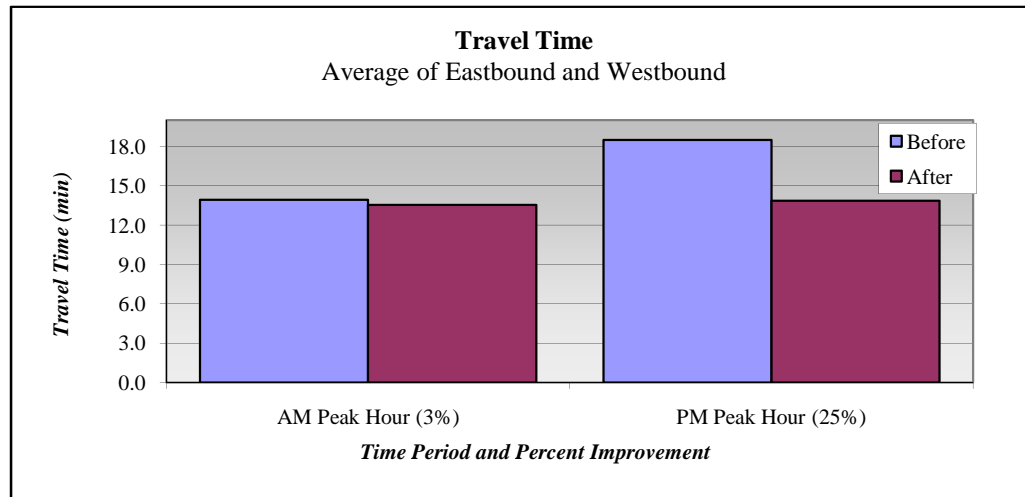
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
AM Peak Hour	3%	23%	3%
PM Peak Hour	25%	57%	34%
Average Improvements:	14%	40%	18%

Agencies operating traffic signals along this corridor: Rialto, Fontana, Caltrans

Before Study was conducted on 11/07/07, 11/08/07, 11/13/07, 11/14/07 and 11/15/07.

After Study was conducted on 10/07/08 and 10/09/08.

"Before and After" Study Results
Exhibit V- 14b: Foothill Boulevard
(Almeria Avenue - Meridian Avenue)



"Before and After" Study Results
Exhibit V- 15a: Grove Avenue
(Philadelphia Street - Riverside Drive)

<div style="display: inline-block; transform: rotate(-45deg);">Direction Time Period</div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	3.28	2.60	3.2	1.6	18.42	22.69	2.61	1.78	2.0	0.6	23.19	33.92
AM Improvement (%)	21%		50%		23%		32%		70%		46%	
PM Period	2.96	1.82	2.6	0.2	20.34	32.74	2.99	1.96	2.4	1.0	20.21	30.57
PM Improvement (%)	39%		92%		61%		34%		58%		51%	

Length (miles): 1.0

Number of Signals: 6

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Northbound and Southbound

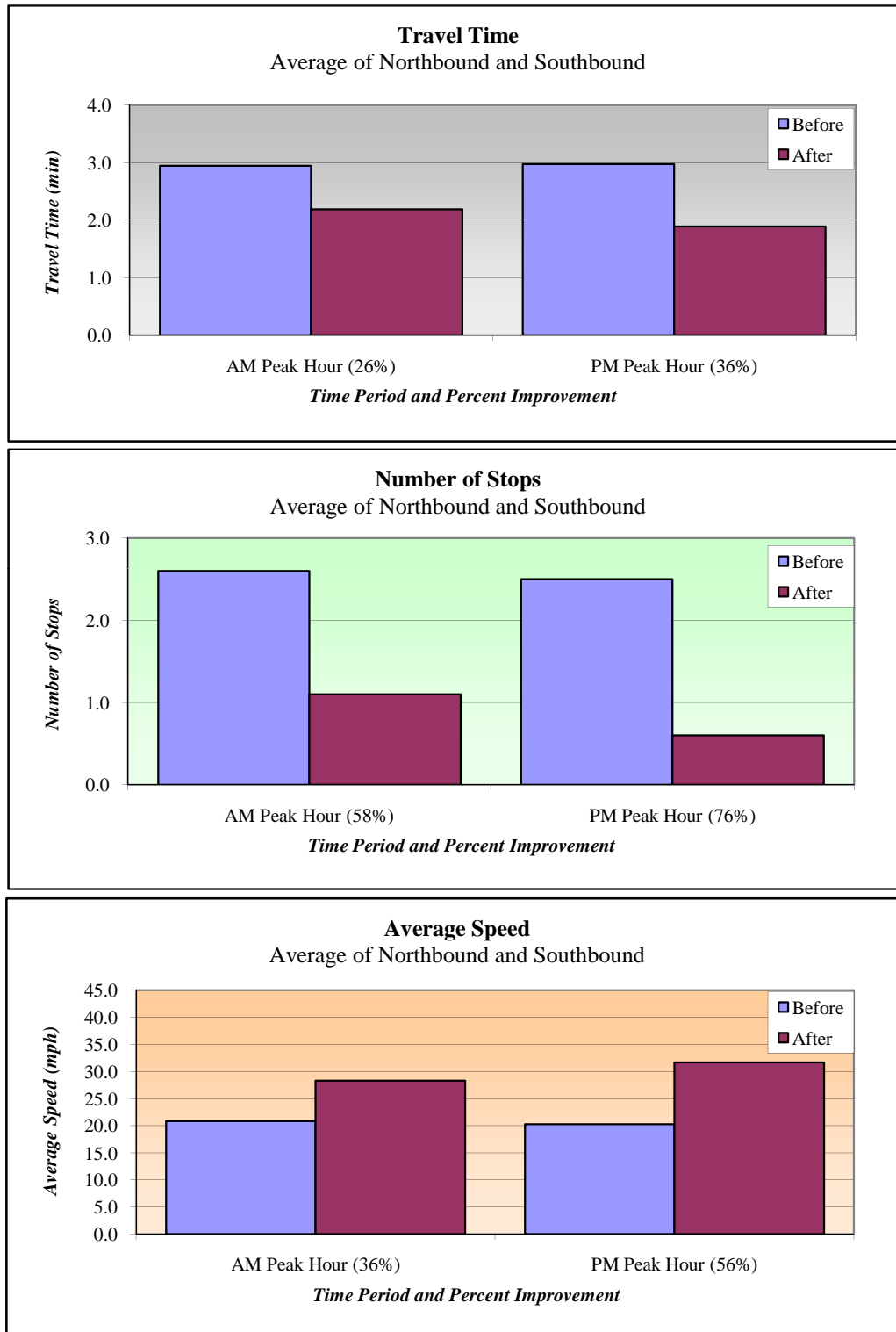
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	26%	58%	36%
<i>PM Peak Hour</i>	36%	76%	56%
Average Improvements:	31%	67%	46%

Agencies operating traffic signals along this corridor: Ontario, Caltrans

Before Study was conducted on 10/31/07.

After Study was conducted on 01/28/09.

"Before and After" Study Results
Exhibit V- 15b: Grove Avenue
(Philadelphia Street - Riverside Drive)



"Before and After" Study Results
Exhibit V- 16a: Haven Avenue
(19th Street - Riverside Drive)

<div style="text-align: center;"> Direction Time Period </div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	17.63	15.80	11.6	7.5	26.60	29.69	16.06	14.50	10.0	8.0	29.26	32.47
AM Improvement (%)	10%		35%		12%		10%		20%		11%	
PM Period	19.41	17.61	11.2	7.8	24.08	26.64	19.92	15.53	12.0	6.6	23.70	30.28
PM Improvement (%)	9%		30%		11%		22%		45%		28%	

Length (miles): 7.8

Number of Signals: 28

Number of Agencies: 3

Average Corridor-wide Improvements:

Combined Average of Northbound and Southbound

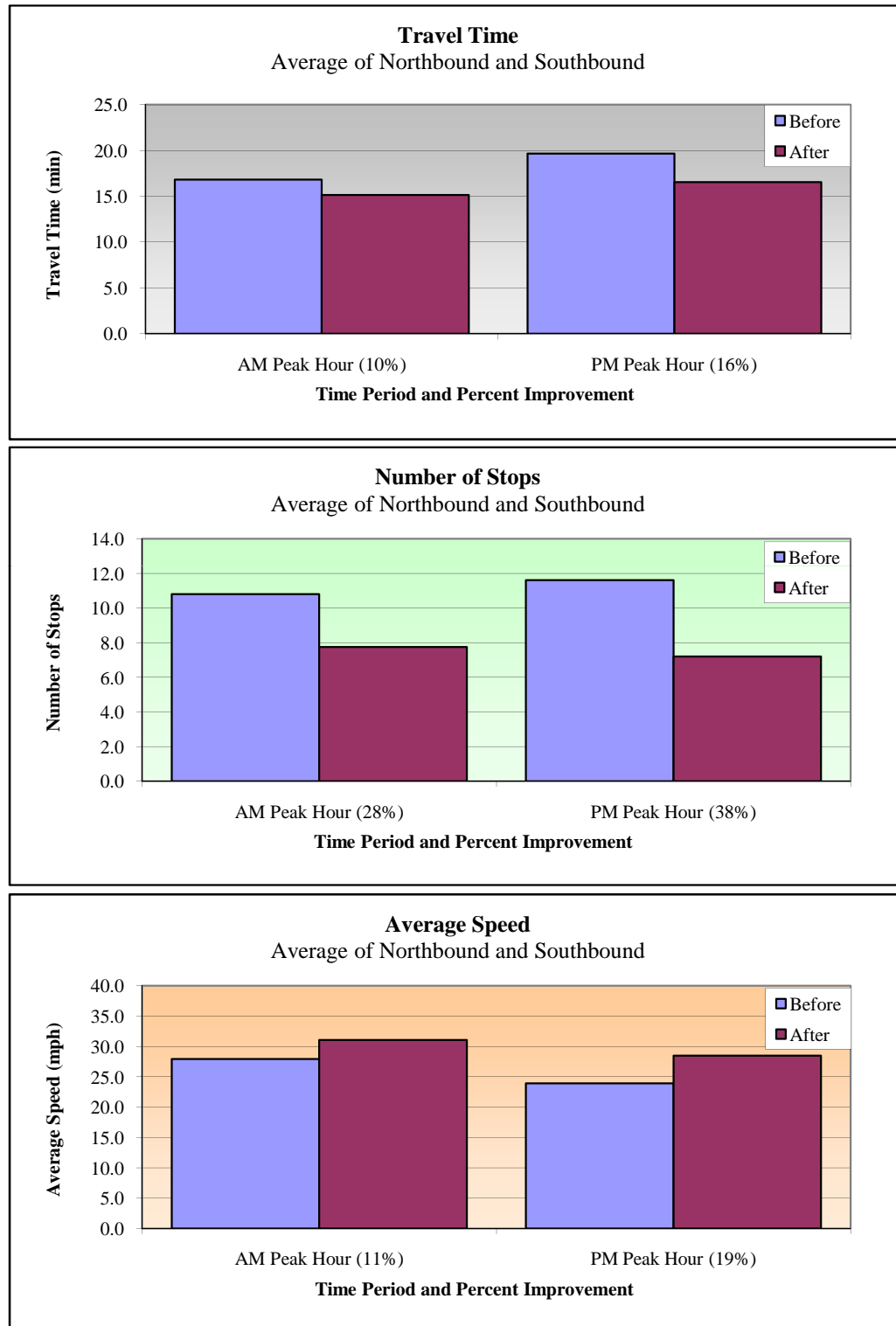
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	10%	28%	11%
<i>PM Peak Hour</i>	16%	38%	19%
Average Improvements:	13%	33%	15%

Agencies operating traffic signals along this corridor: Ontario, Rancho Cucamonga, Caltrans

Before Study was conducted on 11/06/07, 11/07/07 and 11/08/07.

After Study was conducted on 11/12/08 and 11/19/08.

"Before and After" Study Results
**Exhibit V- 16b: Haven Avenue
(19th Street - Riverside Drive)**



"Before and After" Study Results
Exhibit V- 17a: Highland Avenue
(Medical Center - SR-330 Ramps)

<div style="text-align: center;"> Direction Time Period </div>	Eastbound						Westbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	17.95	15.03	11.6	8.0	25.29	30.27	16.93	15.29	9.4	7.6	26.80	29.76
AM Improvement (%)	16%		31%		20%		10%		19%		11%	
PM Period	20.84	16.58	16.0	7.0	21.78	27.43	19.88	16.95	13.6	8.8	22.83	26.83
PM Improvement (%)	20%		56%		26%		15%		35%		18%	

Length (miles): 7.6

Number of Signals: 31

Number of Agencies: 3

Average Corridor-wide Improvements:

Combined Average of Eastbound and Westbound

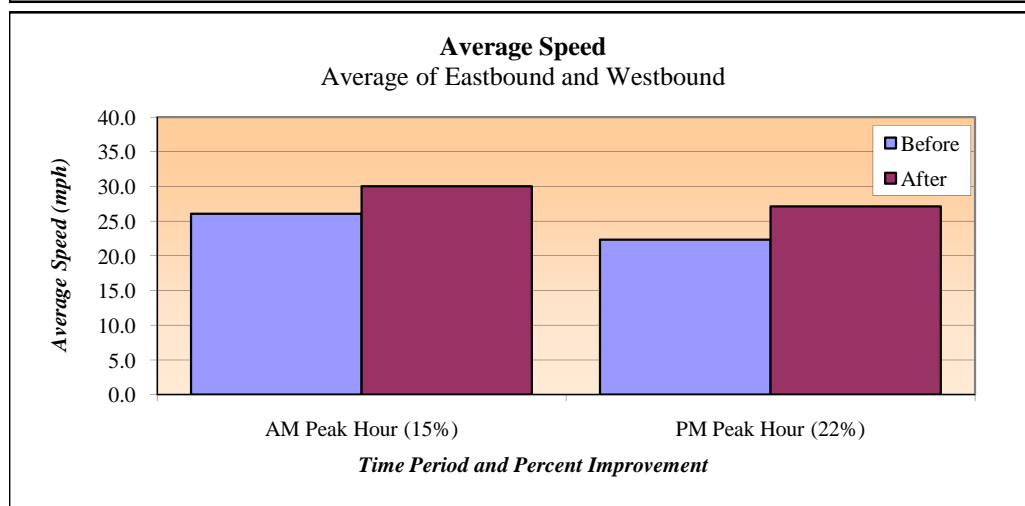
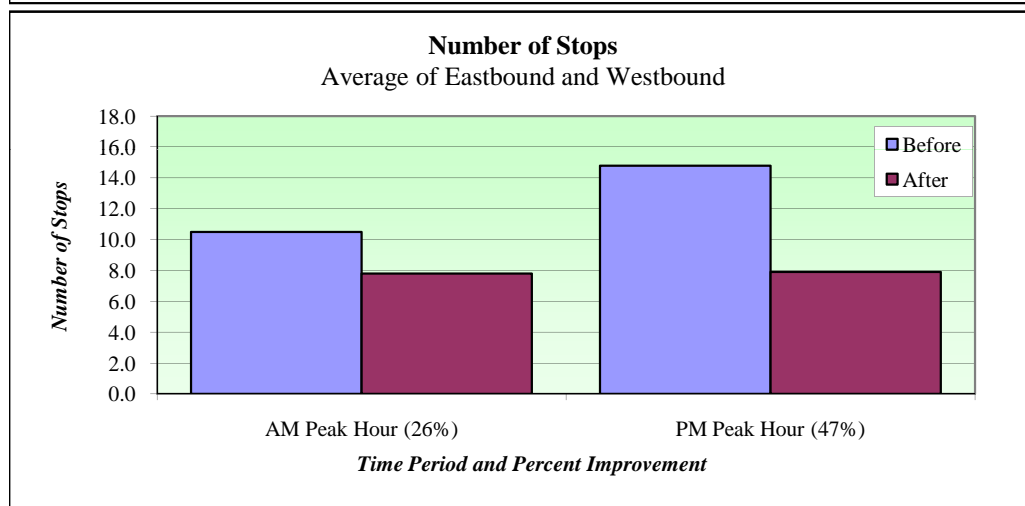
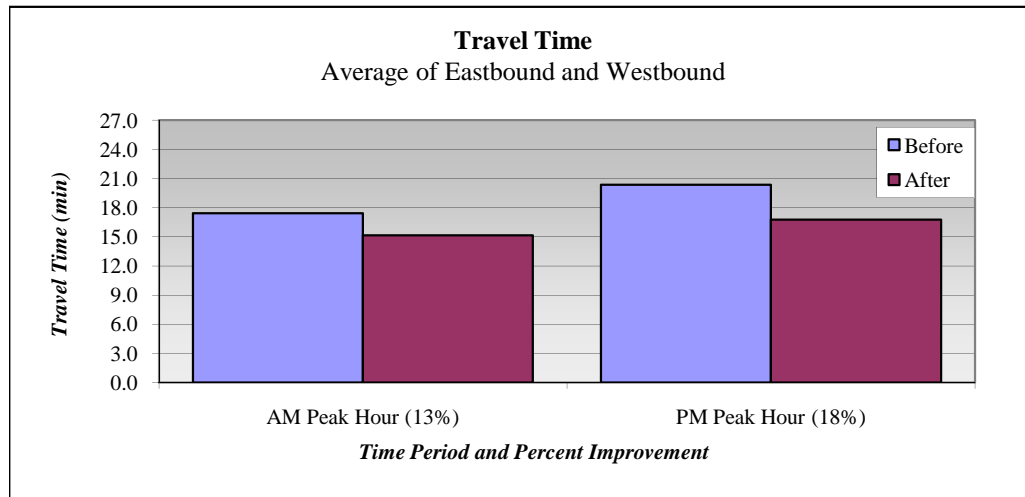
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	13%	26%	15%
<i>PM Peak Hour</i>	18%	47%	22%
Average Improvements:	15%	36%	18%

Agencies operating traffic signals along this corridor: San Bernardino City, Highland, Caltrans

Before Study was conducted on 11/27/07, 11/28/07, 12/05/07, 12/06/07 and 12/07/07.

After Study was conducted on 01/07/09 and 01/13/09.

"Before and After" Study Results
Exhibit V- 17b: Highland Avenue
(Medical Center - SR-330 Ramps)



"Before and After" Study Results
Exhibit V- 18a: Holt Boulevard
(Amherst Avenue - Mountain Avenue)

<div style="display: inline-block; transform: rotate(-45deg);">Direction Time Period</div>	Eastbound						Westbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	5.43	4.47	3.2	1.4	26.73	32.37	4.87	4.05	2.0	1.0	29.68	35.62
AM Improvement (%)	18%		56%		21%		17%		50%		20%	
PM Period	6.52	5.13	3.8	2.2	22.25	28.30	5.49	4.06	2.6	1.0	26.38	35.59
PM Improvement (%)	21%		42%		27%		26%		62%		35%	

Length (miles): 2.4

Number of Signals: 7

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Eastbound and Westbound

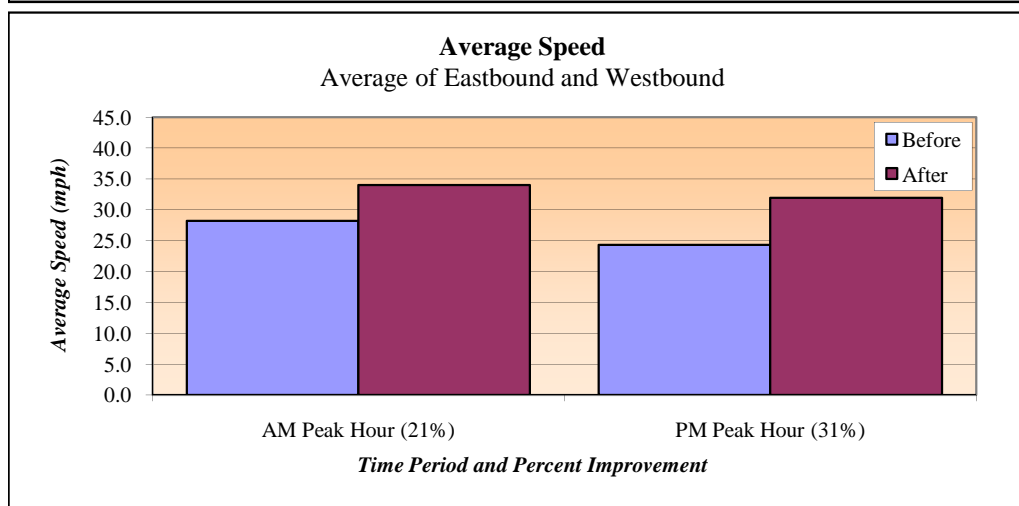
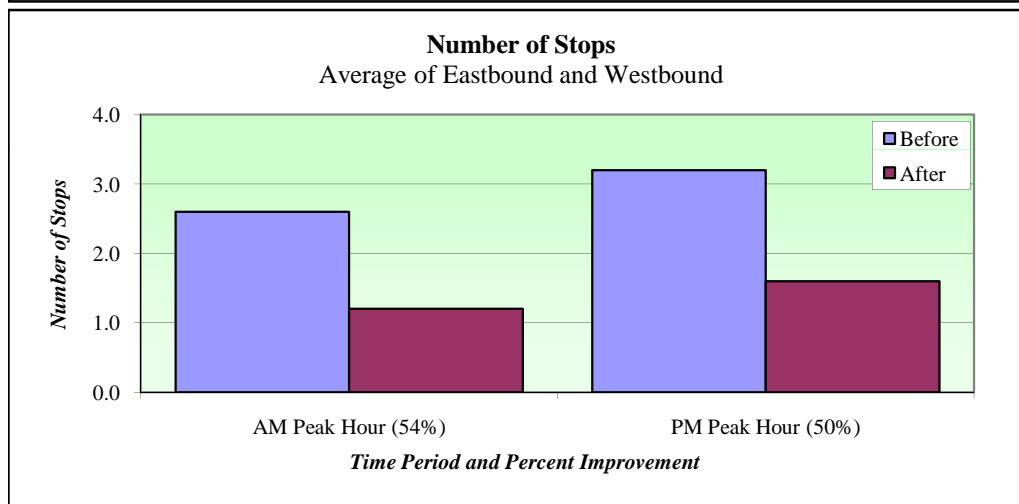
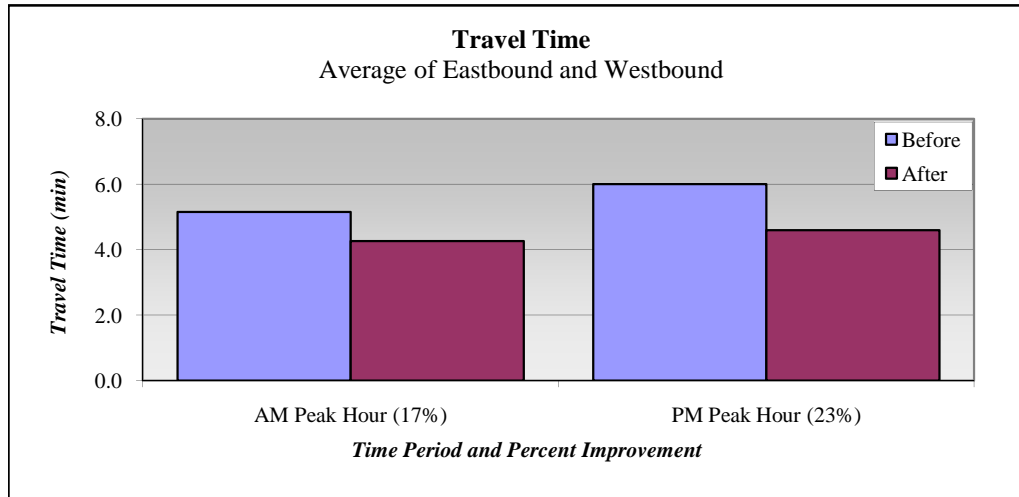
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	17%	54%	21%
<i>PM Peak Hour</i>	23%	50%	31%
Average Improvements:	20%	52%	26%

Agencies operating traffic signals along this corridor: Ontario, Montclair

Before Study was conducted on 12/05/07.

After Study was conducted on 11/20/08.

"Before and After" Study Results
Exhibit V- 18b: Holt Boulevard
(Amherst Avenue - Mountain Avenue)



"Before and After" Study Results
Exhibit V- 19a: Hospitality Lane
(Hunts Lane - Hariman Place)

<div style="text-align: center;"> Direction Time Period </div>	Eastbound						Westbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	3.59	2.60	3.0	1.8	17.78	24.72	3.85	2.23	4.0	0.8	16.45	28.67
AM Improvement (%)	28%		40%		39%		42%		80%		74%	
PM Period	4.53	4.34	3.5	3.2	14.07	14.74	3.51	3.33	2.6	1.8	18.09	19.12
PM Improvement (%)	4%		9%		5%		5%		31%		6%	

Length (miles): 1.1

Number of Signals: 8

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Eastbound and Westbound

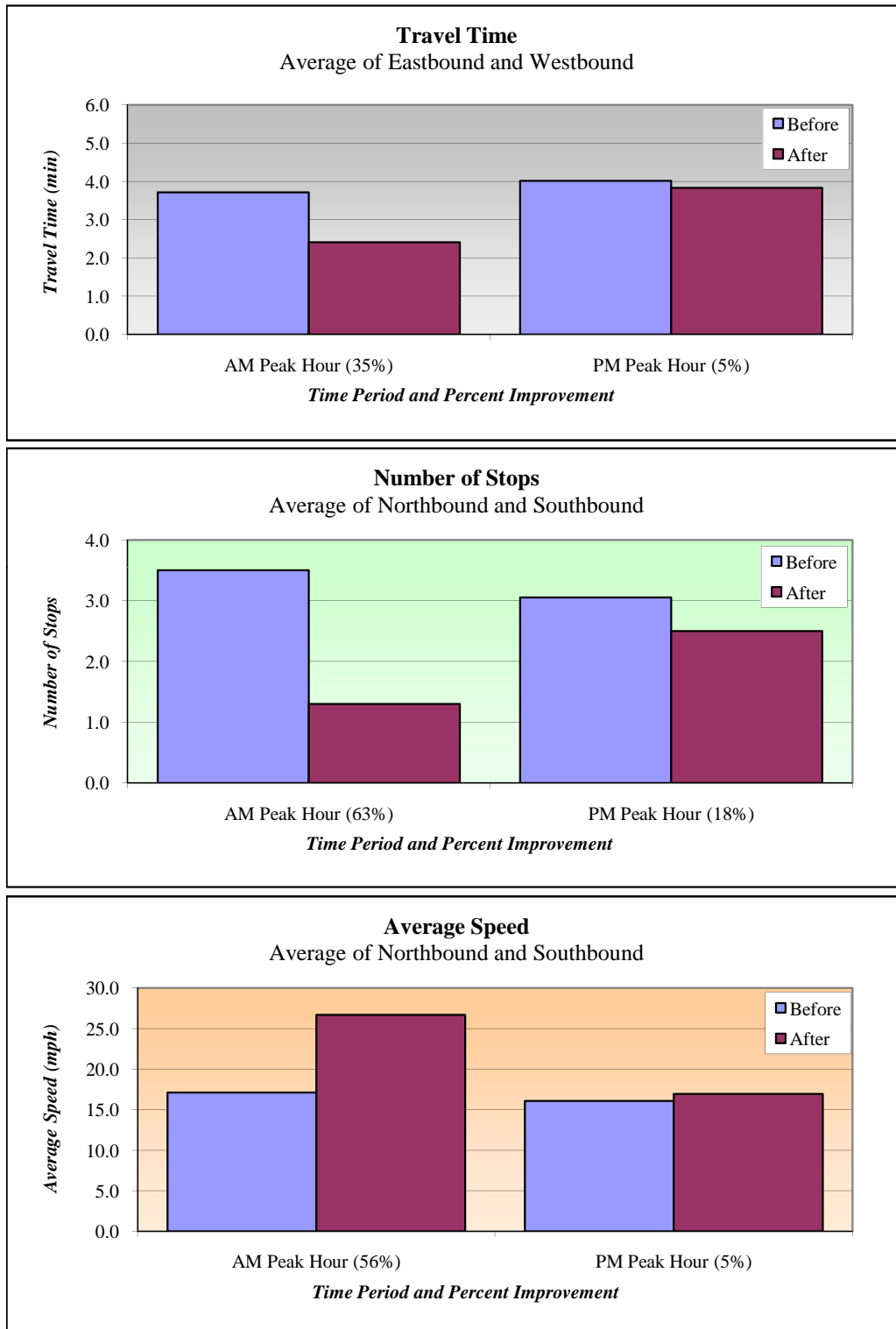
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
AM Peak Hour	35%	63%	56%
PM Peak Hour	5%	18%	5%
Average Improvements:	20%	41%	31%

Agencies operating traffic signals along this corridor: San Bernardino City, Caltrans

Before Study was conducted on 10/02/07.

After Study was conducted on 12/18/08.

"Before and After" Study Results
Exhibit V- 19b: Hospitality Lane
(Hunts Lane - Hariman Place)



"Before and After" Study Results
Exhibit V- 20a: Milliken Avenue
(4th Street - I-10 Ramps)

<div style="text-align: center;"> Direction Time Period </div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	2.26	2.19	1.4	1.0	20.50	21.37	1.87	1.61	1.0	1.0	24.37	28.36
AM Improvement (%)	3%		29%		4%		14%		0%		16%	
PM Period	2.80	2.39	2.2	1.4	16.51	19.08	2.63	2.13	1.2	1.0	17.25	21.32
PM Improvement (%)	15%		36%		16%		19%		17%		24%	

Length (miles): 0.8

Number of Signals: 5

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Northbound and Southbound

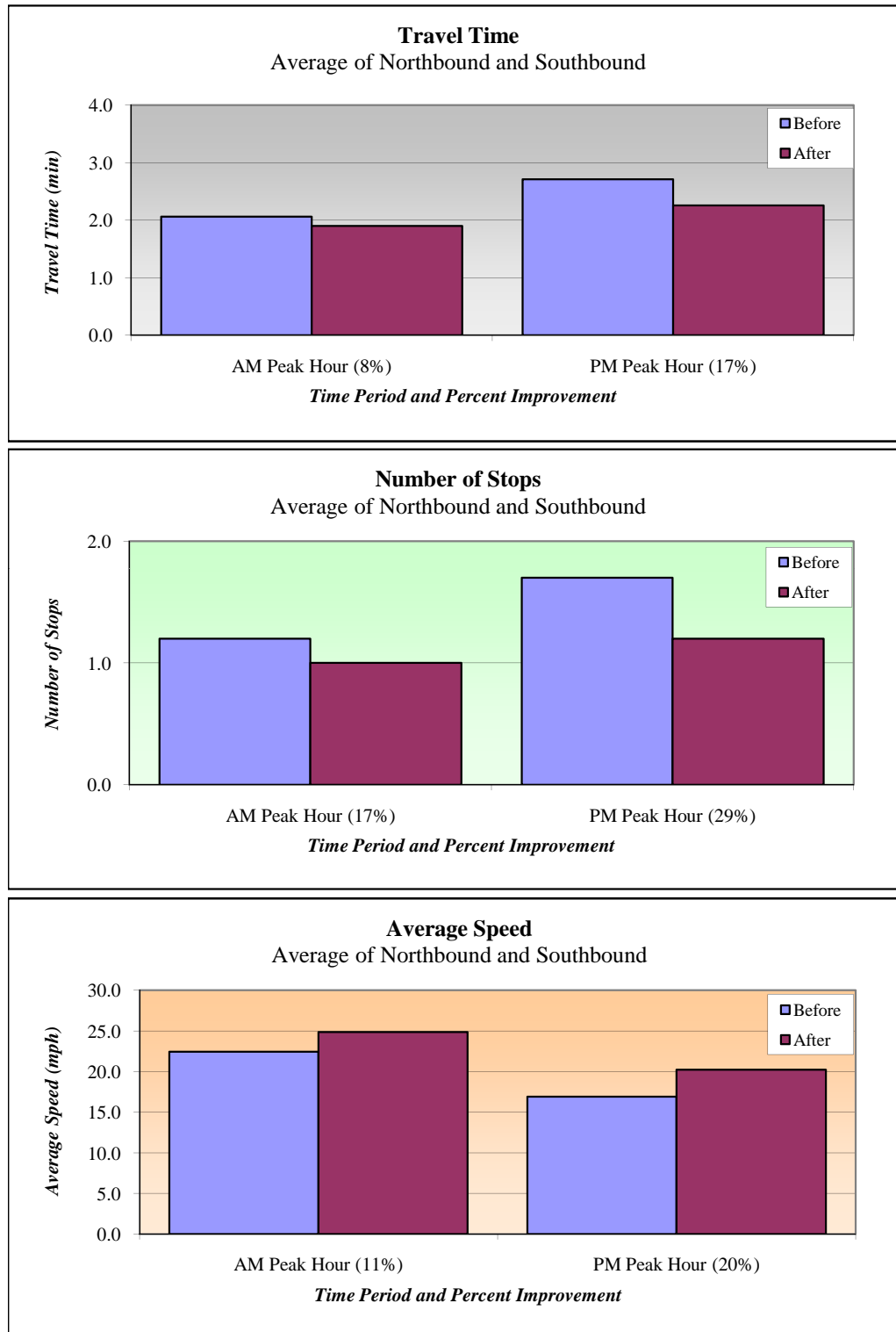
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	8%	17%	11%
<i>PM Peak Hour</i>	17%	29%	20%
Average Improvements:	12%	23%	15%

Agencies operating traffic signals along this corridor: Ontario, Caltrans

Before Study was conducted on 10/23/07.

After Study was conducted on 11/20/08 and 01/08/09.

"Before and After" Study Results
Exhibit V- 20b: Milliken Avenueue
(4th Street - I-10 Ramps)



"Before and After" Study Results
Exhibit V- 21a: Monte Vista Avenue
(Holt Boulevard - Richton Street)

<div style="text-align: center;"> Direction Time Period </div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	5.70	5.24	3.4	3.0	23.44	25.32	5.94	5.15	4.4	3.2	22.44	25.66
AM Improvement (%)	8%		12%		8%		13%		27%		14%	
PM Period	5.51	5.50	2.8	2.7	24.00	24.10	6.11	4.67	4.8	1.8	21.77	28.41
PM Improvement (%)	0%		3%		0%		24%		63%		31%	

Length (miles): 2.2

Number of Signals: 11

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Northbound and Southbound

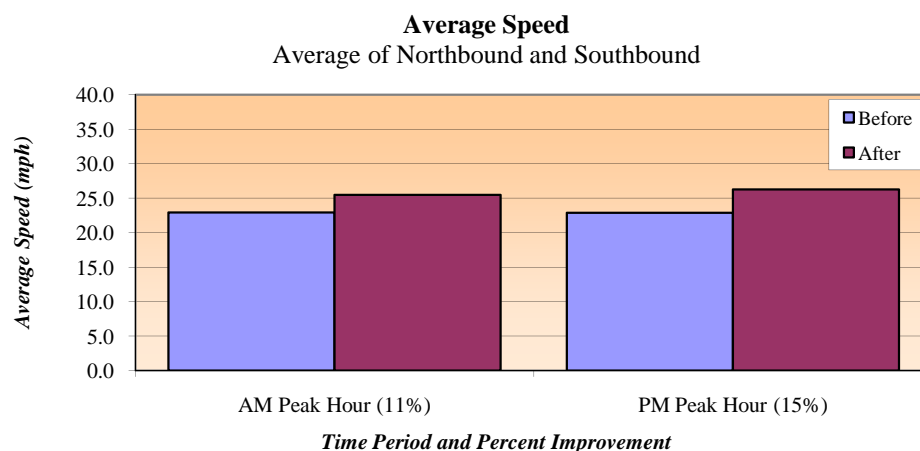
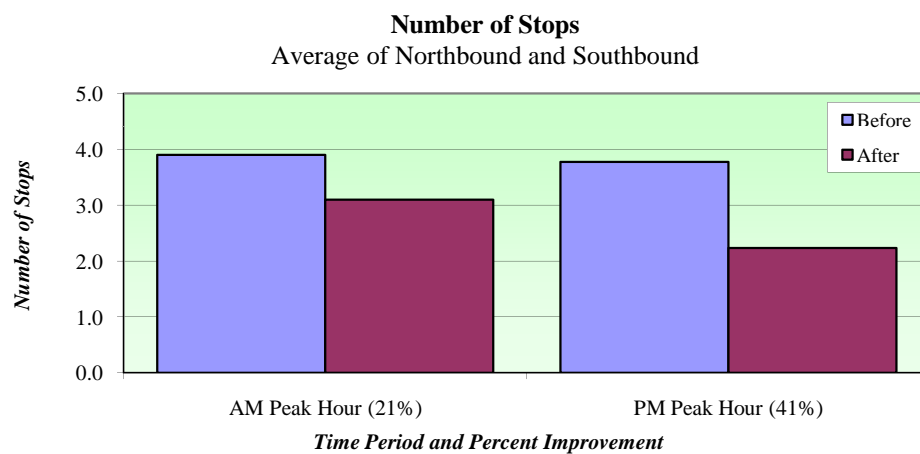
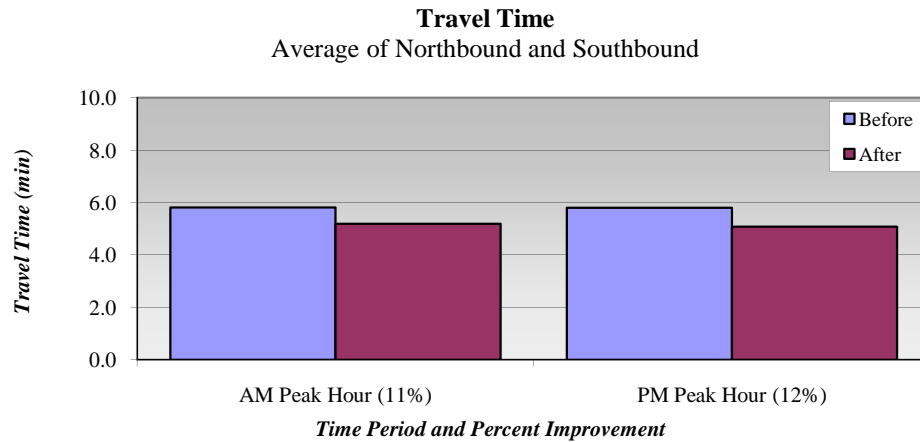
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	11%	21%	11%
<i>PM Peak Hour</i>	12%	41%	15%
Average Improvements:	12%	31%	13%

Agencies operating traffic signals along this corridor: Montclair, Caltrans

Before Study was conducted on 10/02/07 and 10/03/07.

After Study was conducted on 12/11/08 and 01/07/09.

"Before and After" Study Results
Exhibit V- 21b: Monte Vista Avenue
(Holt Boulevard - Richton Street)



"Before and After" Study Results
Exhibit V- 22a: Mountain Avenue
(8th Street - I-10 Ramps)

<div style="display: inline-block; transform: rotate(-45deg);">Direction Time Period</div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	1.33	0.93	1.1	0.8	17.78	25.68	1.08	0.79	1.4	0.2	21.63	21.63
AM Improvement (%)	30%		29%		44%		27%		85%		0%	
PM Period	1.51	1.35	1.0	1.0	15.47	17.05	2.27	1.54	2.8	1.4	10.42	15.04
PM Improvement (%)	11%		0%		10%		32%		50%		44%	

Length (miles): 0.4

Number of Signals: 5

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Northbound and Southbound

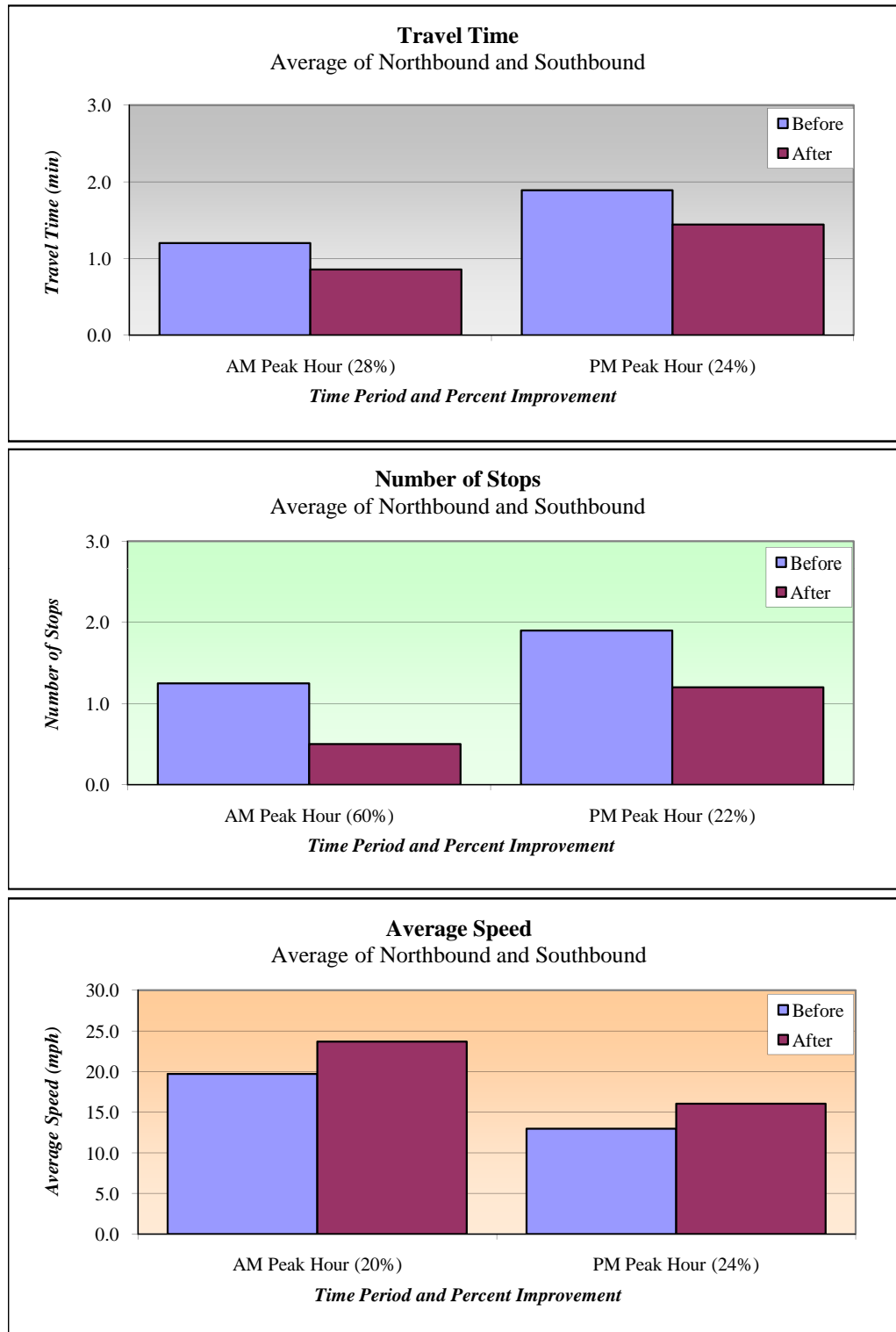
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	28%	60%	20%
<i>PM Peak Hour</i>	24%	37%	24%
Average Improvements:	26%	48%	22%

Agencies operating traffic signals along this corridor: Upland, Caltrans

Before Study was conducted on 11/01/07 and 12/18/07.

After Study was conducted on 12/09/08.

"Before and After" Study Results
Exhibit V- 22b: Mountain Avenue
(8th Street - I-10 Ramps)



"Before and After" Study Results
Exhibit V- 23a: Mountain Avenue
(Riverside Drive - Philadelphia Street)

<div style="text-align: center;"> Direction Time Period </div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	2.78	2.10	2.4	0.8	21.99	29.03	3.09	2.06	2.2	0.6	19.84	29.72
AM Improvement (%)	24%		67%		32%		33%		73%		50%	
PM Period	4.05	1.96	3.0	0.4	15.11	31.06	3.56	2.16	3.6	1.0	17.22	28.15
PM Improvement (%)	52%		87%		106%		39%		72%		63%	

Length (miles): 1.0

Number of Signals: 6

Number of Agencies: 3

Average Corridor-wide Improvements:

Combined Average of Northbound and Southbound

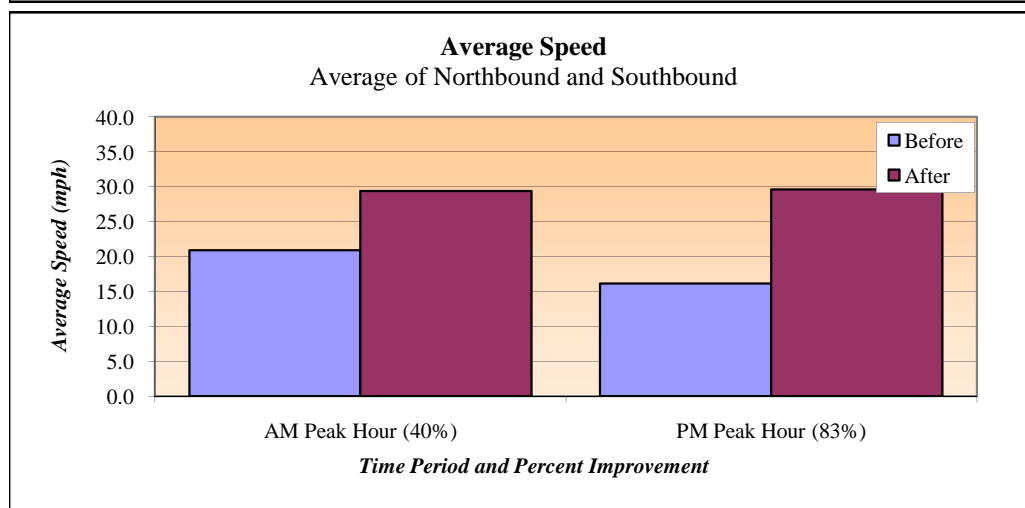
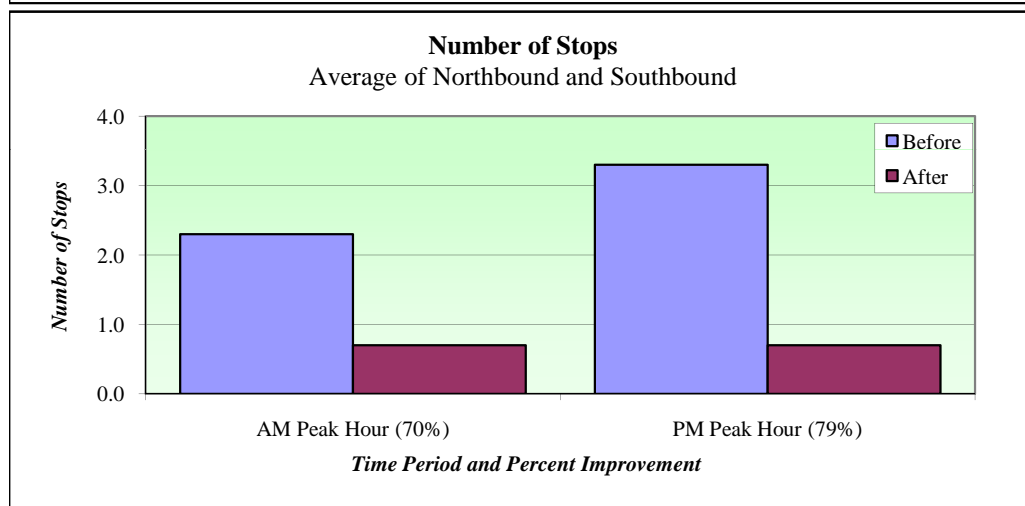
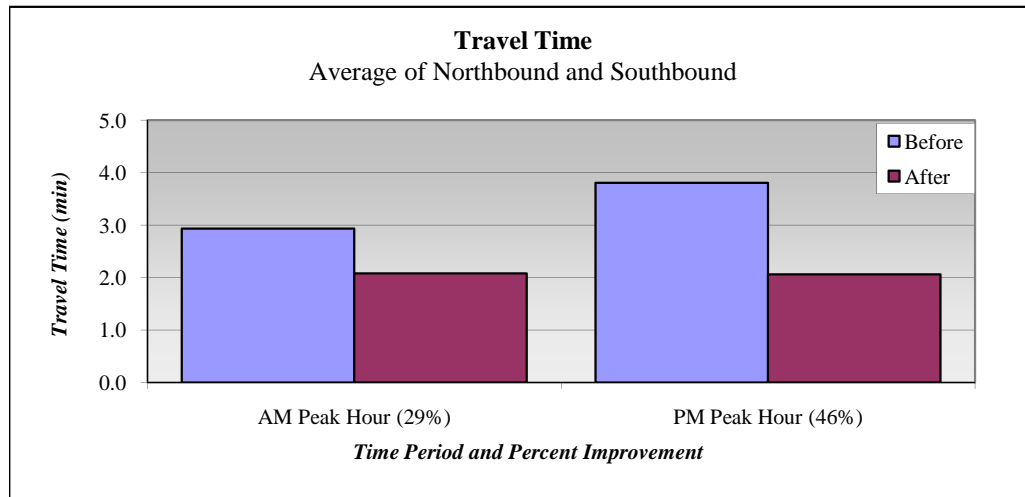
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	29%	70%	40%
<i>PM Peak Hour</i>	46%	79%	83%
Average Improvements:	37%	74%	62%

Agencies operating traffic signals along this corridor: Ontario, Chino, Caltrans

Before Study was conducted on 10/24/07.

After Study was conducted on 04/01/09.

"Before and After" Study Results
Exhibit V- 23b: Mountain Avenue
(Riverside Drive - Philadelphia Street)



"Before and After" Study Results
Exhibit V- 24a: Redlands Boulevard
(New Jersey Street - Highland Avenue)

<div style="text-align: center;"> Direction Time Period </div>	Eastbound						Westbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	10.84	9.65	10.2	5.4	21	23	9.82	7.55	7.0	1.8	23	30
AM Improvement (%)	11%		47%		13%		23%		74%		30%	
PM Period	12.57	8.38	11.6	3.2	18	27	11.44	8.77	8.0	3.4	20	26
PM Improvement (%)	33%		72%		50%		23%		58%		30%	

Length (miles): 3.7

Number of Signals: 17

Number of Agencies: 1

Average Corridor-wide Improvements:

Combined Average of Eastbound and Westbound

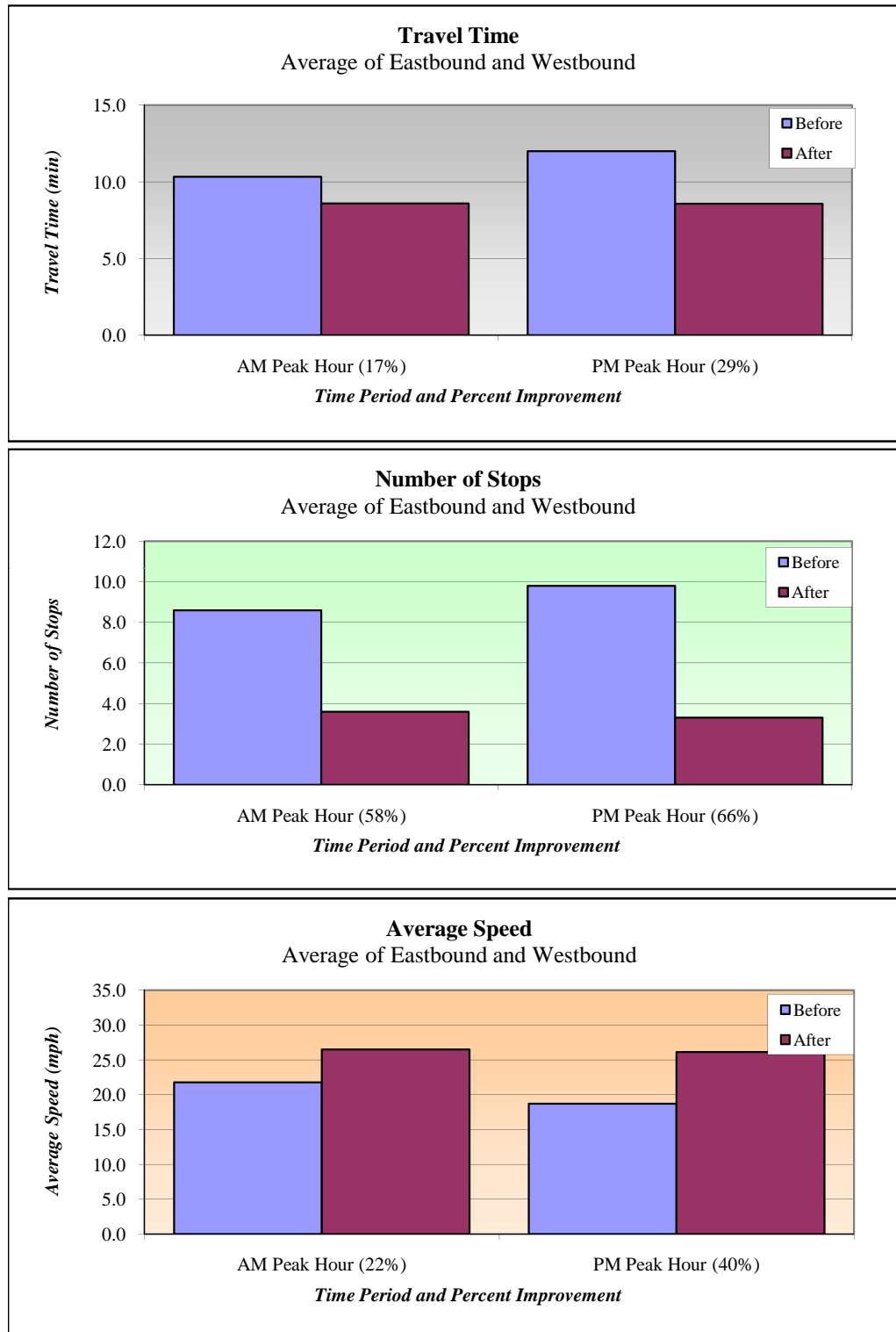
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	17%	58%	22%
<i>PM Peak Hour</i>	29%	66%	40%
Average Improvements:	23%	62%	31%

Agencies operating traffic signals along this corridor: Redlands

Before Study was conducted on 11/28/07, 11/29/07, 12/03/07, 12/05/07.

After Study was conducted 11/20/08.

"Before and After" Study Results
Exhibit V- 24b: Redlands Boulevard
(New Jersey Street - Highland Avenue)



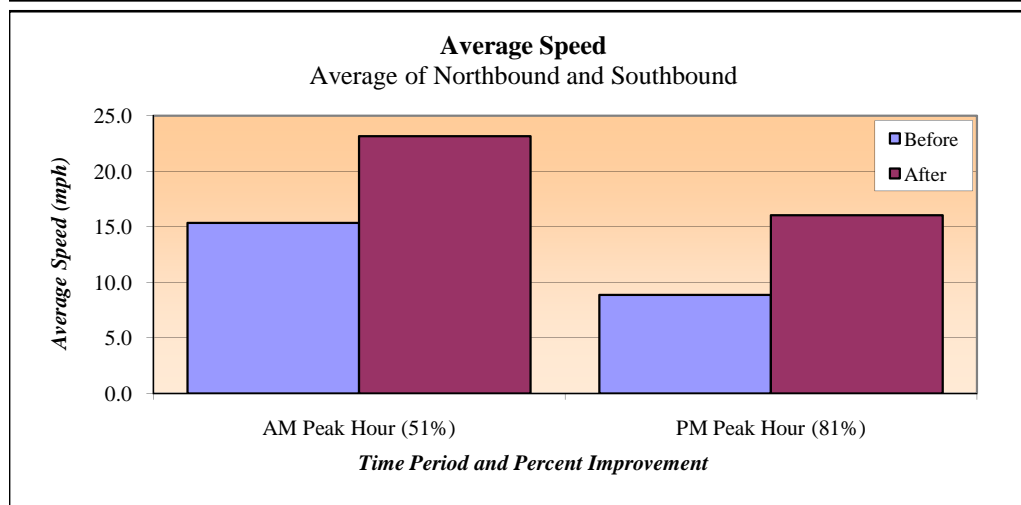
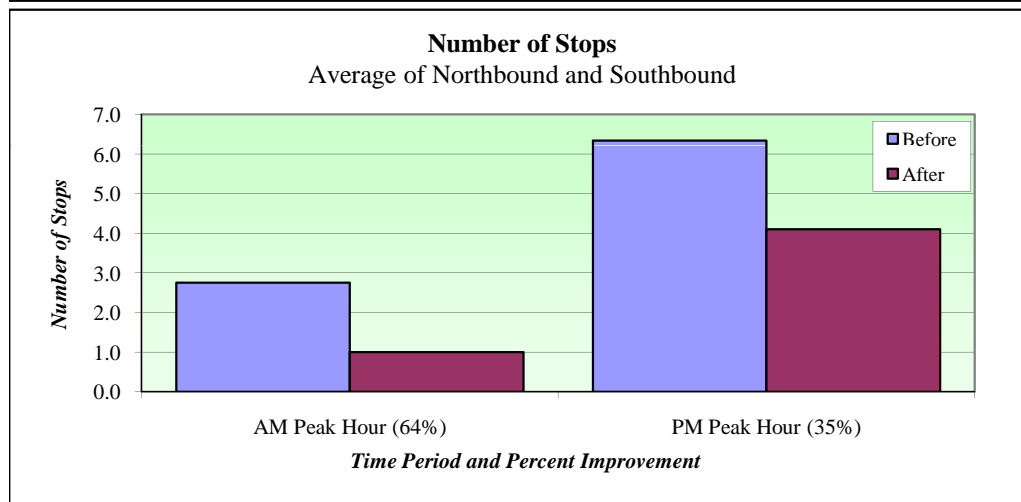
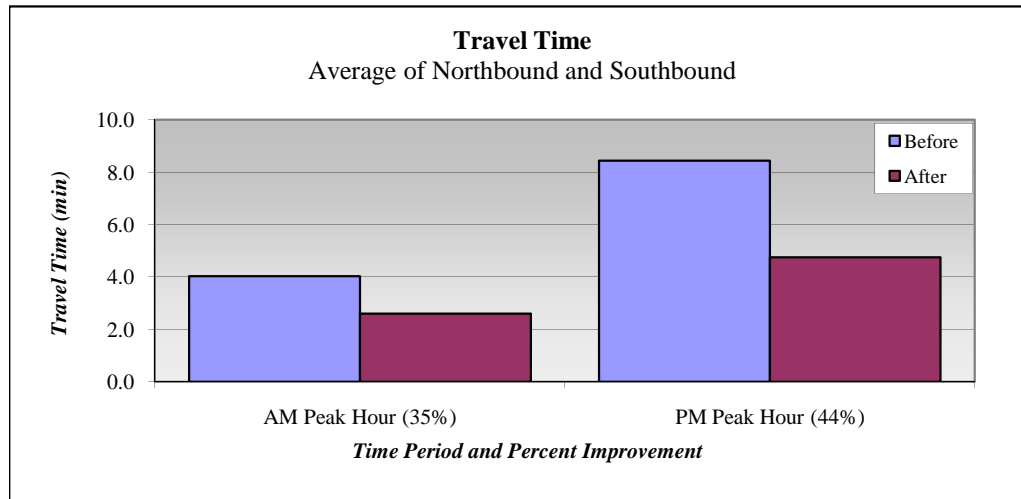
"Before and After" Study Results
Exhibit V- 25a: Riverside Avenue
(San Bernardino Avenue - Slover Avenue)

<div>Direction</div> <div>Time Period</div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	3.58	2.77	2.8	1.0	14.57	21.80	4.49	2.45	2.7	1.0	16.15	24.52
AM Improvement (%)	23%		64%		50%		45%		63%		52%	
PM Period	11.74	6.95	9.2	6.2	5.16	8.69	5.15	2.57	3.5	2.0	12.56	23.41
PM Improvement (%)	41%		32%		68%		50%		43%		86%	
Length (miles): 1.0												
Number of Signals: 7												
Number of Agencies: 2												
Average Corridor-wide Improvements:												
Combined Average of Northbound and Southbound												
	Travel Time		Number of Stops		Average Speed							
AM Peak Hour	35.3%		63.6%		50.8%							
PM Peak Hour	43.6%		35.3%		81.1%							
Average Improvements:	39%		49%		66%							
Agencies operating traffic signals along this corridor: Rialto, Caltrans												

Before Study was conducted on 02/15/07.

After Study was conducted on 03/26/09.

"Before and After" Study Results
Exhibit V- 25b: Riverside Avenue
(San Bernardino Avenue - Slover Avenue)



"Before and After" Study Results
Exhibit V- 26a: Riverside Drive
(Reservior Street - Fern Avenue)

<div style="display: inline-block; transform: rotate(-45deg);">Direction Time Period</div>	Eastbound						Westbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	9.96	9.53	5.8	4.5	26.82	27.87	9.95	9.26	5.4	2.5	26.72	28.70
AM Improvement (%)	4%		22%		4%		7%		54%		7%	
PM Period	10.59	9.12	6.2	2.8	25.19	29.30	11.12	8.82	8.0	2.4	23.89	30.19
PM Improvement (%)	14%		55%		16%		21%		70%		26%	

Length (miles): 4.4

Number of Signals: 17

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Eastbound and Westbound

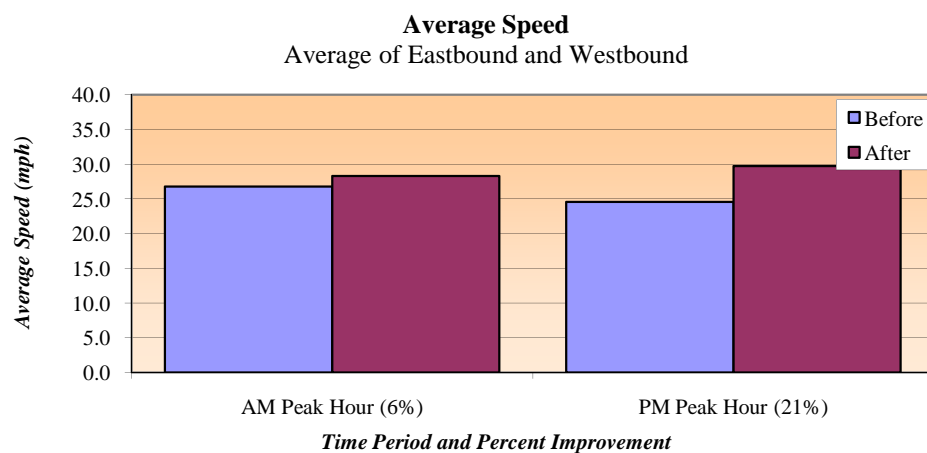
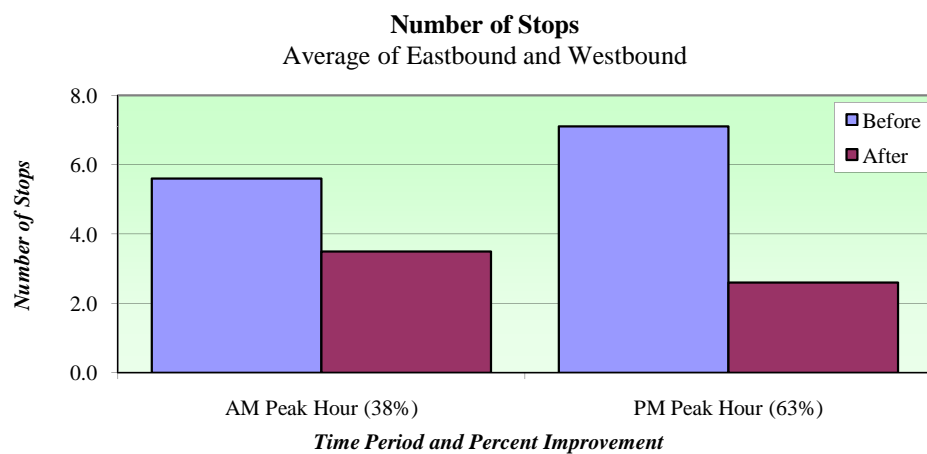
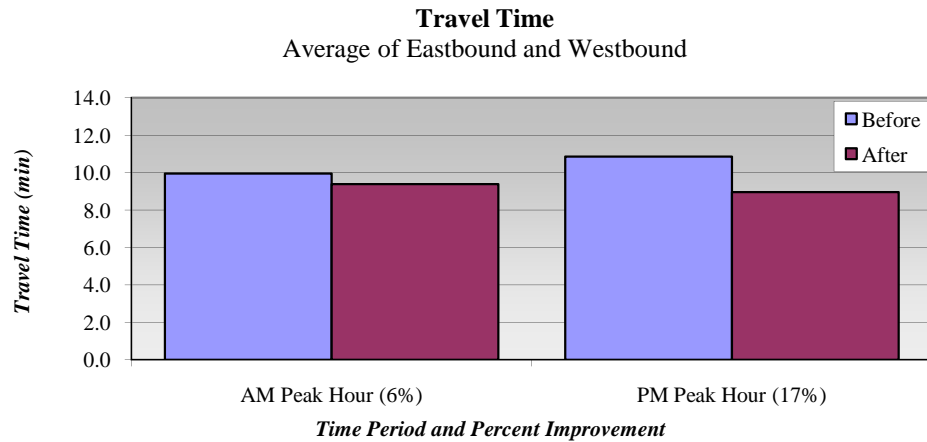
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	6%	38%	6%
<i>PM Peak Hour</i>	17%	63%	21%
Average Improvements:	11%	50%	13%

Agencies operating traffic signals along this corridor: Chino, San Bernardino County

Before Study was conducted on 10/24/07, 10/25/07 and 10/30/07.

After Study was conducted on 12/09/08.

"Before and After" Study Results
Exhibit V- 26b: Riverside Drive
(Reservior Street - Fern Avenue)



"Before and After" Study Results
Exhibit V- 27a: Tennessee Street
(Redlands Boulevard - Lugonia Avenue)

<div style="display: inline-block; transform: rotate(-45deg);">Direction Time Period</div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	2.67	2.17	2.4	1.4	15.04	18.45	2.31	2.27	3.8	1.7	17.36	17.46
AM Improvement (%)	19%		42%		23%		2%		56%		1%	
PM Period	2.06	1.87	1.8	1.0	19.33	21.44	2.91	2.20	2.0	1.2	13.78	18.04
PM Improvement (%)	9%		44%		11%		24%		40%		31%	

Length (miles): 0.7

Number of Signals: 5

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Eastbound and Westbound

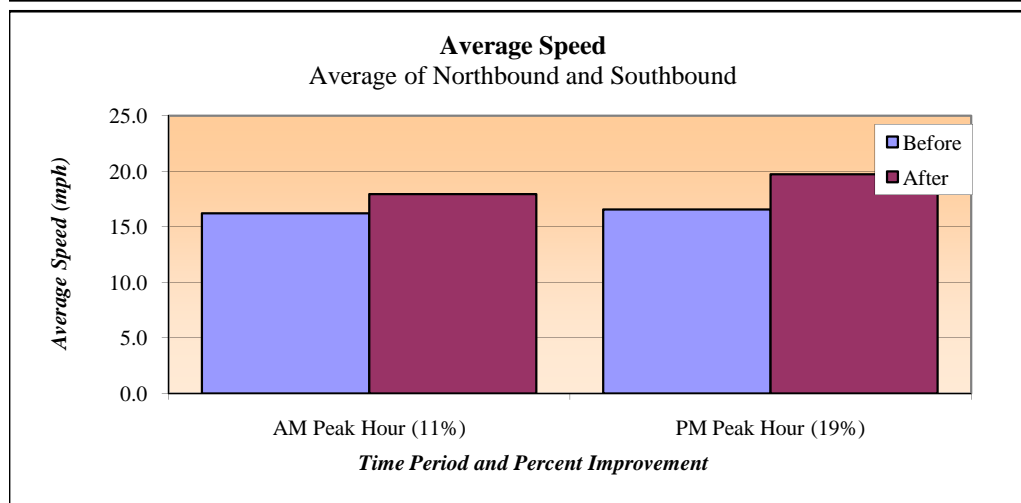
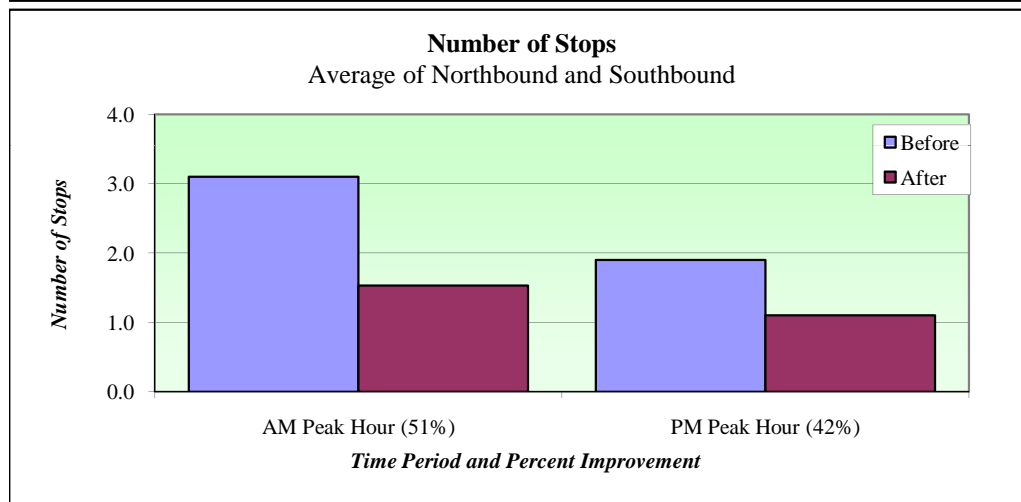
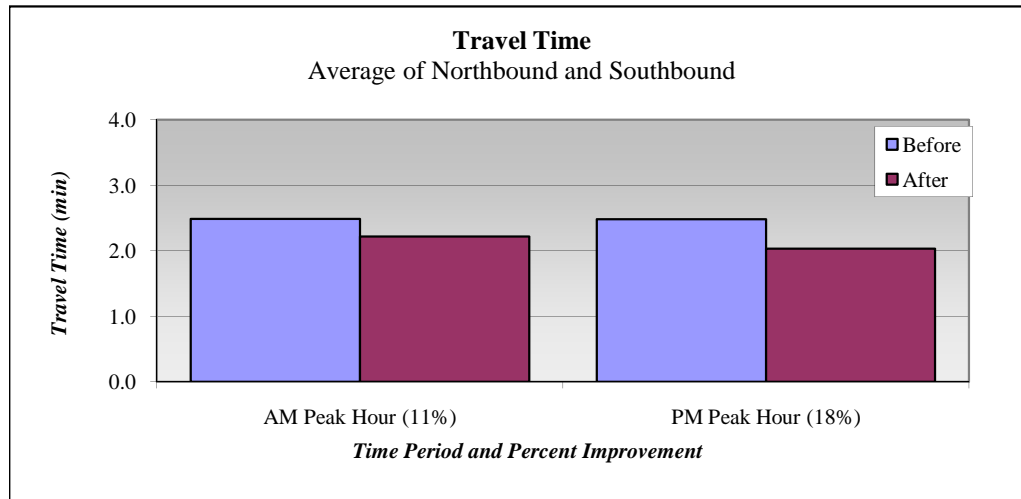
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
AM Peak Hour	11%	51%	11%
PM Peak Hour	18%	42%	19%
Average Improvements:	14%	46%	15%

Agencies operating traffic signals along this corridor: Redlands, Caltrans

Before Study was conducted on 11/28/07 and 12/06/07.

After Study was conducted on 2/10/09.

"Before and After" Study Results
Exhibit V- 27b: Tennessee Street
(Redlands Boulevard - Lugonia Avenue)



"Before and After" Study Results
Exhibit V- 28a: Tippecanoe Avenue
(5th Street - Redlands Boulevard)

<div style="display: inline-block; transform: rotate(-45deg);">Direction Time Period</div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	6.69	5.99	4.2	1.6	28.55	31.99	8.00	7.86	8.0	4.8	23.94	24.00
AM Improvement (%)	10%		62%		12%		2%		40%		0%	
PM Period	8.60	7.13	11.6	2.8	22.22	26.87	8.09	7.86	8.0	4.2	23.63	24.31
PM Improvement (%)	17%		76%		21%		3%		48%		3%	

Length (miles): 3.2

Number of Signals: 14

Number of Agencies: 4

Average Corridor-wide Improvements:

Combined Average of Northbound and Southbound

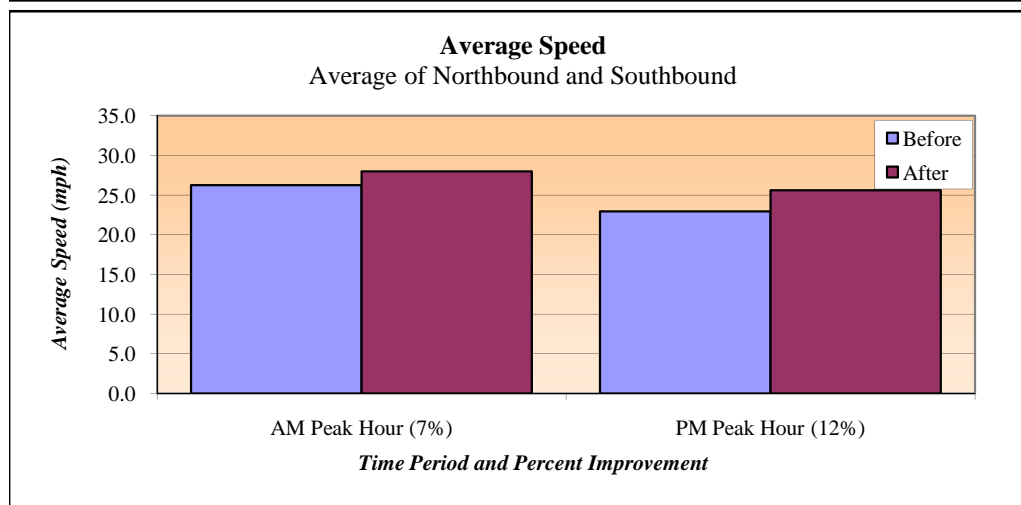
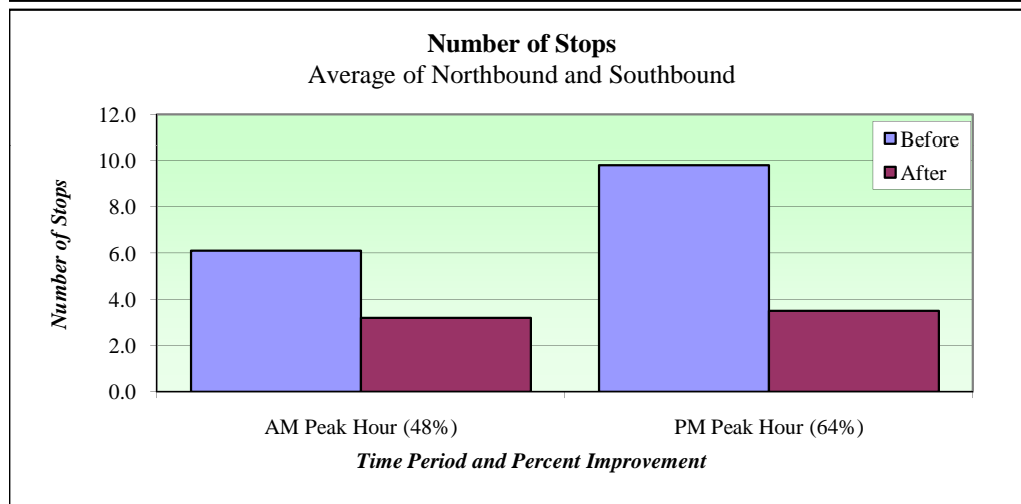
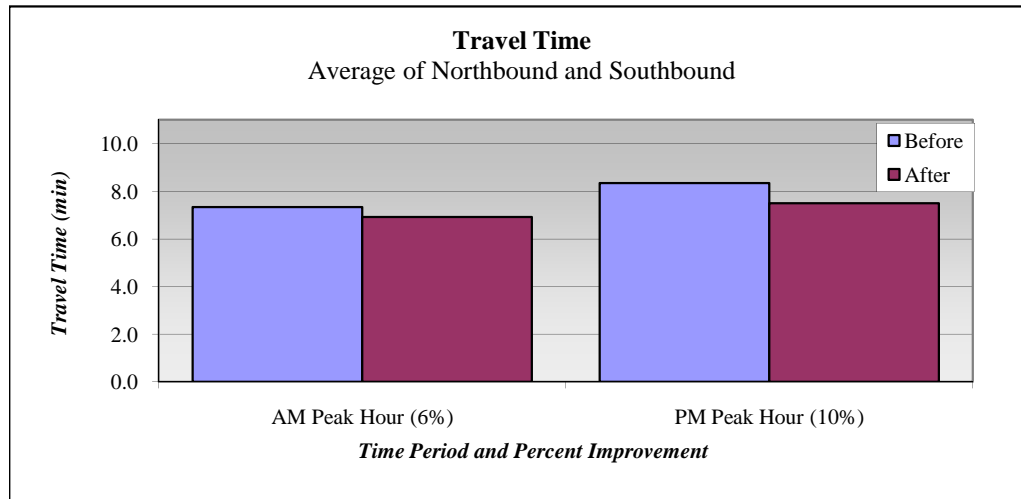
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	6%	48%	7%
<i>PM Peak Hour</i>	10%	64%	12%
Average Improvements:	8%	56%	9%

Agencies operating traffic signals along this corridor: San Bernardino City, San Bernardino County, Loma Linda, Caltrans

Before Study was conducted on 10/23/07.

After Study was conducted on 11/12/08 and 11/13/08.

"Before and After" Study Results
Exhibit V- 28b: Tippecanoe Avenue
(5th Street - Redlands Boulevard)



"Before and After" Study Results
Exhibit V-29a: Vineyard Avenue
(4th Street - Holt Boulevard)

<div style="display: inline-block; transform: rotate(-45deg);">Direction Time Period</div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	3.36	2.83	3.0	2.0	17.59	20.66	2.92	2.21	2.6	1.2	20.16	26.43
AM Improvement (%)	16%		33%		17%		24%		54%		31%	
PM Period	2.37	2.33	1.0	1.0	24.90	25.12	2.07	1.64	1.0	0.0	28.42	35.48
PM Improvement (%)	2%		0%		1%		21%		100%		25%	

Length (miles): 1.0

Number of Signals: 7

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Northbound and Southbound

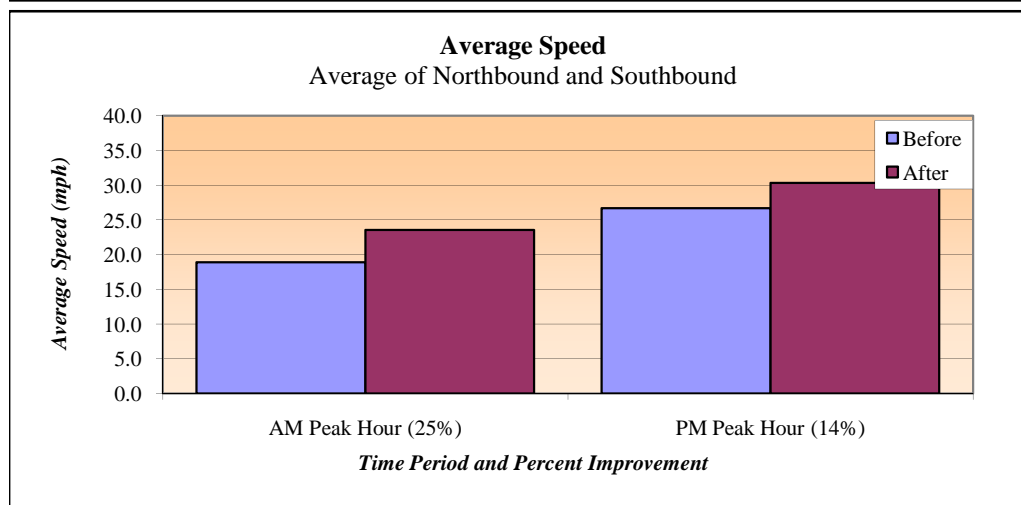
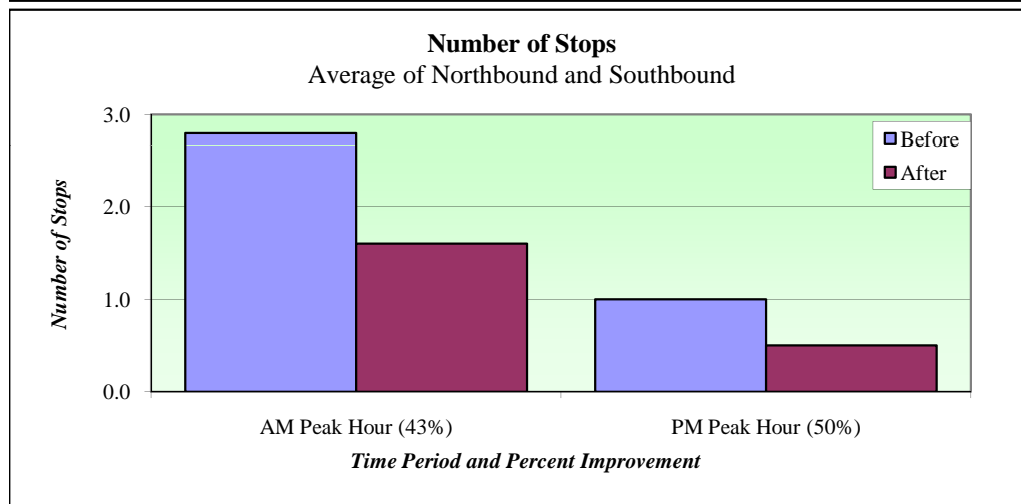
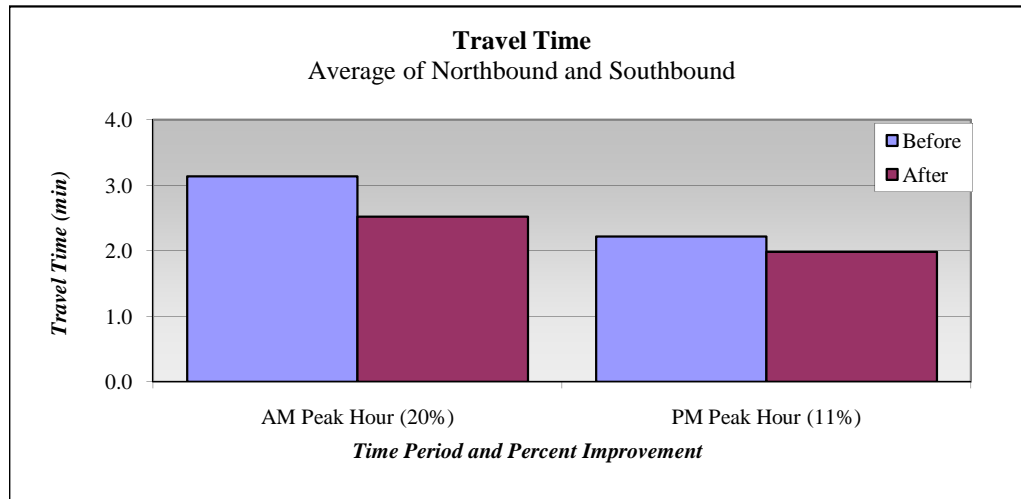
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	20%	43%	25%
<i>PM Peak Hour</i>	11%	50%	14%
Average Improvements:	15%	46%	19%

Agencies operating traffic signals along this corridor: Ontario, Caltrans

Before Study was conducted on 10/24/07 and 10/25/07.

After Study was conducted on 10/01/08 and 10/07/08.

"Before and After" Study Results
**Exhibit V-29b: Vineyard Avenue
(4th Street - Holt Boulevard)**



"Before and After" Study Results
Exhibit V-30a: Vineyard Avenue
(Philadelphia Street - Pep Boys)

<div style="text-align: center;"> Direction Time Period </div>	Northbound						Southbound					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
AM Period	1.17	0.89	1.0	1.0	17.74	22.88	0.93	0.90	1.0	1.0	22.01	22.92
AM Improvement (%)	24%		0%		29%		3%		0%		4%	
PM Period	1.27	0.85	2.2	0.6	16.27	24.13	1.03	0.91	0.8	0.5	19.64	22.44
PM Improvement (%)	33%		73%		48%		12%		38%		14%	

Length (miles): 0.3

Number of Signals: 5

Number of Agencies: 2

Average Corridor-wide Improvements:

Combined Average of Northbound and Southbound

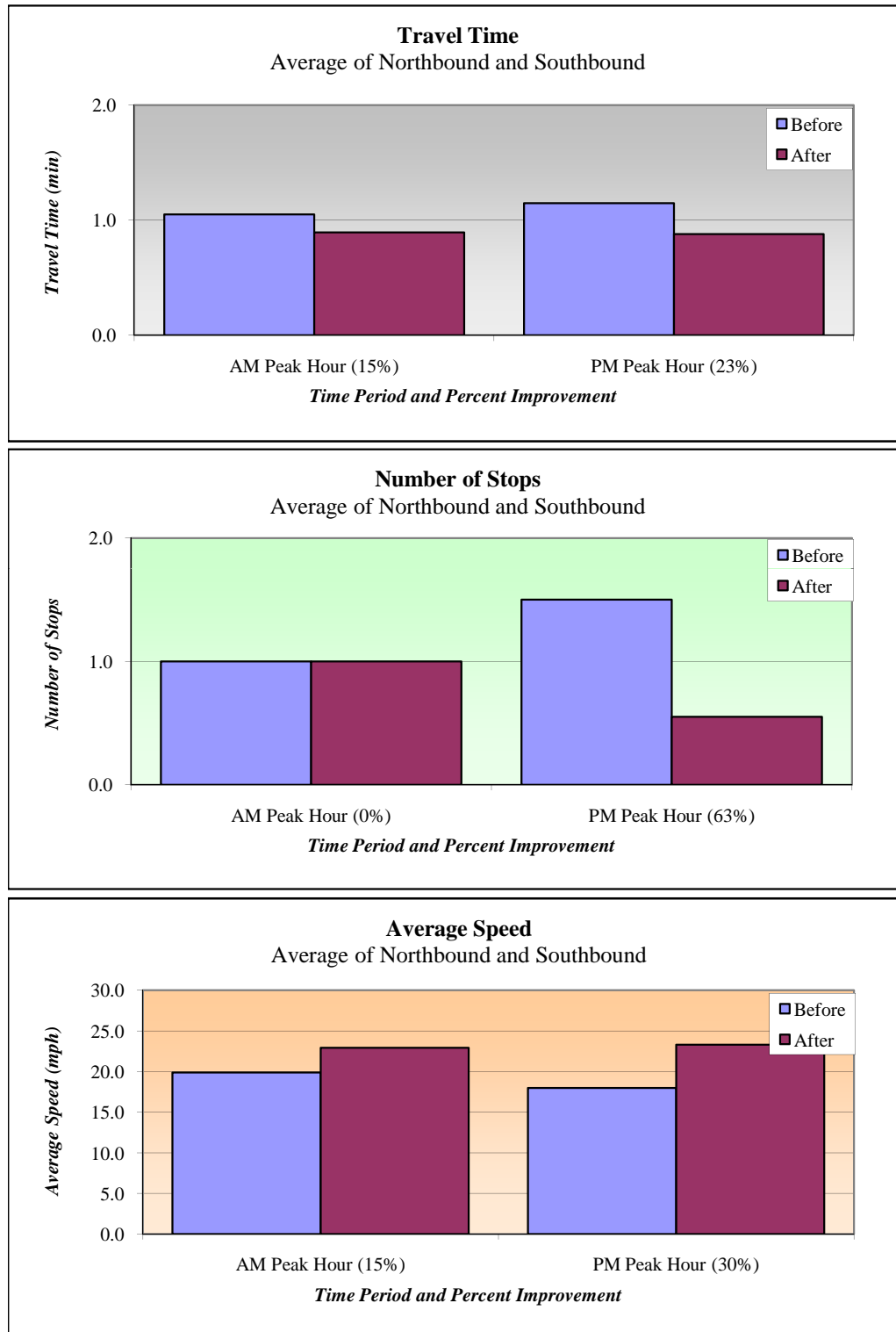
	<i>Travel Time</i>	<i>Number of Stops</i>	<i>Average Speed</i>
<i>AM Peak Hour</i>	15%	0%	15%
<i>PM Peak Hour</i>	23%	63%	30%
Average Improvements:	19%	32%	22%

Agencies operating traffic signals along this corridor: Ontario, Caltrans

Before Study was conducted on 10/31/07.

After Study was conducted on 1/28/09.

"Before and After" Study Results
Exhibit V- 30b: Vineyard Avenue
(Philadelphia Street - Pep Boys)



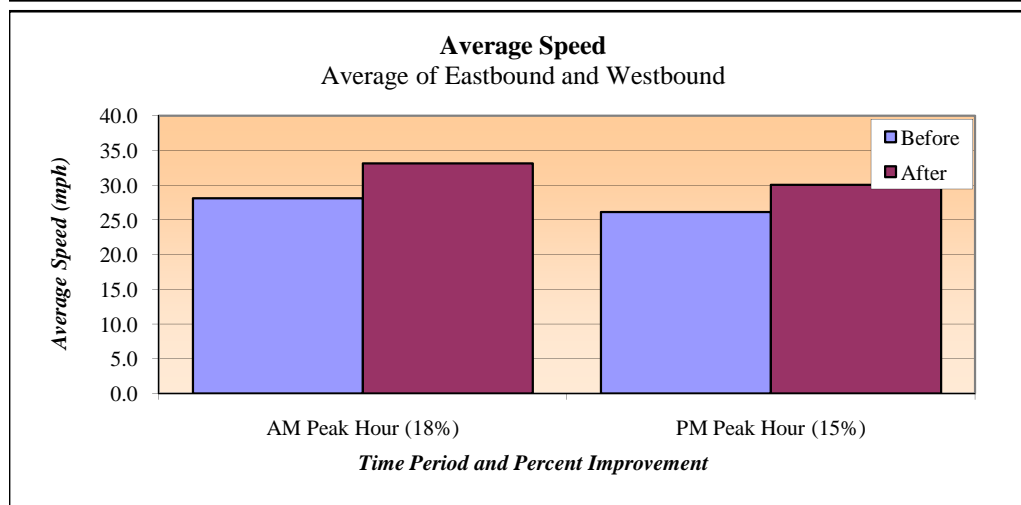
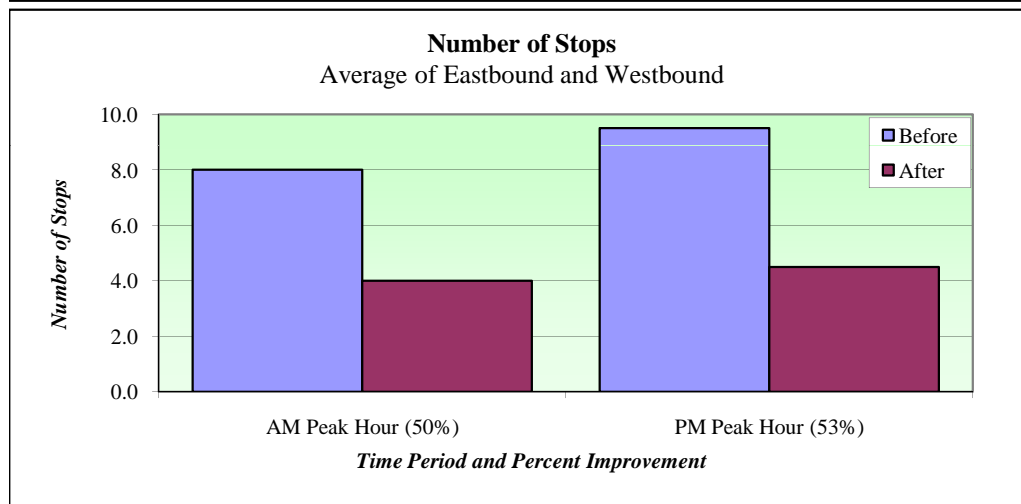
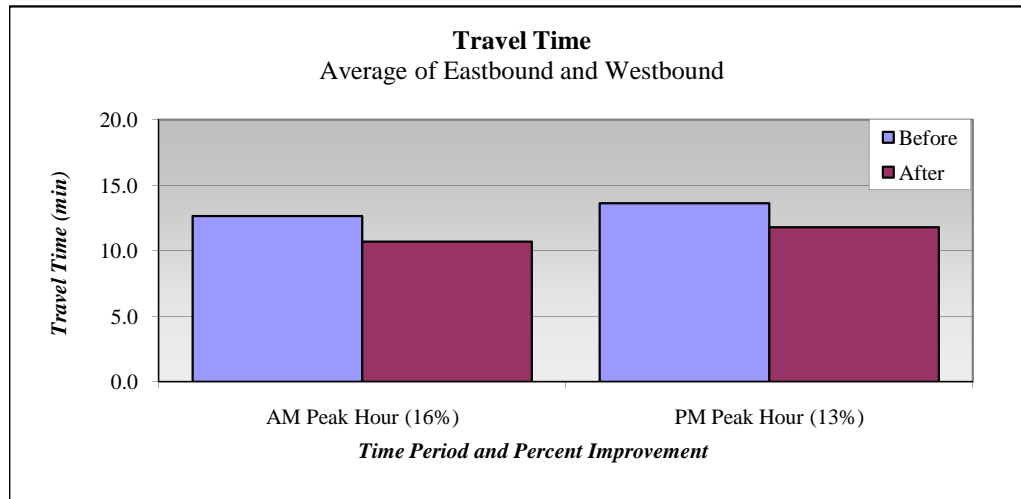
"Before and After" Study Results
Exhibit V- 31a: Washington Street/Barton Road
(Weir Road - Cajon Street/Orange Street)

<div>Direction</div> <div>Time Period</div>	Eastbound						Westbound																					
	Travel Time (min)		Number of Stops		Average Speed (mph)		Travel Time (min)		Number of Stops		Average Speed (mph)																	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After																
AM Period	12.23	10.38	7.0	3.0	29.11	34.24	13.11	11.03	9.0	5.0	27.14	32.06																
AM Improvement (%)	15%		57%		18%		16%		44%		18%																	
PM Period	13.97	11.40	10.0	4.0	25.48	31.13	13.30	12.20	9.0	5.0	26.74	28.96																
PM Improvement (%)	18%		60%		22%		8%		44%		8%																	
<div>Length (miles):5.9</div> <div>Number of Signals:17</div> <div>Number of Agencies:3</div> <div><div>Average Corridor-wide Improvements:</div><div>Combined Average of Eastbound and Westbound</div><table><tr><td></td><td>Travel Time</td><td>Number of Stops</td><td>Average Speed</td></tr><tr><td>AM Peak Hour</td><td>16%</td><td>50%</td><td>18%</td></tr><tr><td>PM Peak Hour</td><td>13%</td><td>53%</td><td>15%</td></tr><tr><td>Average Improvements:</td><td>14%</td><td>51%</td><td>16%</td></tr></table></div>														Travel Time	Number of Stops	Average Speed	AM Peak Hour	16%	50%	18%	PM Peak Hour	13%	53%	15%	Average Improvements:	14%	51%	16%
	Travel Time	Number of Stops	Average Speed																									
AM Peak Hour	16%	50%	18%																									
PM Peak Hour	13%	53%	15%																									
Average Improvements:	14%	51%	16%																									
Agencies operating traffic signals along this corridor: San Bernardino City, Loma Linda, Redlands																												

Before Study was conducted on 11/27/07, 11/28/2007 and 11/29/07.

After Study was conducted on 10/29/08 and 11/05/08.

"Before and After" Study Results
Exhibit V- 31b: Washington Street/Barton Road
(Weir Road - Cajon Street/Orange Street)



A Level of Service (LOS) analysis was conducted for the critical intersections (as previously defined) using procedures contained in the 2000 Highway Capacity Manual. The signal timing parameters for the “after” project conditions were used in the analysis. Results of these analyses are presented on Exhibit V-32 for the AM peak period and Exhibit V-33 for the PM peak period.

Mobile Source Emissions and Fuel Consumption

Unlike as is the case with freeway travel, an increase in average speed on arterial streets, in the range of 25-40 mph, typically results in significant reductions of both emissions and fuel usage. As is commonly known, for vehicles traveling at a constant velocity, emissions and fuel consumption reduce as speed increases up to approximately 40 mph, with the greatest reductions occurring below 25 mph. However, for the 25-40 mph range of speed on arterials with varying degrees of stops at traffic signals, the reduction is even greater as average speed increases. The reason for this is that the increase in average speed is the direct result of fewer stops at traffic signals being coordinated. Emissions along arterials occur primarily during the deceleration and acceleration modes, which generate relatively large amounts of emissions and utilize additional fuel. As was documented in the South Coast AQMD study (“Multijurisdictional Traffic Signal Interconnect and Coordination Timing Project in Western San Bernardino County,” May 1994), typical emission reductions of pollutants measured (VOC, CO, and NO_x) averaged approximately 15% where speeds increased by 15% and stops decreased by 17%. For the same conditions, fuel consumption decreased by 12%. This 12% reduction in fuel consumption is correlatable to a 12% reduction in Green House Gases (CO₂).

Exhibit V-32: Tier 1 & 2 Project Area AM Period Level of Service

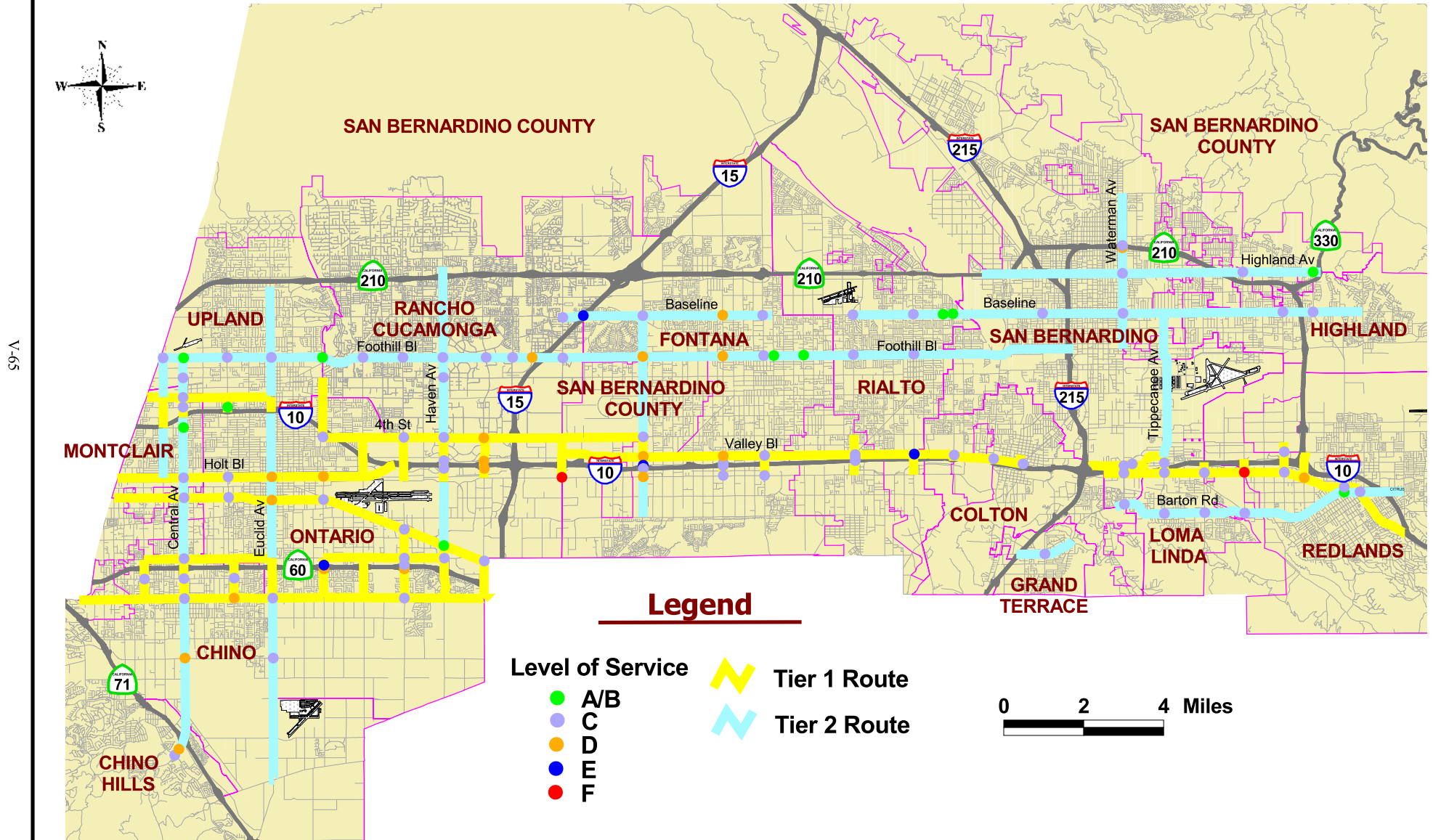
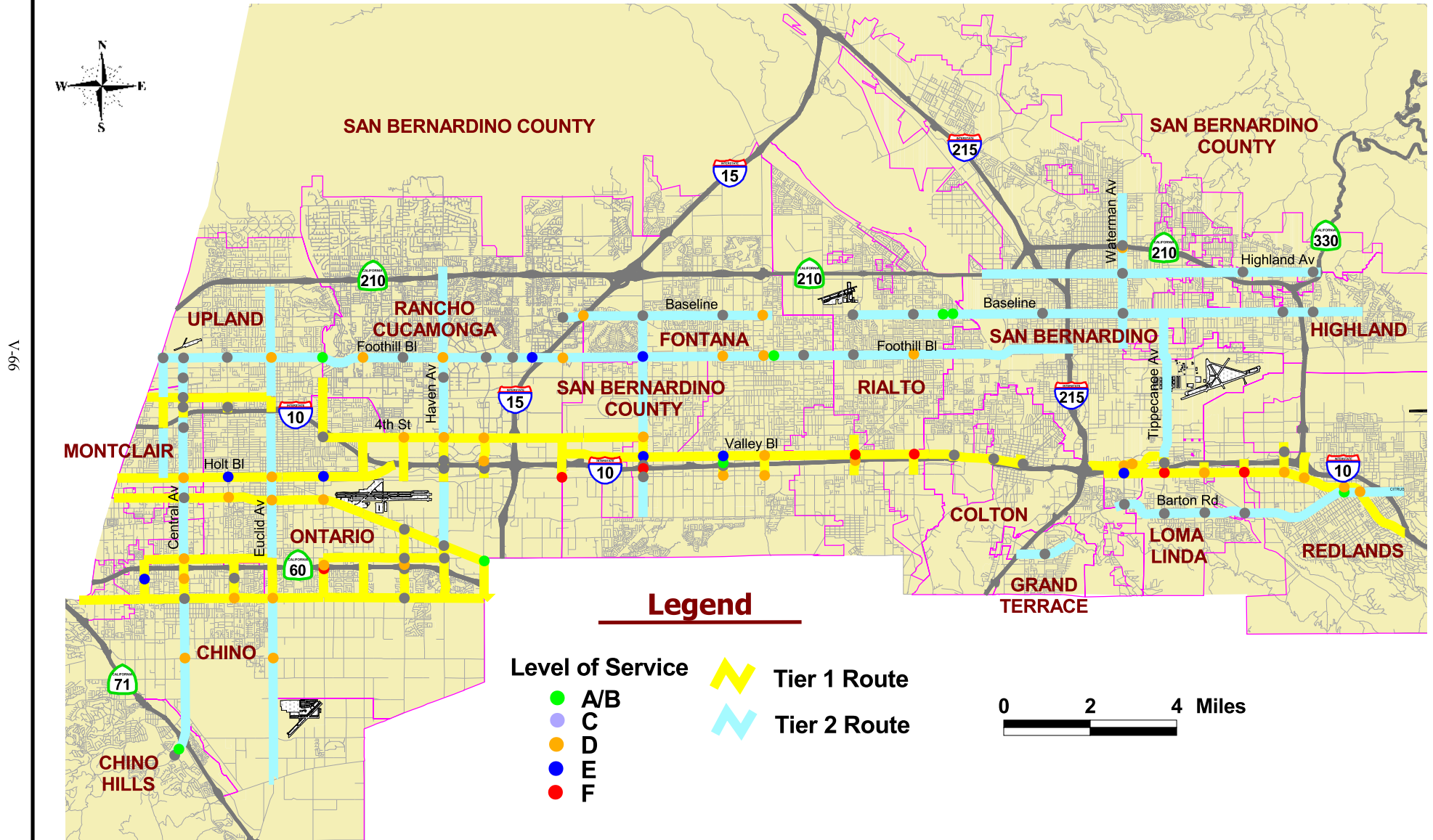


Exhibit V-33: Tier 1 & 2 Project Area PM Period Level of Service



Based on the above referenced research, the South Coast AQMD made a finding that multijurisdictional traffic signal coordination projects should continue and that funding sources, such as CMAQ, would be most appropriate because of the proven and established benefit of significant reduction in emissions (approximately 15% on average) with properly maintained traffic signal coordination.

The cited research project occurred in the same geographic area with similar travel demands as the Tier 1 & 2 Project, and included 113 signalized intersections (approximately 17% of the signals included in the Tier 1 & 2 Project). For simplicity, based on the 17% ratio of study signals, it could be concluded that the Tier 1 & 2 reductions would amount to approximately six times those achieved in the South Coast AQMD research project, or 2,000 lbs of VOC, 16,000 lbs of CO, and 5,000 lbs of NOx per day, considering only reductions occurring during peak hour traffic conditions (i.e., 6 hours per day). While it is true that individual vehicle emission factors are lower now than they were at the time of the South Coast AQMD study, the much higher traffic volumes present in the overall Tier 1 & 2 Project area, combined with the significant reduction in number of stops achieved by coordinating previously uncoordinated Caltrans freeway ramp signals with adjacent local agency signals, could result in even greater emission reductions.

The most significant aspect of traffic signal coordination is that emissions are reduced significantly by decreasing the percentage of higher emissions modes (i.e., the deceleration and acceleration modes) of trips by reducing the number of stops. This likewise results in similar reductions in fuel consumption. For the Tier 1 & 2 Project, this 12% reduction in fuel consumption could amount to as much as 6 million gallons per year.

VI. Multijurisdictional Traffic Signal System Operation

The most effective traffic signal coordination requires the use of appropriate traffic signal infrastructure, optimization of intersection capacity, and the proper implementation and fine-tuning of optimized coordination signal timing. Traffic signal infrastructure includes items such as traffic signal controllers, signal-interconnect communications, vehicle detection systems, and central signal systems. Optimum intersection capacity results when adequate lane geometrics, coupled with appropriate signal phasing, is provided to accommodate traffic demand. It is also important to monitor the coordinated traffic signal system in order to sustain the benefits achieved via traffic signal timing optimization.

The Tier 1 & 2 Project was a significant step in developing and, as importantly, maintaining effective coordination signal timing throughout the San Bernardino Valley. As the first step in the project, interconnect was designed and installed to enable signalized intersections to “talk to each other.” Without this capability, coordination signal timing plans cannot be installed, monitored, maintained, and adjusted on a system-wide basis.

Upgrading of each agency’s central signal control system is another key component of multijurisdictional signal system operation. Recognizing this, SANBAG allocated additional funding to help upgrade the local agencies’ central traffic signal control systems.

Monitoring and maintenance of the coordination signal timing plans, the interconnect, and the central control systems are critical factors in maintaining optimal timing. Recognizing this,

SANBAG has contracted with AGA to provide monitoring of the coordination timing for the 652 project signals included in the Tier 1 & 2 Project through June, 2011. It is anticipated that, at that time, the Tier 3 & 4 Project will be completely designed, constructed, and operational and that SANBAG will contract for monitoring of the coordination signal timing at all 1,200 (\pm) Tier 1-4 intersections on an ongoing basis.

System monitoring is generally defined as ensuring that the entire system is functioning as a whole, that is, as an inter-jurisdictional multi-agency coordinated system. As previously noted, there are several different signal control system software programs in use by the various agencies in the project.

The fine tuning/monitoring of project signals includes periodic remote viewing of system functions and driving of the system signals to visually review the signal coordination effectiveness, minor modifications of splits and offsets to respond to traffic fluctuations, communicating with responsible maintenance technicians at each agency and, most importantly, maintaining multi-jurisdictional traffic signal coordination. In addition, immediate replacements or repairs of any failing signal controllers or vehicle detection systems is also critical in continued operation of the coordinated signal system.

It is therefore very important that an on-going performance monitoring of coordinated traffic signal systems be implemented such that the benefits achieved are not lost due to any signal system equipment malfunctions – detections systems, communication systems, controller or software – and changing traffic volumes. The on-going performance monitoring of the

coordinated signal system should be conducted via advanced traffic signal control systems, field reviews and signal timing adjustments by experienced traffic signal engineers. Additionally, due to changing traffic volumes and traffic patterns, the coordinated signal timing plans should be updated on a three year periodic basis.

SANBAG has also created a fund for the ongoing maintenance of signal communication/control hardware constructed as part of the Tier 1 & 2 Project. This fund is dedicated to the replacement of failed equipment (after the product warranties have expired) in order to help keep the system operational, during the performance monitoring period.

Because the coordination plans were designed and operate without consideration of agency boundaries, that is, as truly multijurisdictional signal timing plans, it is imperative that no coordination timing plans be modified arbitrarily by one agency. SANBAG has developed a draft Memorandum of Understanding (MOU) detailing agency procedures, responsibilities, and constraints relative to maintaining/modifying coordination signal timing on project arterials. Because changing timing at one signal can significantly impact timing coordination along an entire corridor, it is critical that agencies communicate with each other and agree beforehand on any signal timing modifications. The MOU is contained in Appendix A.

One additional component of optimized timing relates to optimization of intersection capacity. During the development and implementation of coordination timing plans, it was observed that there were various Tier 1 & 2 intersections requiring additional turn lanes, longer turn pockets, etc., if timing plans were to be optimized. Such improvements could be relatively simple, such as

restriping within existing curb lines, or relatively complex, such as major widening of critical intersections. As a follow-up project, it would be appropriate to identify such locations within the Tier 1 & 2 Project area and develop a list of potential improvements to enhance capacity at these intersections, resulting in additional through-put volume with appropriate enhanced optimized signal timing.. Those locations are often the controlling factors in developing optimum signal timing plans.

VII. Summary and Conclusions

The Tier 1 & 2 San Bernardino Valley Coordinated Traffic Signal System Plan Project is one of the largest projects of its type in all of Southern California. The interconnect and coordination encompassing 652 signalized intersections throughout 14 cities and unincorporated San Bernardino County, including 48 Caltrans freeway interchanges and 150 miles of arterial highways, is a significant first step in reducing travel times and numbers of stops, and increasing average speeds, throughout the San Bernardino Valley.

In summary, the following key components were essential in the successful implementation of the Tier 1 & 2 coordinated signal system:

1. Use of common time source for exact time-of-day at each agency system.
2. Use of common signal system cycle length when developing optimized coordination traffic signal timings between jurisdictions.
3. Implementation of upgraded traffic signal controllers and communication devices to integrate field devices with traffic operational centers.
4. Development, implementation, and fine-tuning of optimized signal timing parameters based on prevailing traffic patterns, while recognizing the heavy turning movements at freeway interchanges and at major crossing arterials.
5. Multi-agency common goal of increasing arterial thru-put volume with reduced stops and delays.
6. Cooperation and support from all participating cities, the County, and Caltrans.

7. Performance monitoring after project “Turn-on” via extended signal timing fine-tuning adjustments, field reviews and equipment repair of the inter-jurisdictional coordinated traffic signal system.

In addition, the development of a Memorandum of Understanding for the project between SANBAG and participating agencies, specifically defining agency roles and responsibilities, is an essential component to the success of the project. Key elements of project success – including coordination with Caltrans, local agency support and cooperation, and performance monitoring of coordinated traffic signal systems – are aspects that need to be carried forward into future Valley-Wide signal synchronization efforts.

One key recommendation to further improve traffic operational capability of intersections and arterial highways in the San Bernardino Valley relates to capacity enhancements. A follow-up project that identifies key “bottleneck locations” where physical roadway improvements, such as restriping or widening, need to occur, and the development of plans to enact such enhancements, is a necessary step to further increasing mobility throughout the Valley. Additionally, ongoing monitoring of coordination timing, and retiming of project arterials every three years, are likewise key factors in optimizing and maintaining project benefits.

Coordinated efforts of the project team, coupled with excellent cooperation provided by all participating agencies, and implementation of various innovative traffic engineering solutions to optimize signal timing together resulted in a much greater than typical improvement expected. Reductions in peak hour travel time was approximately 22%; the number of stops along project

arterials was reduced by an average of 47%; and overall average peak hour speeds increased by approximately 27%. These improvements resulted in a similar reduction of mobile source emissions and fuel consumption. These results definitely prove the importance and effectiveness of multi-jurisdictional coordination signal timing. When coordinated signal systems operate without regard to jurisdictional boundaries, the result is a significant increase in mobility for all.

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SAN BERNARDINO ASSOCIATED GOVERNMENTS San Bernardino Valley Coordinated Traffic Signal System

To Whom It May Concern:

MEMORANDUM OF UNDERSTANDING

This is a “Memorandum of Understanding” (MOU) between the San Bernardino Associated Governments (SANBAG) and the [Cities of ____/County of San Bernardino/Caltrans] covering the operation of coordinated traffic signals along certain key arterial routes in the San Bernardino Valley as shown on “Exhibit A.” It constitutes solely a guide to the intentions and policies of the parties involved. It is not intended to authorize funding or project effort.

SANBAG and its member agencies have concluded that the coordination of traffic signals across jurisdictional boundaries is one critical component of improving traffic operations and air quality in the San Bernardino Valley. Towards this end, SANBAG has prepared the San Bernardino Valley Coordinated Traffic Signal System Plan Final Report, a document which presents a blueprint for designing, constructing, and operating a Valley-wide coordinated signal system. The attached “Exhibit A” graphically depicts the proposed overall coordinated arterial network. Design and construction of the necessary traffic signal interconnect, and development and implementation of coordination signal timing plans, are the first steps in the eventual operation of the system. However, to ensure that the system, once designed and constructed, continues to operate as planned in an efficient manner, it is important that communication and cooperation among all participating agencies be maintained. To accomplish these goals, the following have been identified:

1. Signal timing plans for those coordinated arterials identified in “Exhibit A” have been and/or will be developed and implemented by SANBAG (or their consultant) after review and approval by the respective agencies. Any subsequent changes to those signal timing plans proposed by any of the parties shall be agreed upon in writing by all parties, such as City Traffic Engineer or City Engineer, affected by the changes.
2. All parties shall maintain a common time source (either a WWV or GPS clock time, or other highly accurate time source) at the appropriate field master traffic signal controller or control center for its signals along arterials identified in “Exhibit A” and shall resynchronize the system clock time at 12:00 midnight each day. The time source either already exists or will be provided by SANBAG as part of the construction phase.

3. Any party wishing to add existing signalized intersections or newly signalized intersections to the coordinated signal system, shall be responsible for providing compatible signal control equipment, including appropriate signal interconnect. Modifications and/or additions to the coordination signal timing plans for those additional intersections shall be agreed to in writing by all affected parties.
4. SANBAG has contracted with a traffic engineering consultant(s) to maintain and monitor the designated signal timing plans. The consultant is authorized to act in SANBAG's behalf (and above-mentioned San Bernardino Valley agencies) relative to any proposed signal timing modifications, additions, etc.

Sincerely,

Deborah Barmack
Executive Director

I CONCUR:

City of _____

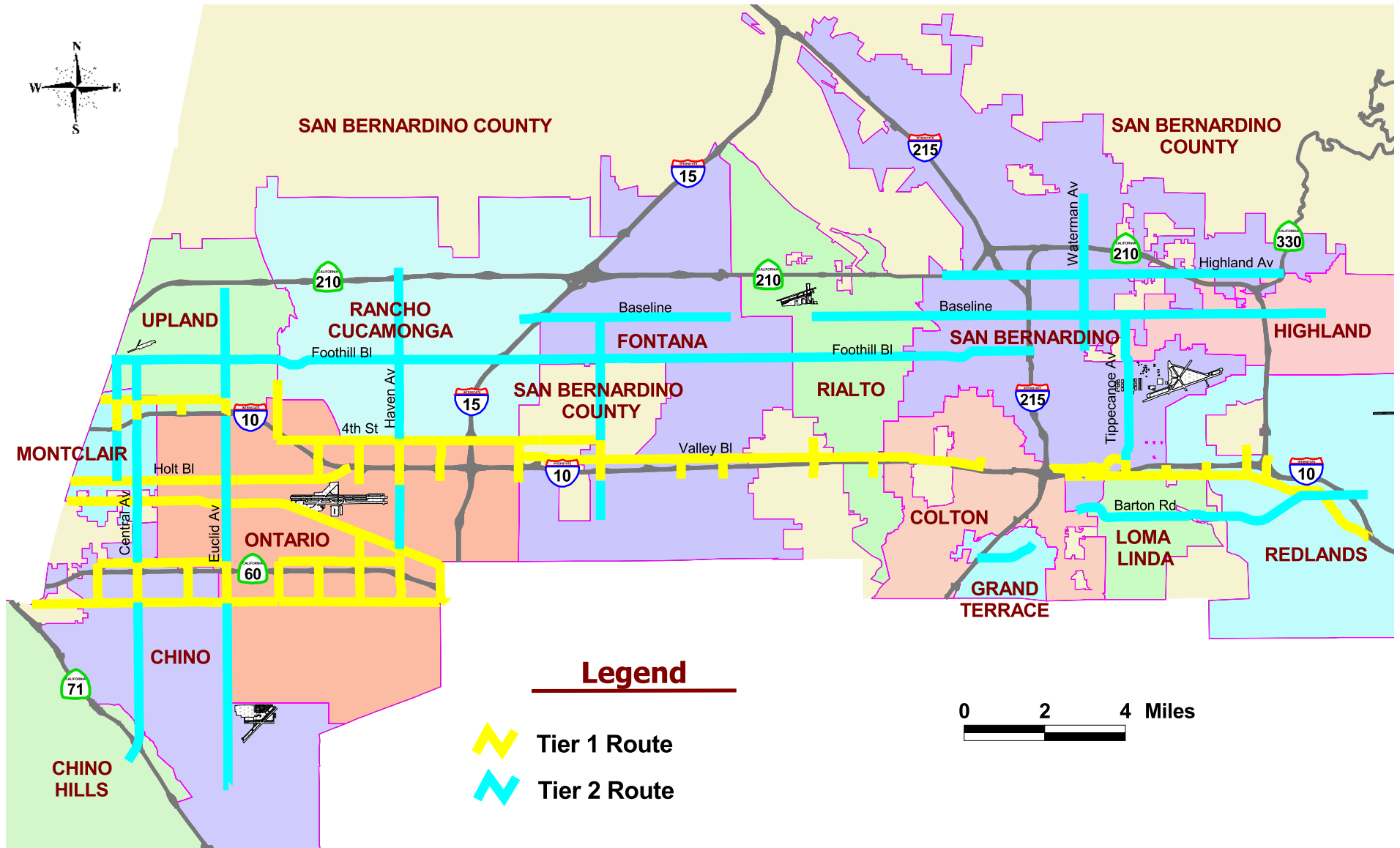
Signature

Printed Name

Title

Date

Exhibit A: Tier 1 & 2 Project Routes



A P P E N D I X B

Signal Controller, System Type & Interconnect Communications
Appendix B-1: Caltrans

Page 1 of 5

No.	Intersection	City Area	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
			Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
			NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070	Model 170/170E										
I-10 Interchanges <i>(includes 4th St @ El Dorado Ave)</i>																		
1	4th St @ El Dorado Ave	Ontario						X	Caltrans C-8					X		X		
2	4th St @ I-10 EB Ramps	Ontario						X	Caltrans C-8					X		X		
3	4th St @ I-10 WB Ramps *	Ontario						X	Caltrans C-8 TRFM					X	X	X		
4	Alabama St @ I-10 EB Ramps	Redlands						X	Caltrans C-8					X		X		
5	Alabama St @ I-10 WB Ramps *	Redlands						X	Caltrans C-8 TRFM					X		X		X
6	Anderson St/Tipecanoe Ave @ I-10 EB Ramps	Loma Linda						X	Caltrans C-8							X		
7	Anderson St/Tipecanoe Ave @ I-10 WB Ramps	Loma Linda						X	Caltrans C-8							X		
8	Archibald Ave @ I-10 Ramps *	Ontario						X	Caltrans C-8 TRFM					X		X		X
9	California St @ I-10 EB Ramps *	Redlands						X	Caltrans C-8 TRFM					X		X		X
10	California St @ I-10 WB Ramps	Redlands						X	Caltrans C-8					X		X		
11	Cedar Ave @ I-10 EB Ramps	Rialto						X	Caltrans C-8					X		X		
12	Cedar Ave @ I-10 WB Ramps *	Rialto						X	Caltrans C-8 TRFM					X		X		X
13	Central Ave @ I-10 EB Ramps *	Montclair						X	Caltrans C-8					X	X	X		
14	Central Ave @ I-10 WB Ramps	Montclair						X	Caltrans C-8					X		X		
15	Cherry Ave @ I-10 EB Ramps	Fontana						X	Caltrans C-8					X		X		
16	Cherry Ave @ I-10 WB Ramps *	Fontana						X	Caltrans C-8 TRFM					X		X		X
17	Citrus Ave @ I-10 EB Ramps	Fontana						X	Caltrans C-8					X		X		
18	Citrus Ave @ I-10 WB Ramps *	Fontana						X	Caltrans C-8 TRFM					X		X		X
19	Etiwanda Ave @ I-10 EB Ramps *	Ontario						X	Caltrans C-8 TRFM					X	X	X		
20	Etiwanda Ave @ I-10 WB Ramps	Ontario						X	Caltrans C-8					X		X		
21	Ford St @ Redlands Blvd-I-10 Ramps *	Redlands						X	Caltrans C-8 TRFM					X		X		X
22	Haven Ave @ I-10 EB Ramps	Ontario						X	Caltrans C-8					X		X		
23	Haven Ave @ I-10 WB Ramps *	Ontario						X	Caltrans C-8 TRFM					X		X		X
24	Hospitality Ln @ I-10 WB Ramps/W Carnegie Dr *	San Bernadino						X	Caltrans C-8 TRFM					X	X	X		
25	Milliken Ave @ I-10 EB Ramps	Ontario						X	Caltrans C-8					X		X		
26	Milliken Ave @ I-10 WB Ramps/Ontario Mills Pkwy *	Ontario						X	Caltrans C-8 TRFM					X	X	X		
27	Monte Vista Ave @ I-10 EB Off-Ramp/Palo Verde St	Montclair						X	Caltrans C-8					X		X		
28	Palo Verde St @ I-10 EB On-Ramp	Montclair						X	Caltrans C-8					X		X		
29	Monte Vista Ave @ I-10 WB Ramps *	Montclair						X	Caltrans C-8 TRFM					X	X	X		
30	Mountain Ave @ I-10 EB Ramps *	Ontario						X	Caltrans C-8 TRFM					X	X	X		
31	Mountain Ave @ I-10 WB Ramps	Upland						X	Caltrans C-8					X		X		
32	Mountain View Ave @ I-10 EB Ramps *	Loma Linda						X	Caltrans C-8 TRFM					X		X		X
33	Mountain View Ave @ I-10 WB Ramps	Loma Linda						X	Caltrans C-8					X		X		

Note: * Field Master Controller Location; TRFM: Traffic Responsive Field Master.

Signal Controller, System Type & Interconnect Communications
Appendix B-1: Caltrans

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No.	Intersection	City Area	Signal Controller							Signal System Make & Type					Type of Signal Interconnect Communication			
			Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain Bl Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
			NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070	Model 170/170E										
I-10 Interchanges (includes 4th St @ El Dorado Ave) - Continued																		
34	Pepper Ave @ I-10 EB Ramps	Colton						X	Caltrans C-8					X		X		
35	Pepper Ave @ I-10 WB Ramps *	Colton						X	Caltrans C-8 TRFM					X		X		X
36	Rancho Ave @ I-10 EB Ramps	Colton						X	Caltrans C-8					X		X		
37	Rancho Ave @ I-10 WB Ramps *	Colton						X	Caltrans C-8 TRFM					X		X		X
38	Redlands Blvd @ I-10 EB Off-Ramp/Club Center Dr	San Bernadino						X	Caltrans C-8					X		X		
39	Riverside Ave @ I-10 EB Ramps	Rialto						X	Caltrans C-8					X		X		
40	Riverside Ave @ I-10 WB Ramps *	Rialto						X	Caltrans C-8 TRFM					X		X		X
41	Sierra Ave @ I-10 Ramps *	Fontana						X	Caltrans C-8 TRFM					X	X			
42	Tennessee St @ I-10 EB Ramps *	Redlands						X	Caltrans C-8 TRFM					X		X		X
43	Tennessee St @ I-10 WB Ramps	Redlands						X	Caltrans C-8					X		X		
44	Valley Blvd @ I-10 Ramps/Commerce Dr	Fontana						X	Caltrans C-8					X		X		
45	Vineyard Ave @ I-10 EB Ramps	Ontario						X	Caltrans C-8					X		X		
46	Vineyard Ave @ I-10 WB Ramps *	Ontario						X	Caltrans C-8 TRFM					X	X	X		
I-15 Interchanges																		
47	4th St @ Ontario Mills Dr/I-15 SB Ramps	Ontario						X	Caltrans C-8					X		X		
48	4th St @ I-15 NB Ramps *	Ontario						X	Caltrans C-8 TRFM					X		X		X
49	Baseline Rd @ I-15 SB Ramps	Rancho Cucamonga						X	Caltrans C-8					X		X		
50	Baseline Ave @ I-15 NB Ramps *	Fontana						X	Caltrans C-8 TRFM					X	X	X		
51	Foothill Blvd @ I-15 SB Ramps	Rancho Cucamonga						X	Caltrans C-8					X		X		
52	Foothill Blvd @ I-15 NB Ramps *	Rancho Cucamonga						X	Caltrans C-8 TRFM					X	X	X		
I-215 Interchanges																		
53	Barton Rd @ I-215 SB Ramps	Grand Terrace						X	Caltrans C-8					X		X		
54	Barton Rd @ I-215 NB Ramps *	Grand Terrace						X	Caltrans C-8 TRFM					X	X	X		
SR-18 (Waterman Avenue)																		
55	Waterman Ave (SR-18) @ SR-210 EB Ramps	San Bernadino						X	Caltrans C-8					X			X	
56	Waterman Ave (SR-18) @ 30th St *	San Bernadino						X	Caltrans C-8 TRFM					X		X	X	X
57	30th St @ Leroy St/SR-210 WB On-Ramp	San Bernadino						X	TSCP					X		X		
58	Waterman Ave (SR-18) @ Marshall Blvd	San Bernadino						X	TSCP					X			X	
59	Waterman Ave (SR-18) @ Parkdale Dr	San Bernadino						X	TSCP					X		X		
60	Waterman Ave (SR-18) @ 38th St	San Bernadino						X	TSCP					X		X	X	
61	Waterman Ave (SR-18) @ 40th St	San Bernadino						X	TSCP					X			X	

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Signal Controller, System Type & Interconnect Communications
Appendix B-1: Caltrans

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No.	Intersection	City Area	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication							
			Type/Brand/Make					Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone				
			NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070											Model 170/170E			
SR-30 (Highland Avenue)																					
62	Highland Ave (SR-30) @ Macy St	San Bernadino						X	Caltrans C-8					X		X					
63	Highland Ave (SR-30) @ State St	San Bernadino						X	Caltrans C-8					X		X					
64	Highland Ave (SR-30) @ California St *	San Bernadino						X	Caltrans C-8 TRFM					X		X		X			
SR-60 EB Interchanges																					
65	Archibald Ave @ SR-60 EB Ramps *	Ontario						X	Caltrans C-8 TRFM					X	X	X					
66	Archibald Ave @ SR-60 WB Ramps	Ontario						X	Caltrans C-8					X		X					
67	Central Ave @ SR-60 EB Ramps *	Chino						X	Caltrans C-8 TRFM					X		X		X			
68	Central Ave @ SR-60 WB Ramps	Chino						X	Caltrans C-8					X		X					
69	Grove Ave @ SR-60 EB Ramps *	Ontario						X	Caltrans C-8 TRFM					X	X	X					
70	Grove Ave @ SR-60 WB Ramps	Ontario						X	Caltrans C-8					X		X					
71	Haven Ave @ SR-60 EB Ramps *	Ontario						X	Caltrans C-8 TRFM					X		X		X			
72	Haven Ave @ SR-60 WB Ramps	Ontario						X	Caltrans C-8					X		X					
73	Milliken Ave @ SR-60 EB Ramps	Ontario						X	Caltrans C-8					X		X					
74	Milliken Ave @ SR-60 WB Ramps *	Ontario						X	Caltrans C-8 TRFM					X	X	X					
75	Mountain Ave @ SR-60 EB Ramps *	Chino					X		TSCP TRFM					X		X		X			
76	Mountain Ave @ SR-60 WB Ramps	Chino						X	Caltrans C-8					X		X					
77	Ramona Ave @ SR-60 EB Ramps *	Chino						X	Caltrans C-8 TRFM					X	X	X					
78	Ramona Ave @ SR-60 WB Ramps	Chino						X	Caltrans C-8					X		X					
79	Vineyard Ave @ SR-60 EB Ramps	Ontario						X	Caltrans C-8					X		X					
80	Vineyard Ave @ SR-60 WB Ramps *	Ontario						X	Caltrans C-8 TRFM					X	X	X					
SR-66 (Foothill Boulevard)																					
81	Foothill Blvd (SR-66) @ Meridian Ave	San Bernadino						X	Caltrans C-8					X			X				
82	Foothill Blvd (SR-66) @ Macy St South *	San Bernadino						X	Caltrans C-8 TRFM					X			X	X			
83	Foothill Blvd-5th St (SR-66) @ 4th St	San Bernadino						X	Caltrans C-8					X			X				
84	5th St (SR-66) @ Medical Center Dr	San Bernadino						X	Caltrans C-8					X			X				
85	5th St (SR-66) @ Cabrera Ave	San Bernadino						X	Caltrans C-8					X			X				
86	5th St (SR-66) @ Mount Vernon Ave	San Bernadino						X	Caltrans C-8					X			X				
87	5th St (SR-66) @ L St	San Bernadino						X	Caltrans C-8					X			X				
88	5th St (SR-66) @ J St	San Bernadino					X		TSCP												
89	5th St (SR-66) @ H St	San Bernadino						X	Caltrans C-8					X			X				
SR-71 Interchanges																					
90	Soquel Canyon Pkwy/Central Ave @ SR-71 SB Ramps *	Chino Hills						X	Caltrans C-8 TRFM					X		X		X			
91	Soquel Canyon Pkwy/Central Ave @ SR-71 NB Ramps	Chino Hills						X	Caltrans C-8					X		X					

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Signal Controller, System Type & Interconnect Communications
Appendix B-1: Caltrans

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			Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
			NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070	Model 170/170E										
SR-83 (Euclid Avenue)																		
92	Euclid Ave (SR-83) @ Pine Ave	Chino						X	Caltrans C-8					X			X	
93	Euclid Ave (SR-83) @ Kimball Ave	Chino						X	Caltrans C-8					X			X	
94	Euclid Ave (SR-83) @ Merrill Ave	Chino						X	Caltrans C-8					X			X	
95	Euclid Ave (SR-83) @ Eucalyptus Ave	Chino						X	Caltrans C-8					X			X	
96	Euclid Ave (SR-83) @ Edison Ave	Chino						X	Caltrans C-8					X			X	
97	Euclid Ave (SR-83) @ Red Bud Ln	Chino						X	Caltrans C-8					X				
98	Euclid Ave (SR-83) @ Schaefer Ave	Chino						X	Caltrans C-8					X			X	
99	Euclid Ave (SR-83) @ Chino Ave	Chino						X	Caltrans C-8					X			X	
100	Euclid Ave (SR-83) @ Riverside Dr	Ontario						X	Caltrans C-8					X		X	X	
101	Euclid Ave (SR-83) @ Merion St	Ontario						X	Caltrans C-8					X		X		
102	Euclid Ave (SR-83) @ Walnut St	Ontario						X	Caltrans C-8					X			X	
103	Euclid Ave (SR-83) @ SR-60 EB Ramps *	Ontario						X	Caltrans C-8 TRFM					X	X	X	X	
104	Euclid Ave (SR-83) @ SR-60 WB Ramps	Ontario						X	Caltrans C-8					X		X		
105	Euclid Ave (SR-83) @ Philadelphia St	Ontario						X	Caltrans C-8					X		X		
106	Euclid Ave (SR-83) @ Francis St	Ontario						X	Caltrans C-8					X			X	
107	Euclid Ave (SR-83) @ Belmont St *	Ontario						X	Caltrans C-8 TRFM					X			X	X
108	Euclid Ave (SR-83) @ Mission Blvd	Ontario						X	Caltrans C-8					X			X	
109	Euclid Ave (SR-83) @ Holt Blvd	Ontario						X	Caltrans C-8					X		X		
110	Euclid Ave (SR-83) @ B St	Ontario						X	Caltrans C-8					X		X		
111	Euclid Ave (SR-83) @ C St	Ontario						X	Caltrans C-8					X		X		
112	Euclid Ave (SR-83) @ D St	Ontario						X	Caltrans C-8					X		X		
113	Euclid Ave (SR-83) @ E St	Ontario						X	Caltrans C-8					X		X		
114	Euclid Ave (SR-83) @ G St	Ontario						X	Caltrans C-8					X		X		
115	Euclid Ave (SR-83) @ I St	Ontario						X	Caltrans C-8					X		X		
116	Euclid Ave (SR-83) @ 4th St	Ontario						X	Caltrans C-8					X		X		
117	Euclid Ave (SR-83) @ Princeton St-EB Crosswalk	Ontario						X	Caltrans C-8					X		X		
118	Euclid Ave (SR-83) @ 5th St	Ontario						X	Caltrans C-8					X		X		
119	Euclid Ave (SR-83) @ 6th St *	Ontario						X	Caltrans C-8 TRFM					X		X		
120	Euclid Ave (SR-83) @ I-10 EB Ramps	Ontario						X	Caltrans C-8					X	X	X		

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Signal Controller, System Type & Interconnect Communications
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			NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070	Model 170/170E										
SR-210 Interchanges																		
121	Baseline St @ SR-210 EB Ramps *	Highland						X	Caltrans C-8 245 FM							X		
122	Baseline St @ SR-210 WB Ramps	Highland						X	Caltrans C-8							X		
123	Haven Ave @ SR-210 EB Ramps	Rancho Cucamonga							Caltrans C-8							X		
124	Haven Ave @ SR-210 WB Ramps *	Rancho Cucamonga							Caltrans C-8 210 FM							X		
125	Highland Ave @ SR-210 EB Off-Ramp	San Bernadino						X	Caltrans C-8					X		X		
126	Highland Ave @ Arden Ave @ SR-210 WB On-Ramp	San Bernadino						X	Caltrans C-8					X		X		
127	Arden Ave @ SR-210 EB On-Ramp	San Bernadino						X	Caltrans C-8					X		X		
128	Highland Ave @ SR-210 WB Off-Ramp *	San Bernadino						X	Caltrans C-8 TRFM					X		X		X
129	State St @ SR-210 EB Ramps	San Bernadino						X	Caltrans C-8					X		X		
130	State St @ SR-210 WB Ramps	San Bernadino						X	Caltrans C-8					X		X		
SR-259 Interchanges																		
131	Highland Ave @ SR-259 SB Ramps	San Bernadino						X	Caltrans C-8							X		
132	Highland Ave @ SR-259 NB Ramps *	San Bernadino						X	Caltrans C-8 FM							X		
SR-330 Interchanges																		
133	Highland Ave @ West Frontage Rd	San Bernadino					X		Caltrans C-8					X		X		
134	Highland Ave @ SR-330 SB Ramps	San Bernadino						X	Caltrans C-8					X		X		
135	Highland Ave @ SR-330 NB Ramps *	San Bernadino						X	Caltrans C-8 TRFM					X		X		X

Note: * Field Master Controller Location; TRFM: Traffic Responsive Field Master.

Signal Controller, System Type & Interconnect Communications
Appendix B-2: City of Chino

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No.	Intersection	Signal Controller						Signal System Make & Type				Type of Signal Interconnect Communication					
		Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070	Model 170/170E										
Central Avenue (El Prado Road - Phillips Boulevard)																	
1	Central Ave @ El Prado Rd		X					Econolite ASC		X					X		
2	Central Ave @ Chino Hills Pkwy		X					Econolite ASC		X					X		
3	Central Ave @ Eucalyptus Ave West		X					Econolite ASC		X					X		
4	Central Ave @ College Park Ave			X				Econolite ASC		X					X		
5	Central Ave @ Edison Ave		X					Econolite ASC		X					X		
6	Central Ave @ Schaefer Ave			X				Econolite ASC		X					X		
7	Central Ave @ Chino Ave		X					Econolite ASC		X					X		
8	Central Ave @ D St			X				Econolite ASC		X					X		
9	Central Ave @ C St		X					Econolite ASC		X					X		
10	Central Ave @ Riverside Dr		X					Econolite ASC		X					X		
11	Central Ave @ Washington Ave		X					Econolite ASC		X					X		
12	Central Ave @ Walnut Ave		X					Econolite ASC		X					X	X	
13	Central Ave @ Columbus Ave		X					Econolite ASC		X					X	X	
14	Central Ave @ SR-60 EB Ramps *						X	Caltrans C-8 TRFM				X			X		X
15	Central Ave @ SR-60 WB Ramps						X	Caltrans C-8				X			X		
16	Central Ave @ Philadelphia St			X				Econolite ASC		X					X	X	
17	Central Ave @ Country Fair Shopping Center		X					Econolite ASC		X					X		
18	Central Ave @ Francis Ave		X					Econolite ASC		X					X	X	
19	Central Ave @ Phillips Blvd			X				Econolite ASC		X					X		
Euclid Avenue {SR-83} (Pine Avenue - Mission Boulevard)																	
20	Euclid Ave (SR-83) @ Pine Ave (Caltrans Signal)						X	Caltrans C-8					X			X	
21	Euclid Ave (SR-83) @ Kimball Ave (Caltrans Signal)						X	Caltrans C-8					X			X	
22	Euclid Ave (SR-83) @ Merrill Ave (Caltrans Signal)						X	Caltrans C-8					X			X	
23	Euclid Ave (SR-83) @ Eucalyptus Ave (Caltrans Signal)						X	Caltrans C-8					X			X	
24	Euclid Ave (SR-83) @ Edison Ave (Caltrans Signal)						X	Caltrans C-8					X			X	
25	Euclid Ave (SR-83) @ Red Bud Ln (Caltrans Signal)						X	Caltrans C-8					X				
26	Euclid Ave (SR-83) @ Schaefer Ave (Caltrans Signal)						X	Caltrans C-8					X			X	
27	Euclid Ave (SR-83) @ Chino Ave (Caltrans Signal)						X	Caltrans C-8					X			X	
Mountain Avenue (Riverside Drive - Phillips Street)																	
28	Mountain Ave @ Riverside Dr		X					Econolite ASC		X					X	X	
29	Mountain Ave @ Verdugo Ave			X				Econolite ASC		X					X		
30	Mountain Ave @ Walnut Ave		X					Econolite ASC		X					X		
31	Mountain Ave @ SR-60 EB Ramps *					X		TSCP TRFM					X		X		X
32	Mountain Ave @ SR-60 WB Ramps						X	Caltrans C-8					X		X		

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-2: City of Chino

Page 2 of 2

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070	Model 170/170E										
Philadelphia Street (Ramona Avenue - Benson Avenue)																	
33	Philadelphia St @ Ramona Ave			X				Econolite ASC		X							X
34	Philadelphia St @ Monte Vista Ave		X					Econolite ASC		X							X
35	Philadelphia St @ Telephone Ave		X					Econolite ASC		X							X
36	Philadelphia St @ Town Square		X					Econolite ASC		X						X	
37	Philadelphia St @ Benson Ave			X				Econolite ASC		X							X
Ramona Avenue (Walnut Avenue - Philadelphia Street)																	
38	Ramona Ave @ Walnut Ave		X					Econolite ASC		X							X
39	Ramona Ave @ SR-60 EB Ramps *						X	Caltrans C-8 TRFM					X	X	X		
40	Ramona Ave @ SR-60 WB Ramps						X	Caltrans C-8					X		X		
Riverside Drive (Reservoir Street - Mountain Avenue)																	
41	Riverside Dr @ Reservoir St (SB County Signal)		X					Econolite ASC		X							X
42	Riverside Dr @ East End Ave (SB County Signal)		X					Econolite ASC		X							X
43	Riverside Dr @ Roswell Ave (SB County Signal)		X					Econolite ASC		X							X
44	Riverside Dr @ Pipeline Ave (SB County Signal)		X					Econolite ASC		X							X
45	Riverside Dr @ Ramona Ave		X					Econolite ASC		X						X	X
46	Riverside Dr @ Yorba Ave			X				Econolite ASC		X						X	
47	Riverside Dr @ Monte Vista Ave				X			Econolite ASC		X						X	
48	Riverside Dr @ 3rd St			X				Econolite ASC		X						X	
49	Riverside Dr @ 10th St		X					Econolite ASC		X						X	
50	Riverside Dr @ Benson Ave			X				Econolite ASC		X						X	
51	Riverside Dr @ Oaks Ave			X				Econolite ASC		X						X	
52	Riverside Dr @ Magnolia Ave		X					Econolite ASC		X						X	
Riverside Drive (Cypress Avenue - Euclid Avenue {SR-83})																	
53	Riverside Dr @ Cypress Ave		X					Econolite ASC		X							X
54	Riverside Dr @ San Antonio Ave			X				Econolite ASC		X						X	X
55	Riverside Dr @ Fern Ave			X				Econolite ASC		X						X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-3: City of Chino Hills

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070	Model 170/170E										
Soquel Canyon Parkway/Central Avenue (Los Serranos Country Club Drive/Butterfield Ranch Road - Fairfield Ranch Road)																	
1	Soquel Canyon Pkwy @ Los Serranos Country Club Dr/Butterfield Ranch Rd *		X					Econolite ASC FM		X					X	X	X
2	Soquel Canyon Pkwy @ Pomona Rincon Rd		X					Econolite ASC		X					X		
3	Soquel Canyon Pkwy/Central Ave @ SR-71 SB Ramps *						X	Caltrans C8 TRFM					X		X		X
4	Soquel Canyon Pkwy/Central Ave @ SR-71 NB Ramps						X	Caltrans C8					X		X		
5	Central Ave @ Fairfield Ranch Rd		X					Econolite ASC		X						X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.'
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-4: City of Colton

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication					
		Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone	
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070	Model 170/170E											
La Cadena Drive (Valley Boulevard - G Street, includes Valley Boulevard @ 9th Street)																		
1	La Cadena Dr @ Valley Blvd *						X	BI Tran 200 210 FM					X				X	X
2	La Cadena Dr @ H St						X	BI Tran 200										
3	La Cadena Dr @ G St						X	BI Tran 233										
4	Valley Blvd @ 9th St						X	BI Tran 200				X					X	
Pepper Avenue (I-10 EB Ramps - Valley Boulevard, includes Valley Blvd @ Meridian Ave)																		
5	Pepper Ave @ I-10 EB Ramps						X	Caltrans C-8					X			X		
6	Pepper Ave @ I-10 WB Ramps *						X	Caltrans C-8 TRFM					X			X		X
7	Pepper Ave @ Valley Blvd						X	BI Tran 200				X					X	
8	Valley Blvd @ Meridian Ave (Future Signal)																	
Rancho Avenue (I-10 EB Ramps - Valley Boulevard, includes Valley Boulevard @ 3rd Street)																		
9	Rancho Ave @ I-10 EB Ramps						X	Caltrans C-8					X			X		
10	Rancho Ave @ I-10 WB Ramps *						X	Caltrans C-8 TRFM					X			X		X
11	Rancho Ave @ Valley Blvd						X	BI Tran 233				X					X	
12	Valley Blvd @ 3rd St						X	BI Tran 200				X					X	
Valley Boulevard (Cactus Avenue - Wildrose Avenue)																		
13	Valley Blvd @ Wildrose Ave						X	BI Tran 200				X					X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- ** Traffic Signal Coordination via Time Base Coordination Method.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-5: City of Fontana

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No.	Intersection	Signal Controller					Signal System Make & Type					Type of Signal Interconnect Communication		
		Type/Brand/Make					ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardware (Copper)	Spread Spectrum or Other Wireless
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070								
						Model 170/170E	Software/ Firmware							Telephone or Cellphone
Baseline Road (I-15 NB Ramps - Mango Avenue, includes Cherry Avenue @ Bar Harbor Road)														
1	Baseline Ave @ American Way		X				Econolite ASC		X				X	
2	Baseline Ave @ Las Palmas Dr		X				Econolite ASC		X				X	
3	Baseline Ave @ North Heritage Circle		X				Econolite ASC		X				X	
4	Baseline Ave @ Heritage Triangle Center		X				Econolite ASC		X				X	
5	Baseline Ave @ Heritage Village Center		X				Econolite ASC		X				X	
6	Baseline Ave @ Cherry Ave		X				Econolite ASC		X				X	
7	Cherry Ave @ Bar Harbor Rd		X				Econolite ASC		X				X	
8	Baseline Ave @ Market Place (East of Cherry Ave)		X				Econolite ASC		X				X	
9	Baseline Ave @ McGuire Ave		X				Econolite ASC		X				X	
10	Baseline Ave @ Live Oak Ave		X				Econolite ASC		X				X	
11	Baseline Ave @ Village Pkwy/Hermlock Ave		X				Econolite ASC		X				X	
12	Baseline Ave @ Beech Ave		X				Econolite ASC		X				X	
13	Baseline Ave @ Orlando Dr		X				Econolite ASC		X				X	
14	Baseline Ave @ Almeria Ave		X				Econolite ASC		X				X	
15	Baseline Ave @ Citrus Ave		X				Econolite ASC		X				X	
16	Baseline Ave @ Oleander Ave		X				Econolite ASC		X				X	
17	Baseline Ave @ Cypress Ave		X				Econolite ASC		X				X	
18	Baseline Ave @ Juniper Ave		X				Econolite ASC		X				X	
19	Baseline Ave @ Sierra Ave		X				Econolite ASC		X			X		
20	Baseline Ave @ Mango Ave		X				Econolite ASC		X				X	
Cherry Avenue (Jurupa Avenue - Arrow Route)														
21	Cherry Ave @ Jurupa Ave		X				Econolite ASC		X				**	
22	Cherry Ave @ Slover Ave		X				Econolite ASC		X				**	
23	Cherry Ave @ I-10 EB Ramps					X	Caltrans C-8				X		X	
24	Cherry Ave @ I-10 WB Ramps *					X	Caltrans C-8 TRFM				X		X	X
25	Cherry Ave @ Valley Blvd		X				Econolite ASC		X				**	
26	Cherry Ave @ San Bernardino Ave (SB County Signal) *		X				Econolite ASC FM		X					X
27	Cherry Ave @ California Steel Way (SB County Signal)			X			Econolite ASC		X					X
28	Cherry Ave @ Randall Ave (SB County Signal)			X			Econolite ASC		X					X
29	Cherry Ave @ Merrill Ave (SB County Signal)			X			Econolite ASC		X					X
30	Cherry Ave @ Whittram Ave (SB County Signal)			X			Econolite ASC		X					X
31	Cherry Ave @ Arrow Rte (SB County Signal)			X			Econolite ASC		X					X
Cherry Avenue (Meyer Canyon Drive - Miller Avenue)														
32	Cherry Ave @ Meyer Canyon Dr		X				Econolite ASC		X				**	
33	Cherry Ave @ Miller Ave		X				Econolite ASC		X				**	
34	Cherry Ave @ Roanoke Rd			X			Econolite ASC		X					

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- ** Traffic Signal Coordination via Time Base Coordination Method.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-5: City of Fontana

Page 2 of 3

No.	Intersection	Signal Controller					Signal System Make & Type					Type of Signal Interconnect Communication					
		Type/Brand/Make						ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone	
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - EconoliteASC/3	NEMA - Econolite ASC-8000	Model 2070											Model 170/170E
Citrus Avenue (Slover Avenue - Valley Boulevard)																	
35	Citrus Ave @ Slover Ave		X					Econolite ASC		X					**		
36	Citrus Ave @ I-10 EB Ramps						X	Caltrans C-8					X		X		
37	Citrus Ave @ I-10 WB Ramps *						X	Caltrans C-8 TRFM					X		X		X
38	Citrus Ave @ Valley Blvd		X					Econolite ASC		X				**			
Foothill Boulevard (Cottonwood Avenue - Locust Avenue)																	
39	Foothill Blvd @ Cottonwood Ave			X				Econolite ASC		X					X		
40	Foothill Blvd @ Mulberry Ave		X					Econolite ASC		X					X		
41	Foothill Blvd @ Banana Ave		X					Econolite ASC		X					X		
42	Foothill Blvd @ Cherry Ave		X					Econolite ASC		X					X		
43	Foothill Blvd @ Redwood Ave (Future Signal)																
44	Foothill Blvd @ Hemlock Ave (Future Signal)																
45	Foothill Blvd @ Almeria Ave		X					Econolite ASC		X				X			
46	Foothill Blvd @ Tokay Ave		X					Econolite ASC		X				X			
47	Foothill Blvd @ Citrus Ave		X					Econolite ASC		X					X		
48	Foothill Blvd @ Juniper Ave		X					Econolite ASC		X					X		
49	Foothill Blvd @ Sierra Ave		X					Econolite ASC		X					X		
50	Foothill Blvd @ Mango Ave		X					Econolite ASC		X					X		
51	Foothill Blvd @ Fontana Square Shopping Center		X					Econolite ASC		X					X		
52	Foothill Blvd @ Palmetto Ave		X					Econolite ASC		X					X		
53	Foothill Blvd @ Tamarind Ave		X					Econolite ASC		X					X		
54	Foothill Blvd @ Alder Ave		X					Econolite ASC		X					X		
55	Foothill Blvd @ Laurel Ave		X					Econolite ASC		X					X		
56	Foothill Blvd @ Locust Ave		X					Econolite ASC		X					X		
Sierra Avenue (Slover Avenue - Valley Boulevard)																	
57	Sierra Ave @ Slover Ave		X					Econolite ASC		X				X			
58	Sierra Ave @ I-10 Ramps *						X	Caltrans C-8 TRFM					X	X			
59	Sierra Ave @ Valley Blvd		X					Econolite ASC		X				X			
Valley Boulevard (Redwood Avenue @ Beech Avenue)																	
60	Valley Blvd @ Redwood Ave (SB County Signal)			X				Econolite ASC		X						X	
61	Valley Blvd @ Live Oak Ave (SB County Signal)			X				Econolite ASC		X						X	
62	Valley Blvd @ Hemlock Avenue @ Fontana Avenue		X					Econolite ASC		X				**			
63	Valley Blvd @ Beech Ave (Future Signal)																

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- ** Traffic Signal Coordination via Time Base Coordination Method.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-5: City of Fontana

Page 3 of 3

No.	Intersection	Signal Controller					Signal System Make & Type					Type of Signal Interconnect Communication		
		Type/Brand/Make					ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070								
						Model 170/170E	Software/ Firmware							Telephone or Cellphone
Valley Boulevard (Poplar Avenue - Oleander Avenue)														
64	Valley Blvd @ Poplar Ave (Future Signal)													
65	Valley Blvd @ Catawaba Ave		X				Econolite ASC		X					**
66	Valley Blvd @ Oleander Ave (Future Signal)													
Valley Boulevard (Juniper Avenue - Swapmeet Signal)														
67	Valley Blvd @ Juniper Ave		X				Econolite ASC		X				X	
68	Valley Blvd @ Inland Empire Center		X				Econolite ASC		X				X	
69	Valley Blvd @ Vineyard Valley Way		X				Econolite ASC		X				X	
70	Valley Blvd @ Health Care Pkwy		X				Econolite ASC		X				X	
71	Valley Blvd @ Palmetto Ave		X				Econolite ASC		X					**
72	Valley Blvd @ Swapmeet Signal		X				Econolite ASC		X				X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- ** Traffic Signal Coordination via Time Base Coordination Method.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-6: City of Grand Terrace

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication			
		Type/Brand/Make														
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070	Model 170/170E									
Barton Road (I-215 SB On-Ramp - Grand Terrace Road/Honey Hill Drive)																
1	Barton Rd @ I-215 SB On-Ramp						X	Caltrans C-8					X		X	
2	Barton Rd @ I-215 NB Ramps *						X	Caltrans C-8 TRFM					X	X	X	
3	Barton Rd @ Michigan Ave						X	BI Tran 200				X				X
4	Barton Rd @ Canal St						X	BI Tran 233				X				X
5	Barton Rd @ Mount Vernon Ave						X	BI Tran 233				X				X
6	Barton Rd @ Preston St						X	BI Tran 200				X			X	X
7	Barton Rd @ Grand Terrace Rd/Honey Hill Dr						X	BI Tran 233				X				X

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-7: City of Highland

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070	Model 170/170E										
Base Line (Sterling Avenue - Church Street)																	
1	Base Line @ Sterling Ave					X		BI Tran 2033				X				X	
2	Base Line @ McKinley St						X	BI Tran 233				X				X	
3	Base Line @ Victoria Ave					X		BI Tran 2033				X				X	
4	Base Line @ Cunningham St/Olive St					X		BI Tran 2033				X				X	
5	Base Line @ Central Ave						X	BI Tran 233				X				X	
6	Base Line @ Palm Ave					X		BI Tran 2033				X		X	X	X	
7	Base Line @ Church Ave						X	BI Tran 233				X			X		
8	Base Line @ SR-210 EB Ramps *						X	Caltrans C-8 245 FM							X		
9	Base Line @ SR-210 WB Ramps						X	Caltrans C-8							X		
10	Base Line @ Seine Ave						X	BI Tran 233				X			X		
11	Base Line @ Boulder Ave					X		BI Tran 2033				X			X		
12	Base Line @ Walgreens Dr						X	BI Tran 233				X			X		
13	Base Line @ Webster St					X		BI Tran 2033				X				X	
14	Base Line @ Streater Ave (Future Signal)																
15	Base Line @ Church St					X		BI Tran 2033				X				X	
Highland Avenue (Victoria Avenue - SR-330 NB Ramps, includes Boulder Avenue @ San Manuel Village (West))																	
16	Boulder Ave @ San Manuel Village (West)					X		BI Tran 2033				X		**			

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- ** Traffic Signal Coordination via Time Base Coordination Method.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-8: City of Loma Linda

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make						ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone	
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070	Model 170/170E										Software/ Firmware
Anderson Street/Tippecanoe Avenue (Redlands Boulevard - 9th Street)																	
1	Redlands Blvd @ Richardson St						X	BI Tran 233				X		X			
2	Anderson St @ Redlands Blvd						X	BI Tran 200				X			X		
3	Anderson St/Tippecanoe Ave @ I-10 EB Ramps						X	Caltrans C-8							X		
4	Anderson St/Tippecanoe Ave @ I-10 WB Ramps						X	Caltrans C-8							X		
Barton Road (Waterman Avenue - Newport Avenue)																	
5	Barton Rd @ Oakwood Dr/University Ave						X	BI Tran 200				X				X	
6	Barton Rd @ Campus St						X	BI Tran 200				X				X	
7	Barton Rd @ Anderson St						X	BI Tran 233				X				X	
8	Barton Rd @ Benton St						X	BI Tran 233				X				X	
9	Barton Rd @ Loma Linda Dr *						X	BI Tran 200 210 FM				X				X	X
10	Barton Rd @ Mountain View Ave						X	BI Tran 233				X				X	
11	Barton Rd @ Newport Ave						X	BI Tran 233				X				X	
Barton Road (California Street - Bellevue Avenue)																	
12	Barton Rd @ California St						X	BI Tran 233				X				X	
Mountain View Avenue (Redlands Boulevard - I-10 WB Ramps)																	
13	Mountain View Ave @ Redlands Blvd						X	BI Tran 233				X			X		
14	Mountain View Ave @ Business Center Dr						X	BI Tran 233				X			X		
15	Mountain View Ave @ I-10 EB Ramps *						X	Caltrans C-8 TRFM					X		X		X
16	Mountain View Ave @ I-10 WB Ramps						X	Caltrans C-8					X		X		

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-9: City of Montclair

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No.	Intersection	Signal Controller							Signal System Make & Type					Type of Signal Interconnect Communication			
		Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070	Model 170/170E										
Arrow Highway/8th Street (Mills Avenue/Claremont Avenue - Benson Avenue)																	
1	Arrow Hwy @ Police Station						X	BI Tran 200				X			X		
2	Arrow Hwy @ Fremont Ave						X	BI Tran 200				X			X		
Central Avenue (Howard Street - Richton Street/9th Street)																	
3	Central Ave @ Howard St						X	BI Tran 233				X				X	
4	Central Ave @ Holt Blvd *						X	BI Tran 200 210 FM				X			X	X	X
5	Central Ave @ Kingsley St						X	BI Tran 233				X			X		
6	Central Ave @ Orchard St						X	BI Tran 233				X			X		
7	Central Ave @ Benito St						X	BI Tran 233				X			X		
8	Central Ave @ San Bernardino St						X	BI Tran 233				X			X		
9	Central Ave @ Palo Verde St						X	BI Tran 233				X			X		
10	Central Ave @ Costco Dwy						X	BI Tran 200				X			X		
11	Central Ave @ I-10 EB Ramps *						X	Caltrans C-8 TRFM					X	X	X		
12	Central Ave @ I-10 WB Ramps						X	Caltrans C-8					X		X		
13	Central Ave @ Plaza Ln						X	BI Tran 200				X			X		
14	Central Ave @ Moreno St						X	BI Tran 200				X			X		
15	Central Ave @ Olive St						X	BI Tran 200				X			X		
16	Central Ave @ Arrow Hwy						X	BI Tran 200				X			X	X	
17	Central Ave @ Richton St/9th St						X	BI Tran 200				X				X	
Holt Boulevard (Mills Avenue - Benson Avenue)																	
18	Holt Blvd @ Mills Ave (Pomona Signal)						X	BI Tran 200				X			X		
19	Holt Blvd @ Amherst Ave						X	BI Tran 200				X				X	
20	Holt Blvd @ Ramona Ave						X	BI Tran 200				X				X	
21	Holt Blvd @ Vernon Ave						X	BI Tran 200				X				X	
22	Holt Blvd @ Benson Ave						X	BI Tran 200				X				X	
Mission Boulevard (Roswell Avenue - Central Avenue)																	
23	Mission Blvd @ Roswell Ave (SB County Signal)						X	BI Tran 233				X				X	
24	Mission Blvd @ Pipeline Ave (SB County Signal)						X	BI Tran 233				X				X	
25	Mission Blvd @ Ramona Ave						X	BI Tran 233				X				X	
26	Mission Blvd @ Monte Vista Ave						X	BI Tran 233				X				X	
27	Mission Blvd @ Fremont Ave						X	BI Tran 233				X				X	
28	Mission Blvd @ Central Ave (SB County Singal)						X	BI Tran 233				X				X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans and San Bernardino County Signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-9: City of Montclair

Page 2 of 2

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make					Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone	
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070											Model 170/170E
Monte Vista Avenue (Holt Boulevard - Arrow Route, includes Palo Verde Street @ I-10 EB On-Ramp)																	
29	Monte Vista Ave @ Holt Blvd						X	BI Tran 200					X				X
30	Monte Vista Ave @ Kingsley St						X	BI Tran 233					X				X
31	Monte Vista Ave @ Orchard St						X	BI Tran 233					X				X
32	Monte Vista Ave @ Benito St						X	BI Tran 233					X			X	X
33	Monte Vista Ave @ San Bernardino St						X	BI Tran 200					X			X	
34	Monte Vista Ave @ I-10 EB Off-Ramp/Palo Verde St						X	Caltrans C-8						X		X	
35	Palo Verde St @ I-10 EB On-Ramp						X	Caltrans C-8						X		X	
36	Monte Vista Ave @ I-10 WB Off-Ramp *						X	Caltrans C-8 TRFM						X	X	X	
37	Monte Vista Ave @ San Jose St						X	BI Tran 200					X			X	
38	Monte Vista Ave @ Moreno St						X	BI Tran 200					X			X	
39	Monte Vista Ave @ Arrow Hwy *						X	BI Tran 200 210 FM					X			X	X
40	Monte Vista Ave @ Richton St						X	BI Tran 200					X			X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
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Signal Controller, System Type & Interconnect Communications
Appendix B-10: City of Ontario

Page 1 of 5

No.	Intersection	Signal Controller						Signal System Make & Type				Type of Signal Interconnect Communication					
		Type/Brand/Make					Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone	
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070											Model 170/170E
4th Street (El Dorado Avenue - Corona Avenue)																	
1	4th St @ El Dorado Ave (Caltrans Signal)						X	Caltrans C-8					X		X		
2	4th St @ I-10 EB Ramps						X	Caltrans C-8					X		X		
3	4th St @ I-10 WB Ramps *						X	Caltrans C-8 TRFM					X	X	X		
4	4th St @ Baker Ave		X					Econolite ASC		X					X		
5	4th St @ Corona Ave (Future Signal)																
4th Street (Vineyard Avenue - Barrington Avenue)																	
6	4th St @ Turner Ave/Hermosa Ave		X					Econolite ASC		X					X	X	
7	4th St @ Center Ave		X					Econolite ASC		X					X		
8	4th St @ Duesenberg Dr/Utica Ave		X					Econolite ASC		X					X		
9	4th St @ Via Asti/Cleveland Ave		X					Econolite ASC		X					X		
10	4th St @ Via Turin/Empire Ct		X					Econolite ASC		X					X		
11	4th St @ Gurnee Ave		X					Econolite ASC		X					X		
12	4th St @ Richmond Pl		X					Econolite ASC		X					X		
13	4th St @ Franklin Ave/Buffalo Ave		X					Econolite ASC		X					X		
14	4th St @ Ontario Mills Dr/I-15 SB Ramps						X	Caltrans C-8					X		X		
15	4th St @ I-15 NB Ramps *						X	Caltrans C-8 TRFM					X		X		X
16	4th St @ Wineville Ave/Santa Anita Ave		X					Econolite ASC		X					X		
17	4th St @ Barrington Ave		X					Econolite ASC		X					X		
Archibald Avenue (Riverside Drive - Mission Boulevard)																	
18	Archibald Ave @ Riverside Dr		X					Econolite ASC		X					X		
19	Archibald Ave @ Walnut St		X					Econolite ASC		X					X		
20	Archibald Ave @ Fedco Dr/Oakhill St		X					Econolite ASC		X					X		
21	Archibald Ave @ SR-60 EB Ramps *						X	Caltrans C-8 TRFM					X	X	X		
22	Archibald Ave @ SR-60 WB Ramps						X	Caltrans C-8					X		X		
23	Archibald Ave @ Philadelphia St *				X			Econolite ASC ASC2m-FM		X					X		X
24	Archibald Ave @ Cedar St				X			Econolite ASC		X					X		
25	Archibald Ave @ Francis St				X			Econolite ASC		X					X		
26	Archibald Ave @ Mission Blvd		X					Econolite ASC		X					X		
Archibald Avenue (Airport Drive - 4th Street)																	
27	Archibald Ave @ Airport Dr		X					Econolite ASC		X					X		
28	Archibald Ave @ Guasti Rd		X					Econolite ASC		X					X		
29	Archibald Ave @ I-10 Fwy *						X	Caltrans C-8 TRFM					X		X		X
30	Archibald Ave @ Inland Empire Blvd		X					Econolite ASC		X					X		X

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
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Signal Controller, System Type & Interconnect Communications
Appendix B-10: City of Ontario

Page 2 of 5

No.	Intersection	Signal Controller						Signal System Make & Type				Type of Signal Interconnect Communication					
		Type/Brand/Make					Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone	
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070											Model 170/170E
Etiwanda Avenue (Airport Drive/Slover Avenue - 4th Street/San Bernardino Avenue)																	
31	Etiwanda Ave @ Airport Dr/Slover Ave		X					Econolite ASC		X							
32	Etiwanda Ave @ I-10 EB Ramps *						X	Caltrans C-8 TRFM					X	X	X		
33	Etiwanda Ave @ I-10 WB Ramps						X	Caltrans C-8					X		X		
34	Etiwanda Ave @ Valley Blvd (SB County Signal)		X					Econolite ASC		X					X		
35	Etiwanda Ave @ 4th St/San Bernardino Ave (SB County Signal)		X					Econolite ASC		X					X		
Euclid Avenue {SR-83} (Pine Avenue - Mission Boulevard)																	
36	Euclid Ave {SR-83} @ Riverside Dr (Caltrans Signals)						X	Caltrans C-8					X		X	X	
37	Euclid Ave {SR-83} @ Merion St (Caltrans Signals)						X	Caltrans C-8					X		X		
38	Euclid Ave {SR-83} @ Walnut Ave (Caltrans Signals)						X	Caltrans C-8					X			X	
39	Euclid Ave {SR-83} @ SR-60 EB Ramps (Caltrans Signals) *						X	Caltrans C-8 TRFM					X	X	X	X	
40	Euclid Ave {SR-83} @ SR-60 WB Ramps (Caltrans Signals)						X	Caltrans C-8					X		X		
41	Euclid Ave {SR-83} @ Philadelphia St (Caltrans Signals)						X	Caltrans C-8					X		X		
42	Euclid Ave {SR-83} @ Francis St (Caltrans Signals)						X	Caltrans C-8					X			X	
43	Euclid Ave {SR-83} @ Belmont St (Caltrans Signals) *						X	Caltrans C-8 TRFM					X			X	X
44	Euclid Ave {SR-83} @ Mission Blvd (Caltrans Signals)						X	Caltrans C-8					X			X	
Euclid Avenue {SR-83} (Holt Boulevard - I-10 EB Ramps)																	
45	Euclid Ave {SR-83} @ Holt Blvd (Caltrans Signals)						X	Caltrans C-8					X		X		
46	Euclid Ave {SR-83} @ B St (Caltrans Signals)						X	Caltrans C-8					X		X		
47	Euclid Ave {SR-83} @ C St (Caltrans Signals)						X	Caltrans C-8					X		X		
48	Euclid Ave {SR-83} @ D St (Caltrans Signals)						X	Caltrans C-8					X		X		
49	Euclid Ave {SR-83} @ E St (Caltrans Signals)						X	Caltrans C-8					X		X		
50	Euclid Ave {SR-83} @ G St (Caltrans Signals)						X	Caltrans C-8					X		X		
51	Euclid Ave {SR-83} @ I St (Caltrans Signals)						X	Caltrans C-8					X		X		
52	Euclid Ave {SR-83} @ 4th St (Caltrans Signals)						X	Caltrans C-8					X		X		
53	Euclid Ave {SR-83} @ Princeton St-EB Crosswalk (Caltrans Signals)						X	Caltrans C-8					X		X		
54	Euclid Ave {SR-83} @ 5th St (Caltrans Signals)						X	Caltrans C-8					X		X		
55	Euclid Ave {SR-83} @ 6th St (Caltrans Signals) *						X	Caltrans C-8 TRFM					X		X		
56	Euclid Ave {SR-83} @ 10th EB Ramps (Caltrans Signals)						X	Caltrans C-8					X	X	X		
Grove Avenue (Walnut Street - Philadelphia Street)																	
57	Grove Ave @ Walnut St				X			Econolite ASC		X					X		
58	Grove Ave @ SR-60 EB Ramps *						X	Caltrans C-8 TRFM					X	X	X		
59	Grove Ave @ SR-60 WB Ramps						X	Caltrans C-8					X		X		
60	Grove Ave @ Marketplace on Grove (Lowe's)		X					Econolite ASC		X					X		
61	Grove Ave @ Philadelphia St		X					Econolite ASC		X					X		

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-10: City of Ontario

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No.	Intersection	Signal Controller					Signal System Make & Type					Type of Signal Interconnect Communication			
		Type/Brand/Make					ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070									
Grove Avenue (4th Street - Arrow Highway/Arrow Route)															
62	Grove Ave @ 4th St		X				Econolite ASC		X				X		
63	Grove Ave @ 6th St		X				Econolite ASC		X				X		
64	Grove Ave @ 7th St		X				Econolite ASC		X				X		
65	Grove Ave @ 8th St		X				Econolite ASC		X				X		
Haven Avenue (Riverside Drive - SR-60 WB Ramps)															
66	Haven Ave @ Riverside Dr *				X		Econolite ASC ASC2m-FM		X				X		X
67	Haven Ave @ Creekside Dr		X				Econolite ASC		X				X		
68	Haven Ave @ SR-60 EB Ramps *					X	Caltrans C-8 TRFM				X		X		X
69	Haven Ave @ SR-60 WB Ramps					X	Caltrans C-8				X		X		
Haven Avenue (Philadelphia Street - Jurupa Street)															
70	Haven Ave @ Philadelphia St		X				Econolite ASC		X				X		
71	Haven Ave @ Mission Blvd		X				Econolite ASC		X				X		
72	Haven Ave @ Francis St		X				Econolite ASC		X				X		
73	Haven Ave @ Jurupa St *		X				Econolite ASC ASC2m-FM		X				X		X
Haven Avenue (Airport Drive - 4th Street)															
74	Haven Ave @ Airport Dr		X				Econolite ASC		X				X		
75	Haven Ave @ Guasti Rd		X				Econolite ASC		X				X		
76	Haven Ave @ I-10 EB Ramps					X	Caltrans C-8				X		X		
77	Haven Ave @ I-10 WB Ramps *					X	Caltrans C-8 TRFM				X		X		X
78	Haven Ave @ Inland Empire Blvd		X				Econolite ASC		X				X		
79	Haven Ave @ Concourses St *		X				Econolite ASC ASC2m-FM		X				X		X
80	Haven Ave @ 4th St		X				Econolite ASC		X				X		
Holt Boulevard (Mills Avenue - Euclid Avenue {SR-83})															
81	Holt Blvd @ Mountain Ave		X				Econolite ASC		X					X	
82	Holt Blvd @ San Antonio Ave		X				Econolite ASC		X					X	
83	Holt Blvd @ Vine Ave		X				Econolite ASC		X					X	
Holt Boulevard (Euclid Avenue {SR-83} - Grove Avenue)															
84	Holt Blvd @ Sultana Ave		X				Econolite ASC		X					X	
85	Holt Blvd @ Campus Ave		X				Econolite ASC		X					X	
86	Holt Blvd @ Bon View Ave/Allyn Ave		X				Econolite ASC		X					X	
87	Holt Blvd @ Grove Ave		X				Econolite ASC		X					X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
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Signal Controller, System Type & Interconnect Communications
Appendix B-10: City of Ontario

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No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070	Model 170/170E										
Holt Boulevard (County of San Bernadino Offices - Guasti Road/Convention Center Way)																	
88	Holt Blvd @ County of San Bernardino Offices		X					Econolite ASC			X					X	
89	Holt Blvd @ Corona Ave		X					Econolite ASC			X				X	X	
90	Holt Blvd @ Vineyard Ave		X					Econolite ASC		X					X		
91	Holt Blvd @ Convention Center Parking		X					Econolite ASC		X					X		
92	Holt Blvd @ Guasti Rd/Convention Center Way		X					Econolite ASC		X					X		
Milliken Avenue (Riverside Drive - Philadelphia Street, includes Riverisde Dr @ Mill Creek Blvd and Mission Blvd @ Philadelphia St)																	
93	Riverside Dr @ Mill Creek Blvd		X					Econolite ASC		X					X		
94	Milliken Ave-Hamner Ave @ Riverside Dr (Riverside County Signal)						X	BI Tran 200									
95	Milliken Ave @ SR-60 EB Ramps						X	Caltrans C-8				X		X			
96	Milliken Ave @ SR-60 WB Ramps *						X	Caltrans C-8 TRFM				X	X	X			
97	Milliken Ave @ Greystone Dr		X					Econolite ASC		X					X		
98	Milliken Ave @ Mission Blvd		X					Econolite ASC		X					X		
99	Mission Blvd @ Philadelphia St				X			Econolite ASC		X					X		
100	Milliken Ave @ Philadelphia St		X					Econolite ASC		X					X		
Milliken Avenue (Airport Drive - 4th Street)																	
101	Milliken Ave @ Airport Dr		X					Econolite ASC		X					X		
102	Milliken Ave @ Guasti Rd		X					Econolite ASC		X					X		
103	Milliken Ave @ I-10 EB Ramps						X	Caltrans C-8				X		X			
104	Milliken Ave @ I-10 WB Ramps-Ontario Mills Pkwy *						X	Caltrans C-8 TRFM				X	X	X			
105	Milliken Ave @ Inland Empire Blvd-Mall Dr		X					Econolite ASC ASC2m-FM		X					X		X
106	Milliken Ave @ Concours St		X					Econolite ASC		X					X		
107	Milliken Ave @ 4th St		X					Econolite ASC		X					X		
Mission Boulevard (Benson Avenue - Grove Avenue)																	
108	Mission Blvd @ Benson Ave (SB County Signal)	X						SEPAC									
109	Mission Blvd @ Mountain Ave		X					Econolite ASC			X					X	
110	Mission Blvd @ San Antonio Ave		X					Econolite ASC			X					X	
111	Mission Blvd @ Vine Ave		X					Econolite ASC			X					X	
112	Mission Blvd @ Sultana Ave		X					Econolite ASC			X					X	
113	Mission Blvd @ Campus Ave		X					Econolite ASC			X					X	
114	Mission Blvd @ Bon View Ave		X					Econolite ASC			X				X	X	
115	Mission Blvd @ Grove Ave		X					Econolite ASC		X					X		

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
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Signal Controller, System Type & Interconnect Communications
Appendix B-10: City of Ontario

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No.	Intersection	Signal Controller						Signal System Make & Type				Type of Signal Interconnect Communication					
		Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070	Model 170/170E										
Mission Boulevard (Baker Avenue - Vineyard Avenue)																	
116	Mission Blvd @ Baker Ave		X				Econolite ASC		X					X			
117	Mission Blvd @ Vineyard Ave				X		Econolite ASC		X					X			
Mountain Avenue (Riverside Drive - Phillips Street)																	
118	Mountain Ave @ Philadelphia St		X				Econolite ASC			X						X	
Mountain Avenue (6th Street - 11th Street)																	
119	Mountain Ave @ 6th St		X				Econolite ASC			X				X			
Philadelphia Street (Benson Avenue - Euclid Avenue {SR-83})																	
120	Philadelphia St @ San Antonio Ave		X				Econolite ASC			X						X	
Philadelphia Street (Archibald Avenue - Excise Avenue)																	
121	Philadelphia St @ Business Pkwy		X				Econolite ASC		X					X			
122	Philadelphia St @ Turner Ave		X				Econolite ASC		X					X			
123	Philadelphia St @ Excise Ave		X				Econolite ASC		X					X			
Riverside Drive (Euclid Avenue {SR-83} - Turner Avenue)																	
124	Riverside Dr @ Campus Ave		X				Econolite ASC		X					X			
125	Riverside Dr @ Grove Ave		X				Econolite ASC		X								X
126	Riverside Dr @ Vineyard Ave				X		Econolite ASC		X								X
127	Riverside Dr @ Turner Ave		X				Econolite ASC		X					X			
Vineyard Avenue (Pep Boys Drive - Philadelphia Street, includes Philadelphia Street @ Kaiser Driveway)																	
128	Vineyard Ave @ Walnut St		X				Econolite ASC		X				X	X			
129	Vineyard Ave @ Pep Boys Dr		X				Econolite ASC		X					X			
130	Vineyard Ave @ SR-60 EB Ramps					X	Caltrans C-8					X		X			
131	Vineyard Ave @ SR-60 WB Ramps *					X	Caltrans C-8 TRFM					X	X	X			
132	Vineyard Ave @ Raymond Kay Way		X				Econolite ASC		X					X			
133	Vineyard Ave @ Philadelphia St *		X				Econolite ASC ASC2m-FM		X					X			X
134	Philadelphia St @ Kaiser Dwy		X				Econolite ASC		X					X			
Vineyard Avenue (Holt Boulevard - 4th Street)																	
135	Vineyard Ave @ D St/Convention Center Way		X				Econolite ASC			X				X			
136	Vineyard Ave @ G St				X		Econolite ASC		X					X			
137	Vineyard Ave @ I-10 EB Ramps					X	Caltrans C-8					X		X			
138	Vineyard Ave @ I-10 WB Ramps *					X	Caltrans C-8 TRFM					X	X	X			
139	Vineyard Ave @ Plaza Serena/Inland Empire Blvd		X				Econolite ASC		X					X			
140	Vineyard Ave @ 4th St		X				Econolite ASC		X					X			

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
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Signal Controller, System Type & Interconnect Communications
Appendix B-11: City of Rancho Cucamonga

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No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication			
		Type/Brand/Make														
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070	Model 170/170E									Software/ Firmware
4th Street (Vineyard Avenue - Barrington Avenue)																
1	4th St @ Smiderle Loop/Golden Oak Rd			X				Econolite ASC		X					X	
Archibald Avenue (Airport Drive - 4th Street)																
2	Archibald Ave @ 4th St			X				Econolite ASC		X					X	X
Base Line Road (Etiwanda Avenue - I-15 NB Ramps)																
3	Base Line Rd @ Etiwanda Ave		X					Econolite ASC		X				X		
4	Base Line Rd @ Shelby Pl		X					Econolite ASC		X				X		
5	Base Line Rd @ I-15 SB Ramps						X	Caltrans C-8					X		X	
6	Base Line Rd-Baseline Ave @ East Ave		X					Econolite ASC							X	
7	Baseline Ave @ I-15 NB Ramps *						X	Caltrans C-8 TRFM					X	X	X	
Foothill Boulevard (San Bernardino Road - Day Creek Boulevard)																
8	Foothill Blvd @ San Bernardino Rd						X	Caltrans C-8							X	
9	Foothill Blvd @ Baker Ave						X	Caltrans C-8							X	
10	Foothill Blvd @ Highridge Pl						X	Caltrans C-8							X	
11	Foothill Blvd @ Vineyard Ave						X	Caltrans C-8							X	
12	Foothill Blvd @ Orchard Plaza						X	Caltrans C-8							X	
13	Foothill Blvd @ Hellman Ave						X	Caltrans C-8							X	
14	Foothill Blvd @ Archibald Ave						X	Caltrans C-8 210 FM							X	X
15	Foothill Blvd @ Ramona Ave						X	Caltrans C-8							X	
16	Foothill Blvd @ Hermosa Ave						X	Caltrans C-8							X	
17	Foothill Blvd @ Center Ave						X	Caltrans C-8							X	
18	Foothill Blvd @ Haven Ave						X	Caltrans C-8							X	
19	Foothill Blvd @ Aspen Ave						X	Caltrans C-8							X	
20	Foothill Blvd @ Spruce Ave						X	Caltrans C-8							X	
21	Foothill Blvd @ Elm Ave						X	Caltrans C-8							X	
22	Foothill Blvd @ Milliken Ave						X	Caltrans C-8							X	
23	Foothill Blvd @ Mayten Ave						X	Caltrans C-8							X	
24	Foothill Blvd @ Masi Dr						X	Caltrans C-8							X	
25	Foothill Blvd @ Rochester Ave						X	BI Tran 233							X	
26	Foothill Blvd @ Day Creek Blvd		X					Econolite ASC							X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-11: City of Rancho Cucamonga

Page 2 of 2

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication			
		Type/Brand/Make														
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070	Model 170/170E									Software/ Firmware
Foothill Boulevard (I-15 SB Ramps - Cornwall Court/Cornwall Avenue)																
27	Foothill Blvd @ I-15 SB Ramps						X	Caltrans C-8					X		X	
28	Foothill Blvd @ I-15 NB Ramps *						X	Caltrans C-8 TRFM					X	X	X	
29	Foothill Blvd @ Market Place/Sacred Heart Dr						X	Caltrans C-8							X	
30	Foothill Blvd @ Etiwanda Ave *						X	Caltrans C-8 ASC2m-FM							X	X
31	Foothill Blvd @ Cornwall Ct/Cornwall Ave			X				Econolite ASC							X	
Grove Avenue (8th Street - Arrow Highway/Arrow Route)																
32	Grove Ave @ 9th St			X				Econolite ASC								X
33	Grove Ave @ Arrow Hwy/Arrow Rte			X				Econolite ASC								X
Haven Avenue (4th Street - Baseline Road)																
34	Haven Ave @ Trademark St		X					Econolite ASC						X		
35	Haven Ave @ 6th St			X				Econolite ASC		X				X		X
36	Haven Ave @ 7th St		X					Econolite ASC		X						X
37	Haven Ave @ Jersey Blvd			X				Econolite ASC		X						X
38	Haven Ave @ Arrow Rte			X				Econolite ASC		X						X
39	Haven Ave @ Civic Center Dr *		X					Econolite ASC ASC2m-FM		X				X		X
40	Haven Ave @ Town Center Dr			X				Econolite ASC		X						X
41	Haven Ave @ Church St			X				Econolite ASC		X				X		X
42	Haven Ave @ Baseline Rd		X					Econolite ASC		X				X		
Haven Avenue (Bike Trail - Lemon Avenue)																
43	Haven Ave @ Bike Trail			X				Econolite ASC		X				X		
44	Haven Ave @ Victoria St		X					Econolite ASC		X				X		
45	Haven Ave @ 19th St		X					Econolite ASC		X				X		
46	Haven Ave @ SR-210 EB Ramps						X	Caltrans C-8							X	
47	Haven Ave @ SR-210 WB Ramps *						X	Caltrans C-8 210 FM							X	
48	Haven Ave @ Alta Loma Dr			X				Econolite ASC							X	
49	Haven Ave @ Lemon Ave		X					Econolite ASC								

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications

Appendix B-12: City of Redlands

Page 1 of 2

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070	Model 170/170E										
Alabama Street (Park Avenue - Almond Avenue)																	
1	Alabama St @ Redlands Blvd					X		SEPAC	X						X	X	
2	Alabama St @ Industrial Park Ave					X		SEPAC	X						X		
3	Alabama St @ I-10 EB Ramps						X	Caltrans C-8					X		X		
4	Alabama St @ I-10 WB Ramps *						X	Caltrans C-8 TRFM					X		X		X
5	Alabama St @ Orange Tree Ln/Coulston Ave	X						SEPAC	X						X		
6	Alabama St @ Lugonia Ave	X						SEPAC	X						X		
7	Alabama St @ Citrus Plaza (SB County Signal)	X						SEPAC	X						X		
8	Alabama St @ Almond Ave (SB County, Future Signal)																
Barton Road (California Street - Bellevue Avenue)																	
9	Barton Rd @ San Timoteo Canyon Rd	X						SEPAC	X							X	
10	Barton Rd @ Terracina Blvd	X						SEPAC	X							X	
11	Barton Rd @ Alabama St	X						SEPAC	X							X	
12	Barton Rd @ Bellevue Ave	X						SEPAC	X							X	
Brookside Avenue (San Mateo Street - Center Street)																	
13	Brookside Ave @ San Mateo St	X						SEPAC	X							X	
14	Brookside Ave @ Center St	X						SEPAC	X							X	
California Street (Redlands Boulevard - Orange Tree Lane)																	
15	California St @ Redlands Blvd	X						SEPAC	X							X	
16	California St @ I-10 EB Ramps *						X	Caltrans C-8 TRFM					X		X		X
17	California St @ I-10 WB Ramps						X	Caltrans C-8					X		X		
18	California St @ Orange Tree Ln						X	BI Tran 200							X		
Citrus Avenue (Church Street - Judson Street)																	
19	Citrus Ave @ Church St	X						SEPAC	X						X	X	
20	Citrus Ave @ Redlands High School Crosswalk	X						SEPAC	X						X		
21	Citrus Ave @ University St	X						SEPAC	X							X	
22	Citrus Ave @ Judson St					X		SEPAC	X							X	
Orange Avenue (Citrus Avenue - Redlands Boulevard, includes Orange Street @ State Street)																	
23	Brookside Ave/Citrus Ave @ Eureka St	X						SEPAC	X							X	
24	Cajon St/Orange St @ Citrus Ave					X		SEPAC	X						X	X	
25	Orange St @ State St	X						SEPAC	X						X		

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-12: City of Redlands

Page 2 of 2

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make					Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone	
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070											Model 170/170E
Redlands Boulevard (New Jersey Street - Alabama Street)																	
26	Redlands Blvd @ New Jersey St	X						SEPAC	X							X	
27	Redlands Blvd @ Nevada St	X						SEPAC	X							X	
28	Redlands Blvd @ Iowa St	X						SEPAC	X							X	
Redlands Boulevard (New York Street - Ford Street)																	
29	Redlands Blvd @ New York St	X						SEPAC	X							X	
30	Redlands Blvd @ Texas St	X						SEPAC	X								X
31	Redlands Blvd @ Eureka St	X						SEPAC	X							X	X
32	Redlands Blvd @ 3rd St	X						SEPAC	X							X	X
33	Redlands Blvd @ Orange St	X						SEPAC	X							X	X
34	Redlands Blvd @ 6th St	X						SEPAC	X								X
35	Redlands Blvd @ Citrus Ave	X						SEPAC	X								X
36	Redlands Blvd @ Fern Ave/Church St					X		SEPAC	X								X
37	Redlands Blvd @ Cypress Ave	X						SEPAC	X							X	X
38	Redlands Blvd @ Albertson's Supermarket	X						SEPAC	X							X	
39	Redlands Blvd @ Palm Ave	X						SEPAC	X							X	
40	Redlands Blvd @ Highland Ave	X						SEPAC	X								X
41	Redlands Blvd/I-10 Ramps @ Ford St *						X	Caltrans C-8 TRFM					X			X	X
Tennessee Street (Park Avenue - Lugonia Avenue, includes Colton Avenue @ Industrial Park Avenue)																	
42	Tennessee St @ Redlands Blvd					X		SEPAC	X								X
43	Colton Ave @ Industrial Park Ave	X						SEPAC	X							X	
44	Tennessee St @ Colton Ave					X		SEPAC	X							X	X
45	Tennessee St @ I-10 EB Ramps *						X	Caltrans C-8 TRFM					X			X	X
46	Tennessee St @ I-10 WB Ramps						X	Caltrans C-8					X			X	
47	Tennessee St @ Lugonia Ave	X						SEPAC	X								X

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
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Signal Controller, System Type & Interconnect Communications
Appendix B-13: City of Rialto

Page 1 of 2

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070	Model 170/170E										
Baseline Road (Cedar Avenue/Ayala Avenue - Meridian Avenue)																	
1	Baseline Rd @ Cedar Ave/Ayala Ave		X				Econolite ASC		X								X
2	Baseline Rd @ Cactus Ave		X				Econolite ASC		X								X
3	Baseline Rd @ Lilac Ave		X				Econolite ASC		X								X
4	Baseline Rd @ Willow Ave *		X				Econolite ASC FM		X							X	X
5	Baseline Rd @ Riverside Ave		X				Econolite ASC		X							X	
6	Baseline Rd @ Sycamore Ave		X				Econolite ASC		X								X
7	Baseline Rd @ Acacia Ave		X				Econolite ASC		X								X
8	Baseline Rd @ Eucalyptus Ave		X				Econolite ASC		X								X
9	Baseline Rd @ Pepper Ave		X				Econolite ASC		X								X
10	Baseline Rd/Baseline St @ Meridian Ave			X			Econolite ASC		X							X	
Foothill Boulevard (Maple Avenue - Meridian Avenue)																	
11	Foothill Blvd @ Maple Ave					X	Caltrans C-8				X				X		
12	Foothill Blvd @ Linden Ave					X	Caltrans C-8				X				X		
13	Foothill Blvd @ Cedar Ave					X	Caltrans C-8				X				X		
14	Foothill Blvd @ Spruce Ave					X	Caltrans C-8				X				X		
15	Foothill Blvd @ Cactus Ave *					X	Caltrans C-8 TRFM				X				X	X	X
16	Foothill Blvd @ Lilac Ave					X	Caltrans C-8				X					X	
17	Foothill Blvd @ Willow Ave					X	Caltrans C-8				X					X	
18	Foothill Blvd @ Riverside Ave					X	Caltrans C-8				X					X	
19	Foothill Blvd @ Sycamore Ave					X	Caltrans C-8				X					X	
20	Foothill Blvd @ Acacia Ave					X	Caltrans C-8				X					X	
21	Foothill Blvd @ Eucalyptus Ave					X	Caltrans C-8				X					X	
22	Foothill Blvd @ Pepper Ave					X	Caltrans C-8				X					X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
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Signal Controller, System Type & Interconnect Communications
Appendix B-13: City of Rialto

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No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make					Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone	
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070											Model 170/170E
Riverside Avenue (Slover Avenue - San Bernardino Avenue)																	
23	Riverside Ave @ Slover Ave		X					Econolite ASC		X						X	
24	Riverside Ave @ I-10 EB Ramps						X	Caltrans C-8					X		X		
25	Riverside Ave @ I-10 WB Ramps *						X	Caltrans C-8 TRFM					X		X		X
26	Riverside Ave @ Valley Blvd		X					Econolite ASC		X					X		
27	Riverside Ave @ Gateway Plaza		X					Econolite ASC		X					X	X	
28	Riverside Ave @ Senior Way		X					Econolite ASC		X					X		
29	Riverside Ave @ San Bernardino Ave		X					Econolite ASC		X					X		
Valley Boulevard (Cactus Avenue - Wildrose Avenue)																	
30	Valley Blvd @ Cactus Ave (Future Signal)																
31	Valley Blvd @ Lilac Ave		X					Econolite ASC		X						X	
32	Valley Blvd @ Willow Ave (Future Signal)																
33	Valley Blvd @ Gateway Plaza/Value Center *		X					Econolite ASC FM		X					X		X

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
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Signal Controller, System Type & Interconnect Communications
Appendix B-14: City of San Bernardino

Page 1 of 4

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make					Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone	
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070											Model 170/170E
Anderson Street/Tippecanoe Avenue (Redlands Boulevard - 9th Street)																	
1	Tippecanoe Ave @ Harriman Pl/Laurelwood Dr						X	BI Tran 200				X			X		
2	Tippecanoe Ave @ Hospitality Ln/Coulston St						X	BI Tran 200				X			X		
3	Tippecanoe Ave @ Brier Dr						X	BI Tran 200				X			X	X	
4	Tippecanoe Ave @ Victoria Ave						X	BI Tran 200				X			X	X	
5	Tippecanoe Ave @ Cooley Ave *						X	BI Tran 200 FM				X			X		X
6	Tippecanoe Ave @ Orange Show Rd/San Bernardino Ave						X	BI Tran 200				X			X		
7	Tippecanoe Ave @ Industrial Center Entrance						X	BI Tran 233				X				X	
8	Tippecanoe Ave @ Central Ave/Palm Meadows Dr						X	BI Tran 200				X				X	
9	Tippecanoe Ave @ Mill St						X	BI Tran 200				X			X	X	
10	Tippecanoe Ave @ Harry Sheppard Blvd						X	BI Tran 200				X			X		
11	Tippecanoe Ave @ Rialto Ave						X	BI Tran 233				X			X		
12	Tippecanoe Ave @ 3rd St						X	BI Tran 233				X				X	
13	Tippecanoe Ave @ 5th St (SB County Signal) *						X	BI Tran 233 245 FM				X				X	X
14	Tippecanoe Ave @ 6th St (SB County Signal)						X	BI Tran 233				X				X	
15	Tippecanoe Ave @ 9th St						X	BI Tran 233				X				X	
Base Line Street (State Street - Sierra Way)																	
16	Base Line St @ State St (University Pkwy)						X	BI Tran 200				X			X		
17	Base Line St @ California St						X	BI Tran 200				X			X	X	
18	Base Line St @ Medical Center Dr						X	BI Tran 200				X				X	
19	Base Line St @ Mount Vernon Ave *						X	BI Tran 200 FM				X				X	X
20	Base Line St @ Massachusetts Ave						X	BI Tran 200				X				X	
21	Base Line St @ Perris St						X	BI Tran 200				X				X	
22	Base Line St @ H St						X	BI Tran 200				X			X		
23	Base Line St @ G St						X	BI Tran 200				X			X		
24	Base Line St @ F St						X	BI Tran 200				X			X		
25	Base Line St @ E St						X	BI Tran 200				X			X		
26	Base Line St @ D St						X	BI Tran 200				X			X		
27	Base Line St @ Arrowhead Ave						X	BI Tran 200				X			X		
28	Base Line St @ Mountain View Ave						X	BI Tran 200				X			X		
29	Base Line St @ Sierra Way						X	BI Tran 200				X			X		
Base Line Street (Waterman Avenue - Windsor Drive)																	
30	Base Line St @ Crestview Ave						X	BI Tran 233				X				X	
31	Base Line St @ Windsor Dr						X	BI Tran 200				X				X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
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Signal Controller, System Type & Interconnect Communications
Appendix B-14: City of San Bernardino

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No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication						
		Type/Brand/Make					Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone			
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070											Model 170/170E		
Base Line Street (Tippecanoe Avenue - Del Rosa Avenue)																			
32	Base Line St @ Tippecanoe Ave						X	BI Tran 200					X				X		
33	Base Line St @ Del Rosa Dr						X	BI Tran 200					X				X		
34	Base Line St @ Del Rosa Ave						X	BI Tran 200					X				X		
Foothill Boulevard (Maple Avenue - Meridian Avenue)																			
35	Foothill Blvd (SR-66) @ Meridian Ave (Caltrans Signal)						X	Caltrans C-8						X			X		
Foothill Boulevard/5th Street (SR-66) (Macy Street South - H Street)																			
36	Foothill Blvd (SR-66) @ Macy St South (Caltrans Signal) *						X	Caltrans C-8 TRFM					X				X		
37	Foothill Blvd/5th St (SR-66) @ 4th St (Caltrans Signal)						X	Caltrans C-8					X				X		
38	5th St (SR-66) @ Medical Center Dr (Caltrans Signal)						X	Caltrans C-8					X				X		
39	5th St (SR-66) @ Cabrera Ave (Caltrans Signal)						X	Caltrans C-8					X				X		
40	5th St (SR-66) @ Mount Vernon Ave (Caltrans Signal)						X	Caltrans C-8					X				X		
41	5th St (SR-66) @ L St (Caltrans Signal)						X	Caltrans C-8					X				X		
42	5th St (SR-66) @ J St (Caltrans Signal)						X	TSCP											
43	5th St (SR-66) @ H St (Caltrans Signal)						X	Caltrans C-8					X				X		
Highland Avenue (SR-30) (Macy Street - California Street)																			
44	Highland Ave (SR-30) @ Macy St (Caltrans Signal)						X	Caltrans C-8					X			X			
45	Highland Ave (SR-30) @ State St (Caltrans Signal)						X	Caltrans C-8					X			X			
46	Highland Ave (SR-30) @ California St (Caltrans Signal) *						X	Caltrans C-8 TRFM					X			X	X		
Highland Avenue (Medical Center Drive - Sierra Way)																			
47	Highland Ave @ Medical Center Dr						X	BI Tran 233					X				X		
48	Highland Ave @ Western Ave						X	BI Tran 233					X				X		
49	Highland Ave @ Mount Vernon Ave						X	BI Tran 200					X				X		
50	Highland Ave @ Muscupiabe Dr						X	BI Tran 200					X			X			
51	Highland Ave @ Lincoln Dr						X	BI Tran 200					X			X	X		
52	Highland Ave @ SR-259 SB Ramps						X	Caltrans C-8								X			
53	Highland Ave @ SR-259 NB Ramps *						X	Caltrans C-8 FM								X			
54	Highland Ave @ H St *						X	BI Tran 200 FM					X			X	X		
55	Highland Ave @ G St						X	BI Tran 200					X			X			
56	Highland Ave @ E St						X	BI Tran 200					X			X			
57	Highland Ave @ D St						X	BI Tran 200					X			X			
58	Highland Ave @ Arrowhead Ave						X	BI Tran 200					X			X			
59	Highland Ave @ Mountain View Ave						X	BI Tran 200					X			X			
60	Highland Ave @ Sierra Way						X	BI Tran 200					X			X			

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-14: City of San Bernardino

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No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make					Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone	
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070											Model 170/170E
Highland Avenue (Valencia Avenue - SR-210 WB Off-Ramp)																	
61	Highland Ave @ Valencia Ave						X	BI Tran 200				X			X		
62	Highland Ave @ Harrison St						X	BI Tran 200				X			X	X	X
63	Highland Ave @ Golden Ave						X	BI Tran 200				X			X		
64	Highland Ave @ Del Rosa Ave/Del Rosa Dr						X	BI Tran 200				X				X	
65	Highland Ave @ Sterling Ave						X	BI Tran 233				X				X	
66	Highland Ave @ SR-210 EB Off-Ramp						X	Caltrans C-8					X		X		
67	Highland Ave @ Arden Ave @ SR-210 WB On-Ramp						X	Caltrans C-8					X		X		
68	Arden Ave @ SR-210 EB On-Ramp						X	Caltrans C-8					X		X		
69	Highland Ave @ SR-210 WB Off-Ramp *						X	Caltrans C-8 TRFM					X		X		X
Highland Avenue (Victoria Avenue - SR-330 NB Ramps, includes Boulder Avenue @ San Manuel Village (West))																	
70	Highland Ave @ Victoria Ave						X	BI Tran 233				X				X	
71	Highland Ave @ Patton State Hospital						X	BI Tran 233				X				X	
72	Highland Ave @ Orange St						X	BI Tran 200				X			X		
73	Highland Ave @ Palm Ave						X	BI Tran 200				X			X	X	
74	Highland Ave @ Piedmont Ave *						X	BI Tran 200 FM				X			X	X	X
75	Highland Ave @ Boulder Ave						X	BI Tran 233				X			X		
76	Highland Ave @ West Frontage Rd (Caltrans Signal)					X		Caltrans C-8					X		X		
77	Highland Ave @ SR-330 SB Ramps						X	Caltrans C-8					X		X		
78	Highland Ave @ SR-330 NB Ramps *						X	Caltrans C-8 TRFM					X		X		X
Hospitality Lane (E Street - Costco Driveway)																	
79	Hospitality Ln @ E St						X	BI Tran 233				X				X	
80	Hospitality Ln @ Hunts Ln						X	BI Tran 233				X			X		
81	Hospitality Ln @ Commercenter Dr West						X	BI Tran 233				X			X	X	
82	Hospitality Ln @ Commercenter Dr East						X	BI Tran 233				X				X	
83	Hospitality Ln @ I-10 WB Ramps/W Carnegie Dr *						X	Caltrans C-8 TRFM					X	X	X		
84	Hospitality Ln @ Private Dr (Circuit City)						X	BI Tran 233				X			X		
85	Hospitality Ln @ Home Depot Dwy *						X	BI Tran 233 FM				X			X		X
86	Hospitality Ln @ Harriman Pl						X	BI Tran 233				X			X		
87	Hospitality Ln @ E Carnegie Dr						X	BI Tran 200				X			X		
88	Hospitality Ln @ Costco Dwy						X	BI Tran 200				X			X		
Redlands Boulevard (Hunts Lane - I-10 EB Off-Ramp/Club Center Drive, includes Hunts Lane @ Club Center Drive)																	
89	Hunts Ln @ Club Center Dr						X	BI Tran 233				X			X		
90	Steel Rd/Redlands Boulevard @ Hunts Ln						X	BI Tran 233				X			X		
91	Redlands Blvd @ Club Way						X	BI Tran 233				X			X		
92	Redlands Blvd @ I-10 EB Off-Ramp/Club Center Dr						X	Caltrans C-8					X		X		

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-14: City of San Bernardino

Page 4 of 4

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC 8000	Model 2070	Model 170/170E										
State Street (SR-210 EB Ramps - Highland Avenue {SR-30})																	
93	State St @ SR-210 EB Ramps						X	Caltrans C-8					X		X		
94	State St @ SR-210 WB Ramps						X	Caltrans C-8					X		X		
Waterman Avenue (Washington Street/Barton Road - Hospitality Lane, includes Washington Street @ Weir Road)																	
95	Washington St @ Weir Rd						X	BI Tran 233				X				X	
96	Waterman Ave @ Washington St/Barton Rd						X	BI Tran 233				X				X	
97	Waterman Ave @ Weir Rd						X	BI Tran 233				X			X		
98	Waterman Ave @ Commercial Rd						X	BI Tran 233				X			X	X	
99	Waterman Ave @ Caroline St						X	BI Tran 233				X			X		
100	Waterman Ave @ Redlands Blvd *						X	BI Tran 233 FM				X			X		X
101	Waterman Ave @ Hospitality Ln						X	BI Tran 233				X			X	X	
Waterman Avenue (5th Street - Highland Avenue)																	
102	Waterman Ave @ 5th St						X	BI Tran 200				X			X		
103	Waterman Ave @ 9th St						X	BI Tran 233				X				X	
104	Waterman Ave @ Base Line St *						X	BI Tran 233 FM				X				X	X
105	Waterman Ave @ 13th St						X	BI Tran 200				X				X	
106	Waterman Ave @ Gilbert St						X	BI Tran 200				X				X	
107	Waterman Ave @ 16th St						X	BI Tran 200				X				X	
108	Waterman Ave @ 21st St						X	BI Tran 200				X				X	
109	Waterman Ave @ Highland Ave *						X	BI Tran 233 210 FM				X				X	X
Waterman Avenue {SR-18} (28th Street - 40th Street)																	
110	Waterman Ave @ 28th St						X	BI Tran 200				X				X	
111	Waterman Ave {SR-18} @ SR-210 EB Ramps						X	Caltrans C-8					X			X	
112	Waterman Ave {SR-18} @ 30th St (Caltrans Signal) *						X	Caltrans C-8 TRFM					X		X	X	X
113	30th St @ Leroy St/SR-210 WB On-Ramp					X		TSCP					X		X		
114	Waterman Ave {SR-18} @ Marshall Blvd (Caltrans Signal)					X		TSCP					X			X	
115	Waterman Ave {SR-18} @ Parkdale Dr (Caltrans Signal)					X		TSCP					X		X		
116	Waterman Ave {SR-18} @ 38th St (Caltrans Signal)					X		TSCP					X		X	X	
117	Waterman Ave {SR-18} @ 40th St (Caltrans Signal)					X		TSCP					X			X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-15: City of Upland

Page 1 of 2

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070	Model 170/170E										
Arrow Hwy/8th Street (Benson Avenue - Euclid Avenue)																	
1	8th St/Arrow Hwy @ Benson Ave						X	BI Tran 200				X			X	X	
2	8th St @ Sherman Way						X	BI Tran 200				X			X		
3	8th St @ San Antonio Ave						X	BI Tran 200				X			X		
Central Avenue (Richton Street/9th Street - Foothill Boulevard)																	
4	Central Ave @ Bike Path						X	BI Tran 200						**			
5	Central Ave @ Arrow Rte						X	BI Tran 200				X				X	
6	Central Ave @ 11th St						X	BI Tran 200				X				X	
Euclid Avenue (7th Street - 11th Street)																	
7	Euclid Ave @ 7th St						X	BI Tran 233				X			X		
8	Euclid Ave @ 8th St						X	BI Tran 233				X			X	X	
9	Euclid Ave @ 9th St						X	BI Tran 233				X			X	X	
10	Euclid Ave @ Arrow Hwy						X	BI Tran 233				X			X		
11	Euclid Ave @ 11th St						X	BI Tran 233				X			X		
Euclid Avenue (14th Street - 19th Street)																	
12	Euclid Ave @ 14th St						X	Caltrans C-8				X			X		
13	Euclid Ave @ 16th St						X	Caltrans C-8				X			X		
14	Euclid Ave @ 18th St					X		TSCP				X			X		
15	Euclid Ave @ 19th St						X	Caltrans C-8				X			X		
Foothill Boulevard (Monte Vista Avenue - Grove Avenue)																	
16	Foothill Blvd @ Monte Vista Ave						X	BI Tran 233				X			X		
17	Foothill Blvd @ Dewey Way						X	BI Tran 233				X			X		
18	Foothill Blvd @ Central Ave					X		BI Tran 2033				X			X	X	
19	Foothill Blvd @ Benson Ave					X		BI Tran 2033				X				X	
20	Foothill Blvd @ Mountain Ave					X		BI Tran 2033				X				X	
21	Foothill Blvd @ Mulberry Ave					X		BI Tran 2033				X			X	X	
22	Foothill Blvd @ San Antonio Ave					X		BI Tran 2033				X			X	X	
23	Foothill Blvd @ Redding Way						X	BI Tran 233				X			X	X	
24	Foothill Blvd @ Euclid Ave					X		BI Tran 2033				X			X	X	
25	Foothill Blvd @ 2nd Ave					X		BI Tran 2033				X			X	X	
26	Foothill Blvd @ 5th Ave					X		BI Tran 2033				X			X		
27	Foothill Blvd @ Campus Ave					X		BI Tran 2033				X			X		
28	Foothill Blvd @ Hospital Pkwy						X	BI Tran 233				X			X		
29	Foothill Blvd @ Alta Ave/Memorial Park						X	BI Tran 233				X				X	
30	Foothill Blvd @ Grove Ave						X	BI Tran 233				X				X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- ** Traffic Signal Coordination via Time Base Coordination Method.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-15: City of Upland

Page 2 of 2

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication				
		Type/Brand/Make						ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuickNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone	
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070	Model 170/170E										
																	Software/ Firmware
Monte Vista Avenue (Holt Boulevard - Arrow Route, includes Palo Verde Street @ I-10 EB On-Ramp)																	
31	Monte Vista Ave @ Arrow Rte						X	BI Tran 200					X				X
Mountain Avenue (6th Street - 11th Street)																	
32	Mountain Ave @ I-10 EB Ramps *						X	Caltrans C-8 TRFM					X	X	X		
33	Mountain Ave @ I-10 WB Ramps						X	Caltrans C-8					X		X		
34	Mountain Ave @ 7th St						X	BI Tran 200				X			X		
35	Mountain Ave @ Shopping Center						X	BI Tran 200				X			X		
36	Mountain Ave @ 8th St						X	BI Tran 200				X			X		

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- ** Traffic Signal Coordination via Time Base Coordination Method.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-16: San Bernardino County

Page 1 of 2

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication					
		Type/Brand/Make						Software/ Firmware	ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone	
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070	Model 170/170E											
Alabama Street (Citrus Plaza - Almond Avenue)																		
1	Alabama St @ Citrus Plaza	X						SEPAC			X					X		
2	Alabama St @ Almond Ave (Future Signal)																	
Cedar Avenue (Slover Avenue - San Bernardino Avenue)																		
3	Cedar Ave @ Slover Ave		X					Econolite ASC		X						X	X	
4	Cedar Ave @ Orange St		X					Econolite ASC		X						X		
5	Cedar Ave @ I-10 EB Ramps						X	Caltrans C-8					X			X		
6	Cedar Ave @ I-10 WB Ramps *						X	Caltrans C-8 TRFM					X			X		X
7	Cedar Ave @ Valley Blvd		X					Econolite ASC		X						X	X	
8	Cedar Ave @ Bloomington Ave		X					Econolite ASC		X						X		
9	Cedar Ave @ San Bernardino Ave *		X					Econolite ASC FM		X							X	X
Cherry Avenue (Jurupa Avenue - Arrow Route)																		
10	Cherry Ave @ San Bernardino Ave *		X					Econolite ASC FM		X							X	X
11	Cherry Ave @ California Steel Way			X				Econolite ASC		X							X	
12	Cherry Ave @ Randall Ave			X				Econolite ASC		X							X	
13	Cherry Ave @ Merrill Ave			X				Econolite ASC		X							X	
14	Cherry Ave @ Whittram Ave			X				Econolite ASC		X							X	
15	Cherry Ave @ Arrow Rte			X				Econolite ASC		X							X	
Etiwanda Avenue (Airport Drive/Slover Avenue - 4th Street/San Bernardino Avenue)																		
16	Etiwanda Ave @ I-10 EB Ramps *						X	Caltrans C-8 TRFM					X	X	X			
17	Etiwanda Ave @ I-10 WB Ramps						X	Caltrans C-8					X			X		
18	Etiwanda Ave @ Valley Blvd		X					Econolite ASC		X						X		
19	Etiwanda Ave @ 4th St/San Bernardino Ave		X					Econolite ASC		X						X		
Mission Boulevard (Roswell Avenue - Central Avenue)																		
20	Mission Blvd @ Roswell Ave						X	BI Tran 233				X					X	
21	Mission Blvd @ Pipeline Ave						X	BI Tran 233				X					X	
22	Mission Blvd @ Central Ave						X	BI Tran 233				X					X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Signal Controller, System Type & Interconnect Communications
Appendix B-16: San Bernardino County

Page 2 of 2

No.	Intersection	Signal Controller						Signal System Make & Type					Type of Signal Interconnect Communication					
		Type/Brand/Make							ACTRA (Siemens Eagle)	ARIES (Econolite)	ICONS (Econolite)	QuicNet (McCain BI Tran)	CTNET (Caltrans)	Fiber Optic	Hardwire (Copper)	Spread Spectrum or Other Wireless	Telephone or Cellphone	
		NEMA - Eagle	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Econolite ASC-8000	Model 2070	Model 170/170E											
Mission Boulevard (Benson Avenue - Grove Avenue)																		
23	Mission Blvd @ Benson Ave	X						SEPAC								X		
Riverside Drive (Reservoir Street - Mountain Avenue)																		
24	Riverside Dr @ Reservoir St		X					Econolite ASC		X							X	
25	Riverside Dr @ East End Ave		X					Econolite ASC		X							X	
26	Riverside Dr @ Roswell Ave		X					Econolite ASC		X							X	
27	Riverside Dr @ Pipeline Ave		X					Econolite ASC		X							X	
San Bernardino Avenue (Etiwanda Avenue - Commerce Drive)																		
28	San Bernardino Ave @ Transportation Way		X					Econolite ASC		X						X		
29	San Bernardino Ave @ Kaiser Way		X					Econolite ASC		X						X		
30	San Bernardino Ave @ Commerce Dr		X					Econolite ASC		X						X	X	
Tippecanoe Avenue (I-10 WB Ramps - 9th Street)																		
31	Tippecanoe Ave @ 5th St *						X	BI Tran 233 FM				X					X	X
32	Tippecanoe Ave @ 6th St						X	BI Tran 233				X					X	
Valley Boulevard (Etiwanda Avenue - Calabash Avenue)																		
33	Valley Blvd @ Logistics Way		X					Econolite ASC		X						X		
34	Valley Blvd @ I-10 Ramps/Commerce Dr						X	Caltrans C-8					X			X		
35	Valley Blvd @ Nexus Way		X					Econolite ASC		X						X	X	
36	Valley Blvd @ Calabash Ave *			X				Econolite ASC FM		X							X	X
Valley Boulevard (Redwood Avenue - Beech Avenue)																		
37	Valley Blvd @ Redwood Ave			X				Econolite ASC		X							X	
38	Valley Blvd @ Live Oak Ave			X				Econolite ASC		X							X	
Valley Boulevard (Alder Avenue - Linden Avenue)																		
39	Valley Blvd @ Alder Ave		X					Econolite ASC		X						X	X	
40	Valley Blvd @ Locust Ave *		X					Econolite ASC FM		X							X	X
41	Valley Blvd @ Linden Ave		X					Econolite ASC		X							X	

Notes:

- * Field Master Controller Location; TRFM: Traffic Responsive Field Master.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

A P P E N D I X C

Traffic Signal Coordination Schedule
Appendix C-1: Caltrans

Page 1 of 5

No.	Intersection	City Area	Weekday						Weekend	
			Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
			AM	MD	PM	AM	MD	PM		
I-10 Interchanges (including 4th St @ El Dorado Ave)										
1	4th St @ El Dorado Ave	Ontario	65	65	65	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 9:00 pm	Free	
2	4th St @ I-10 EB Ramps	Ontario	65	65	65	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 9:00 pm	Free	
3	4th St @ I-10 WB Ramps	Ontario	65	65	65	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 9:00 pm	Free	
4	Alabama St @ I-10 EB Ramps	Redlands	90	100	100	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
5	Alabama St @ I-10 WB Ramps	Redlands	90	100	100	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
6	Anderson St/Tippecanoe Ave @ I-10 EB Ramps	Loma Linda	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	Sat: 9:00 am - 7:00 pm Sun: 10:00 am - 6:00 pm
7	Anderson St/Tippecanoe Ave @ I-10 WB Ramps	Loma Linda	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	Sat: 9:00 am - 7:00 pm Sun: 10:00 am - 6:00 pm
8	Archibald Ave @ I-10 Ramps	Ontario	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 9:00 pm	Free	
9	California St @ I-10 EB Ramps	Redlands	70	70	70	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	Free	
10	California St @ I-10 WB Ramps	Redlands	70	70	70	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	Free	
11	Cedar Ave @ I-10 EB Ramps	Rialto	90		90	5:30 am - 1:30 pm		1:30 pm - 7:30 pm 7:30 pm - 10:00 pm	90	9:00 am - 8:00 pm
12	Cedar Ave @ I-10 WB Ramps	Rialto	90		90	5:30 am - 1:30 pm		1:30 pm - 7:30 pm 7:30 pm - 10:00 pm	90	9:00 am - 8:00 pm
13	Central Ave @ I-10 EB Ramps	Montclair	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
14	Central Ave @ I-10 WB Ramps	Montclair	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
15	Cherry Ave @ I-10 EB Ramps	Fontana	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	Free	
16	Cherry Ave @ I-10 WB Ramps	Fontana	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	Free	
17	Citrus Ave @ I-10 EB Ramps	Fontana	90	90	90	5:00 am - 9:00 am	9:00 am - 11:00 am	11:00 am - 8:00 pm	Free	
18	Citrus Ave @ I-10 WB Ramps	Fontana	90	90	90	5:00 am - 9:00 am	9:00 am - 11:00 am	11:00 am - 8:00 pm	Free	
19	Etiwanda Ave @ I-10 EB Ramps	Ontario	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
20	Etiwanda Ave @ I-10 WB Ramps	Ontario	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
21	Ford St @ Redlands Blvd-I-10 Ramps	Redlands	Free						Free	
22	Haven Ave @ I-10 EB Ramps	Ontario	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
23	Haven Ave @ I-10 WB Ramps	Ontario	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
24	Hospitality Ln @ I-10 WB Ramps/W Carnegie Dr	San Bernadino	90	100	110 100	6:00 am - 9:00 am	9:00 am - 3:02 pm	3:02 pm - 7:00 pm 7:00 pm - 8:00 pm	90	Sat: 9:00 am - 7:00 pm Sun: 10:00 am - 6:00 pm
25	Milliken Ave @ I-10 EB Ramps	Ontario	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 11:00 pm	Free	
26	Milliken Ave @ I-10 WB Ramps/Ontario Mills Pkwy	Ontario	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 11:00 pm	Free	
27	Monte Vista Ave @ I-10 EB Off-Ramp/Palo Verde St	Montclair	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
28	Palo Verde St @ I-10 EB On-Ramp	Montclair	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
29	Monte Vista Ave @ I-10 WB Ramps	Montclair	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
30	Mountain Ave @ I-10 EB Ramps	Ontario	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	90	9:00 am - 8:00 pm
31	Mountain Ave @ I-10 WB Ramps	Upland	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	90	9:00 am - 8:00 pm
32	Mountain View Ave @ I-10 EB Ramps	Loma Linda	100	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
33	Mountain View Ave @ I-10 WB Ramps	Loma Linda	100	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	

Note: Intersections operate free during all other time periods.

Traffic Signal Coordination Schedule
Appendix C-1: Caltrans

Page 2 of 5

No.	Intersection	City Area	Weekday						Weekend	
			Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
			AM	MD	PM	AM	MD	PM		
I-10 Interchanges (including 4th St @ El Dorado Ave)- Continued										
34	Pepper Ave @ I-10 EB Ramps	Colton	90	90	90	6:30 am - 8:45 am	8:45 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
35	Pepper Ave @ I-10 WB Ramps	Colton	90	90	90	6:30 am - 8:45 am	8:45 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
36	Rancho Ave @ I-10 EB Ramps	Colton	85	75 85	75	6:31 am - 8:45 am	8:45 am - 10:29 am 10:29 am - 4:00 pm	4:00 pm - 6:30 pm	Free	
37	Rancho Ave @ I-10 WB Ramps	Colton	85	75 85	75	6:31 am - 8:45 am	8:45 am - 10:29 am 10:29 am - 4:00 pm	4:00 pm - 6:30 pm	Free	
38	Redlands Blvd @ I-10 EB Off-Ramp/Club Center Dr	San Bernadino	90	Free	110	6:30 am - 9:00 am	Free	3:57 pm - 6:00 pm	Free	
39	Riverside Ave @ I-10 EB Ramps	Rialto	90	90		7:00 am - 11:30 am	11:30 am - 7:00 pm		Free	
40	Riverside Ave @ I-10 WB Ramps	Rialto	90	90		7:00 am - 11:30 am	11:30 am - 7:00 pm		Free	
41	Sierra Ave @ I-10 Ramps	Fontana	120	120	120	6:30 am - 9:30 am	9:30 am - 1:30 pm	1:30 pm - 7:00 pm	120	8:00 am - 7:00 pm
42	Tennessee St @ I-10 EB Ramps	Redlands	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
43	Tennessee St @ I-10 WB Ramps	Redlands	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
44	Valley Blvd @ I-10 Ramps/Commerce Dr	Fontana	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
45	Vineyard Ave @ I-10 EB Ramps	Ontario	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
46	Vineyard Ave @ I-10 WB Ramps	Ontario	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
I-15 Interchanges										
47	4th St @ Ontario Mills Dr/I-15 SB Ramps	Ontario	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
48	4th St @ I-15 NB Ramps	Ontario	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
49	Baseline Rd @ I-15 SB Ramps	Rancho Cucamonga	Free						Free	
50	Baseline Ave @ I-15 NB Ramps	Fontana	Free						Free	
51	Foothill Blvd @ I-15 SB Ramps	Rancho Cucamonga	100	110	110	5:00 am - 10:05 am	10:05 am - 1:45 pm	1:45 pm - 10:00 pm	Free	
52	Foothill Blvd @ I-15 NB Ramps	Rancho Cucamonga	100	110	110	5:00 am - 10:05 am	10:05 am - 1:45 pm	1:45 pm - 10:00 pm	Free	
I-215 Interchanges										
53	Barton Rd @ I-215 SB Ramps	Grand Terrance	90	80	90 80	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 7:00 pm 7:00 pm - 9:00 pm	Free	
54	Barton Rd @ I-215 NB Ramps	Grand Terrance	90	80	90 80	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 7:00 pm 7:00 pm - 9:00 pm	Free	
SR-18 (Waterman Avenue)										
55	Waterman Ave (SR-18) @ SR-210 EB Ramps	San Bernadino	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
56	Waterman Ave (SR-18) @ 30th St	San Bernadino	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
57	30th St @ Leroy St-SR/210 WB On-Ramp	San Bernadino	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
58	Waterman Ave (SR-18) @ Marshall Blvd	San Bernadino	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
59	Waterman Ave (SR-18) @ Parkdale Dr	San Bernadino	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
60	Waterman Ave (SR-18) @ 38th St	San Bernadino	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
61	Waterman Ave (SR-18) @ 40th St	San Bernadino	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	

Note: Intersections operate free during all other time periods.

Traffic Signal Coordination Schedule
Appendix C-1: Caltrans

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No.	Intersection	City Area	Weekday						Weekend	
			Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
			AM	MD	PM	AM	MD	PM	MD	MD
SR-30 (Highland Avenue)										
62	Highland Ave (SR-30) @ Macy St	San Bernadino	90	Free	90	6:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
63	Highland Ave (SR-30) @ State St	San Bernadino	90	Free	90	6:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
64	Highland Ave (SR-30) @ California St	San Bernadino	90	Free	90	6:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
SR-60 EB Interchanges										
65	Archibald Ave @ SR-60 EB Ramps	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
66	Archibald Ave @ SR-60 WB Ramps	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
67	Central Ave @ SR-60 EB Ramps	Chino	100	100	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
68	Central Ave @ SR-60 WB Ramps	Chino	100	100	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
69	Grove Ave @ SR-60 EB Ramps	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
70	Grove Ave @ SR-60 WB Ramps	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
71	Haven Ave @ SR-60 EB Ramps	Ontario	100	70	90	7:00 am - 8:30 am	8:30 am - 4:00 pm	4:00 pm - 6:00 pm	Free	
72	Haven Ave @ SR-60 WB Ramps	Ontario	100	70	90	7:00 am - 8:30 am	8:30 am - 4:00 pm	4:00 pm - 6:00 pm	Free	
73	Milliken Ave @ SR-60 EB Ramps	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
74	Milliken Ave @ SR-60 WB Ramps	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
75	Mountain Ave @ SR-60 EB Ramps	Chino	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
76	Mountain Ave @ SR-60 WB Ramps	Chino	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
77	Ramona Ave @ SR-60 EB Ramps	Chino	90	90	90	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
78	Ramona Ave @ SR-60 WB Ramps	Chino	90	90	90	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
79	Vineyard Ave @ SR-60 EB Ramps	Ontario	80	80	80	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
80	Vineyard Ave @ SR-60 WB Ramps	Ontario	80	80	80	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
SR-66 (Foothill Boulevard)										
81	Foothill Blvd (SR-66) @ Meridian Ave	San Bernadino	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	Free	
82	Foothill Blvd (SR-66) @ Macy St South	San Bernadino	75	Free	75	7:00 am - 9:00 am	Free	4:00 pm - 7:00 pm	Free	
83	Foothill Blvd-5th St (SR-66) @ 4th St	San Bernadino	75	Free	75	7:00 am - 9:00 am	Free	4:00 pm - 7:00 pm	Free	
84	5th St (SR-66) @ Medical Center Dr	San Bernadino	75	Free	75	7:00 am - 9:00 am	Free	4:00 pm - 7:00 pm	Free	
85	5th St (SR-66) @ Cabrera Ave	San Bernadino	110	110	110	6:30 am - 9:30 am	11:00 am - 2:00 pm	3:00 pm - 7:00 pm	Free	
86	5th St (SR-66) @ Mount Vernon Ave	San Bernadino	110	110	110	6:30 am - 9:00 am	11:00 am - 2:00 pm	3:00 pm - 7:00 pm	Free	
87	5th St (SR-66) @ L St	San Bernadino	75	Free	75	7:00 am - 9:00 am	Free	4:00 pm - 7:00 pm	Free	
88	5th St (SR-66) @ J St	San Bernadino	Free						Free	
89	5th St (SR-66) @ H St	San Bernadino	Free						Free	
SR-71 Interchanges										
90	Soquel Canyon Pkwy/Central Ave @ SR-71 SB Ramps	Chino Hills	90	Free	90	6:00 am - 9:00 am	Free	4:00 pm - 8:00 pm	Free	
91	Soquel Canyon Pkwy/Central Ave @ SR-71 NB Ramps	Chino Hills	90	Free	90	6:00 am - 9:00 am	Free	4:00 pm - 8:00 pm	Free	

Note: Intersections operate free during all other time periods.

Traffic Signal Coordination Schedule
Appendix C-1: Caltrans

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No.	Intersection	City Area	Weekday						Weekend	
			Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
			AM	MD	PM	AM	MD	PM	MD	MD
SR-83 (Euclid Avenue)										
92	Euclid Ave (SR-83) @ Pine Ave	Chino	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free	
93	Euclid Ave (SR-83) @ Kimball Ave	Chino	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free	
94	Euclid Ave (SR-83) @ Merrill Ave	Chino	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free	
95	Euclid Ave (SR-83) @ Eucalyptus Ave	Chino	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free	
96	Euclid Ave (SR-83) @ Edison Ave	Chino	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free	
97	Euclid Ave (SR-83) @ Red Bud Ln	Chino	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free	
98	Euclid Ave (SR-83) @ Schaefer Ave	Chino	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free	
99	Euclid Ave (SR-83) @ Chino Ave	Chino	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free	
100	Euclid Ave (SR-83) @ Riverside Dr	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
101	Euclid Ave (SR-83) @ Merion St	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
102	Euclid Ave (SR-83) @ Walnut St	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
103	Euclid Ave (SR-83) @ SR-60 EB Ramps	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
104	Euclid Ave (SR-83) @ SR-60 WB Ramps	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
105	Euclid Ave (SR-83) @ Philadelphia St	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
106	Euclid Ave (SR-83) @ Francis St	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
107	Euclid Ave (SR-83) @ Belmont St	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
108	Euclid Ave (SR-83) @ Mission Blvd	Ontario	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
109	Euclid Ave (SR-83) @ Holt Blvd	Ontario	Free						Free	
110	Euclid Ave (SR-83) @ B St	Ontario	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
111	Euclid Ave (SR-83) @ C St	Ontario	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
112	Euclid Ave (SR-83) @ D St	Ontario	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
113	Euclid Ave (SR-83) @ E St	Ontario	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
114	Euclid Ave (SR-83) @ G St	Ontario	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
115	Euclid Ave (SR-83) @ I St	Ontario	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
116	Euclid Ave (SR-83) @ 4th St	Ontario	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
117	Euclid Ave (SR-83) @ Princeton St EB Crosswalk	Ontario	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
118	Euclid Ave (SR-83) @ 5th St	Ontario	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
119	Euclid Ave (SR-83) @ 6th St	Ontario	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
120	Euclid Ave (SR-83) @ I-10 EB Ramps	Ontario	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm

Note: Intersections operate free during all other time periods.

Traffic Signal Coordination Schedule
Appendix C-1: Caltrans

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No.	Intersection	City Area	Weekday							Weekend	
			Cycle Length (sec)			Signal Coordination Schedule				Cycle Length (sec)	Signal Coordination Schedule
			AM	MD	PM	AM	MD	PM	MD	MD	
SR-210 Interchanges											
121	Baseline St @ SR-210 EB Ramps	Highland	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	9:00 am - 3:00 pm	
122	Baseline St @ SR-210 WB Ramps	Highland	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	9:00 am - 3:00 pm	
123	Haven Ave @ SR-210 EB Ramps	Rancho Cucamonga	90	90	90	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free		
124	Haven Ave @ SR-210 WB Ramps	Rancho Cucamonga	90	90	90	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free		
125	Highland Ave @ SR-210 EB Off-Ramp	San Bernadino	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 12:00 am	90	9:00 am - 12:00 am	
126	Highland Ave @ Arden Ave @ SR-210 WB On-Ramp	San Bernadino	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 12:00 am	90	9:00 am - 12:00 am	
127	Arden Ave @ SR-210 EB On-Ramp	San Bernadino	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 12:00 am	90	9:00 am - 12:00 am	
128	Highland Ave @ SR-210 WB Off-Ramp	San Bernadino	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 12:00 am	90	9:00 am - 12:00 am	
129	State St @ SR-210 EB Ramps	San Bernadino	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	9:00 am - 7:00 pm	
130	State St @ SR-210 WB Ramps	San Bernadino	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	9:00 am - 7:00 pm	
SR-259 Interchanges											
131	Highland Ave @ SR-259 SB Ramps	San Bernadino	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	Sat: 9:00 am - 7:00 pm	
										Sun: 10:00 am - 6:00 pm	
132	Highland Ave @ SR-259 NB Ramps	San Bernadino	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	Sat: 9:00 am - 7:00 pm	
										Sun: 10:00 am - 6:00 pm	
SR-330 Interchanges											
133	Highland Ave @ West Frontage Rd	San Bernadino	90	Free	90	7:00 am - 8:30 am	Free	3:00 pm - 6:00 pm	Free		
134	Highland Ave @ SR-330 SB Ramps	San Bernadino	90	Free	90	7:00 am - 8:30 am	Free	3:00 pm - 6:00 pm	Free		
135	Highland Ave @ SR-330 NB Ramps	San Bernadino	90	Free	90	7:00 am - 8:30 am	Free	3:00 pm - 6:00 pm	Free		

Note: Intersections operate free during all other time periods.

Traffic Signal Coordination Schedule Appendix C-2: City of Chino

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No.	Intersection	Weekday							Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule	
		AM	MD	PM	AM	MD	PM	MD	MD	
Central Avenue (El Prado Road - Phillips Boulevard)										
1	Central Ave @ El Prado Rd	100	Free	100	6:45 am - 9:00 am	Free	3:00 pm - 6:30 pm	Free		
2	Central Ave @ Chino Hills Pkwy	100	Free	100	6:45 am - 9:00 am	Free	3:00 pm - 6:30 pm	Free		
3	Central Ave @ Eucalyptus Ave West	100	Free	100	6:45 am - 9:00 am	Free	3:00 pm - 6:30 pm	Free		
4	Central Ave @ College Park Ave	100	Free	100	6:45 am - 9:00 am	Free	3:00 pm - 6:30 pm	Free		
5	Central Ave @ Edison Ave	100	Free	100	6:45 am - 9:00 am	Free	3:00 pm - 6:30 pm	Free		
6	Central Ave @ Schaefer Ave	100	Free	100	6:45 am - 9:00 am	Free	3:00 pm - 6:30 pm	Free		
7	Central Ave @ Chino Ave	100	Free	100	6:45 am - 9:00 am	Free	3:00 pm - 6:30 pm	Free		
8	Central Ave @ D St	100	Free	100	6:45 am - 9:00 am	Free	3:00 pm - 6:30 pm	Free		
9	Central Ave @ C St	100	Free	100	6:45 am - 9:00 am	Free	3:00 pm - 6:30 pm	Free		
10	Central Ave @ Riverside Dr	100	100	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free		
11	Central Ave @ Washington Ave	100	100	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free		
12	Central Ave @ Walnut Ave	100	100	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free		
13	Central Ave @ Columbus Ave	100	100	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free		
14	Central Ave @ SR-60 EB Ramps	100	100	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free		
15	Central Ave @ SR-60 WB Ramps	100	100	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free		
16	Central Ave @ Philadelphia St	100	100	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free		
17	Central Ave @ Country Fair Shopping Center	100	100	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free		
18	Central Ave @ Francis Ave	100	100	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free		
19	Central Ave @ Phillips Blvd	100	100	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free		
Euclid Avenue {SR-83} (Pine Avenue - Mission Boulevard)										
20	Euclid Ave {SR-83} @ Pine Ave (Caltrans Signal)	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free		
21	Euclid Ave {SR-83} @ Kimball Ave (Caltrans Signal)	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free		
22	Euclid Ave {SR-83} @ Merrill Ave (Caltrans Signal)	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free		
23	Euclid Ave {SR-83} @ Eucalyptus Ave (Caltrans Signal)	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free		
24	Euclid Ave {SR-83} @ Edison Ave (Caltrans Signal)	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free		
25	Euclid Ave {SR-83} @ Red Bud Ln (Caltrans Signal)	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free		
26	Euclid Ave {SR-83} @ Schaefer Ave (Caltrans Signal)	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free		
27	Euclid Ave {SR-83} @ Chino Ave (Caltrans Signal)	90	90	90	6:30 am - 9:00 pm	9:00 pm - 2:00 pm	2:00 pm - 8:00 pm	Free		
Mountain Avenue (Riverside Drive - Phillips Street)										
28	Mountain Ave @ Riverside Dr	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free		
29	Mountain Ave @ Verdugo Ave	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free		
30	Mountain Ave @ Walnut Ave	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free		
31	Mountain Ave @ SR-60 EB Ramps	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free		
32	Mountain Ave @ SR-60 WB Ramps	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free		

Notes:

- Intersections operate free during all other time periods.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Traffic Signal Coordination Schedule Appendix C-2: City of Chino

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Philadelphia Street (Ramona Avenue - Benson Avenue)									
33	Philadelphia St @ Ramona Ave	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
34	Philadelphia St @ Monte Vista Ave	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
35	Philadelphia St @ Telephone Ave	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
36	Philadelphia St @ Town Square	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
37	Philadelphia St @ Benson Ave	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
Ramona Avenue (Walnut Avenue - Philadelphia Street)									
38	Ramona Ave @ Walnut Ave	90	90	90	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
39	Ramona Ave @ SR-60 EB Ramps	90	90	90	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
40	Ramona Ave @ SR-60 WB Ramps	90	90	90	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
Riverside Drive (Reservoir Street - Mountain Avenue)									
41	Riverside Dr @ Reservoir St (SB County Signal)	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
42	Riverside Dr @ East End Ave (SB County Signal)	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
43	Riverside Dr @ Roswell Ave (SB County Signal)	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
44	Riverside Dr @ Pipeline Ave (SB County Signal)	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
45	Riverside Dr @ Ramona Ave	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
46	Riverside Dr @ Yorba Ave	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
47	Riverside Dr @ Monte Vista Ave	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
48	Riverside Dr @ 3rd St	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
49	Riverside Dr @ 10th St	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
50	Riverside Dr @ Benson Ave	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
51	Riverside Dr @ Oaks Ave	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
52	Riverside Dr @ Magnolia Ave	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
Riverside Drive (Cypress Avenue - Euclid Avenue (SR-83))									
53	Riverside Dr @ Cypress Ave	90	Free	90	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
54	Riverside Dr @ San Antonio Ave	90	Free	90	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
55	Riverside Dr @ Fern Ave	90	Free	90	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	

Notes:

- Intersections operate free during all other time periods.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Traffic Signal Coordination Schedule
Appendix C-3: City of Chino Hills

No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Soquel Canyon Parkway/Central Avenue (Los Serranos Country Club Drive/Butterfield Ranch Road - Fairfield Ranch Road)									
1	Soquel Canyon Pkwy @ Los Serranos Country Club Dr/Butterfield Ranch Rd	Free			Free			Free	
2	Soquel Canyon Pkwy @ Pomona Rincon Rd	90	Free	90	6:00 am - 7:00 am	Free	4:00 pm - 6:30 pm	Free	
		90			7:00 am - 7:25 am				
		90			7:25 am - 9:00 am				
3	Soquel Canyon Pkwy/Central Ave @ SR-71 SB Ramps	90	Free	90	6:00 am - 9:00 am	Free	4:00 pm - 8:00 pm	Free	
4	Soquel Canyon Pkwy/Central Ave @ SR-71 NB Ramps	90	Free	90	6:00 am - 9:00 am	Free	4:00 pm - 8:00 pm	Free	
5	Central Ave @ Fairfield Ranch Rd	90	Free	90	6:00 am - 9:00 am	Free	4:00 pm - 8:00 pm	Free	

Notes:

- Intersections operate free during all other time periods.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Traffic Signal Coordination Schedule
Appendix C-4: City of Colton

No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
La Cadena Drive (Valley Boulevard - G Street, includes Valley Boulevard @ 9th Street)									
1	La Cadena Dr @ Valley Blvd	80	80	80	7:00 am - 9:00 am	11:00 am - 1:00 pm	3:00 pm - 6:30 pm	Free	
2	La Cadena Dr @ H St	Free						Free	
3	La Cadena Dr @ G St	Free						Free	
4	Valley Blvd @ 9th St	80	80	80	7:00 am - 9:00 am	11:00 am - 1:00 pm	3:00 pm - 6:30 pm	Free	
Pepper Avenue (I-10 EB Ramps - Valley Boulevard, includes Valley Blvd @ Meridian Ave)									
5	Pepper Ave @ I-10 EB Ramps	90	90	90	6:30 am - 8:45 am	8:45 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
6	Pepper Ave @ I-10 WB Ramps	90	90	90	6:30 am - 8:45 am	8:45 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
7	Pepper Ave @ Valley Blvd	90	90	90	6:30 am - 8:45 am	8:45 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
8	Valley Blvd @ Meridian Ave (Future Signal)								
Rancho Avenue (I-10 EB Ramps - Valley Boulevard, includes Valley Boulevard @ 3rd Street)									
9	Rancho Ave @ I-10 EB Ramps	85	75	75	6:31 am - 8:45 am	8:45 am - 10:29 am	4:00 pm - 6:30 pm	Free	
			85			10:29 am - 4:00 pm			
10	Rancho Ave @ I-10 WB Ramps	85	75	75	6:31 am - 8:45 am	8:45 am - 10:29 am	4:00 pm - 6:30 pm	Free	
			85			10:29 am - 4:00 pm			
11	Rancho Ave @ Valley Blvd	85	75	75	6:31 am - 8:45 am	8:45 am - 10:29 am	4:00 pm - 6:30 pm	Free	
			85			10:29 am - 4:00 pm			
12	Valley Blvd @ 3rd St	85	75	75	6:31 am - 8:45 am	8:45 am - 10:29 am	4:00 pm - 6:30 pm	Free	
			85			10:29 am - 4:00 pm			
Valley Boulevard (Cactus Avenue - Wildrose Avenue)									
13	Valley Blvd @ Wildrose Ave	Free			Free			Free	

Notes:

- Intersections operate free during all other time periods.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Traffic Signal Coordination Schedule
Appendix C-5: City of Fontana

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Baseline Road (I-15 NB Ramps - Mango Avenue, includes Cherry Avenue @ Bar Harbor Road)									
1	Baseline Ave @ American Way	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
2	Baseline Ave @ Las Palmas Dr	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
3	Baseline Ave @ North Heritage Circle	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
4	Baseline Ave @ Heritage Triangle Center	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
5	Baseline Ave @ Heritage Village Center	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
6	Baseline Ave @ Cherry Ave	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
7	Cherry Ave @ Bar Harbor Rd	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
8	Baseline Ave @ Market Place (East of Cherry Ave)	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
9	Baseline Ave @ McGuire Ave	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
10	Baseline Ave @ Live Oak Ave	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
11	Baseline Ave @ Village Pkwy/Hemlock Ave	Free	Free	90	Free	Free	4:00 pm - 6:30 pm	Free	
12	Baseline Ave @ Beech Ave	Free	Free	90	Free	Free	4:00 pm - 6:30 pm	Free	
13	Baseline Ave @ Orlando Dr	Free	Free	90	Free	Free	4:00 pm - 6:30 pm	Free	
14	Baseline Ave @ Almeria Ave	Free	Free	90	Free	Free	4:00 pm - 6:30 pm	Free	
15	Baseline Ave @ Citrus Ave	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
16	Baseline Ave @ Oleander Ave	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
17	Baseline Ave @ Cypress Ave	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
18	Baseline Ave @ Juniper Ave	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
19	Baseline Ave @ Sierra Ave	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
20	Baseline Ave @ Mango Ave	100	Free	90	6:00 am - 8:15 am	Free	4:00 pm - 6:30 pm	Free	
Cherry Avenue (Jurupa Avenue - Arrow Route)									
21	Cherry Ave @ Jurupa Ave	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	Free	
22	Cherry Ave @ Slover Ave	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	Free	
23	Cherry Ave @ I-10 EB Ramps	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	Free	
24	Cherry Ave @ I-10 WB Ramps	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	Free	
25	Cherry Ave @ Valley Blvd	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	Free	
26	Cherry Ave @ San Bernardino Ave (SB County Signal)	100	Free	100	6:00 am - 8:00 am	Free	2:00 pm - 7:30 pm	Free	
27	Cherry Ave @ California Steel Way (SB County Signal)	100	Free	100	6:00 am - 8:00 am	Free	4:00 pm - 7:30 pm	Free	
28	Cherry Ave @ Randall Ave (SB County Signal)	100	Free	100	6:00 am - 8:00 am	Free	4:00 pm - 7:30 pm	Free	
29	Cherry Ave @ Merrill Ave (SB County Signal)	100	Free	100	6:00 am - 8:00 am	Free	4:00 pm - 7:30 pm	Free	
30	Cherry Ave @ Whittram Ave (SB County Signal)	100	Free	100	6:00 am - 8:00 am	Free	4:00 pm - 7:30 pm	Free	
31	Cherry Ave @ Arrow Rte (SB County Signal)	100	Free	100	6:00 am - 8:00 am	Free	4:00 pm - 7:30 pm	Free	
Cherry Avenue (Meyer Canyon Drive - Miller Avenue)									
32	Cherry Ave @ Meyer Canyon Dr	100	Free	100	7:00 am - 8:15 am	Free	5:00 pm - 6:30 pm	Free	
33	Cherry Ave @ Miller Ave	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	Free	
34	Cherry Ave @ Roanoke Rd	100	Free	100	7:00 am - 8:15 am	Free	5:00 pm - 6:30 pm	Free	

Notes:

- Intersections operate free during all other time periods.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Traffic Signal Coordination Schedule
Appendix C-5: City of Fontana

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Citrus Avenue (Slover Avenue - Valley Boulevard)									
35	Citrus Ave @ Slover Ave	90	90	90	5:00 am - 9:00 am	9:00 am - 11:00 am	11:00 am - 8:00 pm	Free	
36	Citrus Ave @ I-10 EB Ramps	90	90	90	5:00 am - 9:00 am	9:00 am - 11:00 am	11:00 am - 8:00 pm	Free	
37	Citrus Ave @ I-10 WB Ramps	90	90	90	5:00 am - 9:00 am	9:00 am - 11:00 am	11:00 am - 8:00 pm	Free	
38	Citrus Ave @ Valley Blvd	90	90	90	5:00 am - 9:00 am	9:00 am - 11:00 am	11:00 am - 8:00 pm	Free	
Foothill Boulevard (Cottonwood Avenue - Locust Avenue)									
39	Foothill Blvd @ Cottonwood Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 13:45 pm	13:45 pm - 10:00 pm	110	9:10 am - 7:00 pm
40	Foothill Blvd @ Mulberry Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 13:45 pm	13:45 pm - 10:00 pm	110	9:10 am - 7:00 pm
41	Foothill Blvd @ Banana Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 13:45 pm	13:45 pm - 10:00 pm	110	9:10 am - 7:00 pm
42	Foothill Blvd @ Cherry Ave	Free						Free	
43	Foothill Blvd @ Redwood Ave (Future Signal)								
44	Foothill Blvd @ Hemlock Ave (Future Signal)								
45	Foothill Blvd @ Almeria Ave	100	90	110	5:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 9:00 pm	90	9:00 am - 7:00 pm
46	Foothill Blvd @ Tokay Ave	100	90	110	5:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 9:00 pm	90	9:00 am - 7:00 pm
47	Foothill Blvd @ Citrus Ave	100	90	110	5:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 9:00 pm	90	9:00 am - 7:00 pm
48	Foothill Blvd @ Juniper Ave	110	110	110	5:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 9:00 pm	110	9:00 am - 7:00 pm
49	Foothill Blvd @ Sierra Ave	110	110	110	5:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 9:00 pm	110	9:00 am - 7:00 pm
50	Foothill Blvd @ Mango Ave	110	110	110	5:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 9:00 pm	110	9:00 am - 7:00 pm
51	Foothill Blvd @ Fontana Square Shopping Center	110	110	110	5:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 9:00 pm	110	9:00 am - 7:00 pm
52	Foothill Blvd @ Palmetto Ave	110	110	110	5:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 9:00 pm	110	9:00 am - 7:00 pm
53	Foothill Blvd @ Tamarind Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 9:00 pm	100	9:00 am - 7:00 pm
54	Foothill Blvd @ Alder Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 9:00 pm	100	9:00 am - 7:00 pm
55	Foothill Blvd @ Laurel Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 9:00 pm	100	9:00 am - 7:00 pm
56	Foothill Blvd @ Locust Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 9:00 pm	100	9:00 am - 7:00 pm
Sierra Avenue (Slover Avenue - Valley Boulevard)									
57	Sierra Ave @ Slover Ave	120	120	120	6:30 am - 9:30 am	9:30 am - 1:30 pm	1:30 pm - 7:00 pm	120	8:00 am - 7:00 pm
58	Sierra Ave @ I-10 Ramps	120	120	120	6:30 am - 9:30 am	9:30 am - 1:30 pm	1:30 pm - 7:00 pm	120	8:00 am - 7:00 pm
59	Sierra Ave @ Valley Blvd	120	120	120	6:30 am - 9:30 am	9:30 am - 1:30 pm	1:30 pm - 7:00 pm	120	8:00 am - 7:00 pm
Valley Boulevard (Redwood Avenue @ Beech Avenue)									
60	Valley Blvd @ Redwood Ave (SB County Signal)	100	Free	100	6:00 am - 9:00 am	Free	2:00 pm - 8:00 pm	Free	
61	Valley Blvd @ Live Oak Ave (SB County Signal)	100	Free	100	6:00 am - 9:00 am	Free	2:00 pm - 8:00 pm	Free	
62	Valley Blvd @ Hemlock Avenue @ Fontana Avenue	100	Free	100	6:00 am - 9:00 am	Free	2:00 pm - 8:00 pm	Free	
63	Valley Blvd @ Beech Ave (Future Signal)								

Notes:

- Intersections operate free during all other time periods.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Traffic Signal Coordination Schedule
Appendix C-5: City of Fontana

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Valley Boulevard (Poplar Avenue - Oleander Avenue)									
64	Valley Blvd @ Poplar Ave (Future Signal)								
65	Valley Blvd @ Catawba Ave	90	90	90	5:00 am - 9:00 am	9:00 am - 11:00 am	11:00 am - 8:00 pm	Free	
66	Valley Blvd @ Oleander Ave (Future Signal)								
Valley Boulevard (Juniper Avenue - Swapmeet Signal)									
67	Valley Blvd @ Juniper Ave	120	120	120	6:30 am - 9:30 am	9:30 am - 1:30 pm	1:30 pm - 7:00 pm	120	8:00 am - 7:00 pm
68	Valley Blvd @ Inland Empire Center	120	120	120	6:30 am - 9:30 am	9:30 am - 1:30 pm	1:30 pm - 7:00 pm	120	8:00 am - 7:00 pm
69	Valley Blvd @ Vineyard Valley Way	120	120	120	6:30 am - 9:30 am	9:30 am - 1:30 pm	1:30 pm - 7:00 pm	120	8:00 am - 7:00 pm
70	Valley Blvd @ Health Care Pkwy	120	120	120	6:30 am - 9:30 am	9:30 am - 1:30 pm	1:30 pm - 7:00 pm	120	8:00 am - 7:00 pm
71	Valley Blvd @ Palmetto Ave	120	120	120	6:30 am - 9:30 am	9:30 am - 1:30 pm	1:30 pm - 7:00 pm	120	8:00 am - 7:00 pm
72	Valley Blvd @ Swapmeet Signal	120	120	120	6:30 am - 9:30 am	9:30 am - 1:30 pm	1:30 pm - 7:00 pm	120	8:00 am - 7:00 pm

Notes:

- Intersections operate free during all other time periods.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Traffic Signal Coordination Schedule
Appendix C-6: City of Grand Terrace

No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Barton Road (I-215 SB On-Ramp - Grand Terrace Road/Honey Hill Drive)									
1	Barton Rd @ I-215 SB On-Ramp	90	80	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
				80			7:00 pm - 9:00 pm		
2	Barton Rd @ I-215 NB Ramps	90	80	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
				80			7:00 pm - 9:00 pm		
3	Barton Rd @ Michigan Ave	90	80	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
				80			7:00 pm - 9:00 pm		
4	Barton Rd @ Canal St	90	Free	90	7:00 am - 9:00 am	Free	3:00 pm - 7:00 pm	Free	
5	Barton Rd @ Mount Vernon Ave	90	Free	90	7:00 am - 9:00 am	Free	3:00 pm - 7:00 pm	Free	
6	Barton Rd @ Preston St	90	Free	90	7:00 am - 9:00 am	Free	3:00 pm - 7:00 pm	Free	
7	Barton Rd @ Grand Terrace Rd/Honey Hill Dr	90	Free	90	7:00 am - 9:00 am	Free	3:00 pm - 7:00 pm	Free	

Notes:

- Intersections operate free during all other time periods.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Traffic Signal Coordination Schedule
Appendix C-7: City of Highland

No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Base Line (Sterling Avenue - Church Street)									
1	Base Line @ Sterling Ave	90	Free	90	6:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
2	Base Line @ McKinley St	90	Free	90	6:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
3	Base Line @ Victoria Ave	90	Free	90	6:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
4	Base Line @ Cunningham St/Olive St	90	Free	90	6:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
5	Base Line @ Central Ave	90	Free	90	6:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
6	Base Line @ Palm Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	9:00 am - 3:00 pm
7	Base Line @ Church Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	9:00 am - 3:00 pm
8	Base Line @ SR-210 EB Ramps	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	9:00 am - 3:00 pm
9	Base Line @ SR-210 WB Ramps	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	9:00 am - 3:00 pm
10	Base Line @ Seine Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	9:00 am - 3:00 pm
11	Base Line @ Boulder Ave *	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90 (Sat)	9:00 am - 3:00 pm
12	Base Line @ Walgreens Dr*	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90 (Sun)*	8:00 am - 3:00 pm
13	Base Line @ Webster St	Free	Free	90	Free	Free	3:00 pm - 6:00 pm	Free	
14	Base Line @ Streater Ave (Future Signal)								
15	Base Line @ Church St	Free	Free	90	Free	Free	3:00 pm - 6:00 pm	Free	
Highland Avenue (Victoria Avenue - SR-330 NB Ramps, includes Boulder Avenue @ San Manuel Village (West))									
16	Boulder Ave @ San Manuel Village (West)	90	Free	90	7:00 am - 8:30 am	Free	3:00 pm - 6:00 pm	Free	

Notes:

- * At Base Line @ Boulder and Base Line @ Walgreens, Sunday has special 90 sec plan to accommodate church traffic from 8:00 am - 3:00 pm.
- Intersections operate free during all other time periods.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Traffic Signal Coordination Schedule
Appendix C-8: City of Loma Linda

No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Anderson Street/Tippecanoe Avenue (Redlands Boulevard - 9th Street)									
1	Redlands Blvd @ Richardson St	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
2	Anderson St @ Redlands Blvd	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
3	Anderson St/Tippecanoe Ave @ I-10 EB Ramps	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	Sat: 9:00 am - 7:00 pm Sun: 10:00 am - 6:00 pm
4	Anderson St/Tippecanoe Ave @ I-10 WB Ramps	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	Sat: 9:00 am - 7:00 pm Sun: 10:00 am - 6:00 pm
Barton Road (Waterman Avenue - Newport Avenue)									
5	Barton Rd @ Oakwood Dr/University Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
6	Barton Rd @ Campus St	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
7	Barton Rd @ Anderson St	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
8	Barton Rd @ Benton St	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
9	Barton Rd @ Loma Linda Dr	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
10	Barton Rd @ Mountain View Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
11	Barton Rd @ Newport Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
Barton Road (California Street - Bellevue Avenue)									
12	Barton Rd @ California St	80	80	80	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
Mountain View Avenue (Redlands Boulevard - I-10 WB Ramps)									
13	Mountain View Ave @ Redlands Blvd	100	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
14	Mountain View Ave @ Business Center Dr	100	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
15	Mountain View Ave @ I-10 EB Ramps	100	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
16	Mountain View Ave @ I-10 WB Ramps	100	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	

Notes:

- Intersections operate free during all other time periods.
- Caltrans signals are duplicated and are also shown in individual agency listings for clarity purposes.

Traffic Signal Coordination Schedule

Appendix C-9: City of Montclair

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Arrow Highway/8th Street (Mills Avenue/Claremont Avenue - Benson Avenue)									
1	Arrow Hwy @ Police Station	Free						Free	
2	Arrow Hwy @ Fremont Ave	Free						Free	
Central Avenue (Howard Street - Richton Street/9th Street)									
3	Central Ave @ Howard St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
4	Central Ave @ Holt Blvd	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
5	Central Ave @ Kingsley St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
6	Central Ave @ Orchard St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
7	Central Ave @ Benito St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
8	Central Ave @ San Bernardino St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
9	Central Ave @ Palo Verde St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
10	Central Ave @ Costco Dwy	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
11	Central Ave @ I-10 EB Ramps	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
12	Central Ave @ I-10 WB Ramps	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
13	Central Ave @ Plaza Ln	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
14	Central Ave @ Moreno St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
15	Central Ave @ Olive St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
16	Central Ave @ Arrow Hwy	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
17	Central Ave @ Richton St/9th St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
Holt Boulevard (Mills Avenue - Benson Avenue)									
18	Holt Blvd @ Mills Ave (Pomona Signal)								
19	Holt Blvd @ Amherst Ave	90	45	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
20	Holt Blvd @ Ramona Ave	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
21	Holt Blvd @ Vernon Ave	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
22	Holt Blvd @ Benson Ave	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
Mission Boulevard (Roswell Avenue - Central Avenue)									
23	Mission Blvd @ Roswell Ave (SB County Signal)	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
24	Mission Blvd @ Pipeline Ave (SB County Signal)	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
25	Mission Blvd @ Ramona Ave	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
26	Mission Blvd @ Monte Vista Ave	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
27	Mission Blvd @ Fremont Ave	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
28	Mission Blvd @ Central Ave (SB County Signal)	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	

Notes:

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Traffic Signal Coordination Schedule
Appendix C-9: City of Montclair

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Monte Vista Avenue (Holt Boulevard - Arrow Route, includes Palo Verde Street @ I-10 EB On-Ramp)									
29	Monte Vista Ave @ Holt Blvd	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
30	Monte Vista Ave @ Kingsley St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
31	Monte Vista Ave @ Orchard St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
32	Monte Vista Ave @ Benito St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
33	Monte Vista Ave @ San Bernardino St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
34	Monte Vista Ave @ I-10 EB Off-Ramp/Palo Verde St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
35	Palo Verde St @ I-10 EB On-Ramp	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
36	Monte Vista Ave @ I-10 WB Off-Ramp	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
37	Monte Vista Ave @ San Jose St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
38	Monte Vista Ave @ Moreno St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
39	Monte Vista Ave @ Arrow Hwy	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
40	Monte Vista Ave @ Richton St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	

Notes:

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Traffic Signal Coordination Schedule
Appendix C-10: City of Ontario

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
4th Street (El Dorado Avenue - Corona Avenue)									
1	4th St @ El Dorado Ave (Caltrans Signal)	65	65	65	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 9:00 pm	Free	
2	4th St @ I-10 EB Ramps	65	65	65	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 9:00 pm	Free	
3	4th St @ I-10 WB Ramps	65	65	65	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 9:00 pm	Free	
4	4th St @ Baker Ave	Free						Free	
5	4th St @ Corona Ave (Future Signal)								
4th Street (Vineyard Avenue - Barrington Avenue)									
6	4th St @ Turner Ave/Hermosa Ave	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
7	4th St @ Center Ave	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
8	4th St @ Duesenberg Dr/Utica Ave	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
9	4th St @ Via Asti/Cleveland Ave	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
10	4th St @ Via Turin/Empire Ct	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
11	4th St @ Gurnee Ave	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
12	4th St @ Richmond Pl	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
13	4th St @ Franklin Ave/Buffalo Ave	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
14	4th St @ Ontario Mills Dr/I-15 SB Ramps	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
15	4th St @ I-15 NB Ramps	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
16	4th St @ Wineville Ave/Santa Anita Ave	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
17	4th St @ Barrington Ave	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
Archibald Avenue (Riverside Drive - Mission Boulevard)									
18	Archibald Ave @ Riverside Dr	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
19	Archibald Ave @ Walnut St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
20	Archibald Ave @ Fedco Dr/Oakhill St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
21	Archibald Ave @ SR-60 EB Ramps	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
22	Archibald Ave @ SR-60 WB Ramps	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
23	Archibald Ave @ Philadelphia St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
24	Archibald Ave @ Cedar St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
25	Archibald Ave @ Francis St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
26	Archibald Ave @ Mission Blvd	Free						Free	
Archibald Avenue (Airport Drive - 4th Street)									
27	Archibald Ave @ Airport Dr	Free						Free	
28	Archibald Ave @ Guasti Rd	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 9:00 pm	Free	
29	Archibald Ave @ I-10 Fwy	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 9:00 pm	Free	
30	Archibald Ave @ Inland Empire Blvd	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 9:00 pm	Free	

Notes:

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Traffic Signal Coordination Schedule

Appendix C-10: City of Ontario

Page 2 of 5

No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Etiwanda Avenue (Airport Drive/Slover Avenue - 4th Street/San Bernardino Avenue)									
31	Etiwanda Ave @ Airport Dr/Slover Ave	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
32	Etiwanda Ave @ I-10 EB Ramps	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
33	Etiwanda Ave @ I-10 WB Ramps	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
34	Etiwanda Ave @ Valley Blvd (SB County Signal)	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
35	Etiwanda Ave @ 4th St/San Bernardino Ave (SB County Signal)	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
Euclid Avenue {SR-83} (Pine Avenue - Mission Boulevard)									
36	Euclid Ave {SR-83} @ Riverside Dr (Caltrans Signal)	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
37	Euclid Ave {SR-83} @ Merion St (Caltrans Signal)	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
38	Euclid Ave {SR-83} @ Walnut Ave (Caltrans Signal)	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
39	Euclid Ave {SR-83} @ SR-60 EB Ramps (Caltrans Signal)	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
40	Euclid Ave {SR-83} @ SR-60 WB Ramps (Caltrans Signal)	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
41	Euclid Ave {SR-83} @ Philadelphia St (Caltrans Signal)	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
42	Euclid Ave {SR-83} @ Francis St (Caltrans Signal)	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
43	Euclid Ave {SR-83} @ Belmont St (Caltrans Signal)	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
44	Euclid Ave {SR-83} @ Mission Blvd (Caltrans Signal)	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
Euclid Avenue {SR-83} (Holt Boulevard - I-10 EB Ramps)									
45	Euclid Ave {SR-83} @ Holt Blvd (Caltrans Signal)	Free						Free	
46	Euclid Ave {SR-83} @ B St (Caltrans Signal)	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
47	Euclid Ave {SR-83} @ C St (Caltrans Signal)	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
48	Euclid Ave {SR-83} @ D St (Caltrans Signal)	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
49	Euclid Ave {SR-83} @ E St (Caltrans Signal)	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
50	Euclid Ave {SR-83} @ G St (Caltrans Signal)	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
51	Euclid Ave {SR-83} @ I St (Caltrans Signal)	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
52	Euclid Ave {SR-83} @ 4th St (Caltrans Signal)	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
53	Euclid Ave {SR-83} @ Princeton St EB Crosswalk (Caltrans Signal)	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
54	Euclid Ave {SR-83} @ 5th St (Caltrans Signal)	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
55	Euclid Ave {SR-83} @ 6th St (Caltrans Signal)	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
56	Euclid Ave {SR-83} @ I-10 EB Ramps (Caltrans Signal)	80	80	85 80	6:30 am - 9:30 am	9:30 am - 3:30 pm	3:30 pm - 8:00 pm 8:00 pm - 10:00 pm	80	8:00 am - 10:00 pm
Grove Avenue (Walnut Street - Philadelphia Street)									
57	Grove Ave @ Walnut St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
58	Grove Ave @ SR-60 EB Ramps	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
59	Grove Ave @ SR-60 WB Ramps	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
60	Grove Ave @ Marketplace on Grove (Lowe's)	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
61	Grove Ave @ Philadelphia St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	

Notes:

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Traffic Signal Coordination Schedule
Appendix C-10: City of Ontario

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Grove Avenue (4th Street - 8th Street)									
62	Grove Ave @ 4th St	90	90	110	6:15 am - 11:30 am	11:30 am - 3:00 pm	3:00 pm - 6:30 pm	Free	
63	Grove Ave @ 6th St	90	Free	110	6:15 am - 8:15 am	Free	3:00 pm - 6:30 pm	Free	
64	Grove Ave @ 7th St	90	Free	110	6:15 am - 8:15 am	Free	3:00 pm - 6:30 pm	Free	
65	Grove Ave @ 8th St	90	Free	110	6:15 am - 8:15 am	Free	3:00 pm - 6:30 pm	Free	
Haven Avenue (Riverside Drive - SR-60 WB Ramps)									
66	Haven Ave @ Riverside Dr	100	Free	90	6:30 am - 9:00 am	Free	2:00 am - 7:00 pm	Free	
67	Haven Ave @ Creekside Dr	100	Free	90	7:00 am - 8:30 am	Free	4:00 pm - 6:00 pm	Free	
68	Haven Ave @ SR-60 EB Ramps	100	70	90	7:00 am - 8:30 am	8:30 am - 4:00 pm	4:00 pm - 6:00 pm	Free	
69	Haven Ave @ SR-60 WB Ramps	100	70	90	7:00 am - 8:30 am	8:30 am - 4:00 pm	4:00 pm - 6:00 pm	Free	
Haven Avenue (Philadelphia Street - Jurupa Street)									
70	Haven Ave @ Philadelphia St	120	100	120 100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 6:30 pm 6:30 pm - 8:00 pm	Free	
71	Haven Ave @ Mission Blvd	120	100	120 100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 6:30 pm 6:30 pm - 8:00 pm	Free	
72	Haven Ave @ Francis St	120	100	120 100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 6:30 pm 6:30 pm - 8:00 pm	Free	
73	Haven Ave @ Jurupa St	120	100	120 100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 6:30 pm 6:30 pm - 8:00 pm	Free	
Haven Avenue (Airport Drive - 4th Street)									
74	Haven Ave @ Airport Dr	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
75	Haven Ave @ Guasti Rd	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
76	Haven Ave @ I-10 EB Ramps	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
77	Haven Ave @ I-10 WB Ramps	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
78	Haven Ave @ Inland Empire Blvd	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
79	Haven Ave @ Concoars St	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
80	Haven Ave @ 4th St	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
Holt Boulevard (Mills Avenue - Euclid Avenue {SR-83})									
81	Holt Blvd @ Mountain Ave	90	90	90	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
82	Holt Blvd @ San Antonio Ave	90	90	90	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
83	Holt Blvd @ Vine Ave	90	90	90	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
Holt Boulevard (Euclid Avenue {SR-83} - Grove Avenue)									
84	Holt Blvd @ Sultana Ave	90	Free	110	6:15 am - 8:15 am	Free	3:00 pm - 6:30 pm	Free	
85	Holt Blvd @ Campus Ave	90	Free	110	6:15 am - 8:15 am	Free	3:00 pm - 6:30 pm	Free	
86	Holt Blvd @ Bon View Ave/Allyn Ave	90	Free	110	6:15 am - 8:15 am	Free	3:00 pm - 6:30 pm	Free	
87	Holt Blvd @ Grove Ave	90	90	110	6:15 am - 8:15 am	8:15 am - 3:00 pm	3:00 pm - 6:30 pm	Free	

Notes:

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Traffic Signal Coordination Schedule

Appendix C-10: City of Ontario

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Holt Boulevard (County of San Bernadino Offices - Guasti Road/Convention Center Way)									
88	Holt Blvd @ County of San Bernardino Offices	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
89	Holt Blvd @ Corona Ave	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
90	Holt Blvd @ Vineyard Ave	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
91	Holt Blvd @ Convention Center Parking	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
92	Holt Blvd @ Guasti Rd/Convention Center Way	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
Milliken Avenue (Riverside Drive - Philadelphia Street, includes Riverside Drive @ Mill Creek Boulevard and Mission Blvd @ Philadelphia Street)									
93	Riverside Dr @ Mill Creek Blvd	Free						Free	
94	Milliken Ave/Hammer Ave @ Riverside Dr (Riverside County Signal)								
95	Milliken Ave @ SR-60 EB Ramps	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
96	Milliken Ave @ SR-60 WB Ramps	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
97	Milliken Ave @ Greystone Dr	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
98	Milliken Ave @ Mission Blvd	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
99	Mission Blvd @ Philadelphia St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
100	Milliken Ave @ Philadelphia St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
Milliken Avenue (Airport Drive - 4th Street)									
101	Milliken Ave @ Airport Dr	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 11:00 pm	Free	
102	Milliken Ave @ Guasti Rd	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 11:00 pm	Free	
103	Milliken Ave @ I-10 EB Ramps	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 11:00 pm	Free	
104	Milliken Ave @ I-10 WB Ramps/Ontario Mills Pkwy	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 11:00 pm	Free	
105	Milliken Ave @ Inland Empire Blvd/Mall Dr	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 11:00 pm	Free	
106	Milliken Ave @ Concours St	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 11:00 pm	Free	
107	Milliken Ave @ 4th St	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 11:00 pm	Free	
Mission Boulevard (Benson Avenue - Grove Avenue)									
108	Mission Blvd @ Benson Ave (SB County Signal)	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
109	Mission Blvd @ Mountain Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
110	Mission Blvd @ San Antonio Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
111	Mission Blvd @ Vine Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
112	Mission Blvd @ Sultana Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
113	Mission Blvd @ Campus Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
114	Mission Blvd @ Bon View Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
115	Mission Blvd @ Grove Ave	90	90	110	6:15 am - 11:30 am	11:30 am - 3:00 pm	3:00 pm - 6:30 pm	Free	

Notes:

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Traffic Signal Coordination Schedule

Appendix C-10: City of Ontario

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Mission Boulevard (Baker Avenue - Vineyard Avenue)									
116	Mission Blvd @ Baker Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
117	Mission Blvd @ Vineyard Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
Mountain Avenue (Riverside Drive - Phillips Street)									
118	Mountain Ave @ Philadelphia St	100	100	100	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
Mountain Avenue (6th Street - 11th Street)									
119	Mountain Ave @ 6th St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	90	9:00 am - 8:00 pm
Philadelphia Street (Benson Avenue - Euclid Avenue {SR-83})									
120	Philadelphia St @ San Antonio Ave	90	90	90	7:00 am - 9:00 am	10:00 am - 2:00 pm	3:00 pm - 8:00 pm	Free	
Philadelphia Street (Archibald Avenue - Excise Avenue)									
121	Philadelphia St @ Business Pkwy	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
122	Philadelphia St @ Turner Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
123	Philadelphia St @ Excise Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
Riverside Drive (Euclid Avenue {SR-83} - Turner Avenue)									
124	Riverside Dr @ Campus Ave	100	90	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 am - 7:00 pm	Free	
125	Riverside Dr @ Grove Ave	100	Free	100	6:30 am - 9:00 am	Free	2:00 am - 7:00 pm	Free	
126	Riverside Dr @ Vineyard Ave	100	90	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 am - 7:00 pm	Free	
127	Riverside Dr @ Turner Ave	100	90	100	6:30 am - 9:00 am	9:00 am - 2:00 pm	2:00 am - 7:00 pm	Free	
Vineyard Avenue (Pep Boys Drive - Philadelphia Street, includes Philadelphia Street @ Kaiser Driveway)									
128	Vineyard Ave @ Walnut St	80	80	80	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
129	Vineyard Ave @ Pep Boys Dr	80	80	80	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
130	Vineyard Ave @ SR-60 EB Ramps	80	80	80	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
131	Vineyard Ave @ SR-60 WB Ramps	80	80	80	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
132	Vineyard Ave @ Raymond Kay Way	80	80	80	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
133	Vineyard Ave @ Philadelphia St	80	80	80	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	Free	
134	Philadelphia St @ Kaiser Dwy	Free						Free	
Vineyard Avenue (Holt Boulevard - 4th Street)									
135	Vineyard Ave @ D St/Convention Center Way	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
136	Vineyard Ave @ G St	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
137	Vineyard Ave @ I-10 EB Ramps	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
138	Vineyard Ave @ I-10 WB Ramps	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
139	Vineyard Ave @ Plaza Serena/Inland Empire Blvd	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
140	Vineyard Ave @ 4th St	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	

Notes:

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Traffic Signal Coordination Schedule

Appendix C-11: City of Rancho Cucamonga

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
4th Street (Vineyard Avenue - Barrington Avenue)									
1	4th St @ Smiderle Loop/Golden Oak Rd	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
Archibald Avenue (Airport Drive - 4th Street)									
2	Archibald Ave @ 4th St	100	100	100	6:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 9:00 pm	Free	
Base Line Road (Etiwanda Avenue - I-15 NB Ramps)									
3	Base Line Rd @ Etiwanda Ave (Use Existing Base Line Rd Coordination Timing)	110	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	Free	
4	Base Line Rd @ Shelby Pl	Free			Free			Free	
5	Base Line Rd @ I-15 SB Ramps	Free			Free			Free	
6	Base Line Rd-Baseline Ave @ East Ave	Free			Free			Free	
7	Baseline Ave @ I-15 NB Ramps	Free			Free			free	
Foothill Boulevard (San Bernardino Road - Day Creek Boulevard)									
8	Foothill Blvd @ San Bernardino Rd	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
9	Foothill Blvd @ Baker Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
10	Foothill Blvd @ Highridge Pl	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
11	Foothill Blvd @ Vineyard Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
12	Foothill Blvd @ Orchard Plaza	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
13	Foothill Blvd @ Hellman Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
14	Foothill Blvd @ Archibald Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
15	Foothill Blvd @ Ramona Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
16	Foothill Blvd @ Hermosa Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
17	Foothill Blvd @ Center Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
18	Foothill Blvd @ Haven Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
19	Foothill Blvd @ Aspen Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
20	Foothill Blvd @ Spruce Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
21	Foothill Blvd @ Elm Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
22	Foothill Blvd @ Milliken Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
23	Foothill Blvd @ Mayten Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
24	Foothill Blvd @ Masi Dr	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
25	Foothill Blvd @ Rochester Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
26	Foothill Blvd @ Day Creek Blvd	Free			Free			Free	

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Traffic Signal Coordination Schedule

Appendix C-11: City of Rancho Cucamonga

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Foothill Boulevard (I-15 SB Ramps - Cornwall Court/Cornwall Avenue)									
27	Foothill Blvd @ I-15 SB Ramps	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	Free	
28	Foothill Blvd @ I-15 NB Ramps	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	Free	
29	Foothill Blvd @ Market Place/Sacred Heart Dr	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	Free	
30	Foothill Blvd @ Etiwanda Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	Free	
31	Foothill Blvd @ Cornwall Ct/Cornwall Ave	100	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	Free	
Grove Avenue (8th Street - Arrow Highway/Arrow Route)									
32	Grove Ave @ 9th St	80	80	110	6:15 am - 8:15 am	11:30 am - 1:15 pm	3:00 pm - 6:30 pm	Free	
		80	80	90	8:15 am - 11:30 am	1:15 pm - 3:00 pm	6:30 pm - 9:00 pm		
33	Grove Ave @ Arrow Hwy/Arrow Rte	80	80	110	6:15 am - 8:15 am	11:30 am - 1:15 pm	3:00 pm - 6:30 pm	Free	
		80	80	90	8:15 am - 11:30 am	1:15 pm - 3:00 pm	6:30 pm - 9:00 pm		
Haven Avenue (4th Street - Baseline Road)									
34	Haven Ave @ Trademark St	100	100	100	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
35	Haven Ave @ 6th St	100	100	100	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
36	Haven Ave @ 7th St	100	100	100	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
37	Haven Ave @ Jersey Blvd	100	100	100	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
38	Haven Ave @ Arrow Rte	100	100	100	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
39	Haven Ave @ Civic Center Dr	100	100	100	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
40	Haven Ave @ Town Center Dr	100	110	110	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
41	Haven Ave @ Church St	100	110	110	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
42	Haven Ave @ Baseline Rd (Use Existing Baseline Rd Coordination Timing)	110	110	110	5:00 am - 10:05 am	10:05 am - 2:40 pm	2:40 pm - 10:00 pm	Free	
Haven Avenue (Bike Trail - Lemon Avenue)									
43	Haven Ave @ Bike Trail	90	90	90	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
44	Haven Ave @ Victoria St	90	90	90	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
45	Haven Ave @ 19th St	90	90	90	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
46	Haven Ave @ SR-210 EB Ramps	90	90	90	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
47	Haven Ave @ SR-210 WB Ramps	90	90	90	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
48	Haven Ave @ Alta Loma Dr	90	90	90	5:00 am - 10:00 am	10:00 am - 3:00 pm	3:00 pm - 10:00 pm	Free	
49	Haven Ave @ Lemon Ave	Free						Free	

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Traffic Signal Coordination Schedule

Appendix C-12: City of Redlands

Page 1 of 2

No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Alabama Street (Park Avenue - Almond Avenue)									
1	Alabama St @ Redlands Blvd	90	100	100	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
2	Alabama St @ Industrial Park Ave	90	100	100	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
3	Alabama St @ I-10 EB Ramps	90	100	100	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
4	Alabama St @ I-10 WB Ramps	90	100	100	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
5	Alabama St @ Orange Tree Ln/Coulston Ave	90	100	100	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
6	Alabama St @ Lugonia Ave	90	100	100	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
7	Alabama St @ Citrus Plaza (SB County Signal)	Free						Free	
8	Alabama St @ Almond Ave (SB County, Future Signal)								
Barton Road (California Street - Bellevue Avenue)									
9	Barton Rd @ San Timoteo Canyon Rd	80	Free	80	7:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
10	Barton Rd @ Terracina Blvd	80	Free	80	7:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
11	Barton Rd @ Alabama St	80	Free	80	7:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
12	Barton Rd @ Bellevue Ave	80	Free	80	7:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
Brookside Avenue (San Mateo Street - Center Street)									
13	Brookside Ave @ San Mateo St	Free	70	70	Free	12:00 pm - 3:00 pm	3:00 pm - 6:30 pm	Free	
14	Brookside Ave @ Center St	Free	70	70	Free	12:00 pm - 3:00 pm	3:00 pm - 6:30 pm	Free	
California Street (Redlands Boulevard - Orange Tree Lane)									
15	California St @ Redlands Blvd	Free						Free	
16	California St @ I-10 EB Ramps	70	70	70	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	Free	
17	California St @ I-10 WB Ramps	70	70	70	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	Free	
18	California St @ Orange Tree Ln	70	70	70	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	Free	
Citrus Avenue (Church Street - Judson Street)									
19	Citrus Ave @ Church St	90	Free	90	6:30 am - 8:30 am	Free	2:00 pm - 6:00 pm	Free	
20	Citrus Ave @ Redlands High School Crosswalk	90	Free	90	6:30 am - 8:30 am	Free	2:00 pm - 6:00 pm	Free	
21	Citrus Ave @ University St	90	Free	90	6:30 am - 8:30 am	Free	2:00 pm - 6:00 pm	Free	
22	Citrus Ave @ Judson St	Free						Free	
Orange Avenue (Citrus Avenue - Redlands Boulevard, includes Orange Street @ State Street)									
23	Brookside Ave/Citrus Ave @ Eureka St	90	90	90	6:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 7:00 pm	90	10:00 am - 6:00 pm
				90			7:00 pm - 8:00 pm		
24	Cajon St/Orange St @ Citrus Ave	90	90	90	6:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 7:00 pm	90	10:00 am - 6:00 pm
				90			7:00 pm - 8:00 pm		
25	Orange St @ State St	90	90	90	6:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 7:00 pm	90	10:00 am - 6:00 pm
				90			7:00 pm - 8:00 pm		

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Traffic Signal Coordination Schedule

Appendix C-12: City of Redlands

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Redlands Boulevard (New Jersey Street - Alabama Street)									
26	Redlands Blvd @ New Jersey St	90	100	100	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
27	Redlands Blvd @ Nevada St	90	100	100	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
28	Redlands Blvd @ Iowa St	90	100	100	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
Redlands Boulevard (New York Street - Ford Street)									
29	Redlands Blvd @ New York St	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 6:30 pm	Free	
30	Redlands Blvd @ Texas St	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 6:30 pm	Free	
31	Redlands Blvd @ Eureka St	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 6:00 pm	Free	
32	Redlands Blvd @ 3rd St	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 6:00 pm	Free	
33	Redlands Blvd @ Orange St	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 6:30 pm	Free	
34	Redlands Blvd @ 6th St	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 6:30 pm	Free	
35	Redlands Blvd @ Citrus Ave	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 6:30 pm	Free	
36	Redlands Blvd @ Fern Ave/Church St	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 6:30 pm	Free	
37	Redlands Blvd @ Cypress Ave	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 6:30 pm	Free	
38	Redlands Blvd @ Albertson's Supermarket	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 6:30 pm	Free	
39	Redlands Blvd @ Palm Ave	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 6:30 pm	Free	
40	Redlands Blvd @ Highland Ave	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 6:30 pm	Free	
41	Redlands Blvd/I-10 Ramps @ Ford St	Free						Free	
Tennessee Street (Park Avenue - Lugonia Avenue, includes Colton Avenue @ Industrial Park Avenue)									
42	Tennessee St @ Redlands Blvd	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
43	Colton Ave @ Industrial Park Ave	Free						Free	
44	Tennessee St @ Colton Ave	90	90	90	6:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
45	Tennessee St @ I-10 EB Ramps	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
46	Tennessee St @ I-10 WB Ramps	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 7:00 pm	Free	
47	Tennessee St @ Lugonia Ave	90	90	90	6:30 am - 9:30 am	9:30 am - 3:00 pm	3:00 pm - 7:00 pm	Free	

Notes:

- Intersections operate free during all other time periods.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Traffic Signal Coordination Schedule

Appendix C-13: City of Rialto

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Baseline Road (Cedar Avenue/Ayala Avenue - Meridian Avenue)									
1	Baseline Rd @ Cedar Ave/Ayala Ave	90	90	90	7:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
2	Baseline Rd @ Cactus Ave	90	90	90	7:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
3	Baseline Rd @ Lilac Ave	90	90	90	7:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
4	Baseline Rd @ Willow Ave	90	90	90	7:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
5	Baseline Rd @ Riverside Ave	90	90	90	7:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
6	Baseline Rd @ Sycamore Ave	90	90	90	7:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
7	Baseline Rd @ Acacia Ave	90	90	90	7:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
8	Baseline Rd @ Eucalyptus Ave	90	90	90	7:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
9	Baseline Rd @ Pepper Ave	90	90	90	7:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
10	Baseline Rd/Baseline St @ Meridian Ave	90	90	90	7:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
Foothill Boulevard (Maple Avenue - Meridian Avenue)									
11	Foothill Blvd @ Maple Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	100	9:00 am - 7:00 pm
12	Foothill Blvd @ Linden Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	100	9:00 am - 7:00 pm
13	Foothill Blvd @ Cedar Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	100	9:00 am - 7:00 pm
14	Foothill Blvd @ Spruce Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	100	9:00 am - 7:00 pm
15	Foothill Blvd @ Cactus Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	100	9:00 am - 7:00 pm
16	Foothill Blvd @ Lilac Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	100	9:00 am - 7:00 pm
17	Foothill Blvd @ Willow Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	100	9:00 am - 7:00 pm
18	Foothill Blvd @ Riverside Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	100	9:00 am - 7:00 pm
19	Foothill Blvd @ Sycamore Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	100	9:00 am - 7:00 pm
20	Foothill Blvd @ Acacia Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	100	9:00 am - 7:00 pm
21	Foothill Blvd @ Eucalyptus Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	100	9:00 am - 7:00 pm
22	Foothill Blvd @ Pepper Ave	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	100	9:00 am - 7:00 pm

Notes:

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Traffic Signal Coordination Schedule
Appendix C-13: City of Rialto

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Riverside Avenue (Slover Avenue - San Bernardino Avenue)									
23	Riverside Ave @ Slover Ave	90	90		7:00 am - 11:30 am		11:30 am - 7:00 pm		Free
24	Riverside Ave @ I-10 EB Ramps	90	90		7:00 am - 11:30 am		11:30 am - 7:00 pm		Free
25	Riverside Ave @ I-10 WB Ramps	90	90		7:00 am - 11:30 am		11:30 am - 7:00 pm		Free
26	Riverside Ave @ Valley Blvd	90	90		7:00 am - 11:30 am		11:30 am - 7:00 pm		Free
27	Riverside Ave @ Gateway Plaza	90	90		7:00 am - 11:30 am		11:30 am - 7:00 pm		Free
28	Riverside Ave @ Senior Way	90	Free	90	7:00 am - 9:00 am	Free	3:00 pm - 7:00 pm		Free
29	Riverside Ave @ San Bernardino Ave	90	90		7:00 am - 11:30 am		11:30 am - 7:00 pm		free
Valley Boulevard (Cactus Avenue - Wildrose Avenue)									
30	Valley Blvd @ Cactus Ave (Future Signal)								
31	Valley Blvd @ Lilac Ave	90	90		7:00 am - 11:30 am		11:30 am - 7:00 pm		Free
32	Valley Blvd @ Willow Ave (Future Signal)								
33	Valley Blvd @ Gateway Plaza/Value Center	90	90		7:00 am - 11:30 am		11:30 am - 7:00 pm		Free

Notes:

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Traffic Signal Coordination Schedule
Appendix C-14: City of San Bernardino

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Anderson Street/Tippecanoe Avenue (Redlands Boulevard - 9th Street)									
1	Tippecanoe Ave @ Harriman Pl/Laurelwood Dr	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
2	Tippecanoe Ave @ Hospitality Ln/Coulston St	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
3	Tippecanoe Ave @ Brier Dr	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
4	Tippecanoe Ave @ Victoria Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
5	Tippecanoe Ave @ Cooley Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
6	Tippecanoe Ave @ Orange Show Rd/San Bernardino Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
7	Tippecanoe Ave @ Industrial Center Entrance	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
8	Tippecanoe Ave @ Central Ave/Palm Meadows Dr	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
9	Tippecanoe Ave @ Mill St	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
10	Tippecanoe Ave @ Harry Sheppard Blvd	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
11	Tippecanoe Ave @ Rialto Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
12	Tippecanoe Ave @ 3rd St	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
13	Tippecanoe Ave @ 5th St (SB County Signal)	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
14	Tippecanoe Ave @ 6th St (SB County Signal)	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
15	Tippecanoe Ave @ 9th St	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
Base Line Street (State Street - Sierra Way)									
16	Base Line St @ State St (University Pkwy)	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
17	Base Line St @ California St	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
18	Base Line St @ Medical Center Dr	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
19	Base Line St @ Mount Vernon Ave	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
20	Base Line St @ Massachusetts Ave	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
21	Base Line St @ Perris St	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
22	Base Line St @ H St	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
23	Base Line St @ G St	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
24	Base Line St @ F St	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
25	Base Line St @ E St	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
26	Base Line St @ D St	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
27	Base Line St @ Arrowhead Ave	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
28	Base Line St @ Mountain View Ave	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
29	Base Line St @ Sierra Way	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
Base Line Street (Waterman Avenue - Windsor Drive)									
30	Base Line St @ Crestview Ave	Free						Free	
31	Base Line St @ Windsor Dr	Free						Free	

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Traffic Signal Coordination Schedule
Appendix C-14: City of San Bernardino

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Base Line Street (Tippecanoe Avenue - Del Rosa Avenue)									
32	Base Line St @ Tippecanoe Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
33	Base Line St @ Del Rosa Dr	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
34	Base Line St @ Del Rosa Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
Foothill Boulevard (Maple Avenue - Meridian Avenue)									
35	Foothill Blvd {SR-66} @ Meridian Ave (Caltrans Signal)	100	100	110	7:00 am - 9:00 am	9:00 am - 1:45 pm	1:45 pm - 8:00 pm	Free	
Foothill Boulevard/5th Street {SR-66} (Macy Street South - H Street)									
36	Foothill Blvd {SR-66} @ Macy St South (Caltrans Signal)	75	Free	75	7:00 am - 9:00 am	Free	4:00 pm - 7:00 pm	Free	
37	Foothill Blvd/5th St {SR-66} @ 4th St (Caltrans Signal)	75	Free	75	7:00 am - 9:00 am	Free	4:00 pm - 7:00 pm	Free	
38	5th St {SR-66} @ Medical Center Dr (Caltrans Signal)	75	Free	75	7:00 am - 9:00 am	Free	4:00 pm - 7:00 pm	Free	
39	5th St {SR-66} @ Cabrera Ave (Caltrans Signal)	110	110	110	6:30 am - 9:30 am	11:00 am - 2:00 pm	3:00 pm - 7:00 pm	Free	
40	5th St {SR-66} @ Mount Vernon Ave (Caltrans Signal)	110	110	110	6:30 am - 9:00 am	11:00 am - 2:00 pm	3:00 pm - 7:00 pm	Free	
41	5th St {SR-66} @ L St (Caltrans Signal)	75	Free	75	7:00 am - 9:00 am	Free	4:00 pm - 7:00 pm	Free	
42	5th St {SR-66} @ J St (Caltrans Signal)	Free						Free	
43	5th St {SR-66} @ H St (Caltrans Signal)	Free						Free	
Highland Avenue {SR-30} (Macy Street - California Street)									
44	Highland Ave {SR-30} @ Macy St (Caltrans Signal)	90	Free	90	6:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
45	Highland Ave {SR-30} @ State St (Caltrans Signal)	90	Free	90	6:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
46	Highland Ave {SR-30} @ California St (Caltrans Signal)	90	Free	90	6:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
Highland Avenue (Medical Center Drive - Sierra Way)									
47	Highland Ave @ Medical Center Dr	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
48	Highland Ave @ Western Ave	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
49	Highland Ave @ Mount Vernon Ave	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
50	Highland Ave @ Muscupiabe Dr	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
51	Highland Ave @ Lincoln Dr	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
52	Highland Ave @ SR-259 SB Ramps	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
53	Highland Ave @ SR-259 NB Ramps	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
54	Highland Ave @ H St	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
55	Highland Ave @ G St	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
56	Highland Ave @ E St	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
57	Highland Ave @ D St	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
58	Highland Ave @ Arrowhead Ave	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
59	Highland Ave @ Mountain View Ave	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm
60	Highland Ave @ Sierra Way	80	80	80	7:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	80	9:00 am - 7:00 pm

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Traffic Signal Coordination Schedule
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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Highland Avenue (Valencia Avenue - SR-210 WB Off-Ramp)									
61	Highland Ave @ Valencia Ave	Free						Free	
62	Highland Ave @ Harrison St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	90	9:00 am - 7:00 pm
63	Highland Ave @ Golden Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	90	9:00 am - 7:00 pm
64	Highland Ave @ Del Rosa Ave/Del Rosa Dr	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 7:00 pm	90	9:00 am - 7:00 pm
65	Highland Ave @ Sterling Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 12:00 am	90	9:00 am - 7:00 pm
66	Highland Ave @ SR-210 EB Off-Ramp	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 12:00 am	90	9:00 am - 7:00 pm 10:00 am - 6:00 pm
67	Highland Ave @ Arden Ave @ SR-210 WB On-Ramp	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 12:00 am	90	9:00 am - 7:00 pm 10:00 am - 6:00 pm
68	Arden Ave @ SR-210 EB On-Ramp	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 12:00 am	90	9:00 am - 7:00 pm 10:00 am - 6:00 pm
69	Highland Ave @ SR-210 WB Off-Ramp	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 12:00 am	90	9:00 am - 7:00 pm 10:00 am - 6:00 pm
Highland Avenue (Victoria Avenue - SR-330 NB Ramps, includes Boulder Avenue @ San Manuel Village (West))									
70	Highland Ave @ Victoria Ave	Free						Free	
71	Highland Ave @ Patton State Hospital	90	Free	90	7:00 am - 8:30 am	Free	3:00 pm - 6:00 pm	Free	
72	Highland Ave @ Orange St	90	Free	90	7:00 am - 8:30 am	Free	3:00 pm - 6:00 pm	Free	
73	Highland Ave @ Palm Ave	90	Free	90	7:00 am - 8:30 am	Free	3:00 pm - 6:00 pm	Free	
74	Highland Ave @ Piedmont Ave	90	Free	90	7:00 am - 8:30 am	Free	3:00 pm - 6:00 pm	Free	
75	Highland Ave @ Boulder Ave	90	Free	90	7:00 am - 8:30 am	Free	3:00 pm - 6:00 pm	Free	
76	Highland Ave @ West Frontage Rd (Caltrans Signal)	90	Free	90	7:00 am - 8:30 am	Free	3:00 pm - 6:00 pm	Free	
77	Highland Ave @ SR-330 SB Ramps	90	Free	90	7:00 am - 8:30 am	Free	3:00 pm - 6:00 pm	Free	
78	Highland Ave @ SR-330 NB Ramps	90	Free	90	7:00 am - 8:30 am	Free	3:00 pm - 6:00 pm	Free	
Hospitality Lane (E Street - Costco Driveway)									
79	Hospitality Ln @ E St	Free						Free	
80	Hospitality Ln @ Hunts Ln	90	100	110 100	6:00 am - 9:00 am	9:00 am - 3:02 pm	3:02 pm - 7:00 pm 7:00 pm - 8:00 pm	Sat: 90 Sun: 90	9:00 am - 7:00 pm 10:00 am - 6:00 pm
81	Hospitality Ln @ Commercenter Dr West	90	100	110 100	6:00 am - 9:00 am	9:00 am - 3:02 pm	3:02 pm - 7:00 pm 7:00 pm - 8:00 pm	Sat: 90 Sun: 90	9:00 am - 7:00 pm 10:00 am - 6:00 pm
82	Hospitality Ln @ Commercenter Dr East	90	100	110 100	6:00 am - 9:00 am	9:00 am - 3:02 pm	3:02 pm - 7:00 pm 7:00 pm - 8:00 pm	Sat: 90 Sun: 90	9:00 am - 7:00 pm 10:00 am - 6:00 pm
83	Hospitality Ln @ I-10 WB Ramps/W Carnegie Dr	90	100	110 100	6:00 am - 9:00 am	9:00 am - 3:02 pm	3:02 pm - 7:00 pm 7:00 pm - 8:00 pm	Sat: 90 Sun: 90	9:00 am - 7:00 pm 10:00 am - 6:00 pm
84	Hospitality Ln @ Private Dr (Circuit City)	90	100	110 100	6:00 am - 9:00 am	9:00 am - 3:02 pm	3:02 pm - 7:00 pm 7:00 pm - 8:00 pm	Sat: 90 Sun: 90	9:00 am - 7:00 pm 10:00 am - 6:00 pm
85	Hospitality Ln @ Home Depot Dwy	90	100	110 100	6:00 am - 9:00 am	9:00 am - 3:02 pm	3:02 pm - 7:00 pm 7:00 pm - 8:00 pm	Sat: 90 Sun: 90	9:00 am - 7:00 pm 10:00 am - 6:00 pm
86	Hospitality Ln @ Harriman Pl	90	100	110 100	6:00 am - 9:00 am	9:00 am - 3:02 pm	3:02 pm - 7:00 pm 7:00 pm - 8:00 pm	Sat: 90 Sun: 90	9:00 am - 7:00 pm 10:00 am - 6:00 pm
87	Hospitality Ln @ E Carnegie Dr	90	100	110 100	6:00 am - 9:00 am	9:00 am - 3:02 pm	3:02 pm - 7:00 pm 7:00 pm - 8:00 pm	Sat: 90 Sun: 90	9:00 am - 7:00 pm 10:00 am - 6:00 pm
88	Hospitality Ln @ Costco Dwy	Free						Free	
Redlands Boulevard (Hunts Lane - I-10 EB Off-Ramp/Club Center Drive, includes Hunts Lane @ Club Center Drive)									
89	Hunts Ln @ Club Center Dr	Free						Free	
90	Steel Rd/Redlands Blvd @ Hunts Ln	90	Free	110	6:30 am - 9:00 am	Free	3:57 pm - 6:00 pm	Free	
91	Redlands Blvd @ Club Way	90	Free	110	6:30 am - 9:00 am	Free	3:57 pm - 6:00 pm	Free	
92	Redlands Blvd @ I-10 EB Off-Ramp/Club Center Dr	90	Free	110	6:30 am - 9:00 am	Free	3:57 pm - 6:00 pm	Free	

Notes:

- Intersections operate free during all other time periods.
- Caltrans and San Bernardino County signals are duplicated and are also shown in individual agency listings for clarity purposes.

Traffic Signal Coordination Schedule
Appendix C-14: City of San Bernardino

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
State Street (SR-210 EB Ramps - Highland Avenue (SR-30))									
93	State St @ SR-210 EB Ramps	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	9:00 am - 7:00 pm
94	State St @ SR-210 WB Ramps	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	90	9:00 am - 7:00 pm
Waterman Avenue (Washington Street/Barton Road - Hospitality Lane, includes Washington Street @ Weir Road)									
95	Washington St @ Weir Rd	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
96	Waterman Ave @ Washington St/Barton Rd	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
97	Waterman Ave @ Weir Rd	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
98	Waterman Ave @ Commercial Rd	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
99	Waterman Ave @ Caroline St	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
100	Waterman Ave @ Redlands Blvd	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
101	Waterman Ave @ Hospitality Ln	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
Waterman Avenue (5th Street - Highland Avenue)									
102	Waterman Ave @ 5th St	100	Free	100	6:50 am - 8:00 am	Free	4:20 pm - 6:00 pm	Sat: 100 Sun: 100	9:00 am - 7:00 pm 10:00 am - 6:00 pm
103	Waterman Ave @ 9th St	100	Free	100	6:50 am - 8:00 am	Free	4:20 pm - 6:00 pm	Sat: 100 Sun: 100	9:00 am - 7:00 pm 10:00 am - 6:00 pm
104	Waterman Ave @ Base Line St	100	Free	100	6:50 am - 8:00 am	Free	4:20 pm - 6:00 pm	Sat: 100 Sun: 100	9:00 am - 7:00 pm 10:00 am - 6:00 pm
105	Waterman Ave @ 13th St	100	Free	100	6:50 am - 8:00 am	Free	4:20 pm - 6:00 pm	Sat: 100 Sun: 100	9:00 am - 7:00 pm 10:00 am - 6:00 pm
106	Waterman Ave @ Gilbert St	100	Free	100	6:50 am - 8:00 am	Free	4:20 pm - 6:00 pm	Sat: 100 Sun: 100	9:00 am - 7:00 pm 10:00 am - 6:00 pm
107	Waterman Ave @ 16th St	100	Free	100	6:50 am - 8:00 am	Free	4:20 pm - 6:00 pm	Sat: 100 Sun: 100	9:00 am - 7:00 pm 10:00 am - 6:00 pm
108	Waterman Ave @ 21st St	100	Free	100	6:50 am - 8:00 am	Free	4:20 pm - 6:00 pm	Sat: 100 Sun: 100	9:00 am - 7:00 pm 10:00 am - 6:00 pm
109	Waterman Ave @ Highland Ave	100	Free	100	6:50 am - 8:00 am	Free	4:20 pm - 6:00 pm	Sat: 100 Sun: 100	9:00 am - 7:00 pm 10:00 am - 6:00 pm
Waterman Avenue (SR-18) (28th Street - 40th Street)									
110	Waterman Ave @ 28th St	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
111	Waterman Ave (SR-18) @ SR-210 EB Ramps	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
112	Waterman Ave (SR-18) @ 30th St (Caltrans Signal)	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
113	30th St @ Leroy St/SR-210 WB On-Ramp	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
114	Waterman Ave (SR-18) @ Marshall Blvd (Caltrans Signal)	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
115	Waterman Ave (SR-18) @ Parkdale Dr (Caltrans Signal)	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
116	Waterman Ave (SR-18) @ 38th St (Caltrans Signal)	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
117	Waterman Ave (SR-18) @ 40th St (Caltrans Signal)	90	90	100	5:30 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	

Notes:

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Traffic Signal Coordination Schedule
Appendix C-15: City of Upland

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Arrow Highway/8th Street (Benson Avenue - Euclid Avenue)									
1	Arrow Hwy/8th St @ Benson Ave	90	Free	90	7:00 am - 8:30 am	Free	4:00 pm - 6:30 pm	Free	
2	8th St @ Sherman Way	90	Free	90	6:00 am - 9:00 am	Free	2:00 pm - 9:00 pm	Free	
3	8th St @ San Antonio Ave	90	Free	90	6:00 am - 9:00 am	Free	2:00 pm - 9:00 pm	Free	
Central Avenue (Richton Street/9th Street - Foothill Boulevard)									
4	Central Ave @ Bike Path	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
5	Central Ave @ Arrow Rte	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
6	Central Ave @ 11th St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	Free	
Euclid Avenue (7th Street - 11th Street)									
7	Euclid Ave @ 7th St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	90	9:00 am - 8:00 pm
8	Euclid Ave @ 8th St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	90	9:00 am - 8:00 pm
9	Euclid Ave @ 9th St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	90	9:00 am - 8:00 pm
10	Euclid Ave @ Arrow Hwy	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	90	9:00 am - 8:00 pm
11	Euclid Ave @ 11th St	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 9:00 pm	90	9:00 am - 8:00 pm
Euclid Avenue (14th Street - 19th Street)									
12	Euclid Ave @ 14th St	Free			Free			Free	
13	Euclid Ave @ 16th St	Free			Free			Free	
14	Euclid Ave @ 18th St	Free			Free			Free	
15	Euclid Ave @ 19th St	Free			Free			Free	
Foothill Boulevard (Monte Vista Avenue - Grove Avenue)									
16	Foothill Blvd @ Monte Vista Ave	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
17	Foothill Blvd @ Dewey Way	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
18	Foothill Blvd @ Central Ave	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
19	Foothill Blvd @ Benson Ave	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
20	Foothill Blvd @ Mountain Ave	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
21	Foothill Blvd @ Mulberry Ave	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
22	Foothill Blvd @ San Antonio Ave	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
23	Foothill Blvd @ Redding Way	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
24	Foothill Blvd @ Euclid Ave	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
25	Foothill Blvd @ 2nd Ave	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
26	Foothill Blvd @ 5th Ave	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
27	Foothill Blvd @ Campus Ave	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
28	Foothill Blvd @ Hospital Pkwy	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
29	Foothill Blvd @ Alta Ave/Memorial Park	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm
30	Foothill Blvd @ Grove Ave	100	110	110	6:00 am - 10:05 pm	10:05 pm - 2:40 pm	2:40 pm - 10:00 pm	110	9:10 am - 7:00 pm

Notes:

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Traffic Signal Coordination Schedule
Appendix C-15: City of Upland

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Monte Vista Avenue (Holt Boulevard - Arrow Route, includes Palo Verde Street @ I-10 EB On-Ramp)									
31	Monte Vista Ave @ Arrow Rte	Free						Free	
Mountain Avenue (6th Street - 11th Street)									
32	Mountain Ave @ I-10 EB Ramps	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	90	9:00 am - 8:00 pm
33	Mountain Ave @ I-10 WB Ramps	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	90	9:00 am - 8:00 pm
34	Mountain Ave @ 7th St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	90	9:00 am - 8:00 pm
35	Mountain Ave @ Shopping Center	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	90	9:00 am - 8:00 pm
36	Mountain Ave @ 8th St	90	90	90	6:00 am - 10:00 am	10:00 am - 2:00 pm	2:00 pm - 10:00 pm	90	9:00 am - 8:00 pm

Notes:

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Traffic Signal Coordination Schedule

Appendix C-16: San Bernardino County

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Alabama Street (Citrus Plaza - Almond Avenue)									
1	Alabama St @ Citrus Plaza	Free						Free	
2	Alabama St @ Almond Ave (Future Signal)								
Cedar Avenue (Slover Avenue - San Bernardino Avenue)									
3	Cedar Ave @ Slover Ave	90	90	5:30 am - 1:30 pm	1:30 pm - 7:30 pm		90	9:00 am - 8:00 pm	
			90		7:30 pm - 10:00 pm				
4	Cedar Ave @ Orange St	90	90	5:30 am - 1:30 pm	1:30 pm - 7:30 pm		90	9:00 am - 8:00 pm	
			90		7:30 pm - 10:00 pm				
5	Cedar Ave @ I-10 EB Ramps	90	90	5:30 am - 1:30 pm	1:30 pm - 7:30 pm		90	9:00 am - 8:00 pm	
			90		7:30 pm - 10:00 pm				
6	Cedar Ave @ I-10 WB Ramps	90	90	5:30 am - 1:30 pm	1:30 pm - 7:30 pm		90	9:00 am - 8:00 pm	
			90		7:30 pm - 10:00 pm				
7	Cedar Ave @ Valley Blvd	90	90	5:30 am - 1:30 pm	1:30 pm - 7:30 pm		90	9:00 am - 8:00 pm	
			90		7:30 pm - 10:00 pm				
8	Cedar Ave @ Bloomington Ave	90	90	5:30 am - 1:30 pm	1:30 pm - 7:30 pm		90	9:00 am - 8:00 pm	
			90		7:30 pm - 10:00 pm				
9	Cedar Ave @ San Bernardino Ave	90	90	5:30 am - 1:30 pm	1:30 pm - 7:30 pm		90	9:00 am - 8:00 pm	
			90		7:30 pm - 10:00 pm				
Cherry Avenue (Jurupa Avenue - Arrow Route)									
10	Cherry Ave @ San Bernardino Ave	100	Free	100	6:00 am - 8:00 am	Free	2:00 pm - 7:30 pm	Free	
11	Cherry Ave @ California Steel Way	100	Free	100	6:00 am - 8:00 am	Free	4:00 pm - 7:30 pm	Free	
12	Cherry Ave @ Randall Ave	100	Free	100	6:00 am - 8:00 am	Free	4:00 pm - 7:30 pm	Free	
13	Cherry Ave @ Merrill Ave	100	Free	100	6:00 am - 8:00 am	Free	4:00 pm - 7:30 pm	Free	
14	Cherry Ave @ Whittram Ave	100	Free	100	6:00 am - 8:00 am	Free	4:00 pm - 7:30 pm	Free	
15	Cherry Ave @ Arrow Rte	100	Free	100	6:00 am - 8:00 am	Free	4:00 pm - 7:30 pm	Free	
Etiwanda Avenue (Airport Drive/Slover Avenue - 4th Street/San Bernardino Avenue)									
16	Etiwanda Ave @ I-10 EB Ramps	100	Free	100	5:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
17	Etiwanda Ave @ I-10 WB Ramps	100	Free	100	5:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
18	Etiwanda Ave @ Valley Blvd	100	Free	100	5:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
19	Etiwanda Ave @ 4th St/San Bernardino Ave	100	Free	100	5:00 am - 9:00 am	Free	3:00 pm - 8:00 pm	Free	
Mission Boulevard (Roswell Avenue - Central Avenue)									
20	Mission Blvd @ Roswell Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
21	Mission Blvd @ Pipeline Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
22	Mission Blvd @ Central Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	

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Traffic Signal Coordination Schedule

Appendix C-16: San Bernardino County

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No.	Intersection	Weekday						Weekend	
		Cycle Length (sec)			Signal Coordination Schedule			Cycle Length (sec)	Signal Coordination Schedule
		AM	MD	PM	AM	MD	PM	MD	MD
Mission Boulevard (Benson Avenue - Grove Avenue)									
23	Mission Blvd @ Benson Ave	90	90	90	6:00 am - 9:00 am	9:00 am - 2:00 pm	2:00 pm - 8:00 pm	Free	
Riverside Drive (Reservoir Street - Mountain Avenue)									
24	Riverside Dr @ Reservoir St	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
25	Riverside Dr @ East End Ave	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
26	Riverside Dr @ Roswell Ave	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
27	Riverside Dr @ Pipeline Ave	100	Free	100	6:30 am - 8:30 am	Free	3:30 pm - 6:30 pm	Free	
San Bernardino Avenue (Etiwanda Avenue - Commerce Drive)									
28	San Bernardino Ave @ Transportation Way	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
29	San Bernardino Ave @ Kaiser Way	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
30	San Bernardino Ave @ Commerce Dr	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
Tippecanoe Avenue (I-10 WB Ramps - 9th Street)									
31	Tippecanoe Ave @ 5th St	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
32	Tippecanoe Ave @ 6th St	90	90	90	6:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
Valley Boulevard (Etiwanda Avenue - Calabash Avenue)									
33	Valley Blvd @ Logistics Way	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
34	Valley Blvd @ I-10 Ramps/Commerce Dr	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
35	Valley Blvd @ Nexus Way	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
36	Valley Blvd @ Calabash Ave	100	90	100	5:00 am - 9:00 am	9:00 am - 3:00 pm	3:00 pm - 8:00 pm	Free	
Valley Boulevard (Redwood Avenue @ Beech Avenue)									
37	Valley Blvd @ Redwood Ave	100	Free	100	6:00 am - 9:00 am	Free	2:00 pm - 8:00 pm	Free	
38	Valley Blvd @ Live Oak Ave	100	Free	100	6:00 am - 9:00 am	Free	2:00 pm - 8:00 pm	Free	
Valley Boulevard (Alder Avenue - Linden Avenue)									
39	Valley Blvd @ Alder Ave	90	90	5:30 am - 1:30 pm	1:30 pm - 7:30 pm	Free			
			90				7:30 pm - 10:00		
40	Valley Blvd @ Locust Ave	90	90	5:30 am - 1:30 pm	1:30 pm - 7:30 pm	Free			
			90				7:30 pm - 10:00		
41	Valley Blvd @ Linden Ave	90	90	5:30 am - 1:30 pm	1:30 pm - 7:30 pm	Free			
			90				7:30 pm - 10:00		

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