

FOOTHILL PARKWAY WESTERLY EXTENSION BASIS OF DESIGN

Prepared for:

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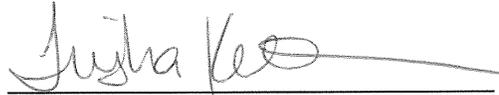


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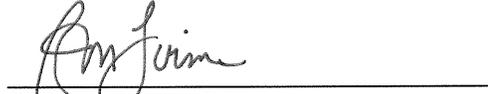
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8/6/08
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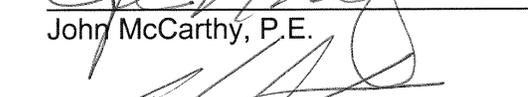
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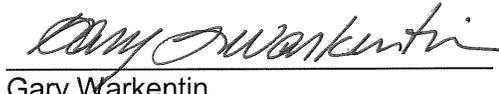
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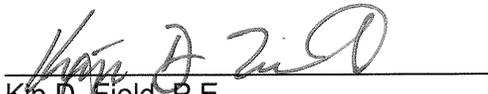
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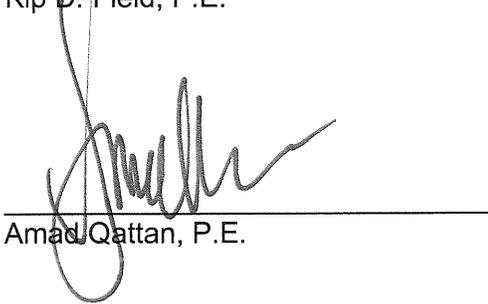
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I. Introduction

The proposed Foothill Parkway Westerly Extension project is located in the southern portion of the City of Corona along the base of the Santa Ana Mountains. The roadway would generally extend westerly from its existing terminus approximately 600 feet west of Skyline Drive to the Green River Road/ Paseo Grande intersection for a distance of approximately 2 miles. Portions of Foothill Parkway have been recently completed as a four-lane divided roadway from Interstate 15 (I-15) to approximately 4 miles west at Skyline Drive. Green River Road currently extends approximately 3 miles east from State Route 91 (SR-91) to Paseo Grande. Green River Road, in the vicinity of Paseo Grande, is a paved two-lane roadway and would be improved to four lanes from Paseo Grande to Tanglewood Drive. The remainder of Green River Road to SR-91 is a paved four-lane roadway. See Exhibits 1 and 2 for Regional Vicinity and Site Vicinity Maps.

The roadway extension is situated along the northeastern base of the Santa Ana Mountains and transects both private and public properties within the City of Corona and County of Riverside. The proposed alignment is located immediately adjacent to the Cleveland National Forest, which is under jurisdiction of the United States Forest Service (USFS). The proposed alignment traverses undeveloped terrain generally in an east/west direction. It crosses the Riverside County Flood Control and Water Conservation District (RCFC&WCD) Mabey Canyon Debris Basin and traverses a 108-inch Metropolitan Water District (MWD) feeder line, located approximately 1,000 feet southeast of the intersection of Green River Road and Paseo Grande. Topography through the alignment generally ranges from gently sloping terraces transected by ravines in the eastern and western portions of the alignment, to steep mountainous terrain in the central portion of the alignment. Elevations range from approximately 800 to 1,300 feet above mean sea level (msl). Local roadway connections to the Foothill Parkway extension are proposed at Border Avenue and Chase Drive.

Land uses surrounding and adjacent to the project alignment include mostly residential uses, vacant properties, limited agricultural uses, and USFS property. The City of Corona Zoning Ordinance designates properties within the project area as Agricultural (A), Single-Family Residential (R-1A), and Single-Family Development (SFD).

This report describes the development of the proposed project alignment and design elements, and will serve as the basis for final design of the Foothill Parkway Westerly Extension project. Elements of this report will also be referenced in the project's environmental document.

II. Purpose and Need

The Foothill Parkway Westerly Extension is included as a planned arterial in the City of Corona's General Plan and Circulation Element. The primary purpose of the Foothill Parkway Westerly Extension project is to complete a critical east/west connection from its current terminus, approximately 600 feet west of Skyline Drive, to the Green River Road/Paseo Grande intersection. The roadway extension would alleviate existing traffic congestion on the local circulation network and accommodate traffic generated by approved and planned development in south Corona. Additionally, Foothill Parkway and its proposed connections will provide greater access to existing and future developments in the southern portion of Corona, not only for routine daily traffic, but for emergency response vehicles, as well.

The operational goal for the roadway, at a minimum, is level of service (LOS) "D", which has been adopted by the City as the standard for local streets and arterial highways. The goal of this project is to identify the most cost-effective improvements that will be compatible with existing and future physical and legal constraints, while minimizing impacts and providing value to the community.

Foothill Parkway is an integral part of the City's circulation plan, providing a much needed east/west arterial and increasing mobility in the area. Recent growth in population and land uses, both within south Corona and in adjacent communities, has put increasing pressures on the City's arterial and local street system. Additionally, congestion on SR-91 and I-15, as well as congestion at the interchange of the two freeways, has resulted in local and regional traffic using City streets to avoid freeway delays. Ontario Avenue traverses the southeastern portion of Corona. It is a primary east/west arterial serving south Corona, and has become increasingly congested with vehicles attempting to reach the freeway during peak periods. Ontario Avenue does not provide a direct freeway connection to SR-91, causing vehicles to utilize residential streets to access the Green River Road, Maple Street, and Serfas Club Drive interchanges. Many Corona area residents traveling to and from Orange County use the Green River Road interchange to access the SR-91, as it is located just east of the Orange County line. It provides the first exit into Corona and last entrance onto the freeway from Corona for those commuters.

In October 2002, the Orange County Transportation Authority (OCTA), Southern California Association of Governments (SCAG), and the Riverside County Transportation Commission (RCTC) conducted the State Route 91 Commuter Study. The objective of the study was to learn the travel characteristics of those using the SR-91 corridor, particularly those who travel across the Orange/Riverside County line on weekday mornings. Through the use of questionnaires and traffic videotaping to read license plates, the origins and destinations of trips across the county line were evaluated. The study showed that approximately 85% of the vehicles using the Green River Road interchange on SR-91 were Corona area residents. The Foothill Parkway extension, with connections to Border Avenue and Chase Drive, would serve a large portion of these travelers by providing an alternate east/west arterial and access to local neighborhoods.

Construction of Foothill Parkway, with local roadway connections at Border Avenue and Chase Drive, is necessary to complete the City's overall traffic circulation plan in the southern portion of the City, and provide relief for the ever-growing congestion on the City's existing arterial and local roadway network. Additionally, the South Corona Communities Facilities Plan, adopted by the City of Corona in 1989, included the Foothill Parkway extension (see Section III.A). Development in South Corona and adjacent areas since then has been designed and approved with the understanding that the Foothill Parkway extension will be constructed. Without the extension of Foothill Parkway, the circulation system in Corona is inconsistent with existing and future approved development.

III. Background

A. Project History

The City of Corona and the County of Riverside recognize the desirability of developing a high-grade arterial which would facilitate continuous east/west travel across the City and which would provide additional access to SR-91. Foothill Parkway has been included in the master plans of the City and County since the 1980's.

In November 1985, the City adopted the roadway as a four-lane arterial highway. The conceptual alignment for the Foothill Parkway Westerly Extension was again recognized and approved with the update of the City's *General Plan* and Circulation Element in 2004, as well as the 1990 *Riverside County Comprehensive General Plan* (RCCGP). The project is a collaborative effort by the City and County, with the City assuming the lead agency role. The proposed Foothill Parkway alignment generally follows the previous conceptual alignment adopted in the 1980s. In order to meet minimum roadway design standards (e.g., turn lane requirements, spacing of intersections, local street access criteria, and design speed) the alignment location has been shifted slightly northerly from the previous alignment.

The following discussion provides a summary of applicable regional and Citywide planning documents that anticipate the completion of Foothill Parkway as currently proposed:

City of Corona General Plan. The *City of Corona General Plan*, adopted March 17, 2004 (Resolution No. 2004-034), is a policy document designed to give long-range guidance for decision-making that affects the future character of Corona. It represents the official statement of the community's physical development as well as its economic, social, and environmental goals. The *General Plan* Circulation Element describes the location and extent of planned circulation facilities and services, and identifies standards for those facilities. The Circulation Element outlines the long-term plan for roadways, including the number of lanes, right of way, and general operating conditions. The proposed Foothill Parkway Westerly Extension and connections at Border Avenue and Chase Drive are consistent with the circulation and other applicable elements of the City's *General Plan*. The *General Plan* Circulation Element designates Foothill Parkway as a Secondary four-lane arterial from I-15 to Paseo Grande.

Riverside County Comprehensive General Plan. The *Riverside County Comprehensive General Plan* (RCCGP) (February 1990) is designed to provide an administrative guideline for the County in providing services for the residents of the County. This is accomplished through the County's implementation of the General Plan's Administrative Element and the programs located in other elements of the plan. The RCCGP is also used to determine appropriate land uses and infrastructure requirements for sites within the County. In conjunction with this use, development and infrastructure improvement projects are reviewed for consistency with the RCCGP. Foothill Parkway's ultimate designation is a Secondary Arterial (four-lane, divided roadway, 100 foot right of way) per the County's Circulation Element. The portion of Foothill Parkway that extends beyond the limits of the City is in conformance with the RCCGP Circulation Element.

South Corona Community Facilities Plan. The *South Corona Community Facilities Plan* (CFP) was adopted by the City of Corona in 1989 to establish land use policies and infrastructure requirements for that portion of the City located south of Ontario Avenue. The CFP identified proposed circulation improvements to serve the South Corona area including the extension of Foothill Parkway. The CFP identified a general conceptual alignment for Foothill Parkway with the direction that the City develop a precise alignment and further evaluate design issues. The proposed project is consistent with the CFP land use policies and infrastructure requirements.

Sierra Del Oro General Plan Amendment EIR. The *Sierra Del Oro General Plan Amendment Environmental Impact Report (EIR)* (August 1985) refers to the proposed Chase Drive Extension (now referenced as Foothill Parkway Westerly Extension), extending from Mangular Avenue, westerly to the Green River Road/Paseo Grande intersection. The EIR states that this connection would serve as a key element to facilitate east/west travel and would provide an important arterial facility for the City.

South Corona Agricultural Area General Plan Amendment EIR. The Final EIR for the *South Corona Agricultural Area* (November 1985) concludes that the Foothill Parkway Westerly Extension would significantly mitigate traffic impacts to/from the South Corona Agricultural Area on the southern portions of Main Street, Grand Boulevard, and Lincoln Avenue.

Western Riverside Multi-Species Habitat Conservation Plan. The *Western Riverside Multi-Species Habitat Conservation Plan* (MSHCP) is a criteria-based plan, focused on preserving individual species through habitat conservation. The MSHCP is one element of the Riverside County Integrated Project (RCIP), a comprehensive regional planning effort begun in 1999. The purpose of the RCIP is to integrate all aspects of land use, transportation, and conservation planning and implementation in order to develop a comprehensive vision for the future of Riverside County. The Foothill Parkway Westerly Extension is part of the regional transportation project proposed for the County and is identified as a Covered Activity under the MSHCP. As a Covered Activity, the impacts would be mitigated through participation in the Plan, through implementation of construction best management practices, completing necessary species surveys, and meeting specific species conservation objectives.

B. Alternatives Considered

RBF has worked with the City of Corona since 1999 on the development of the Foothill Parkway Westerly Extension project. The placement of the horizontal and vertical alignment was influenced by several major constraints, including an existing 108" MWD feeder line, the Mabey Canyon Debris Basin, the Cleveland National Forest, an existing water reservoir/tower, existing developed areas, and joins to existing Green River Road, Border Avenue, Chase Drive, and Foothill Parkway. See Exhibit 8J for an illustration of the major project constraints.

In 2006, the conceptual phase of design was completed, and a concept design was approved. As part of the preliminary design process, RBF developed nine additional refinements of the horizontal and vertical alignment of Foothill Parkway to minimize impacts to adjacent properties and the built and open space environment, balance earthwork, and incorporate trails into the project. These design refinements were referred to as "alternatives" during the development process. The nine alternatives are described below:

Alternative 1

Alternative 1 was a minor revision of the approved concept design of Foothill Parkway. It consisted primarily of an update to the east and west join points based on more recent topographic information, a horizontal shift of the west end to accommodate a 10-foot, rather than 4-foot median, and revision of the horizontal curves to a minimum 1,100-foot radius to eliminate the need for superelevation. One curve remained at a 900-foot radius, due to adjacent constraints, and would require 3% superelevation. A maximum 7% grade was maintained for the project. Small changes were made in the alignment at the east end of the project, to reduce impacts to an adjacent property. No changes were made to the alignment where it crossed the Mabey Canyon Debris Basin. At the MWD feeder line crossing, the alignment was also unchanged. A bridge placed approximately 50 feet above original ground had been identified as the preferred alternative to protect the MWD line during the concept design phase. This alternative was to serve as the "base alignment", from which other alternatives would be developed and compared. See Exhibit 8A for a plan view of this alignment at the Mabey Canyon Debris Basin.

Alternative 2

Alternative 2 was a revision of Alternative 1, in which modifications were made to the alignment near Mabey Canyon Debris Basin. In Alternative 1, the proposed roadway crossed the basin on the south side of the existing dam. In Alternative 2, Foothill Parkway was shifted north, to place half of the roadway embankment on the existing dam and the other half of the roadway on a bridge, thus reducing impacts and modifications to the basin. This alternative was dismissed due to potential constructability issues for the bridge/fill combination, and because the cost of the bridge was significantly higher than the cost of grading improvements to the basin, without significant environmental benefit. See Exhibit 8B for a plan view of this alignment at the Mabey Canyon Debris Basin.

Alternative 3

Alternative 3 was also a revision of Alternative 1. Similar to Alternative 2, its purpose was primarily to investigate options at Mabey Canyon Debris Basin. In this case, the roadway was shifted to cross the basin at its midsection, and a bridge was assumed at that location. The cost, benefits, and drawbacks of this option were evaluated against those of Alternatives 1 and 2. Additionally, the alignment was shifted horizontally at the west end to reduce potential impacts to the Cleveland National Forest and private properties. This alternative was dismissed because the cost of the bridge was significantly higher than the cost of grading improvements to the basin, without significant environmental benefit. See Exhibit 8C for a plan view of this alignment at the Mabey Canyon Debris Basin.

Alternative 4

Alternative 4 was also a revision of Alternative 1. Like Alternative 3, it included a horizontal shift at the west end, this time to eliminate the need for retaining walls at the Cleveland National Forest. No change was made to the alignment near Mabey Canyon Debris Basin from Alternative 1. This alternative was further enhanced in Alternative 5. See Exhibit 8D for a plan view of this alignment.

Alternative 5

Alternative 5 was a revision of Alternative 4. At that time, wider parkways were added to the west end of the project, in the large fill section in Wardlow Canyon. A horizontal shift of the alignment in this location was necessary to accommodate the wider section while still avoiding impacts to the Cleveland National Forest. This was the alternative submitted in the draft Basis of Design report, dated November 15, 2006. At that time, a maximum 7% grade was used in the Wardlow Wash segment. The earthwork showed a large surplus of material that would need to be distributed throughout the site or disposed of off-site. As in Alternative 1, the crossing over the MWD feeder line was assumed to be a bridge approximately 50 feet above grade.

Two additional profiles were studied for this horizontal alignment to explore options for the MWD crossing. These alternative profiles were presented at a Value Analysis Workshop held on January 29, 2007 (see Section III.C). The first profile incorporated an 8% grade through Wardlow Canyon, while maintaining the original profile through the cut section west of Mabey Canyon. In holding the same elevations through the large cut west of Mabey Canyon Debris Basin, the profile at MWD was lowered to 20 feet above existing ground. At this height, RBF evaluated five alternatives to protect the 108-inch pipe in place. These alternatives are

discussed further in Section VI.A.7. A second profile was developed that also used an 8% grade through Wardlow Canyon, but was not controlled by the original profile near Mabey Canyon. In this case, a maximum 6-foot fill was assumed over the MWD line, consistent with the MWD easement restrictions. From there, the profile ascended south at 8% grade to the crest of the vertical alignment. With this profile, it was expected that a structure would not be needed over the pipe, thus eliminating costs for a bridge or similar structure. However, this profile caused a greater imbalance in the earthwork. The profile with an 8% grade and a 20-foot high structure over the MWD line was selected as the preferred alignment by the workshop participants, and was incorporated into the subsequent alternatives. The profiles studied are included in Exhibit 8E.

Alternative 6

Alternative 6 was a revision of Alternative 5. The purpose of this alternative was to allow for an open drainage channel to flow continuously through Wardlow Canyon by providing adequate clearance in Wardlow Canyon between the base of the westerly toe of fill slope and the Cleveland National Forest. Three alternatives (6b, 6c, and 6d) were developed and compared. All three alternatives were dismissed due to increased noise impacts to adjacent properties, increased costs, and less favorable roadway geometries. See Exhibits 8F-1 through 8F-4 for the comparative analysis and plan views of these alternatives.

Alternative 7

Alternative 7 was also a revision of Alternative 5. This alternative studied the realignment of Foothill Parkway to avoid Mabey Canyon Debris Basin completely. The roadway was shifted south into private properties west of Mabey Canyon and continued around the southern end of the basin to tie back into Alternative 5. This alternative was dismissed due to significant right of way impacts, as well as an even greater earthwork imbalance. See Exhibit 8G for a plan view of this alternative near Mabey Canyon Debris Basin.

Alternative 8

Alternative 8 was a revision of Alternative 5. It was designed to reduce the horizontal curves along the proposed 8% grade in Wardlow Canyon, as was suggested in the Value Analysis Workshop conducted in January 2007 (see Section III.C). This modification was not adopted. Straightening out the alignment in this area did not produce any significant benefits, and appeared to cause greater potential for speeding on the downgrade. See Exhibit 8H for a plan view of this alternative.

Alternative 9 – City-Preferred

Alternative 9 is the current alignment, and is proposed as the basis for final design of the project. It is a revision from Alternative 5, done in an effort to better balance earthwork, locate the alignment farther away from the Cleveland National Forest to provide room for a multi-purpose wildlife trail, and minimize right of way impacts. The alignment was shifted to the north/ east within Wardlow Canyon, and to the north through private property west of Mabey Canyon. In order to accommodate these shifts, the 900-foot radius horizontal curve in this area was reduced to 700 feet, and the profile west of Mabey Canyon was raised. The raised vertical alignment resulted in an increase to a maximum 9% grade through Wardlow Canyon and a roadway elevation located 30 feet above existing ground at the MWD feeder line crossing. The reduced horizontal curve radius from 900 feet to 700 feet required an increase in superelevation

from 3% to 5%. See Exhibit 8I for a plan view of this alternative, relative to Alternative 5. See Exhibit 22 (map pocket) for full-size Plan and Profile views and Typical Sections for the proposed alignment (Alternative 9).

Alternative 9 (Reduced-Width)

As part of the environmental evaluation of the project, the Alternative 9 alignment was revisited as a two-lane roadway. The horizontal and vertical alignments were unchanged, but the typical section of the roadway was reduced from four travel lanes (two in each direction) to two travel lanes (one in each direction). The environmental technical studies evaluated this alignment against the proposed alignment. This alternative was dismissed, as it did not produce any significant benefits, and provided an unacceptable level of service on Foothill Parkway.

C. Value Analysis Workshop

On January 29, 2007, a Value Analysis (VA) Workshop was conducted at the City of Corona to review the project, discuss project constraints, and provide input on potential improvements to the design. The workshop participants consisted of members of RBF and City staff that had not been involved in previous design or reviews, and could provide new perspectives to benefit the project. At that time, Alternative 5 was the current alignment. Among the three profiles developed for that horizontal alignment, the VA team identified the profile that included an 8% grade with a bridge structure over the MWD feeder line at 20 feet above existing ground as the preferred option. This profile was preferred over the previous 7% profile, with 50-foot high bridge, due to reduced structural cost. It was also preferred over a third profile that included an 8% profile with a 6-foot tall fill over the MWD line. This lowered profile prevented access across Foothill Parkway at the MWD line and increased the earthwork imbalance. Detailed conclusions of the Value Analysis team were documented in Meeting Minutes, included as Exhibit 9 of this report.

IV. Existing Facility

The Foothill Parkway Westerly Extension is a new roadway connection planned in the southwestern portion of the City of Corona. It will connect existing Green River Road and Foothill Parkway. Currently, Green River Road extends from State Route 91 east to Paseo Grande, and Foothill Parkway extends west from Interstate 15 at El Cerrito Road to approximately 600 feet west of Skyline Drive. At the project's west end, proposed Foothill Parkway will join existing Green River Road at Paseo Grande. Green River Road at this location, between Tanglewood Drive and Paseo Grande, is a paved two-lane road with curb, gutter, and sidewalk on the north side of the street. The south side of the street is unimproved, with no curb, gutter, or sidewalk. To the west of Tanglewood Drive, it is a fully improved four-lane roadway with a striped median. Paseo Grande is a paved two-lane road with a striped northbound left turn onto San Bautista Drive. There are curb, gutter, and sidewalk on the west side of the street, and curb and gutter only on the east side of the street. At the project's east end, the proposed roadway will join existing Foothill Parkway at its current terminus. Foothill Parkway at this location is a four-lane divided secondary arterial roadway, with curb, gutter, sidewalk, and a raised landscaped median.

In addition to the extension of Foothill Parkway, the proposed project includes connections to two local two-lane collector roadways. Just east of the Mabey Canyon Debris Basin, Border Avenue will be extended to connect with proposed Foothill Parkway. Existing Border Avenue is a local two-lane collector roadway with curb, gutter, and sidewalk on both sides. Farther east

along the alignment, Chase Drive will be extended to provide another north/south connection to Foothill Parkway. This will require improvements to both Chase Drive and Mangular Avenue. Existing Mangular Avenue, near Chase Drive, is a local two-lane collector roadway with curb, gutter, and sidewalk on the west side only. The east side of the roadway has asphalt dike only, and no sidewalk. Existing Chase Drive is a local two-lane roadway with no curb, gutter, or sidewalk. The existing intersection of Chase Drive and Mangular Avenue is an uncontrolled “L” intersection, with Mangular Avenue extending to the north and Chase Drive extending to the east. See Exhibits 4A, 4B, and 4C for Existing Condition Photographs.

V. Traffic Analysis

Modeling Background

The City of Corona General Plan model has been used to analyze and model “with project” and “without project” scenarios for the years 2010 and 2025. The build-out scenario, year 2025 in this project, includes the potential future Riverside County-Orange County corridor as part of the model. In 2005, the Riverside County-Orange County Major Investment Study was conducted, which examined five corridors to relieve congestion on SR-91. Corridor B, the extension of the planned Mid County Parkway to Orange County via a tunnel, was the corridor assumed in the traffic model.

Projections of Average Daily Traffic (ADT) volumes for the years 2010 and 2025 were made for the following scenarios:

- No Foothill Parkway extension
- Foothill Parkway extension, with connections to both Border Avenue and Chase Drive
- Foothill Parkway extension only, no connections to Border Avenue or Chase Drive
- Foothill Parkway extension, with a connection to Border Avenue only
- Foothill Parkway extension, with a connection to Chase Drive only
- Foothill Parkway extension, 2-Lane Reduced Width, with connections to both Border Avenue and Chase Drive

Projected volumes were provided by Meyer, Mohaddes Associates (MMA). These volumes were obtained by first using the City’s travel demand model to project growth, and then applying that growth to traffic counts that were obtained in 2006. The basic methodology for the analysis was to:

- Modify the travel demand model roadway network to reflect the Foothill Parkway alignment and Border Avenue and Chase Drive connections.
- Run the model for 2025 using City build-out land use.
- Calculate model volume growth between 2001 model and 2025 model.
- Apply growth for 4 years (2006 to 2010) and 19 years (2006 to 2025) to 2006 traffic volumes.

The ADT volumes provided by MMA for years 2006, 2010, and 2025 for the study area roadways in the different project scenarios can be found in Exhibits 21A through 21N. Table V.1, below, shows the resulting ADT volumes on Foothill Parkway for years 2006, 2010, and 2025 at locations west of the project, along the project, and east of the project. The 2010 and 2025 volumes in this table include the extension of Foothill Parkway, including the proposed local connections at Border Avenue and Chase Drive.

**Table V.1: Foothill Parkway ADT Summary
Foothill Parkway Westerly Extension with Border Avenue and Chase Drive Connections**

Year	w/o Paseo Grande	Paseo Grande to Skyline	e/o Lincoln
2006	12,900	N/A	3,700
2010	17,900	11,000	10,500
2025	29,000	21,700	21,900

General Traffic Assessment

The results from the traffic model forecasts prepared by MMA showed that traffic volumes on existing Green River Road and Foothill Parkway East would increase as a result of the extension of Foothill Parkway. Volumes on the parallel arterial roadways, such as Ontario Avenue, 10th Street, and 6th Street, are expected to decrease as a result of redistribution of traffic from these streets onto Foothill Parkway. Construction of Foothill Parkway Westerly Extension would provide substantial relief to Ontario Avenue, which is currently congested at peak hours by local and regional traffic seeking access to SR-91 via Paseo Grande at the west end of Ontario Avenue.

Connections of Border Avenue and Chase Drive to Foothill Parkway would further increase benefits to the City roadway system, providing alternate routes to Foothill Parkway and dispersing traffic more evenly throughout the area, as planned in the City’s General Plan Circulation Element. The connections would reduce traffic on Paseo Grande and Elysia Street, at the west and east ends of the project, respectively. Currently, on the west end, travelers use Paseo Grande to access Green River Road from Ontario Avenue. The segment of Ontario Avenue from Border Avenue to Paseo Grande is two lanes wide, stop-controlled at many intersections, and has residential frontage along both sides. It currently carries approximately 12,200 ADT. Much of that traffic comes from the neighborhoods south of Ontario Avenue, between Paseo Grande and Lincoln Avenue. The Border Avenue and Chase Drive connections would give residents from these neighborhoods optional routes to reach Green River Road and Foothill Parkway. At the east end of the project, local residential traffic from neighborhoods along Mangular Avenue and Oak Avenue currently use Four Kings Street to Elysia Street to access existing Foothill Parkway. These are residential streets, whereas Border Avenue and Chase Drive are designated as local collectors in the City’s General Plan Circulation Element. Local collectors are intended to carry traffic from the local neighborhoods to the arterial roadways in the City’s overall roadway network. Most of the existing traffic on Border Avenue and Mangular Avenue near Ontario Avenue is generated from local development, trying to reach Ontario Avenue and parallel arterials to the north for east/west movement through the City. It is expected that a portion of that neighborhood traffic will redirect to the south to access Foothill Parkway as an alternate east/west route. This redirection will cause the traffic volumes on those two streets to increase at the southern ends near Foothill Parkway. These increases, however, are well below the designated capacity for collector roadways, and are consistent with the City’s General Plan. It is expected that the volumes on Border Avenue and Mangular Avenue will decrease near Ontario Avenue, as a result of the redistribution of traffic.

RBF prepared a Traffic Assessment for this project based on the data from MMA. This assessment will serve as the basis for the traffic analysis portion of the environmental document. The Traffic Assessment is included as Exhibit 10 in this report.

VI. Project Description

A. Proposal

1. Foothill Parkway

The proposed project involves the westerly extension of Foothill Parkway as a four-lane roadway from approximately 600 feet west of Skyline Drive to the intersection of Green River Road and Paseo Grande. At Skyline Drive, the roadway would veer to the west into unincorporated Riverside County and continue in an east/west direction along the City/County boundary. The alignment would then curve to the north and connect to Green River Road in the vicinity of Paseo Grande. A 108-inch MWD feeder line, located approximately 1,000 feet southeast of the Green River Road/Paseo Grande intersection, will be protected from roadway load and settlement. A bridge structure is recommended at this location. The proposed project would require right of way (R/W) acquisition for roadway improvements, slopes, and drainage facilities, as well as temporary construction easements. The project also includes new signalized intersections at Paseo Grande and the proposed connections of Border Avenue and Chase Drive. Street lighting is planned in the median along the entire roadway. See Exhibit 3 for a Site Plan, and Exhibit 22 (map pocket) for full-size Plan and Profile views and Typical Sections for Foothill Parkway. Typical Sections and Illustrative Cross Sections for proposed Foothill Parkway and other proposed roadway improvements are included as Exhibits 6A, 6B, and 7A through 7D.

Roadway right of way will vary from 105 feet to 118 feet in width, with an actual roadway width ranging from 72 to 78 feet. A narrower roadway width is proposed through Wardlow Wash, from Paseo Grande to Border Avenue, to reduce the overall footprint and maintain the grading limits outside of the Cleveland National Forest. This will be accomplished by the use of a 10-foot, rather than 14-foot wide median. A 14-foot wide median is proposed for the remainder of the extension, from Border Avenue to existing Foothill Parkway. Four travel lanes, two in each direction will be provided, with 7-foot wide parkways, a 5-foot wide sidewalk on the north side of the roadway, and a 10- to 14-foot wide multipurpose trail on the south side. Generally, the Number 1 lane will be 12 feet wide, and the Number 2 lane will be 11 feet wide, with an 8-foot wide Class II bicycle lane. Striping will be modified through the superelevated 700-foot-radius curve to accommodate street runoff that will drain toward the median. In that location, the Number 1 lane will be 13 feet wide, the Number 2 lane will be 11 feet wide, and the Class II bike lane will be 7 feet wide. The overall roadway width will not change. As Foothill Parkway passes over the Mabey Canyon Debris Basin dam, the sidewalk and roadside multi-purpose trail will be located behind the curb, eliminating the 7-foot wide parkways on each side of the roadway. The trail width will be reduced to 5 feet at that location. A maintenance access road will be placed adjacent to the southerly edge of the trail, for access to the debris basin. East of the Chase Drive connection, the curb-to-curb roadway width will be increased by two feet in order to match existing Foothill Parkway at the easterly join point. The wider roadway width will accommodate two 12-foot traffic lanes and an 8-foot wide Class II bike lane in each direction. Roadway grades on Foothill Parkway will vary from a minimum of 1.8 percent to a maximum of nine (9) percent.

Retaining walls are proposed at three locations along Foothill Parkway, in order to minimize grading impacts at critical locations. See Sections VI.A.10 and XI.E for further discussion.

In order to accommodate anticipated traffic volumes and associated turn lane requirements, Paseo Grande will be widened at Foothill Parkway. The roadway right of way will be increased from approximately 56 feet to 82 feet. This will allow for 14-foot and 12-foot southbound right turn lanes, one 10-foot wide southbound left turn lane, two 12-foot wide northbound lanes, and a 5-foot wide northbound shoulder. The widening will continue north approximately 225 feet, and then taper to join the existing two-lane Paseo Grande roadway to the north. Due to the necessary southbound turn lane lengths, the proposed roadway striping will create a right-in, right-out only condition at the San Bautista Road/Paseo Grande intersection. The existing stop sign on Paseo Grande will be removed at that location.

In addition to the extension of Foothill Parkway, the project recommendation is to extend and connect two existing local collector streets, Border Avenue and Chase Drive, to facilitate north/south local access to Foothill Parkway, consistent with the *General Plan* Circulation Element.

2. Border Avenue Connection

Border Avenue, a two-lane undivided collector roadway, will be extended approximately 200 feet south from its existing terminus and connect to Foothill Parkway, approximately 400 feet east of the Mabey Canyon Debris Basin. The proposed Foothill Parkway profile at that location is higher than the existing Border terminus. Therefore, approximately 200 feet of the existing south end of Border Avenue will be reconstructed to accommodate the elevated profile. The proposed typical section includes a 12-foot wide traffic lane and 10-foot wide Class III bike lane in each direction, a 7-foot parkway and 5-foot sidewalk on the west side of the street, and an 8-foot parkway on the east side, for a total right of way width of 64 feet. A traffic signal will be placed at the intersection of Border Avenue and Foothill Parkway as part of the connection.

3. Chase Drive Connection

Chase Drive, a two-lane local roadway, will be extended westerly approximately 650 feet from its intersection with Mangular Avenue and form a “T” intersection with Foothill Parkway. The new section of roadway will be a two-lane undivided collector. The proposed typical section includes a 12-foot wide traffic lane and 6-foot wide Class III bike lane in each direction, with 7-foot parkways and 5-foot sidewalks, for a total right of way width of 60 feet. A 100-foot inscribed diameter roundabout will be provided at the intersection of Mangular Avenue and Chase Drive as a means to reduce speeds at the intersection. The roundabout will be designed to accommodate existing access to adjacent properties and improve traffic mobility. A traffic signal will be placed at the intersection of Chase Drive and Foothill Parkway.

4. Mangular Avenue/Chase Drive Improvements

Existing Mangular Avenue is a two-lane collector per the City of Corona General Plan. However, from Chase Drive to approximately 900 feet north, the street was built as a narrower section, and, on the east side of the street, has asphalt dike, rather than curb and gutter, and no sidewalk. As part of the Chase Drive connection to Foothill Parkway, this portion of Mangular Avenue will be widened and improved to match existing Mangular Avenue to the north. The roadway section will be widened from approximately 31 feet to 44 feet, with one 10-foot traffic lane, a 5-foot Class II bicycle lane, and a 7-foot parking lane in each direction. A curb-adjacent 5-foot sidewalk and 3-foot parkway will be added on the east side of the street. These improvements will not require additional right of way, however they may require a construction easement. Overhead power lines located behind the existing easterly asphalt dike will be relocated behind the new easterly curb. Other utility relocations may also be required.

Existing Chase Drive, between Mangular Avenue and Skyline Drive, is a narrow, rural asphalt road. The north side of the roadway has no curb, gutter, or sidewalk. The south side also has no curb, gutter, or sidewalk, and instead has an asphalt path, separated from the traveled way by asphalt dike. The west end of this segment of Chase Drive will be widened to transition to the entrance of the proposed roundabout at Mangular Avenue. The remaining portion will not be improved as part of this project. Several water line appurtenances have been noted immediately south of the corner of Chase Drive and Mangular Avenue, and other utilities may also be present. Relocations may be necessary.

5. Green River Road Improvements

Currently, Green River Road extends from State Route 91, east to Paseo Grande. Between Tanglewood Drive and Paseo Grande, Green River Road is a paved two-lane road, fully improved on the north side, adjacent to existing residential development, and has no curb, gutter, or sidewalk on the south side. To the west of Tanglewood Drive, it is a four-lane roadway with a striped median. As part of this project, Green River Road will be widened between Tanglewood Drive and Paseo Grande to provide a continuous four-lane segment between existing and proposed roadways. The roadway will be widened from 44 feet to 80 feet, with two 12-foot lanes and a 6-foot Class II bike lane in each direction, and a 20-foot striped median. Curb, gutter, a 5-foot parkway, and a 5-foot sidewalk/multi-purpose trail will be provided on the south side of the roadway. The northerly existing curb, gutter, and sidewalk will remain in place, and the existing 100-foot right of way will be maintained. These improvements were anticipated when the road was originally constructed, so the full roadway width was graded in preparation for a future widening. Many utilities were placed with the expectation that the roadway would be widened. Grading and utility relocations for this portion of the project are expected to be minimal.

An opening in the striped median will be provided at the intersection of Green River Road and San Simeon Drive to allow for full turning movements into and out of that neighborhood. A traffic signal is not planned at this location, due to its close proximity to both Paseo Grande, which will be signalized as part of this project, and Tanglewood Drive, which may be signalized as a part of future development.

6. Mabey Canyon Road Improvements

Mabey Canyon Road currently extends south from a "T" intersection at Border Avenue into Mabey Canyon. It provides access to Hawk Circle, Falcon Circle, the Mabey Canyon Debris Basin, and private properties located farther south in the canyon. North of the debris basin dam, Mabey Canyon Road is a standard paved two-lane roadway. South of the debris basin dam, it transitions to a narrow dirt road, ranging between 15 and 20 feet wide. Proposed Foothill Parkway will transect this roadway. For the properties located south of Foothill Parkway, including the debris basin and residences, an access point will be provided on eastbound Foothill Parkway to tie into existing Mabey Canyon Road. This access will be a full local street intersection to accommodate future improvements. A portion of the existing dirt road will be reconstructed to accommodate the wider section, as well as the elevation difference between existing Mabey Canyon Road and proposed Foothill Parkway. The raised median along Foothill Parkway will continue through this location, allowing for a right-in, right-out only condition. The nearest turn-around point will be located at Border Avenue, approximately 1,000 feet to the east along Foothill Parkway. Vehicles traveling east from Mabey Canyon Road on Foothill Parkway may turn left at Border Avenue to travel north, or make a U-turn at Border

Avenue to travel west to Green River Road. Vehicles traveling toward Mabey Canyon from the west, on eastbound Foothill Parkway, may turn right onto Mabey Canyon Road. Vehicles traveling toward Mabey Canyon Road from the north, on southbound Border Avenue, or from the east, on westbound Foothill Parkway, must continue west to Paseo Grande, approximately 6,100 feet to the northwest, to turn around and return via eastbound Foothill Parkway. On the north side of proposed Foothill Parkway, the City has proposed to eliminate the portion of existing Mabey Canyon Road between Falcon Circle and Foothill Parkway, and provide a knuckle intersection at Falcon Circle. The remaining segment of Mabey Canyon Road, north of Falcon Circle, will be approximately 1,100 feet long, and will intersect Border Avenue, Hawk Circle, and Falcon Circle. The residents on these streets will continue to have unchanged access to the north, via Border Avenue, and they will also have access to Foothill Parkway to the south, via the proposed Border Avenue connection.

7. MWD Crossing

The proposed Foothill Parkway extension will bridge across the Metropolitan Water District (MWD) Lower Feeder line, a 108-inch inside diameter precast concrete pipe, approximately 1,000 feet southeast of the Green River Road/Paseo Grande intersection. At that location, the roadway finished grade will be approximately 30 feet above existing ground.

Pipeline Protection Alternatives presented to MWD

During the conceptual design process, in year 2000, pipeline protection studies were developed to mitigate the roadway fill load on the existing MWD pipe. These studies were updated in October 2006, during preliminary design, and were presented to MWD. The studies were based on a roadway profile located 50 feet above existing ground at the MWD line, and included two alternatives. The first alternative was a three-span 275-foot long bridge that would span the feeder line. This alternative avoided additional loading on the pipe, and provided full access to the pipe for maintenance and replacement. Additionally, the opening beneath the bridge could serve as a wildlife crossing. The second alternative was the construction of a 460-foot long concrete frame over the pipe, located at the base of the fill section, which would isolate the pipe from the fill loads and settlement. The concrete frame option provided limited access for pipeline maintenance and replacement. As a result, MWD identified the bridge option as the preferred alternative. The estimated cost for the bridge was \$5.14 million. The Preliminary Structure Plan for the bridge alternative is included as Exhibit 11A.

Pipeline Protection Alternatives for Value Analysis

In preparation for the Value Analysis (VA) Workshop, the studies were revised again in January 2007. The new studies were based on a roadway profile located 20 feet above original ground at the MWD feeder line. The concrete frame alternative was abandoned, and RBF expanded the pipeline protection studies to five alternatives:

1. Concrete Encasement of the Pipe
2. Concrete Encasement of the Pipe founded on Bedrock
3. Buried Concrete Arch – 320 feet in length with MSE walls
4. Above Grade Concrete Arch – 240 feet in length with MSE walls
5. Bridge Structure – 120 feet in length, single-span

These alternatives were presented at the VA workshop. Alternative 1 was dismissed because it was unable to maintain pipe settlement within MWD criteria. Alternative 2 was dismissed because it was not constructible. Alternative 3, the buried arch, was not selected due to the limited access it would provide to the pipe, as well as the high cost, estimated at \$2.6 million.

Alternative 4, the above ground arch, was ranked second among the alternatives. It would provide continuous access over the pipe for MWD, as well as pedestrian and wildlife movement under the roadway, however the height and width of the access would limit the size of equipment MWD could use for maintenance or repair of the pipe. The estimated cost was \$2.4 million. Alternative 5, the bridge option, was selected as the preferred alternative, because it would provide open, continuous access over the MWD line. It was also deemed the best value of the alternatives analyzed, with an estimated cost of \$2.2 million. Exhibits for all of the alternatives, as well as a comparative analysis matrix, are included as Exhibits 11B through 11 F.

Bridge Alternative for Final Design

Since the time when the Value Analysis workshop was held in January 2007, the profile of proposed Foothill Parkway has been changed. The currently proposed design of Foothill Parkway calls for a roadway finished grade approximately 30 feet above existing ground at the MWD feeder line location, a 10-foot increase from the previous design. The above ground arch and bridge alternatives were the most beneficial and cost-effective options to protect the pipe in the previous alignment. As a result, the costs for pipeline protection alternatives 4 and 5, above, were revisited. The estimated costs for both alternatives increased with the current alignment, due to the higher roadway profile. Relative to the previous estimates, an above ground arch design would be longer in order to span a wider fill, and stronger, to support an additional 10 feet of fill. A bridge structure would be taller and longer, calling for a three-span structure, rather than single-span. The bridge length would be approximately 200 feet. Based on RBF's assessment of the two structures, the estimated cost for an above ground arch for the current alignment is \$3.75 million, whereas the estimated cost for a bridge is \$3.4 million. Similar to the studies done in January 2007, RBF and the City concluded that the bridge structure will cost less than an above ground arch, and will also provide better access for maintenance and repair of the pipe. Additionally, MWD has previously identified a bridge as its preferred pipeline protection structure, and may not agree to an arch structure. The bridge is therefore the preferred alternative recommended in this report, and is described below. Additional details of the bridge design will be developed further in final design.

The horizontal alignment of Foothill Parkway at the MWD feeder line crossing is curved, with a radius of 1,400 feet. In order to limit the skew angle of the proposed bridge to approximately 30 degrees, the bridge will be split into two structures, each carrying two lanes of traffic, an 8-foot wide Class II bike lane, and a 5-foot wide sidewalk. Each bridge will have a width of 38 feet 5 inches, including barriers on both sides of each bridge. MWD's existing 50-foot wide right-of-way will be maintained. Bridge approach slopes will be constructed at a 1½:1 slope perpendicular to the MWD right-of-way, and the toes of slope will fall outside of the MWD right-of-way.

The bents will be located outside of the MWD right-of-way, and the spans will be arranged for balanced superstructure design. End span lengths will be determined to produce the optimal height short seat type abutment. The bridge abutments and bent layouts will run parallel with each other. For the intended spans, a cast-in-place post-tensioned concrete box girder is the most suitable bridge type for the project. A cast-in-place reinforced concrete box girder bridge was considered, but the additional weight would result in larger seismic loads and larger substructure sections. Based on the superstructure depth to span ratios and seismic consideration, 5'-6" octagonal columns were investigated in the study.

Based on foundation recommendations by Earth Mechanics, Inc., the bents will be founded on large-diameter cast-in-drilled-hole piles. Pile footings supported on steel H-piles are recommended for the abutments.

Structure approaches will be required, since the bridge will carry a multilane urbanized highway, and it is located in a seismically prone area (peak rock acceleration greater than 0.6g and fill height greater than 10 feet), per Caltrans Memo to Designers Section 5.3 Appendix B.

Full slope paving is recommended for this project, due to low maintenance cost and widespread use in other projects.

To accommodate pedestrian traffic, concrete barrier (Caltrans Type 26) will be built on the outer edges of the bridges. Traffic barrier (Caltrans Type 732) will be used on the inner edges of the bridges, adjacent to the traffic lanes. Chain link railing (Caltrans Type 7) will be provided on both barriers, rather than tubular hand railing, to prevent objects from being thrown into the crevice below. Safety barrier end treatments will be provided in the median area of the bridges.

There are currently no aesthetics requirements from the City of Corona for this project. However, RBF will coordinate further with the City during final design. Architectural features can be incorporated into the project once the information is available.

The bridges can be built using conventional falsework construction. The falsework bents adjacent to the MWD pipeline should be located to avoid placing load on the existing pipe. Since Foothill Parkway is a new roadway, stage construction will not be required to construct the bridges.

At this time, there are no known environmental or regulatory Agency permit requirements that will influence the recommended bridge type.

8. TMC Interconnect

The Foothill Parkway Westerly Extension includes three new signalized intersections at Paseo Grande, Border Avenue, and Chase Drive. The signals will be interconnected via fiber optic cable along Foothill Parkway. Additionally, the City will connect the signals to the City of Corona Traffic Management Center (TMC) via direct connect or a wireless communication system in order to provide real-time information from the field element to the TMC.

9. Drainage Facilities

Existing condition and project condition hydrology studies were prepared for the watershed tributary to Foothill Parkway Westerly Extension. The purpose of the studies was to determine the size and type of major drainage improvements for inclusion in this document and the preliminary cost estimate. A final hydrology report will be prepared in accordance with City and County criteria during final design.

Hydrology Methods

Hydrology studies were prepared using both the Rational Method and Synthetic Unit Hydrograph Method as outlined by the Riverside County Flood Control and Water Conservation District (RCFC&WCD) Hydrology Manual. Preliminary onsite hydrology was computed using the Rational Method, also following the Riverside County Hydrology Manual. The Rational Method is commonly used for determining the peak discharge from relatively small drainage

areas. For areas in excess of 300 to 500-acres, the Synthetic Unit Hydrograph Method should be used.

The Rational Method is an empirical computational procedure for developing a peak runoff rate (discharge) for small watersheds for storms of a given recurrence interval. The Rational Method equation, $Q=CIA$, is based on the assumption that the peak flow rate (Q) is directly proportional to the drainage area (A), rainfall intensity (I), and a runoff coefficient (C) which is related to land use and soil type. The 10-year and 100-year storm events were considered in this analysis to determine the peak runoff values. Design discharges at intermediate points were computed by generating a hydrologic “link-node” model which divides the area into drainage sub-areas; each area tributary to a concentration point or hydrologic “node” point is determined by the existing terrain or proposed street layout.

The Synthetic Unit Hydrograph Method, outlined in the RCFC&WCD Hydrology Manual, was used to develop runoff hydrographs using the HEC-1 Flood Hydrograph Package (USACE 1998) and LAPRE-1 (USACE 1989). Lag times used for the development of the synthetic unit hydrographs were generated based on the shape and size of the sub-basin. The watershed sub area lag times were calculated according to the lag time equation, as indicated in the RCFC&WCD Hydrology Manual. The basin factor (n value) was estimated based on field investigations and existing and planned development. Composite n values were developed for each sub-basin based on the mean value of the collection streams and channels within the basin. A weighted n value was used in this analysis.

Hydrology Criteria

The hydrologic criteria for this project are based on the Riverside County Flood Control and Water Conservation District standards. The 10-year, and 100-year, 3-hour and 6-hour storm events were analyzed in order to determine the peak-runoff values used to design cross culverts, open channels, and main line storm drain for both the on and off-site drainage facilities. The 100-year, 3-hour storm event governed in this analysis, and the resulting discharges will be used to size proposed facilities. Land uses and topography for the offsite areas were taken from the General Land Use Plan for the City of Corona and the United States Geological Survey (USGS) topographic maps.

Hydraulic Modeling

Cross culverts are modeled using the Hydraulic Design of Highway Culverts (FHWA HDS-5) culvert design curves. To meet RCFC&WCD criteria, the cross culverts are sized to pass the 10-year flow at or below the culvert soffit. Additionally, the culvert must pass the 100-year flows without an “objectionable headwater.” For the purpose of this study, “objectionable headwater” is assumed to be 1 foot below the edge of traveled way. To verify that the culverts operate under an “inlet control” condition, a normal depth calculation is included for each flow rate.

Open channels were sized to convey the estimated 100-year return frequency event using the AES program Hydraulic Elements I. The main storm drain system will be designed using the Los Angeles County Flood Control District Water Surface Pressure Gradient (WSPG F0515P) design software during the final design. WSPG computes and plots uniform and non-uniform steady flow water surface profiles and pressure gradients in open channels and closed conduits with irregular or regular sections. The computation procedure is based on solving Bernoulli's equation for the total energy between two sections in a reach.

Hydraulic Criteria

The specific design criteria used in performing the engineering studies for the modeling of the flood control channelization primarily relied on satisfying the minimum RCFC&WCD requirements applicable to the proposed facilities.

Proper selection of the Manning's coefficient is one of the most critical and variable features of the hydraulic analysis that can vary the results if no calibration is available. The Manning's coefficient is carefully selected based upon physical conditions. Manning's roughness coefficients can vary greatly in a channel due to the amount of vegetation and type of material the channel is lined with. The selected Manning's friction coefficients are representative of the streambed material, vegetation for the project location, and the finish of proposed concrete lined channels and culverts. The following Manning's "n-Values" were used in the analysis:

Section Element	Manning's n Value
Natural Rough Terrain (Typical Off-site Conditions)	0.045
Rip Rap	0.035
Street Sections	0.015
Concrete Lined Channel	0.015
Concrete V-Ditch	0.015
Reinforced Concrete Pipe (RCP)	0.013
Reinforced Concrete Box (RCB)	0.014

Flood Zones

The project is located within the unincorporated areas of Riverside County as outlined in the National Flood Insurance Program (NFIP), which is administered by the Federal Emergency Management Agency (FEMA). Communities in the NFIP must adopt and enforce minimum floodplain management standards, including identification of flood hazards and flood risks. Foothill Parkway is located within community numbers 060245 1355 B, 060250 0010 D, and 060250 0005 F. These three areas are located on the Flood Insurance Rate Map (FIRM) panel for Riverside County revised March 22, 1983, June 18, 1996, and June 18, 1996, respectively. The Flood Insurance Rate Map indicates that the project has two locations, Wardlow Canyon Wash and Kroonen Channel, which are designated within Zone A. Flood zone designation A is defined as a Special Flood Hazard Area subject to inundation by the 100-year flood (1% annual chance flood). Base flood elevations have not been determined for these areas. Backup hydraulic modeling data has been requested from FEMA. Once the preliminary roadway design has been approved and necessary backup data from FEMA has been provided, a Conditional Letter of Map Revision (CLOMR) will be completed.

Watershed Characteristics

The watershed covers approximately 2,200 acres in the Santa Ana Mountains located in both Orange and Riverside Counties. It is comprised of four separate major sub-watersheds ranging in size from approximately 40 acres to 1,000 acres. The soils are predominantly type "D" with fair cover. The tributary offsite area is predominantly comprised of relatively moderate slopes in the mountains of the Cleveland National Forest.

Under existing conditions, watershed A is 46.42 acres and located southeast of Mabey Canyon Debris Basin. Fill from the proposed roadway creates two distinct drainage paths within this area. Two 3-foot diameter reinforced concrete pipes (RCP) are proposed in order to convey discharge from both paths. The two systems will confluence under the roadway and outlet to their natural drainage courses.

Watershed B, under existing conditions, consists of 5.5 acres and currently discharges to an existing residential tract along Mangalar Road and the Oak Street Debris basin through Kroonen Channel. Under the project condition, this watershed is included with area E. Flow will be partially distributed onto Foothill Parkway, controlled by local catch basins, and put into the main line system. The remaining flow in this watershed will be picked up at a low elevation point south of the roadway and conveyed through an 18-inch diameter culvert into the main line system. The main line system will discharge to the Oak Street Debris Basin.

The largest watershed, with an area of 921.1 acres, watershed D is the major contributing watershed to the existing RCFC&WCD Mabey Canyon Debris Basin facility. This watershed was analyzed using the Synthetic Unit Hydrograph method. The proposed horizontal alignment for Foothill Parkway runs along the embankment crest of the existing basin. The roadway construction would involve placement of fill on the upstream side of the dam embankment. This would completely cover the existing concrete spillway crest located on the easterly abutment. Two improvement alternatives were analyzed to accommodate the original storage volume capacity and level of flood protection. These alternatives are discussed next in the Mabey Canyon Debris Basin Modifications section.

Watershed E confluences at a point south of the proposed Foothill Parkway, near Chase Drive. The existing tributary area is 349.2 acres. Runoff is currently conveyed into Oak Street Debris basin from Kroonen channel, a concrete lined trapezoid channel. Under the proposed conditions, there will be 360.54 acres of tributary area. Fill from the proposed roadway will completely cover Kroonen Channel and intersect the existing drainage path, creating the need for drainage improvements. A proposed 102-inch diameter RCP culvert will convey runoff from watershed E into Oak Street Debris Basin. The culvert will traverse under Foothill Parkway and Chase Drive and eventually tie into the existing 9-foot by 10-foot RCB culvert under Mangalar Avenue, leading into Oak Street Debris Basin.

For hydraulic design purposes, the 838.1 acre watershed F was divided into three different regions; on-site roadway runoff and the undeveloped areas located on both sides of the proposed roadway. On the north side of the parkway, runoff sheet flows from the undeveloped areas, and will drain parallel to the proposed road by means of a concrete lined v-ditch. This v-ditch will vary from a 1-foot to a 1.5-foot depth. Roadway runoff will be controlled on-site through catch basins and a main line facility. Runoff from the southern side of the roadway will be conveyed through a mainline system combining RCP culverts as well as a trapezoidal riprap channel, which will traverse parallel to Foothill Parkway. There will be multiple inlets along this mainline which will help convey flow from sub-watersheds within this southern area. Detention basins are designed at each inlet in order to detain the maximum debris load produced by the 100-year flood for each sub-area. Along with alleviating the amount of debris allowed into the proposed facilities, the detention basins will lessen the peak flow produced by each design storm. Ultimately, these flows will pass under Foothill Parkway through a 108-inch diameter RCP, near the northern extent of the project, and discharge into their natural drainage path. The hydraulic analysis of the mainline was computed using WSPG. A more detailed analysis of the downstream conditions within Area F will be required during final design.

The locations of the watershed areas are shown in Exhibits 23A and 23B (map pocket), Existing and Project Condition Hydrology Maps. Hydrology and hydraulic calculations will be included in the final design Hydrology and Hydraulics Report.

Mabey Canyon Debris Basin Modifications

The proposed Foothill Parkway alignment will be located along the crest of the Mabey Canyon Debris Basin dam, requiring roadway embankment on the top and upstream side of the existing dam. The proposed roadway will cross over the existing open spillway. Concepts have been developed to maintain spillway function, as well as retain the original storage volume in the basin. During conceptual design, RBF Consulting prepared the *Mabey Canyon Debris Basin – Foothill Parkway Crossing Feasibility* report, dated November 1999. This document was submitted to the Riverside County Flood Control and Water Conservation District (RCFC&WCD) for evaluation of the design concept. Once preliminary design of the project began, the report was resubmitted to RCFC&WCD in 2006 for re-evaluation of the overall design concept. The concept, referred to as Mabey Canyon - Alternative 1 in this Basis of Design report, included the use of a drop inlet spillway and box conduit through the dam embankment as a means to economically construct the Foothill Parkway extension across the crest of the dam. RBF received a letter on October 16, 2006 from RCFC&WCD confirming disapproval for Alternative 1 (see Exhibit 20A). Therefore, an open spillway alternative, Mabey Canyon - Alternative 2, was analyzed, in which a structure would be constructed to support the roadway over the spillway. Alternatives 1 and 2 were presented at the January 29, 2007 Value Analysis Workshop, and are described below. Exhibit 12A was the cost estimate comparison presented at the workshop.

Mabey Canyon - Alternative 1

In Alternative 1, the existing basin floor would be excavated and lowered approximately 5 feet within the existing basin right-of-way to retain the original storage volume. A new low-level outlet would be constructed, upgraded to be consistent with other debris basin outlet structures constructed by RCFC&WCD (i.e. similar to Oak Street Basin or Lake View Dam). A new spillway would be constructed, which would consist of a rectangular drop spillway inlet, and an underground box culvert with an energy dissipater. This type of facility would allow flow underneath the roadway without a bridge structure. As part of the excavation within the debris basin, new access ramps to the bottom of the debris basin and a perimeter access roadway would be constructed. As mentioned above, this alternative was rejected by RCFC&WCD. See Exhibit 12B for the plan view of this alternative.

Mabey Canyon - Alternative 2

In Alternative 2, the existing bottom elevation of the debris basin would be maintained. Excavation would take place at the upstream end of the basin to shift the basin end upstream, which would require additional right of way. This would offset the storage capacity lost due to the roadway embankment. A new low-level outlet structure, similar to the one in Alternative 1, would be constructed. A new spillway would be extended from the crest of the existing spillway to the face of the proposed dam embankment. A structure would be constructed to support the roadway over the open spillway. The length of structure would be governed by the width of spillway required to accommodate the anticipated flows plus freeboard. Three options were considered for spanning the extended spillway:

Option A - Span the extended spillway with a single span 4-foot deep cast-in-place post-tensioned box girder bridge.

Option B - Span the extended spillway with an 18 -inch thick two-span cast-in-place reinforced concrete slab bridge.

Option C - Construct a triple cell 18-foot x 8.5-foot reinforced concrete box culvert to extend the spillway underneath the proposed roadway.

See Exhibits 12C through 12G for plan and profile views of Alternative 2, Options A, B, and C.

Option C is the preferred option, as it provides the most economical solution. Hydraulic analyses for the spillway were performed using the WSPG program. Additional alternative spillway designs, such as four- and five-cell box culverts, were analyzed, but did not satisfy the hydraulic constraints. The water surface elevation must be maintained below the top of the basin elevation of 1,145 feet. All pier widths included an additional foot on each side to compensate for potential debris. RBF provided a new report, *Mabey Canyon Hydrology and Hydraulics Study*, dated October 2007, to RCFC&WCD. This report provided hydrology, sediment yield estimations, and dam modification alternatives. It included the previously rejected Alternative 1, and described a new proposed Alternative 2, which addressed their concerns and issues. RCFC&WCD provided verbal approval of Alternative 2, Option C, at a meeting on April 3, 2008.

Mabey Canyon – Alternative 3

During the environmental evaluation of the project, an existing stone bridge was identified near the upstream end of the basin. This bridge spans the existing inlet channel into the debris basin. Excavation at the upstream end of the basin proposed in Alternative 2 would require removal of the bridge. An avoidance alternative, Alternative 3, was developed to avoid impact to the bridge. In this alternative, the basin floor would be excavated and lowered approximately 5 feet within the existing basin right-of-way, similar to Alternative 1. A triple-cell box culvert would be used to maintain an open spillway, similar to Alternative 2. Due to the lowered basin floor, a new low-flow outlet pipe would be jacked through the dam embankment. See Exhibit 12H for a plan view of this alternative. This avoidance alternative was presented to RCFC&WCD in June 2008. RCFC&WCD deemed this alternative unacceptable and provided the City with a letter, dated July 3, 2008, which outlined the reasons for the finding (see Exhibit 20B).

RCFC&WCD confirmed and has deemed Alternative 2, Option C the approved preliminary design alternative for proposed modifications to the Mabey Canyon Debris Basin. Alternative 2, Option C is proposed as part of this project for final design.

10. Retaining Walls

In an effort to reduce or eliminate slope encroachment into private properties, retaining walls are proposed at three locations on Foothill Parkway. In the segment between Mabey Canyon Debris Basin and proposed Border Avenue, a standard 2:1 cut slope on the north side of the roadway would extend into residential parcels, based on the proposed alignment and typical section. Therefore, a variable-height retaining wall, approximately 480 feet long, is proposed along the northerly street hinge in this location. The height of the wall will vary, in order to minimize wall height while keeping the daylight line behind the wall outside of private right of way. The maximum anticipated height of this wall is 40 feet, near its west end at Mabey Canyon Debris Basin. A soil nail wall with architectural finish is proposed at this location, similar to an existing wall located east of this project's terminus. This wall type is decorative, with an

earthen-looking facade, and can provide an interesting aesthetic quality to the overall project. See Exhibit 13 for a photo example of a soil nail wall, as well as the proposed retaining wall locations.

A second wall will be located approximately 300 feet west of Mabey Canyon Road, on the northerly hinge of the roadway. The proposed cut slope in this area would impact a water tank that is located to the north of proposed Foothill Parkway, accessible from Raven Circle. The retaining wall required to prevent this impact will be approximately 120 feet long and a maximum of 15 feet tall. A soil nail wall with architectural finish is also proposed at this location.

The third proposed wall is located at the east end of the project, on the south side of Foothill Parkway. The proposed 2:1 roadway cut slope would cause substantial right of way impacts on the slope and existing building pad on the Addison property. A 30- to 35-foot tall retaining wall is proposed approximately mid-slope at this location to reduce right of way impacts, as well as address slope stability issues caused by adverse-laying clay beds that were discovered during the geotechnical analysis of the slope. An MSE-type wall is proposed, which will utilize pre-cast concrete panels for the wall face and geogrid material to anchor the wall. Due to the soil conditions identified to date, and the remedial grading required on-site, a soil nail wall is not feasible on this slope.

Further geotechnical studies will be conducted during final design to more accurately evaluate proposed retaining wall types and locations. Additional walls may also be considered in final design to prevent further right of way and other impacts. See Section XI.E for additional information. See Exhibit 13 for proposed and potential retaining wall locations.

11. Trails and Wildlife Linkages

The proposed Foothill Parkway Westerly Extension will be constructed in an area that is primarily open space, with little or no development, and is immediately adjacent to the Cleveland National Forest. There are many existing trails in the vicinity, and it is a goal of this project to maintain trail connectivity. Recreational trails, access roads, and wildlife movement have been considered in the design of two multi-purpose trails as part of this project.

There are several horse trails that lead into Wardlow and Fresno Canyons, as well as access roads to properties within the Cleveland National Forest. A 20-foot wide multi-purpose trail is planned at the base of the westerly toe of fill slope through the length of the roadway through Wardlow Wash. This trail will serve as a maintenance access road for the proposed storm drain facility, which will be located under the trail, and debris basins at the two main storm flow catch points. This trail will also allow private access to properties within the forest, as well as pedestrian, equestrian, and bicycle use. A low-flow swale will follow the trail, at the base of the fill slope. A trail staging area is proposed on the south side of Foothill Parkway, near Paseo Grande, with access to Foothill Parkway and a parking lot and trailhead. From this staging area, there will be access under the proposed MWD crossing structure to the east side of Foothill Parkway and an existing access road that ties into Adobe Avenue. From the east side of Foothill Parkway, trails may eventually be provided to the north, which will allow continuous movement from the northern end of the project, near Green River Road and Paseo Grande, down into Wardlow and Fresno Canyons.

A roadside multi-purpose trail will be provided along the south side of most of Foothill Parkway. It will begin at the west end, on Green River Road at Tanglewood Drive, and continue approximately 250 feet east of Paseo Grande, where access will be provided from eastbound

Foothill Parkway to the proposed wildlife trail staging area. The roadside trail will diverge from Foothill Parkway at this location, and follow the entrance into the staging area. From the staging area, users may follow the wildlife trail along the base of the roadway fill slope for approximately 800 feet to a point where the wildlife trail will join the second portion of roadside multi-purpose trail along Foothill Parkway. A wide parkway, without a trail, is proposed on the south side of Foothill Parkway between the staging area and this join point. The roadside trail will continue east along the remaining length of Foothill Parkway, and ultimately join the existing sidewalk at the east end of the project.

Overall, the proposed trails will provide linkages to the existing and potential future trails in the area, including the Santa Ana River Trail, Fresno Canyon, Wardlow Canyon, Mabey Canyon, the MWD Bike Path, Oak Street Channel Trail, and Skyline Drive Trail. See Exhibit 14 for a plan view of the proposed Trails and Wildlife Linkages.

B. Design Criteria

Design standards utilized by the City of Corona, County of Riverside, American Association of State Highway and Transportation Officials, and Caltrans have been used to develop the proposed alignment.

Figure VI.B.1 shows the design criteria utilized in the development of the Foothill Parkway Extension.

Figure VI.B.1 – Design Criteria

Design Feature	Criteria
FOOTHILL PARKWAY	
Design Speed	45 mph
Desirable Minimum Horizontal Curve Radius	1,100 ft (no superelevation required)
Minimum Horizontal Curve Radius	700 ft (5% superelevation required)
Maximum Grade	9%
Minimum Grade	0.6%
Minimum Tangent	150 ft
Minimum Vertical Curve Length	200 ft
Desirable Median Width	14 ft
Minimum Median Width	10 ft
Typical Lane Configuration – crown section	#1 – 12 ft, #2 – 11 ft, Bike Lane (Class II) – 8 ft
Typical Lane Configuration – superelevated section	#1 – 13 ft, #2 – 11 ft, Bike Lane (Class II) – 7 ft
Typical Lane Configuration – Green River Rd	#1 – 12 ft, #2 – 12 ft, Bike Lane (Class II) – 6 ft
LOCAL ROADWAYS	
Minimum Design Speed	35 mph, 25 mph at T-intersection
Desirable Minimum Horizontal Curve Radius	450 ft
Minimum Horizontal Curve Radius at Intersection	200 ft
Maximum Grade	12%
Minimum Grade	0.6%
Minimum Vertical Curve Length	150 ft
Typical Lane Configuration – Border Ave	#1 – 12 ft, Bike Lane (Class III) – 10 ft
Typical Lane Configuration – Chase Drive	#1 – 12 ft, Bike Lane (Class III) – 6 ft
Typical Lane Configuration – Mangular Ave	#1 – 10 ft, Bike Lane (Class II) – 5 ft, Parking Lane – 7 ft
ALL ROADWAYS	
Side Slopes	2:1 or flatter
Through Traffic Lane Width	12 ft, 10 ft min.
Single Left Turn Lane Width	10 ft
Dual Left Turn Lane Width	10 ft / each
Single Turn Lane Raised Median Nose Width	4 ft
Normal Cross Slope	1.7%
Cross Slope for Extended 9% Grade	3%
Desirable Parkway Width (incl. Sidewalk)	12 ft
Minimum Parkway Width (incl. Sidewalk)	8 ft
Sidewalk Width	5 ft
Curb Height	8 in
Normal Emergency Shoulder/ Bike Lane Width	8 ft
Minimum Bike Lane Width	5 ft
Maximum Access Road Grade	10% unpaved, 25% paved

C. Utilities

Utility information requests have been sent to the following utility companies:

- Metropolitan Water District
- AT&T – formerly SBC/Pacific Bell
- Southern California Edison
- Southern California Gas
- Comcast Cable

Coordination with utility companies will continue throughout development of the project. There are existing overhead power lines located just east of the intersection of Green River Road and Paseo Grande. The lines run parallel to Paseo Grande, down the slope from the roadway, and follow the hilly topography in the area. Due to potential vertical conflicts with proposed Foothill Parkway, it is anticipated that the lines will be relocated. The MWD feeder line, described in Section VI.A.7 of this document, will be protected in place. Utility investigations will also be conducted for the improvements to Paseo Grande, Border Avenue, Chase Drive, Mangular Avenue, and Green River Road. Overhead power lines located behind the existing easterly edge of pavement on Mangular Avenue will be relocated behind the proposed easterly curb when Mangular Avenue is widened. Additional utility relocations may also be necessary at Mangular Avenue and the other locations mentioned above.

It is anticipated that new domestic and reclaimed water lines will be placed beneath the roadway section of Foothill Parkway. Possible sewer crossings, removal of a lift station near Border Avenue, and stub-outs for future development have been discussed, but not confirmed. The specific facilities to be included, their limits, and design parameters will be determined by the City of Corona during final design.

D. Landscaping and Irrigation

The proposed landscaping is intended to provide a seamless transition between the new portion of Foothill Parkway and the existing streetscapes at the join points near Paseo Grande and Skyline Drive. The planting palette will consist of low maintenance, drought tolerant, California-friendly plants to complement the adjacent landscape aesthetic. Medians and parkways will be landscaped to soften and screen traffic flow and noise from the pedestrian walkways and buffer adjacent retaining walls and slopes along Foothill Parkway. From Paseo Grande to Border Avenue, medians will consist of street trees and medium to low growing shrubs and groundcover. The parkways will also be planted with street trees and medium to low growing shrubs and groundcover to buffer pedestrians from the adjacent traffic. Through this area, a “rural highway” feel will be the aesthetic goal. Generally, the slopes will be hydroseeded with plants that will complement the surrounding native vegetation and require no permanent irrigation. Trees and other landscaping will be planted at the base of cut slopes, up to the first drainage terrace, in order to soften the appearance of large slopes from the driver’s and pedestrian’s perspective. From Border Avenue to the easterly project limits near Skyline Drive, medians and parkways along Foothill Parkway will consist of street trees and medium to low growing shrubs and groundcover. Overall, the planting palette will be designed to coalesce with the recently constructed Foothill Parkway, east of Skyline Drive. Slopes may also be landscaped. Particular attention will be paid to the cut and fill slopes facing residents where slopes will be immediately adjacent to their properties and highly visible. Irrigation and maintenance will be provided by the City of Corona. This landscape concept was developed through project team discussions early in project development. RBF will work closely with the

City of Corona landscape group as design progresses to ensure that the final landscape plan provides aesthetics and performance that meet the City's goals and requirements. See Exhibit 15 for the Conceptual Landscape Plan. During final design, the City may choose to modify and enhance this plan to meet aesthetic goals, as well as provide on-site mitigation for oak tree and other vegetation impacts. See Section XI.E for more information.

E. Project Schedule

Preparation of final PS&E is scheduled to commence in Fall 2008. Environmental certification is anticipated by Fall 2008. Construction is scheduled to commence in Spring 2009 and be completed by Winter 2010.

F. Project Costs

The preliminary estimated cost of construction, based on the design presented in this report, is \$35.6 million (2007 dollars). Figure VI.F.1 shows the major project components and their associated costs. See Exhibit 5, Preliminary Cost Estimate, for a more detailed breakdown of the estimated costs.

Figure VI.F.1 – Preliminary Costs for Major Project Components

Item	Preliminary Cost (in \$ Millions)
Earthwork	6.25
Roadway	6.1
Drainage	6.2
Specialty Items (incl. Structures)	11.15
Traffic	1.0
Contingency	4.9
TOTAL	35.6

It is anticipated that project costs will be funded by the Transportation Uniform Mitigation Fee (TUMF) program, a developmental impact fee program established by the Western Riverside Council of Governments (WRCOG), as well as other City of Corona local funding sources.

VII. Agreements, Permits, and Approvals

An agreement will be required between the City of Corona and the County of Riverside, which will designate the City of Corona as the agency responsible for construction administration and inspection. Upon completion of construction, an agreement will also be required to convey ownership and maintenance of the portions of roadway within County of Riverside to the City of Corona.

An agreement will be necessary between the City of Corona and the Riverside County Flood Control and Water Conservation District to determine maintenance responsibilities for the larger storm water facilities, including the proposed pipe storm drain facility adjacent to the Cleveland National Forest, in Wardlow Wash, and the proposed pipe/box system near Chase Drive, in Kroonen Wash.

The approvals required for development of the Foothill Parkway Westerly Extension would include, but not be limited to the following:

City of Corona:

- Certification of the Environmental Impact Report (EIR)
- Use Permit/Tentative Tract Map/Design Review Approvals
- Approval of construction plans and specifications, including potential utility relocation
- Grading and Building Permits.

Army Corps of Engineers:

- Section 404 Permit Pursuant to the Clean Water Act

California Department of Fish and Game:

- Section 1062 Permit – Streambed Alteration Agreement

California Regional Water Quality Control Board – Santa Ana Region:

- Section 401 Water Quality Certification
- Approval of a General Construction Activity Storm Water Permit and other approvals deemed necessary during the construction entitlement process

Riverside County Flood Control District:

- Approval of Mabey Canyon Debris Basin modifications and regional storm drain facilities

California Division of Dam Safety:

- Approval of Mabey Canyon Debris Basin modifications

VIII. Right of Way

Partial and full right of way acquisitions from various property owners will be required for the proposed roadway alignment, slope easement areas, and drainage facilities. Construction easements will also be necessary. See Exhibit 16 for a Right of Way Impact map, which illustrates the affected parcels.

Figures VIII.1 through VIII.4 list the affected parcels and corresponding owners for this project:

Figure VIII.1 – Right of Way Impacts for Foothill Parkway

Assessor's Parcel Number	Owner
102-390-037	City of Corona
103-020-075	City of Corona
102-320-009	Andersen
102-320-014	Andersen
103-020-064	City of Corona
103-020-077	City of Corona
103-020-099	City of Corona
103-390-020	Collins
275-030-006	Far West Corona Properties

Assessor's Parcel Number	Owner
275-040-012	Far West Corona Properties
112-120-017	Ridgecrest
275-040-009	Riverside County Flood Control
275-040-013	Riverside County Flood Control
275-040-016	Riverside County Flood Control
275-040-015	Far West Corona Properties
103-390-019	Crown Ridge
112-141-031	Crown Ridge
112-142-005	Crown Ridge
112-360-029	D R Horton
112-360-019	City of Corona
275-050-004	Far West Corona Properties
112-352-014	Hidden Crest HOA
275-050-005	Riverside County Flood Control
275-050-007	Riverside County Flood Control
275-050-008	Addison
275-050-001	Prichard, John and Esther B
275-080-015	Addison
275-080-016	Prichard, John and Esther B
275-080-014	Centex Homes

Figure VIII.2 – Right of Way Impacts for Border Avenue

Assessor's Parcel Number	Owner
112-141-031	Crown Ridge
112-142-005	Crown Ridge

Figure VIII.3 – Right of Way Impacts for Chase Drive

Assessor's Parcel Number	Owner
275-050-007	Riverside County Flood Control
275-050-008	Addison
275-050-005	Riverside County Flood Control
275-050-001	Prichard, John and Esther B
112-220-005	Riverside County Flood Control
112-320-001	Riverside County Flood Control
112-320-002	Sheppard, Howard / Prichard, John
112-220-010	George R and Denice Valdez
112-310-001	Martinez, Maria I
112-310-002	Riverside County Flood Control

Figure VIII.4 – Right of Way Impacts for Paseo Grande

Assessor's Parcel Number	Owner
103-020-075	City of Corona

IX. Environmental Clearance

In accordance with the guidelines and regulations of the California Environmental Quality Act (CEQA), a preliminary Initial Study checklist was prepared for this project to address the potential for direct, indirect, and cumulative environmental effects associated with the project, as proposed. This document was circulated, with the Notice of Preparation, on June 8, 2007, for a 30-day public review period. Draft technical studies have been prepared in support of this document. Based on the findings in the Initial Study, an Environmental Impact Report (EIR) is required for this project. Final environmental certification is anticipated by Fall 2008. The City of Corona is the Lead Agency for CEQA documentation. It has been determined that National Environmental Policy Act (NEPA) documentation will not be required for this project.

X. Public Involvement and Hearing Process

Public outreach meetings have been conducted during the course of preliminary design to obtain feedback from local residents and other stakeholders. A large community workshop was held on June 28, 2007 at the Corona Public Library to provide project background and schedule, identify initial concerns, and obtain input from the community. Based on input received from the community at that meeting, a series of focused workshops were held with neighborhood groups. In these meetings, a brief review of the topics discussed at the larger community meeting was given, followed by more in-depth discussions of issues and concerns that had been brought up relative to their areas. Additionally, the City has set up a project web site and phone hotline that allows the public to gain information and provide feedback on the project. In the event that future communication with the community is required, large neighborhood signs, door-hangers, and newsletters may be used to contact individual property owners, provide information about the project, and advise of upcoming public meetings. See Exhibit 17 for the Informational Flyer mailed out for the community workshop. Near the completion of the environmental documentation, a public presentation will be made to City Council to provide design details and obtain final comments.

XI. Other Considerations

A. Impacts on Non-Motorized Transportation and Pedestrian Modes

Pedestrians and bicyclists will have full use of Foothill Parkway, with 7 to 8-foot Class II bicycle lanes, a 5-foot sidewalk on the north side of the roadway, and a 10- to 14-foot multi-purpose trail on the south side of the roadway. Connections on Border Avenue and Chase Drive will also have bicycle lanes and sidewalks, providing full access throughout the improvements and new connections between adjacent neighborhoods.

B. Hazardous Waste or Material

A Preliminary Hazardous Materials Assessment, prepared by RBF Consulting, dated June 23, 2006, has determined that there is no contamination or recognized environmental condition (REC) on-site. All Hazardous Materials topics addressed in the Initial Study yielded "Less Than Significant Impact" or "No Impact" results. Further analysis in the environmental document will not be required.

C. Roadway Reconstruction, Restoration, Pavement Rehabilitation

Minimal amounts of roadway reconstruction, restoration, or pavement rehabilitation are anticipated at the easterly and westerly join points to provide seamless connections from existing to proposed conditions. When the Border Avenue connection is constructed, a portion of Border Avenue will be reconstructed to raise the profile to meet Foothill Parkway. The remaining portion of Border Avenue, between the join point and Condor Circle, may require an overlay. When the Chase Drive connection is made, reconstruction will be required on Chase Drive and Mangular Avenue to accommodate alignment improvements and the proposed roundabout intersection at Chase Drive and Mangular Avenue. Widening of Green River Road, between Paseo Grande and Tanglewood Drive, and Mangular Avenue, from Chase Drive to approximately 900 feet north, could also require some reconstruction. These items, and the need for pavement rehabilitation of the existing streets, will be addressed further in final design.

D. Access to Adjacent Properties

There are many properties, both adjacent to the proposed roadway and in remote locations, whose access will be impacted by the proposed Foothill Parkway extension. In order to maintain access to these locations, points of connection will be made along Foothill Parkway at key locations.

An alley approach-type driveway will be provided on the eastbound side of widened Green River Road, approximately 40 feet east of San Simeon Drive. This connection will provide access to an existing asphalt access road that circulates among several properties to the south and east.

Approximately 250 feet east of Paseo Grande, access will be provided from eastbound Foothill Parkway to a proposed staging area and wildlife trailhead on the south side of the project. From this staging area, there will be access under the proposed MWD crossing structure to the east side of Foothill Parkway and an existing access road that ties into Adobe Avenue. The wildlife trail that will extend from the staging area along the southerly toe of slope of Foothill Parkway will also serve as an access road to existing access roads and horse trails within Wardlow Canyon.

A standard local street intersection will be placed at the intersection of eastbound Foothill Parkway and Mabey Canyon Road, which will allow right-in, right-out only access to the properties along Mabey Canyon Road, south of proposed Foothill Parkway.

Farther east along Foothill Parkway, an access point will be provided to the Addison property on the south side of the roadway, near the proposed Chase Drive connection.

Near the east end of the project, there is a nursery property (AP 275-080-021) located south of the Addison property. This property has a permanent easement across the Addison property, and currently uses a small access road that transects the Addison property along its east-facing slope. This access road joins into Addison's access, which ties into existing Chase Drive via the

Kroonen Wash access road. The southerly cut slope on proposed Foothill Parkway at this location will sever this existing access road. Therefore, the access road will be realigned to the southeast and will tie into an existing access road at a debris basin, built as part of Tentative Tract Map 31955 improvements. Access to this debris basin currently extends from the terminus of existing Foothill Parkway. A driveway will be placed on the south side of Foothill Parkway to join the existing debris basin driveway.

There are two parcels (AP 275-050-009 and 275-070-004) located to the west of the Addison property that also have permanent easements across the Addison property. This access is provided along the north side of the Addison property. The proposed project will provide access to the Addison property at its east end, which will allow for continued access to the adjacent properties, as well. It will be the Addisons' responsibility to maintain the access across their property.

The existing intersection of Chase Drive and Mangular Avenue is an uncontrolled "L", with Mangular Avenue extending to the north and Chase Drive extending to the east. A driveway ties into this intersection from south, providing access to four parcels, three of which have homes built on them. A 100-foot inscribed diameter roundabout is proposed at this location. Access will be maintained to the homes to the south via a driveway access point on the south side of the roundabout.

E. Final Design Considerations

As this project continues into final design, several items require further consideration. They are outlined below:

1. Potential Retaining Wall near Meadowcrest: Oak Impact

On the north side of Foothill Parkway, near station 1042+00, there is a large oak tree on County property that would be impacted by the roadway fill slope. The City agrees that the oak is of substantial size and age, and that its preservation should be considered in final design. The City will employ an arborist to evaluate the tree, and establish whether its health is sufficient to warrant protection. Use of a retaining wall at the roadway hinge may be explored during final roadway and grading design. See Exhibit 13 for proposed and potential retaining wall locations.

2. Potential Retaining Walls west of Mabey Canyon: Property Impacts

As the project is shown in this report, the northerly cut slopes immediately west of Mabey Canyon Road show very minor potential impacts to the Crown Ridge property (AP 103-390-019) and Ridgecrest property (AP 112-120-017). The City has directed RBF to consider the use of retaining walls to eliminate the right of way impacts to these properties. Three potential retaining walls will be considered in final design. See Exhibit 13 for proposed and potential retaining wall locations.

3. Nursery Access Road realignment

A nursery property (AP 275-080-021), located south of the Addison property, currently uses a small access road that transects the Addison property along its east-facing slope and ties into Chase Drive via the Kroonen Wash access road. The southerly cut slope on proposed Foothill Parkway at this location will sever this existing access road. Per Section XI.D of this document, and the graphics included in this report, the access road will be realigned to the southeast to tie

into an existing access road for a debris basin, built as part of Tentative Tract Map 31955 improvements. In final design, this realignment should be investigated further. As shown, the realigned access road will cross the path of flow into the debris basin. To avoid possible conflict between the access road and drainage, an alternate alignment located between the Addison slope and the debris basin may be considered, with an access point on Foothill Parkway just west of the existing basin. A driveway would still be placed farther east on the south side of Foothill Parkway, to join the existing debris basin driveway. Grading for the realigned access road must be designed to avoid a small parcel of National Forest (AP 275-080-013) to the south.

4. Chase Drive Recommended Alternative Alignment

As it is currently proposed, the Chase Drive extension would be constructed on a fill slope immediately behind the back perimeter walls of properties on Meadowcrest Circle, on what is currently Riverside County Flood Control and Water Conservation District property.

The City requested that RBF look at further solutions to reduce visual, noise, and glare impacts to the adjacent properties. Based on the City's acquisition of right of way from adjacent parcels, RBF developed an alternative alignment of Chase Drive located farther away from Meadowcrest Circle. This alternative alignment of Chase Drive also provides for enhanced drainage options in the area, and is considered the "Recommended Alternative". Use of this alignment of Chase Drive will be addressed further in final design. See Exhibits 18 and 19 for the Chase Drive recommended alternative alignment.

5. Roadside Multi-Purpose Trail: Variable Width and Configuration

A variable width roadside multi-purpose trail is proposed along the eastbound side of Foothill Parkway. The plan view exhibits in this report show a 10-foot width. In final design, the trail width may be varied, as desired and where right of way permits, in order to provide enhanced aesthetics, rest areas, and vista points. Also, the configuration of the trail, with respect to the back of curb may be varied. The City has suggested the use of a berm in the parkway to provide additional buffer between the roadway and trail. Another suggestion was to vertically offset the trail up or down from the parkway, which would require the trail to meander horizontally. Variations of the width and configuration of the roadside trail will be evaluated in final design.

6. Landscape Concept

For the segment of proposed Foothill Parkway between Border Avenue and the easterly project limits, the landscape concept currently proposes a plant palette similar to existing Foothill Parkway. Existing Foothill Parkway has an "urban" feel, with palm trees, magnolias, and other trees in the median and groomed grass parkways. During final design, the City and RBF may consider using a "rural highway" planting palette in that segment of Foothill Parkway, similar to what is proposed between Paseo Grande and Border Avenue. Oak trees may be incorporated into this palette, and may also serve as part of the required mitigation for this project. The use of oak trees on the project site, as part of the landscaping and to serve as mitigation, will be explored further in final design.

7. Focused Meetings

In order to provide comprehensive thought and design for the specialty items in this project, focused meetings are suggested during the transition from preliminary to final design. Focused meetings would be appropriate for landscape, traffic, water lines, structures, and other items, and should include RBF and appropriate City staff, as well as staff from other approving agencies, as needed.

XII. Attachments

Exhibits

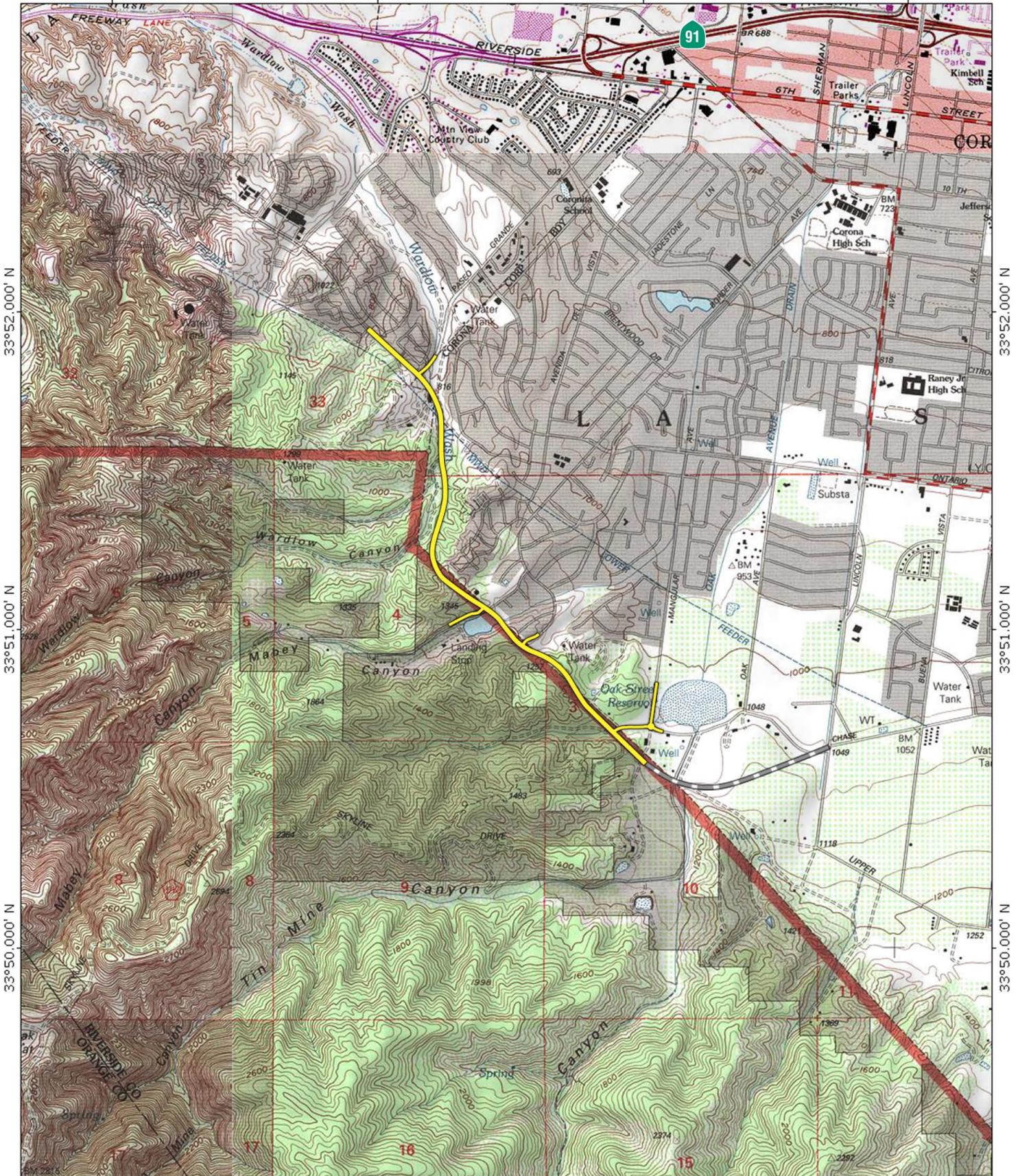
1. Regional Vicinity Map
2. Site Vicinity Map
3. Site Plan
4. Existing Condition Photographs
5. Preliminary Cost Estimate
6. Typical Sections
7. Illustrative Cross Sections
8. Preliminary Design Alternatives
9. Value Analysis Workshop Summary
10. Traffic Analysis – Traffic Assessment by RBF
11. MWD Crossing – Preliminary Structure Plans and Alternatives
12. Mabey Canyon Debris Basin – Improvement Alternatives
13. Retaining Wall Locations
14. Trails and Wildlife Linkages
15. Conceptual Landscape Plan
16. Right of Way Impacts
17. Community Workshop Flyer
18. Chase Drive Recommended Alternative Alignment
19. Chase Drive Recommended Alternative Alignment and Grading
20. Mabey Canyon Debris Basin – RCFC&WCD Letters
21. Traffic Model – Average Daily Traffic (ADT) Volumes
22. Foothill Parkway – Plan, Profile, and Typical Sections (Map Pocket)
23. Hydrology Maps (Map Pocket)

117°38.000' W

117°37.000' W

117°36.000' W

WGS84 117°35.000' W



33°52.000' N

33°51.000' N

33°50.000' N

33°52.000' N

33°51.000' N

33°50.000' N



117°37.000' W 117°36.000' W WGS84 117°35.000' W

 Project Site

 Roadway Completed

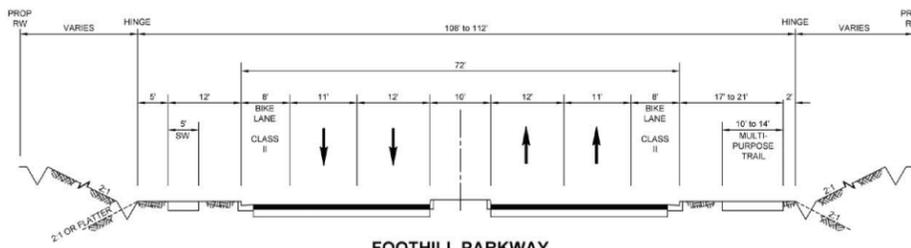
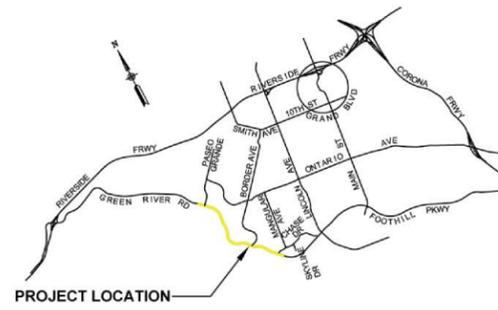
FOOTHILL PARKWAY WESTERLY EXTENSION
BASIS OF DESIGN

Site Vicinity

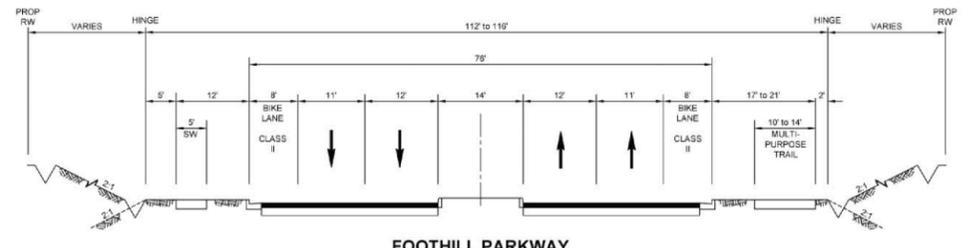
Exhibit 2



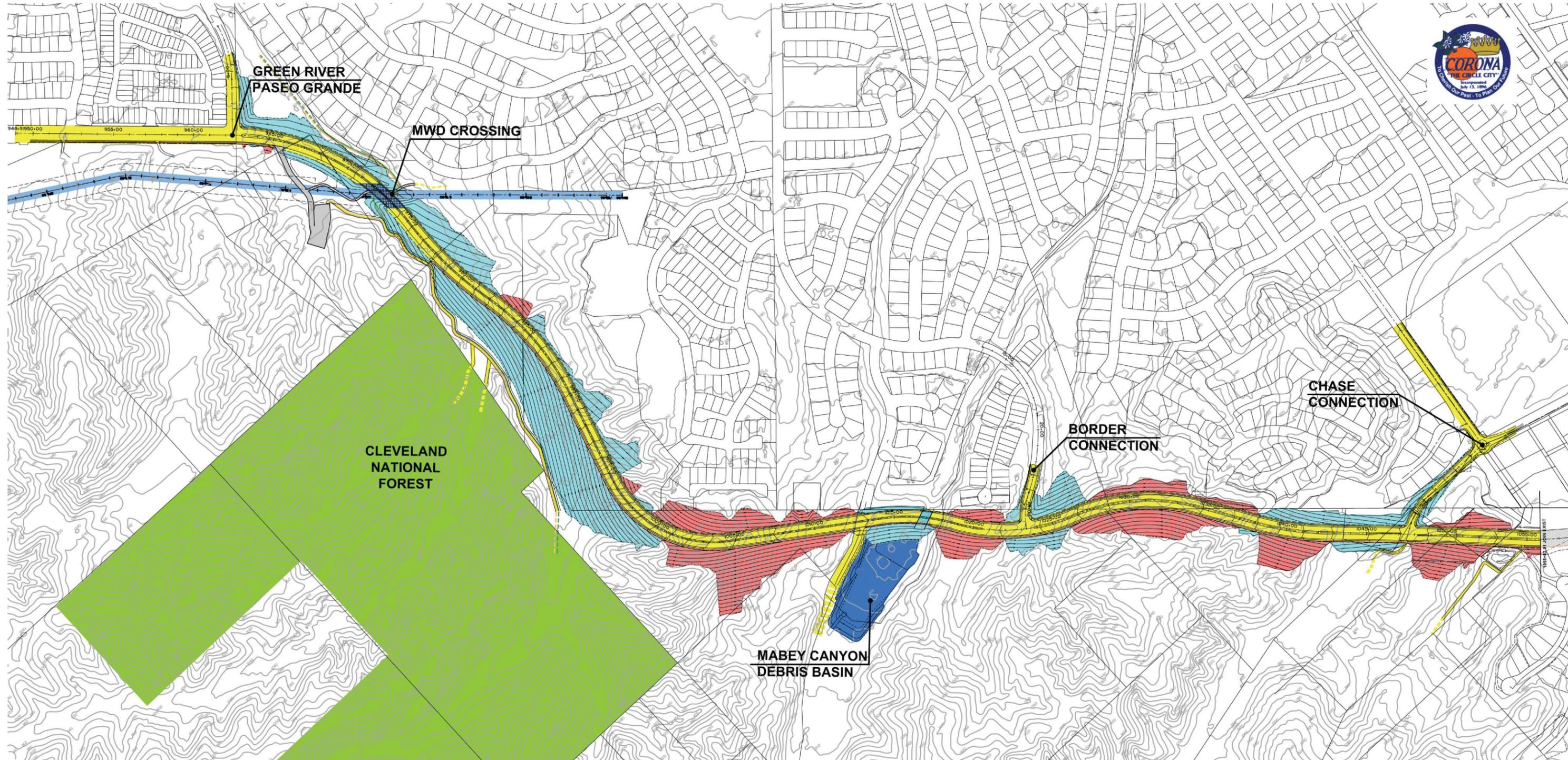
6/14/07 JN 10-104629-13393



FOOTHILL PARKWAY
 PASEO GRANDE TO BORDER AVENUE
 964+00 TO 993+09
 1007+40 TO 1012+60
 1017+50 TO 1022+74

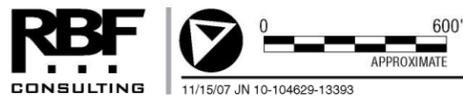


FOOTHILL PARKWAY
 BORDER AVENUE TO CHASE DRIVE
 1023+98 TO 1047+10



LEGEND:

ROADWAY IMPROVEMENTS	MWD LINE	NATIONAL FOREST
CUT AREA	BASIN IMPROVEMENTS	TRAILS
FILL AREA	PROPOSED DEVELOPMENTS	



-  Orientation
-  Photograph Number



1 View located to the east looking to the northwest toward the on-site structures, vacant land, surrounding rural residential uses, and Green River Road.



2 View located to the east looking to the northwest toward the on-site structures.



3 View located along the northern portion of the project looking toward the south-southeast at surrounding vacant land.



4 View located along the central portion of the project site looking to the east-southeast toward the Mabe Canyon detention basin.

-  Orientation
-  Photograph Number



5 View located to the south looking to the west at surrounding vacant land.



6 View located to the west looking to the east at vacant land and residential uses.



7 View located along the eastern portion of the project site looking to the southeast toward vacant land.



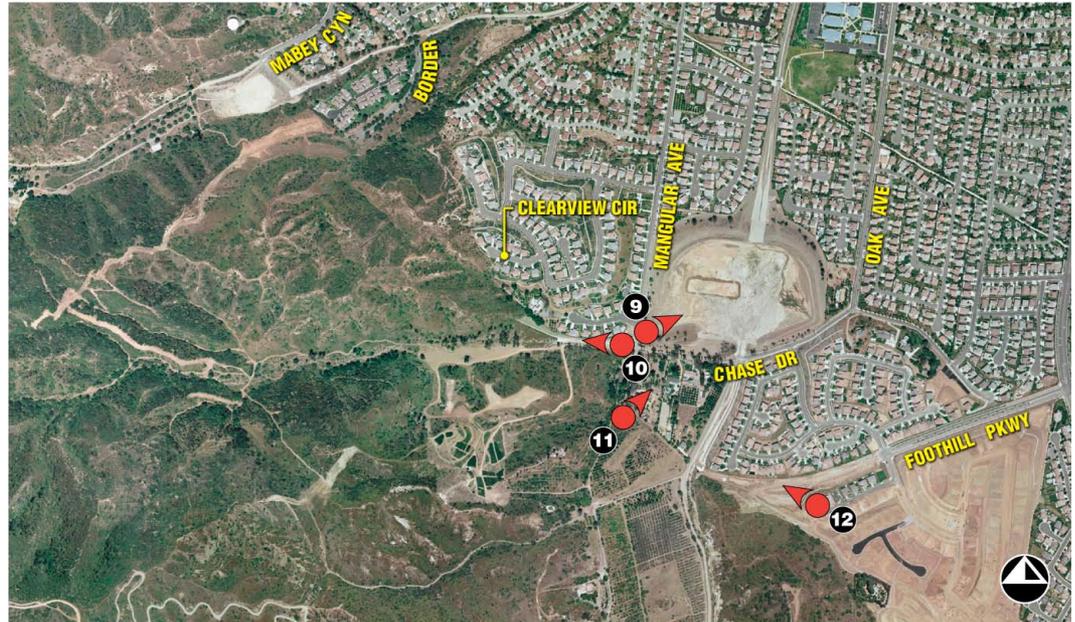
8 View located along the eastern portion of the project site at Mangular Avenue looking to the west-northwest at surrounding residential uses.



-  Orientation
-  Photograph Number



9 View located Mangular Avenue and Chase Drive looking to the northeast toward the Oak Street Reservoir.



10 View located at Mangular Avenue and Chase Drive looking to the west toward the proposed Mangular Avenue realignment.



11 View located at the eastern portion of the project site looking to the north-northeast toward surrounding residential uses and construction activities.



12 View located to the east at the construction activities (future residential uses) looking to the northwest toward surrounding vacant land and agricultural activities.

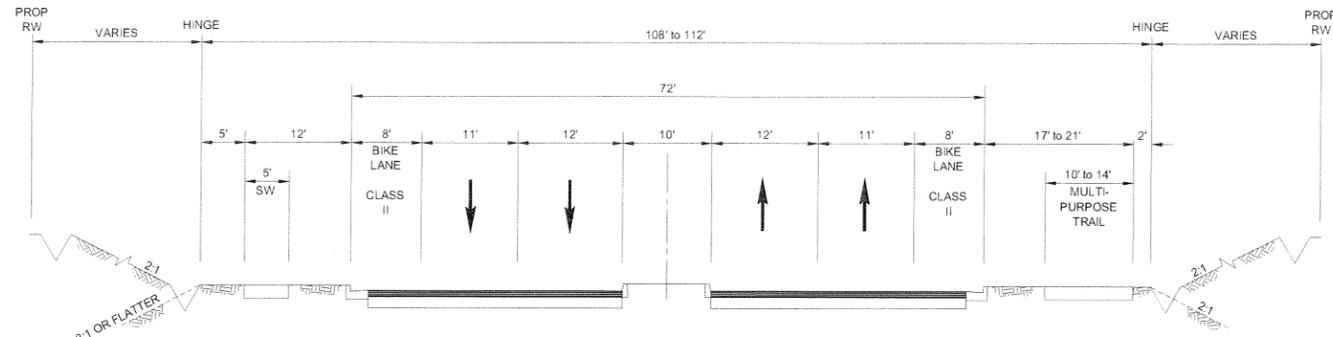
FOOTHILL PARKWAY

PASEO GRANDE TO 600' WEST OF SKYLINE DRIVE

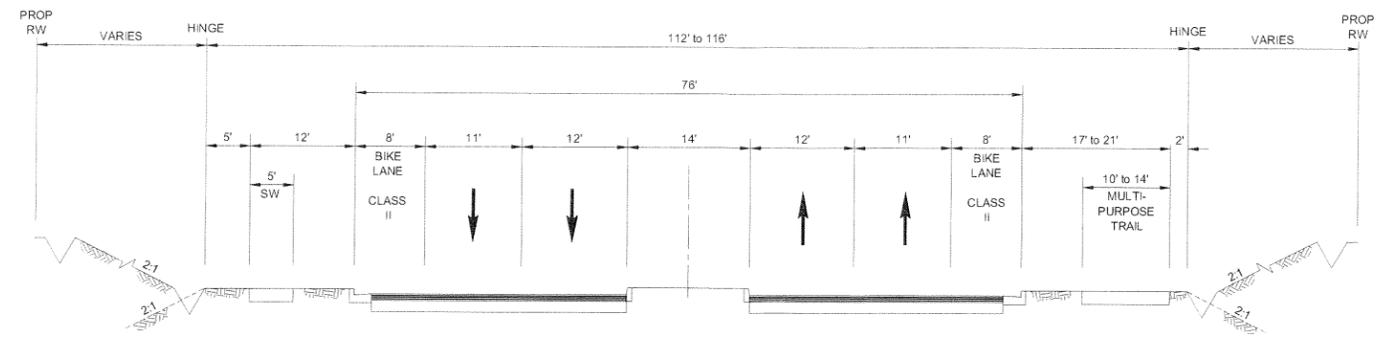
PRELIMINARY ALTERNATIVE 9 - 9% PROFILE, NORTHERLY SHIFT OF WEST END

Prepared for: City of Corona
 Prepared by: Trisha Keith
 August 2008

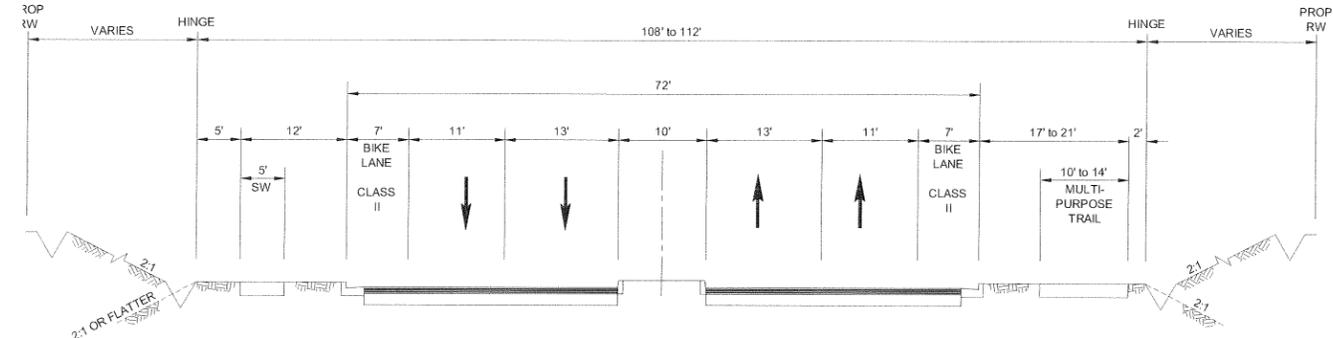
		GREEN RIVER ROADWAY IMPROVEMENTS		FOOTHILL PARKWAY ROADWAY IMPROVEMENTS		BORDER AVENUE CONNECTION		CHASE DRIVE CONNECTION		MANGULAR AVENUE ROADWAY IMPROVEMENTS		TOTAL	
ITEM	DESCRIPTION	COST	/UNIT	QUANTITY	ITEM COST	QUANTITY	ITEM COST	QUANTITY	ITEM COST	QUANTITY	ITEM COST	QUANTITY	ITEM COST
1	EARTHWORK												
1.1	Mobilization	2%	LS	1	\$10,400	1	\$557,400	1	\$15,200	1	\$27,600	1	\$3,000
1.2	Excavation & Compaction	\$2.00	/cy	5,400	10,800	1,680,100	3,360,200	0	0	3,400	6,800	1,500	3,000
1.3	Export	4.00	/cy	0	0	0	0	0	0	0	0	0	0
1.4	Import	4.00	/cy	0	0	161,500	646,000	3,900	15,600	22,400	89,600	0	187,800
1.5	Remedial & Corrective Grading	2.00	/cy	1,400	2,800	420,100	840,200	900	1,800	5,900	11,800	400	800
1.6	Clear and Grub	2,500.00	/ac	1.5	3,800	53	132,500	1.5	3,800	2.4	6,000	0.5	1,300
1.7	Fine Grading	0.50	/sf	56,750	28,380	819,700	409,900	50,500	25,300	62,600	31,300	9,100	4,600
	- Sub total -				\$56,200		\$5,946,200		\$61,700		\$173,100		\$12,700
2	STRUCTURAL SECTION												
2.1	AC Pavement	\$6.00	/sf	47,300	\$283,800	576,500	\$3,459,000	37,400	\$224,400	43,600	\$261,600	9,100	\$54,600
2.2	PCC Sidewalk	8.00	/sf	0	0	48,650	389,200	9,400	75,200	13,600	108,800	3,800	30,400
2.3	AC Trail	2.50	/sf	13,200	33,000	96,240	240,600	0	0	0	0	0	109,440
2.4	Curb & Gutter (Type A2-8)	20.00	/lf	1,350	27,000	19,500	390,000	1,900	38,000	2,750	55,000	800	16,000
2.5	Median Curb (Type A1-8)	15.00	/lf	0	0	19,000	285,000	0	0	0	0	0	19,000
2.6	Remove AC Pavement	2.00	/sf	1,350	2,700	500	1,000	32,900	65,800	6,100	12,200	800	1,600
2.7	Remove Curb and Gutter	6.00	/lf	0	0	500	3,000	1,500	9,000	800	4,800	800	4,800
2.8	Remove PCC Sidewalk	3.00	/sf	0	0	0	0	3,700	11,100	0	0	0	3,700
2.9	Sawcut	1.00	/lf	1,350	1,400	500	500	70	100	0	0	800	800
	- Sub total -				\$347,900		\$4,768,300		\$423,600		\$442,400		\$108,200
3	DRAINAGE												
3.1	Mabey Canyon Debris Basin	\$2,230,000	LS	0	\$0	1	\$2,230,000	0	\$0	0	\$0	0	\$0
3.2	RCP (Various Sizes)	1	LS	0	0	1	2,420,900	0	0	1	286,200	0	0
3.3	6' x 8' RCB	800.00	/cy	0	0	0	0	0	0	0	0	0	0
3.4	Concrete Channel	750.00	/cy	0	0	400	300,000	0	0	0	0	400	\$300,000
3.5	Concrete V-Ditch	48.00	/lf	0	0	2,200	105,600	0	0	0	0	2,200	\$105,600
3.6	Outlet Structure	15,000.00	/ea	0	0	4	60,000	0	0	1	15,000	0	0
3.7	Inlet Structure	10,000.00	/ea	0	0	9	90,000	0	0	1	10,000	0	0
3.8	Junction Structure	1,500.00	/ea	0	0	73	109,500	0	0	12	18,000	0	0
3.9	Man Hole	3,000.00	/ea	0	0	18	54,000	0	0	2	6,000	0	0
3.10	Catch Basin	5,000.00	/ea	0	0	14	70,000	0	0	2	10,000	0	0
3.11	Wardlow Canyon Debris Measures	1	LS	0	0	1	300,000	0	0	0	0	0	0
3.12	Access Ramps	35,000.00	/ea	0	0	2	70,000	0	0	0	0	0	0
3.13	Access Road	3.00	/sf	0	0	22,500	67,500	0	0	0	0	22,500	\$70,500
	- Sub total -				\$0		\$5,877,500		\$0		\$345,200		\$0
4	SPECIALTY ITEMS												
4.1	Slope Landscaping	\$2.00	/sf	31,000	\$62,000	726,000	\$1,452,000	11,300	\$22,600	28,000	\$56,000	0	\$0
4.2	Median Improvements	7.00	/sf	0	0	98,500	689,500	0	0	2,750	19,300	0	0
4.3	Parkway Landscaping	7.00	/sf	5,000	35,000	190,000	1,330,000	5,075	35,500	17,550	122,900	2,400	16,800
4.4	Erosion Control/Hydroseeding	0.50	/sf	0	0	1,162,900	581,500	0	0	10,200	5,100	0	0
4.4	Retaining Wall (Soil Nail Wall)	100.00	/sf	0	0	10,110	1,011,000	0	0	0	0	0	10,110
4.5	Retaining Wall (MSE Wall)	70.00	/sf	0	0	9,870	690,900	0	0	0	0	0	9,870
4.6	Bridge	3,400,000	LS	0	0	1	3,400,000	0	0	0	0	0	1
4.7	Fence - Split Rail	20	/lf	0	0	0	0	0	0	0	0	0	0
4.8	Environmental Mitigation	77,000.00	/ac	0	0	11.3	868,600	0	0	0	0	0	11
4.9	Slope Drainage	20,000.00	/ac	0	0	38	760,000	0	0	0	0	0	38
	- Sub total -				\$97,000		\$10,783,500		\$58,100		\$203,300		\$16,800
5	TRAFFIC ITEMS												
5.1	New Traffic Signal	\$200,000.00	/ea	0	\$0	1	\$200,000	1	\$200,000	1	\$200,000	0	\$0
5.2	Signing and Striping	5.00	/lf	1,350	6,800	9,500	47,500	950	4,800	1,350	6,800	800	4,000
5.3	Street Lights - Conduit/Pull Boxes	8.00	/lf	1,350	10,800	9,500	76,000	350	2,800	1,350	10,800	800	6,400
5.4	Street Lights	3,000.00	/ea	8	100	55	165,000	2	6,000	8	100	3	0
5.5	Remove Street Lights	1,000.00	/ea	0	0	4	4,000	4	4,000	0	0	1	1,000
	- Sub total -				\$17,700		\$492,500		\$217,600		\$217,700		\$11,400
TOTAL CONSTRUCTION COSTS					\$518,800		\$27,868,000		\$761,000		\$1,381,700		\$149,100
6	FEES												
6.1	Contingencies	10%			\$51,900		\$2,786,800		\$76,100		\$138,200		\$14,900
6.2	Survey	1	LS										\$300,000
6.3	Materials Testing	1	LS										\$300,000
6.4	Construction Management / Inspection	1	LS										\$1,200,000
	- Sub total -												\$4,867,900
TOTAL PROJECT COSTS													\$35,603,900



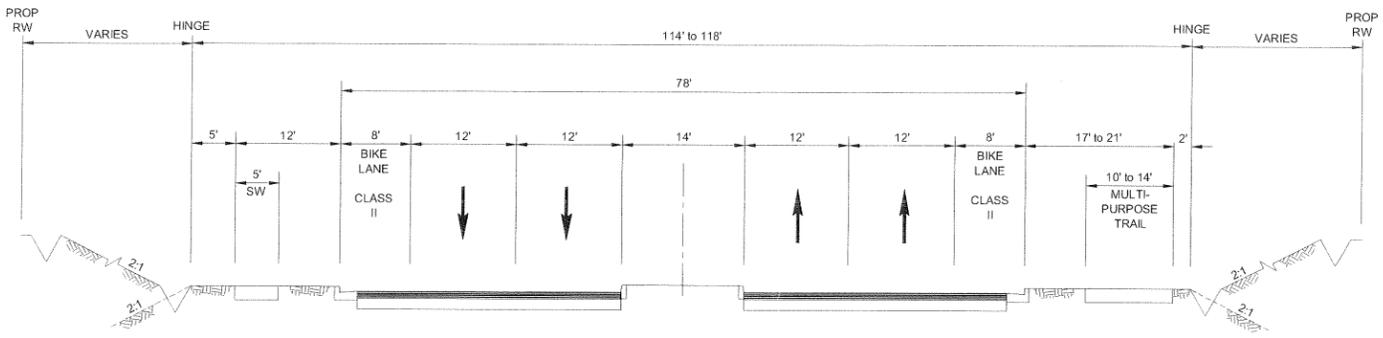
FOOTHILL PARKWAY
 PASEO GRANDE TO BORDER AVENUE
 964+00 TO 993+09
 1007+40 TO 1012+60
 1017+50 TO 1022+74



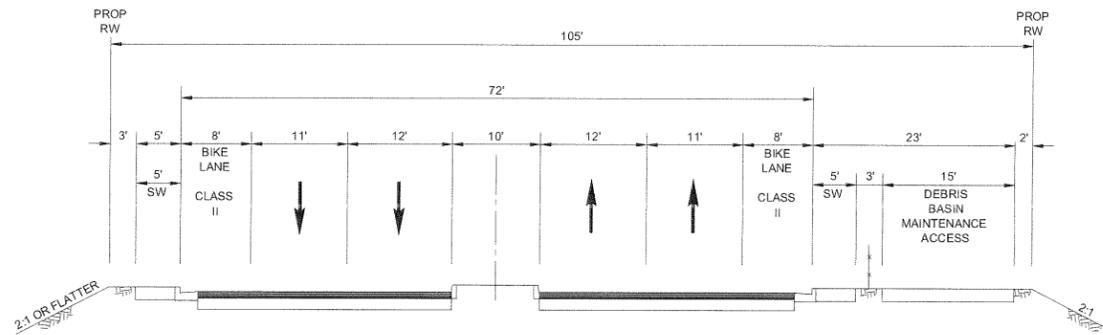
FOOTHILL PARKWAY
 BORDER AVENUE TO CHASE DRIVE
 1023+98 TO 1047+10



FOOTHILL PARKWAY
 PASEO GRANDE TO BORDER AVENUE
 993+09 TO 1007+40



FOOTHILL PARKWAY
 CHASE DRIVE TO SKYLINE DRIVE
 1048+26 TO 1055+82.91



FOOTHILL PARKWAY
 PASEO GRANDE TO BORDER AVENUE
 ACROSS MABEY CANYON DAM
 1013+28 TO 1017+20

 8/21/08
 AMAD QATTAN DATE
 8/20/08
 KIP D. FIELD DATE
 8/12/08
 CLINT HERBER DATE
 8/12/08
 RAFAEL MARTINEZ DATE

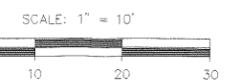


EXHIBIT 6A
 Underground Service Alert
 Call: TOLL FREE
 1-800-422-4133
 TWO WORKING DAYS BEFORE YOU DIG



Designed by TK
 Drawn by PC
 Checked by GW
 PLANS PREPARED UNDER SUPERVISION OF
 TRISHA C. KEITH
 R.C.E. No. 62490 Date 09/30/09

REFERENCED PLANS FOR THESE IMPROVEMENTS

Date By REVISIONS App'g

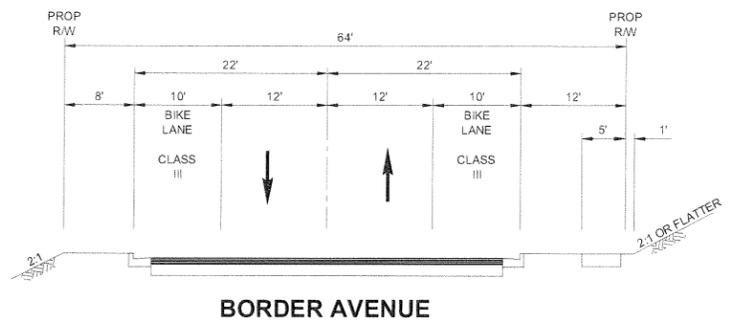
BENCH MARK: 2-1/2" BRASS DISK STAMPED "C-125" SET IN THE TOP OF CURB, LOCATED 5' SOUTH OF THE B.C.R. OF THE SOUTHEASTERLY CURB RETURN OF THE INTERSECTION OF BORDER AVENUE AND MABEY CANYON ROAD
 ELEVATION=1083.414

Engineering
 Planning
 Fire

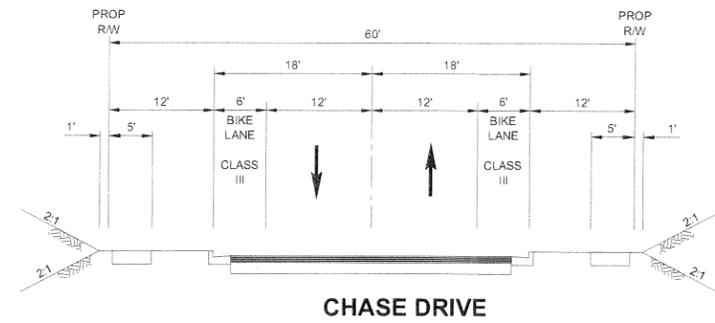
AMAD QATTAN
 DIRECTOR OF PUBLIC WORKS
 R.C.E. No. 61930 EXP. 09/30/2009

CITY OF CORONA
 TYPICAL SECTIONS - FOOTHILL PARKWAY
 FOOTHILL PARKWAY WESTERLY EXTENSION
 DWG. NO. XX-XXXX
 1 of 2

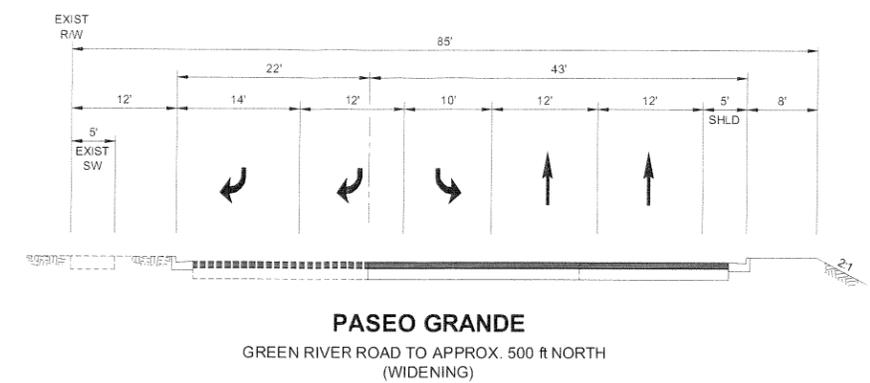
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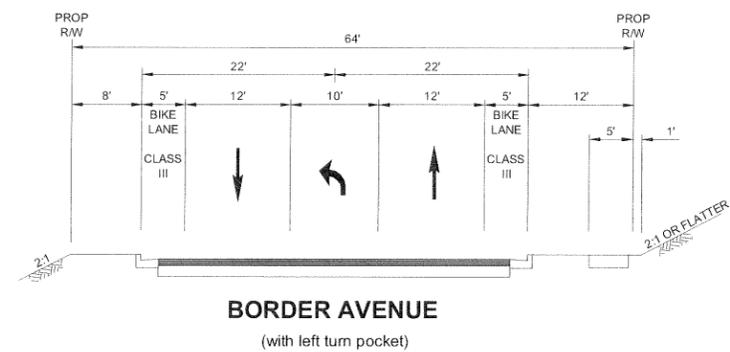
BORDER AVENUE



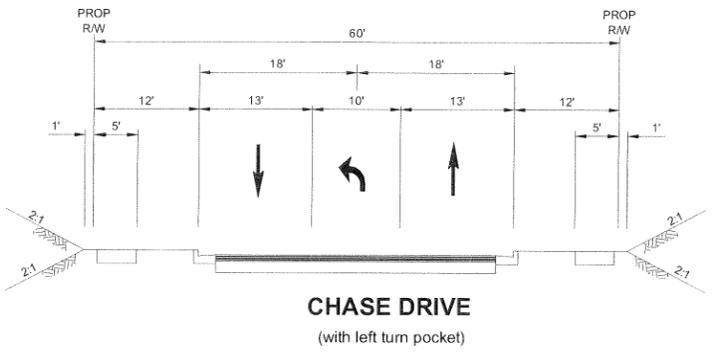
CHASE DRIVE



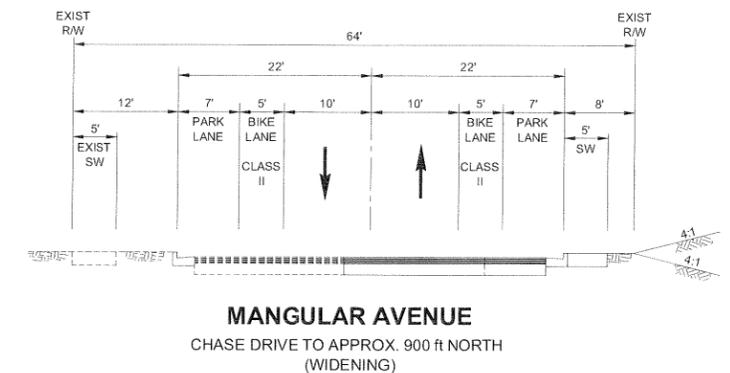
PASEO GRANDE
GREEN RIVER ROAD TO APPROX. 500 ft NORTH
(WIDENING)



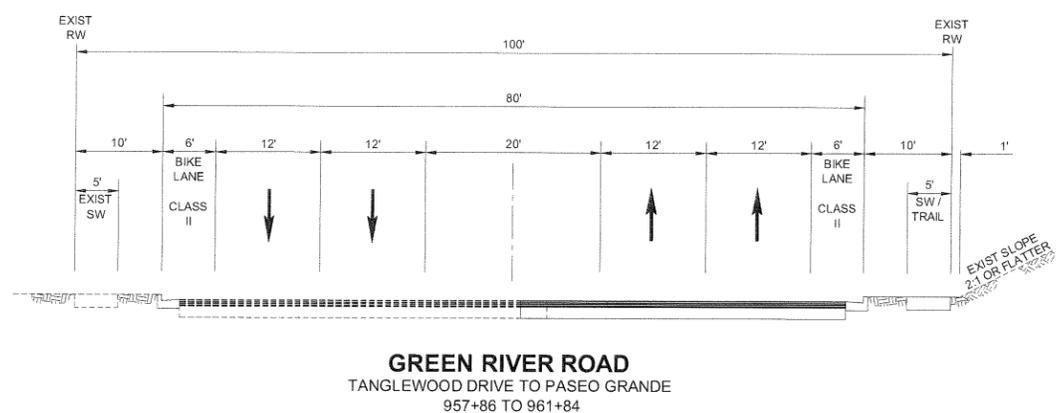
BORDER AVENUE
(with left turn pocket)



CHASE DRIVE
(with left turn pocket)



MANGULAR AVENUE
CHASE DRIVE TO APPROX. 900 ft NORTH
(WIDENING)



GREEN RIVER ROAD
TANGLEWOOD DRIVE TO PASEO GRANDE
957+86 TO 961+84

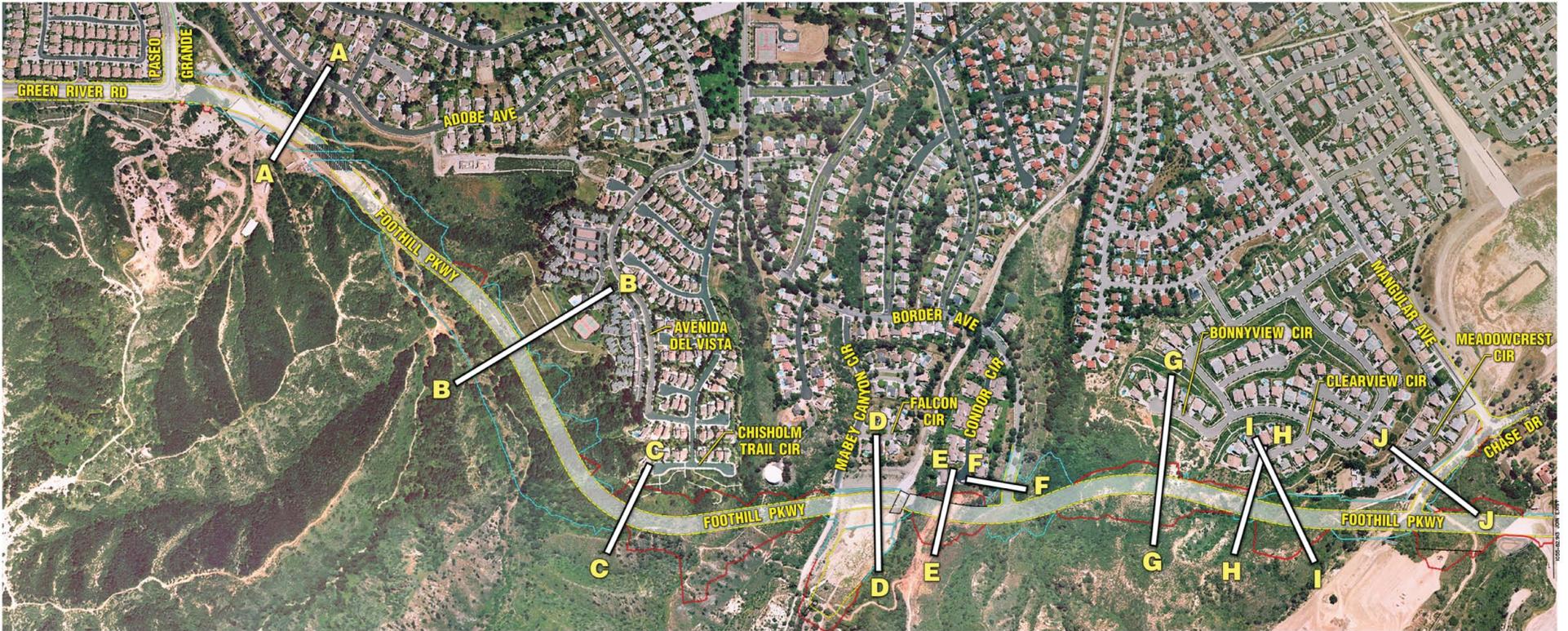
<i>[Signature]</i>	DATE
AMAD QATTAN	9/2/08
<i>[Signature]</i>	DATE
KIP D. FIELD	8/20/08
<i>[Signature]</i>	DATE
CLINT HERRERA	8/12/08
<i>[Signature]</i>	DATE
RAFAEL MARTINEZ	8/12/08

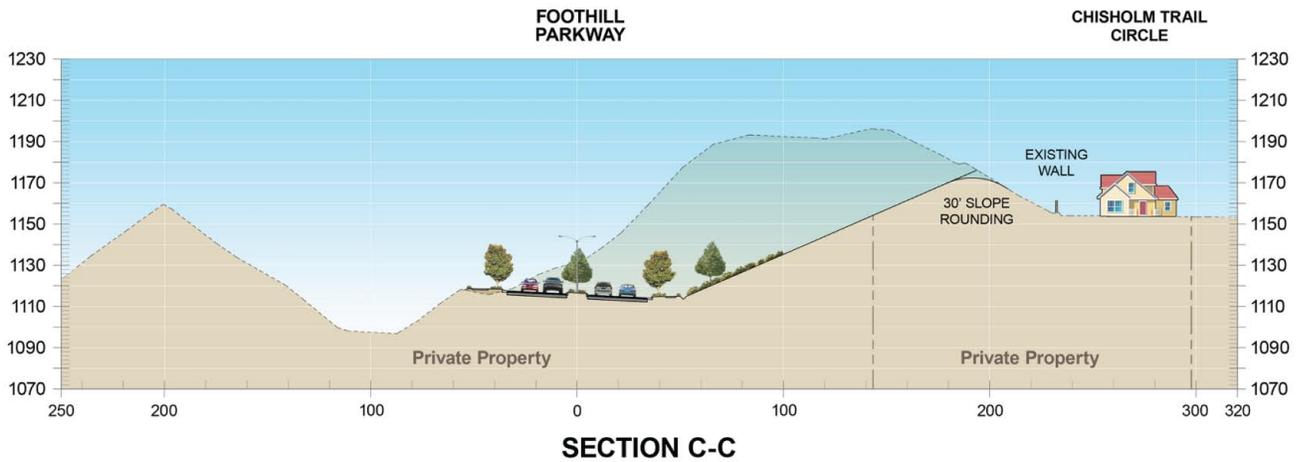
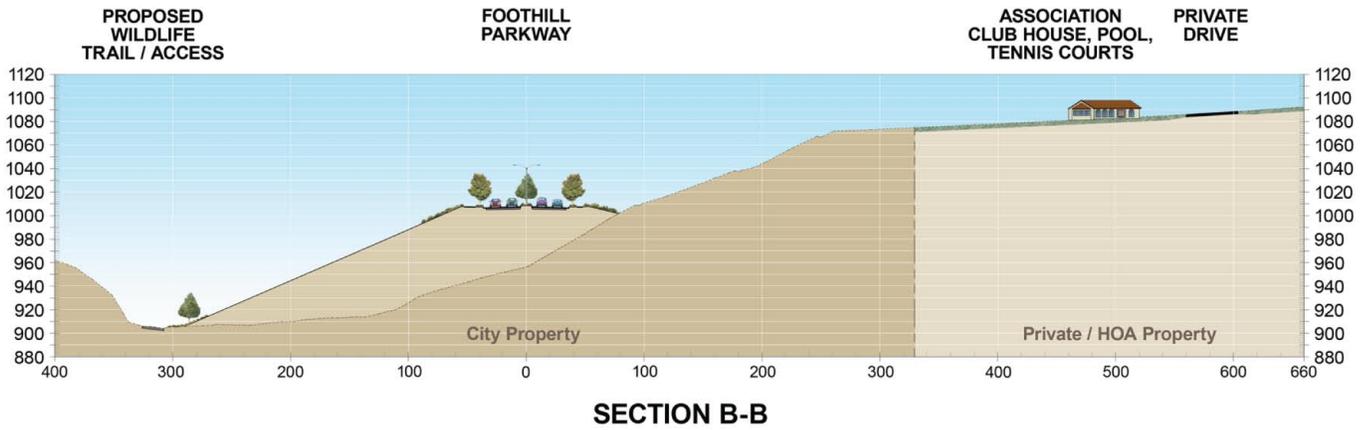
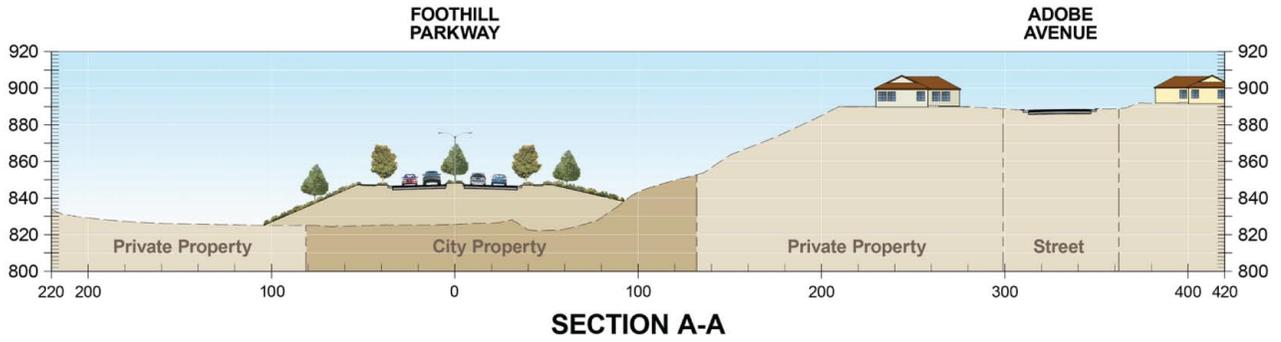


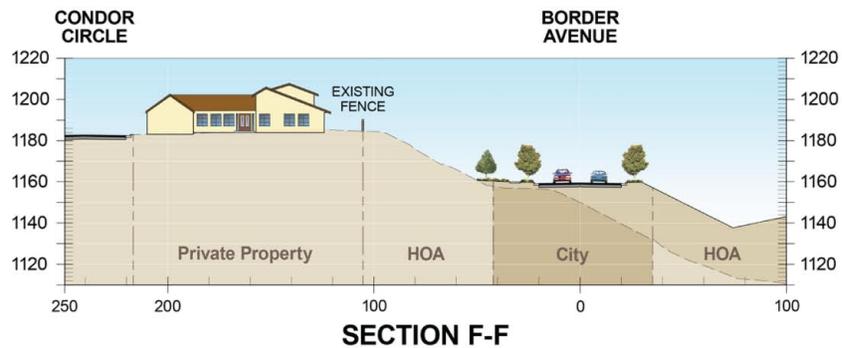
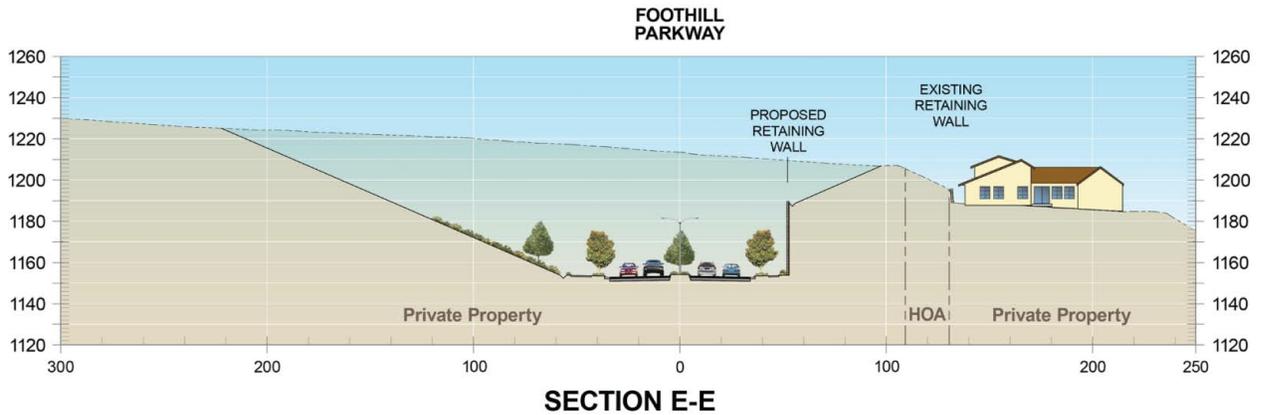
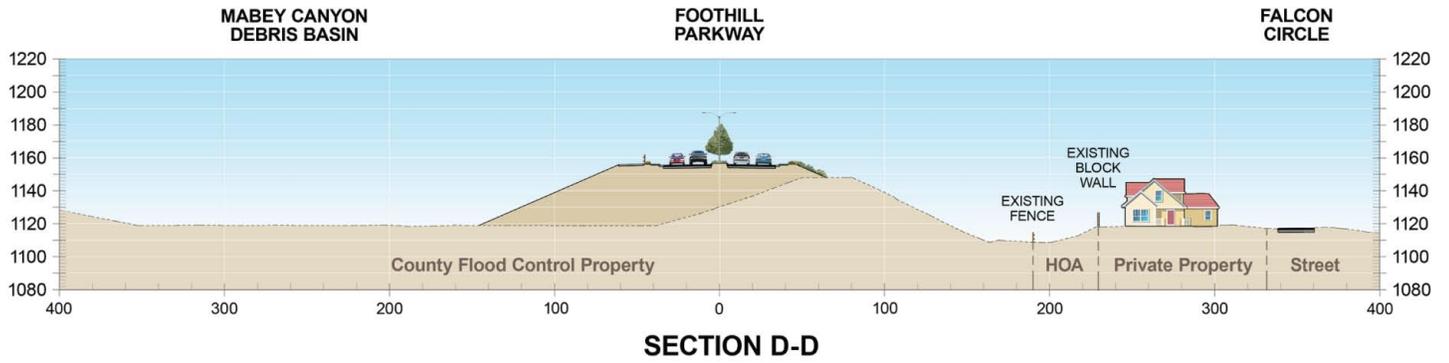
EXHIBIT 6B

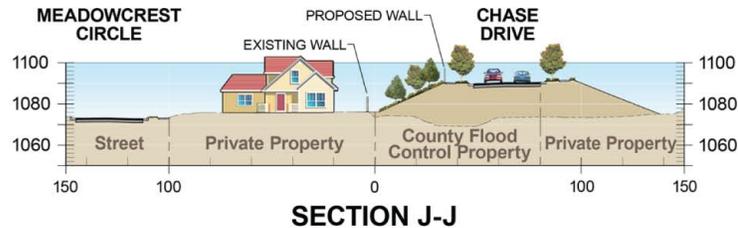
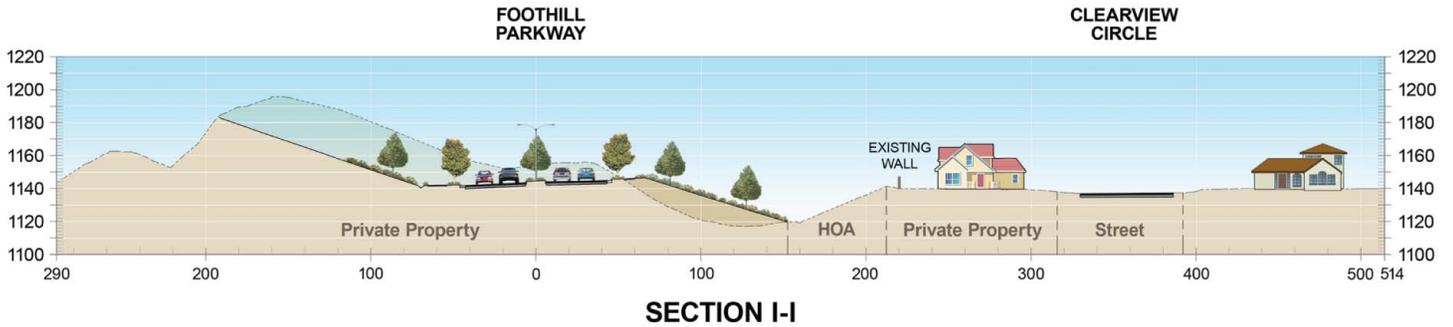
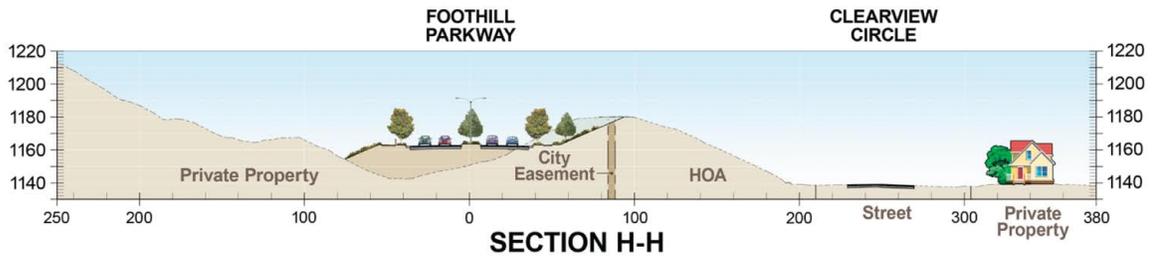
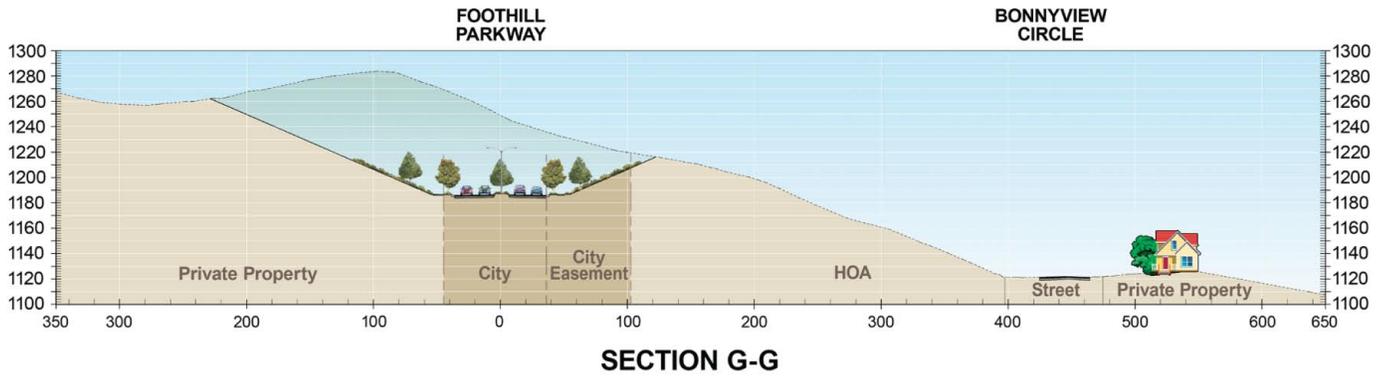
Underground Service Alert
Call: TOLL FREE
1-800-422-4133
TWO WORKING DAYS BEFORE YOU DIG

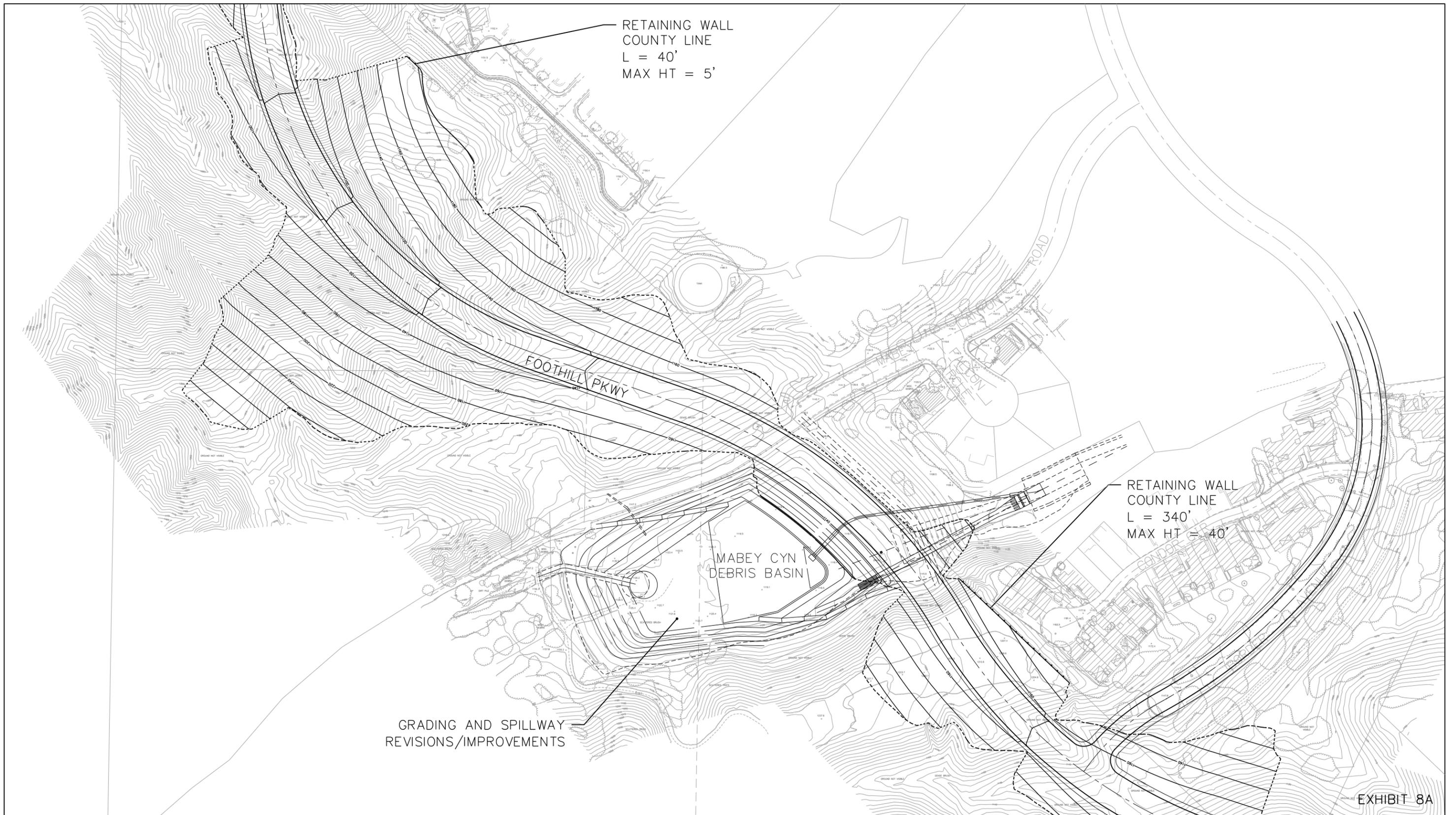
F:\Picta\10104629\CADD\Transp\Div\Typical\4629X002.dwg 08/12/08 - 3:50pm TRK:ETH











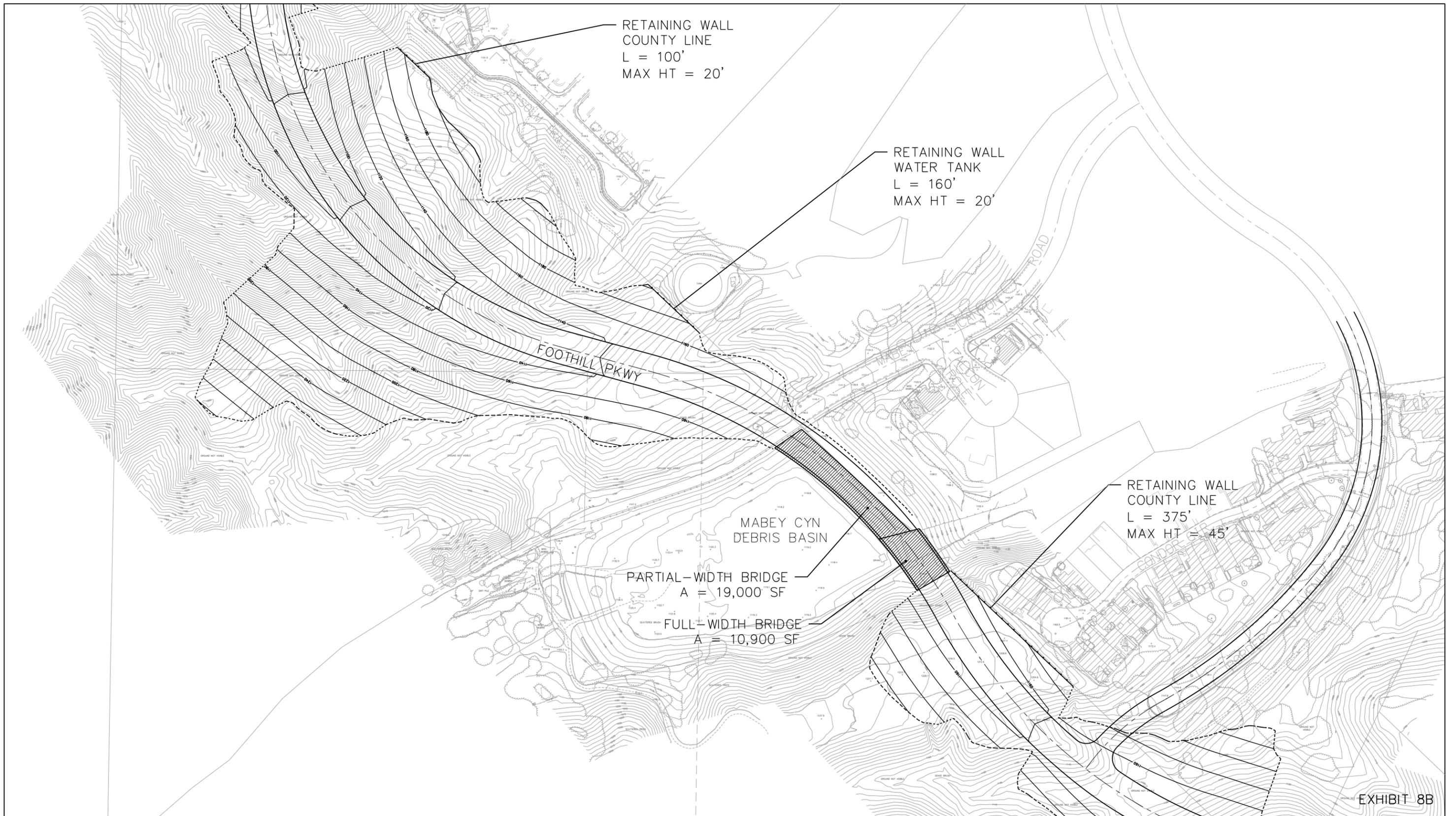
FOOTHILL PKWY WESTERLY EXTENSION – MABEY CYN AREA

PRELIMINARY ALIGNMENT – ALTERNATIVE 1 (BASE CONDITION)

REQUIRES GRADING/SPILLWAY REVISIONS AT DAM, RETAINING WALLS AT COUNTY LINE

EXHIBIT 8A

AUGUST 2006



FOOTHILL PKWY WESTERLY EXTENSION – MABEY CYN AREA

PRELIMINARY ALIGNMENT – ALTERNATIVE 2 (SHIFT ONTO MABEY CYN DAM)

ELIMINATES GRADING/SPILLWAY REVISIONS AT DAM. REQUIRES PARTIAL- AND FULL-WIDTH BRIDGES AT DAM, INCREASED/ADDITIONAL RETAINING WALLS

AUGUST 2006

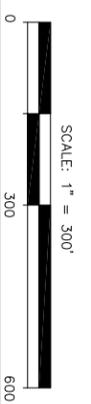
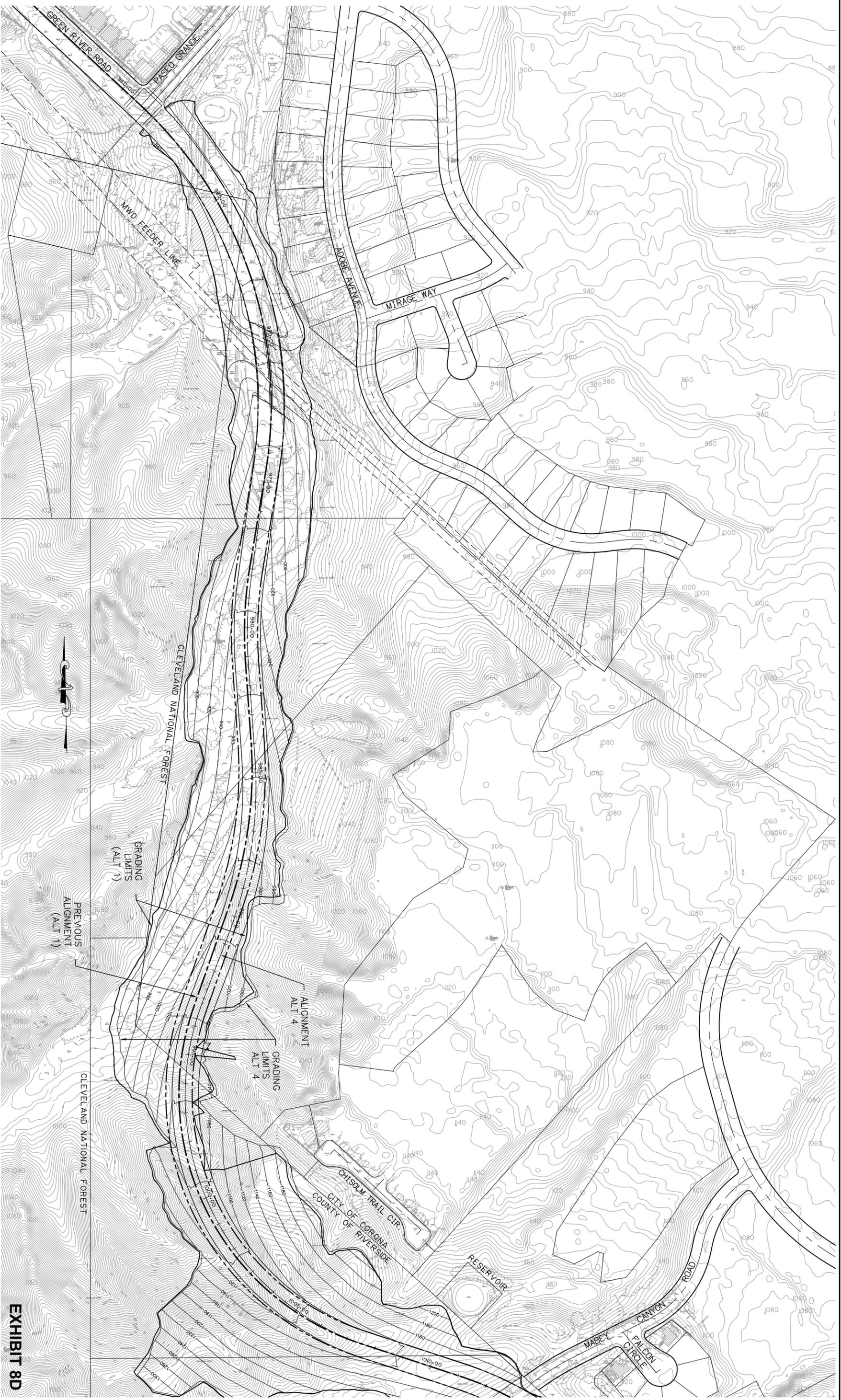


FOOTHILL PKWY WESTERLY EXTENSION – MABEY CYN AREA

PRELIMINARY ALIGNMENT – ALTERNATIVE 3 (BRIDGE OVER MABEY CANYON BASIN)

ELIMINATES GRADING/SPILLWAY REVISIONS AT DAM. FULL-WIDTH BRIDGE OVER BASIN AND MABEY CYN RD, MINIMAL RETAINING WALLS IN THIS AREA

AUGUST 2006



FOOTHILL PARKWAY WESTERLY EXTENSION
Alignment Study - Alt 4 - Horizontal Shift in Wardlow Cyn - avoid impact to Cleveland Nat'l Forest
August 2006

EXHIBIT 8D

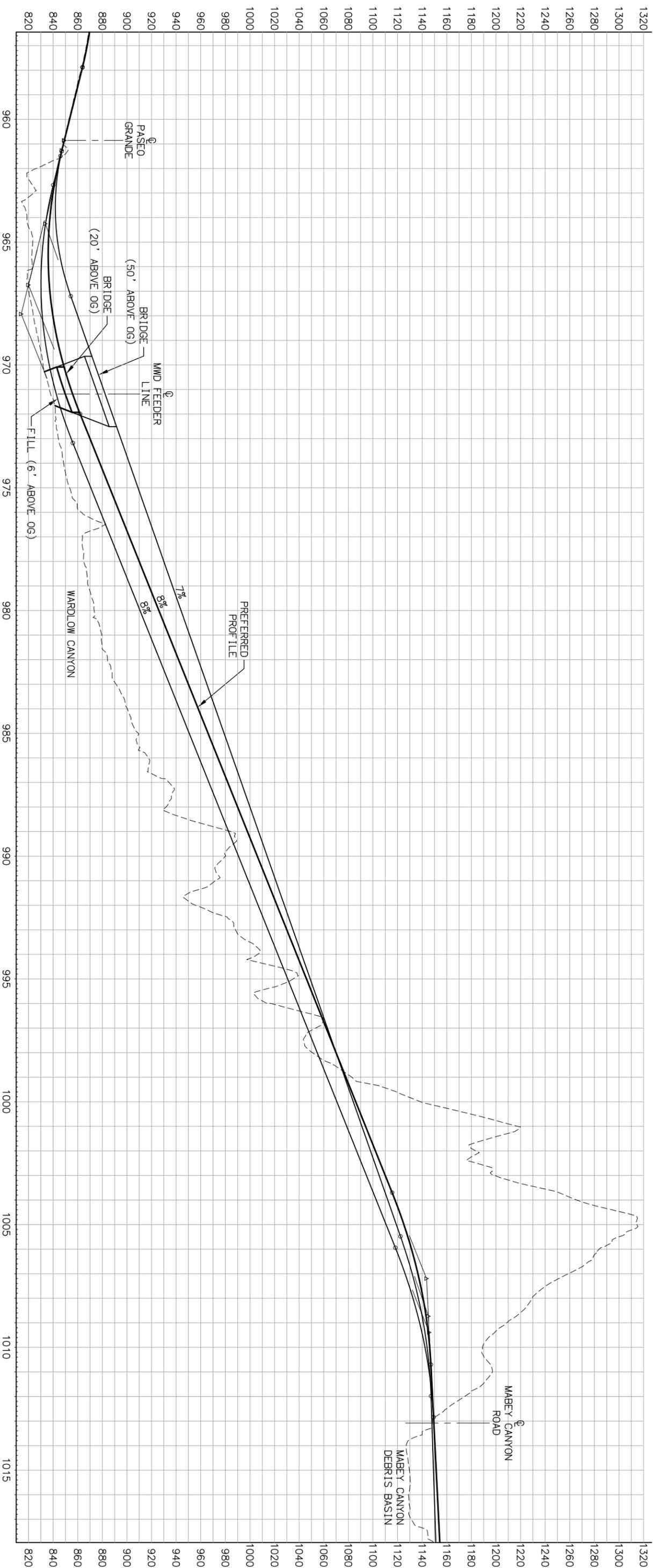
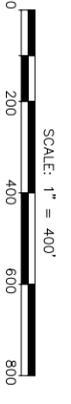


EXHIBIT 8E



Foothill Parkway

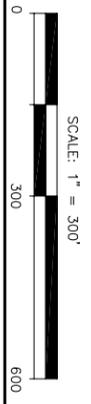
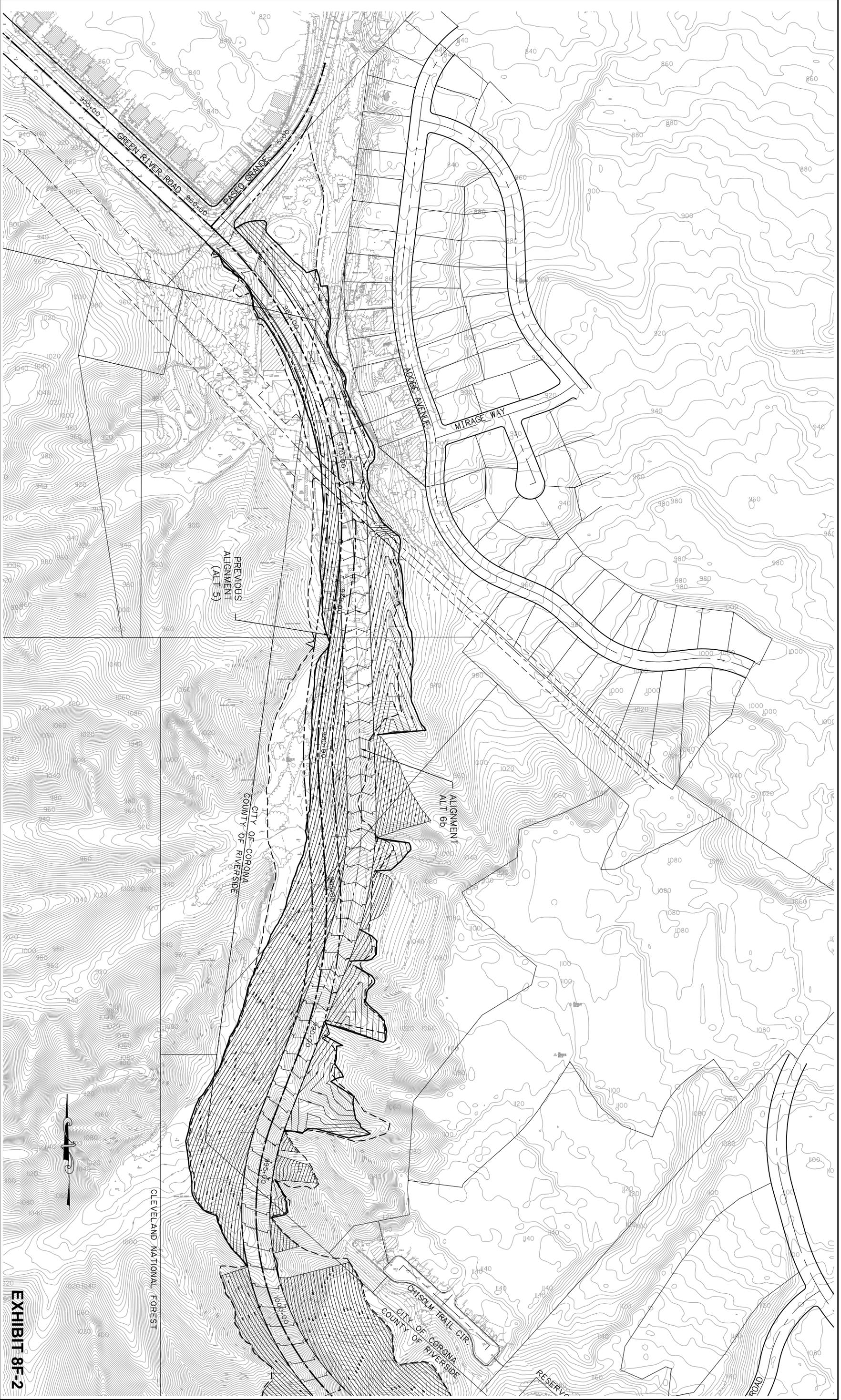
Horizontal Alignment shift alternatives to provide for Wardlow Wash trap channel

1/18/2007

	Pros	Cons	Assoc. Costs	
Original Alignment (Alt 5 w/ lowered profile)	<ul style="list-style-type: none"> - GEOMETRICS: Provides tangents between horizontal curves on 8% downgrade. - NOISE: Maintains farthest distance from existing homes 	<ul style="list-style-type: none"> - DRAINAGE: Will require approximately 750 linear feet of pipe within Wardlow drainage facility. 	Pipe = \$520K	Recommended Alternative
Alternative 6b		<ul style="list-style-type: none"> - DRAINAGE: Does not allow room for a trap channel along the length of Wardlow Wash. - EARTHWORK: Creates additional cut on the east side of the roadway. - NOISE: Places roadway closer to existing homes. 	Pipe = \$520K	Not Recommended
Alternative 6c	<ul style="list-style-type: none"> - DRAINAGE: Allows room for a trap channel along the length of Wardlow Wash 	<ul style="list-style-type: none"> - EARTHWORK: Creates additional cut on the east side of the roadway. - GEOMETRICS: Reversing 1400' curves on 8% downgrade. - AESTHETICS: Broken back curve at MWD. - BRIDGE COST: Increased skew at MWD, causes approx. 14% increase in length across easement (\$400K). - NOISE: Places roadway closer to existing homes. 	Trap = \$530K Bridge = \$400K (add'l) Total = \$930K	Not Recommended
Alternative 6d	<ul style="list-style-type: none"> - DRAINAGE: Allows room for a trap channel along the length of Wardlow Wash 	<ul style="list-style-type: none"> - GEOMETRICS: Reversing 1400' curves on 8% downgrade. - BRIDGE COST: Increased skew at MWD, causes approx. 11% increase in length across easement (\$320K). - NOISE: Places roadway closer to existing homes. 	Trap = \$530K Bridge = \$320K (add'l) Total \$850K	Not Recommended

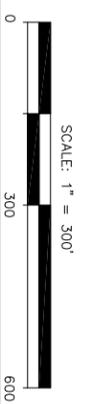
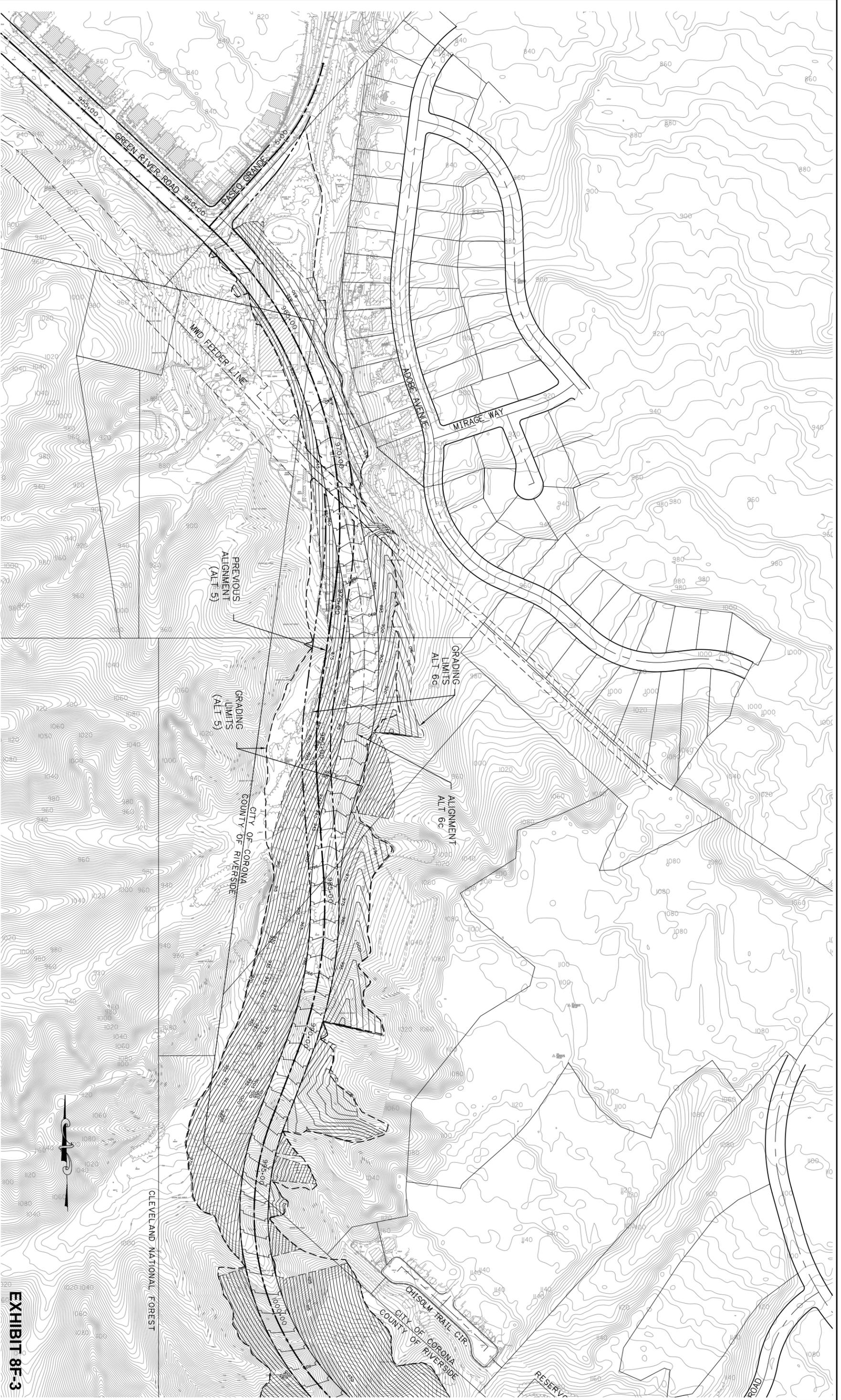
Assumptions:

1. Approximate materials costs for major drainage features in Wardlow Wash:
 - a. Concrete Trap Channel (approx 30' top width, 2:1 side slopes, 8" thick section) = \$710 per linear foot
 - b. 138" Concrete Pipe = \$690 per linear foot
2. Approximate cost of protection at MWD crossing for original alignment = \$2.9M



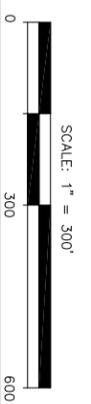
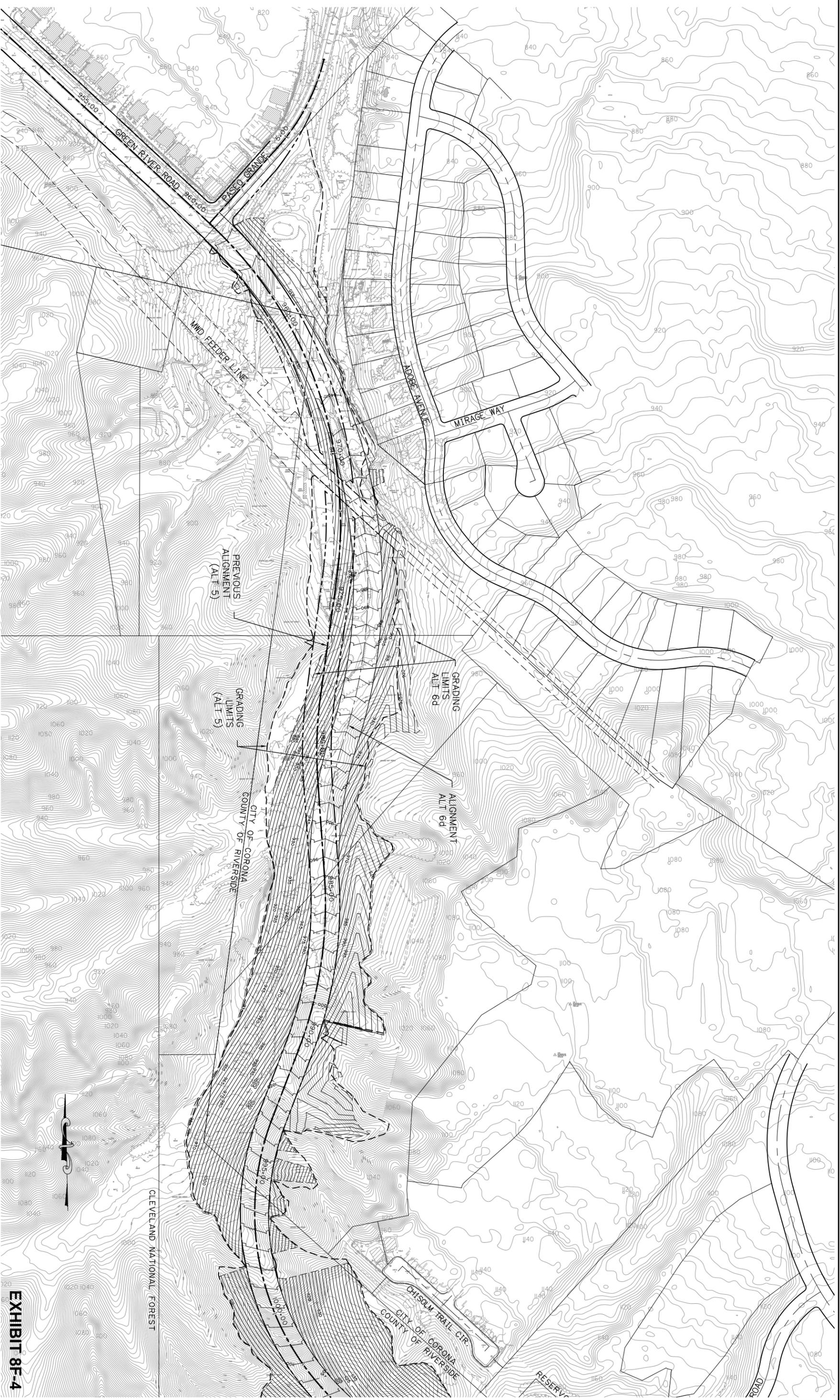
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Alignment Study - Alt 6b - Horizontal Shift (from Alt 5) to allow for Trap Channel in Wardlow Cyn
 January 18, 2007

EXHIBIT 8F-2



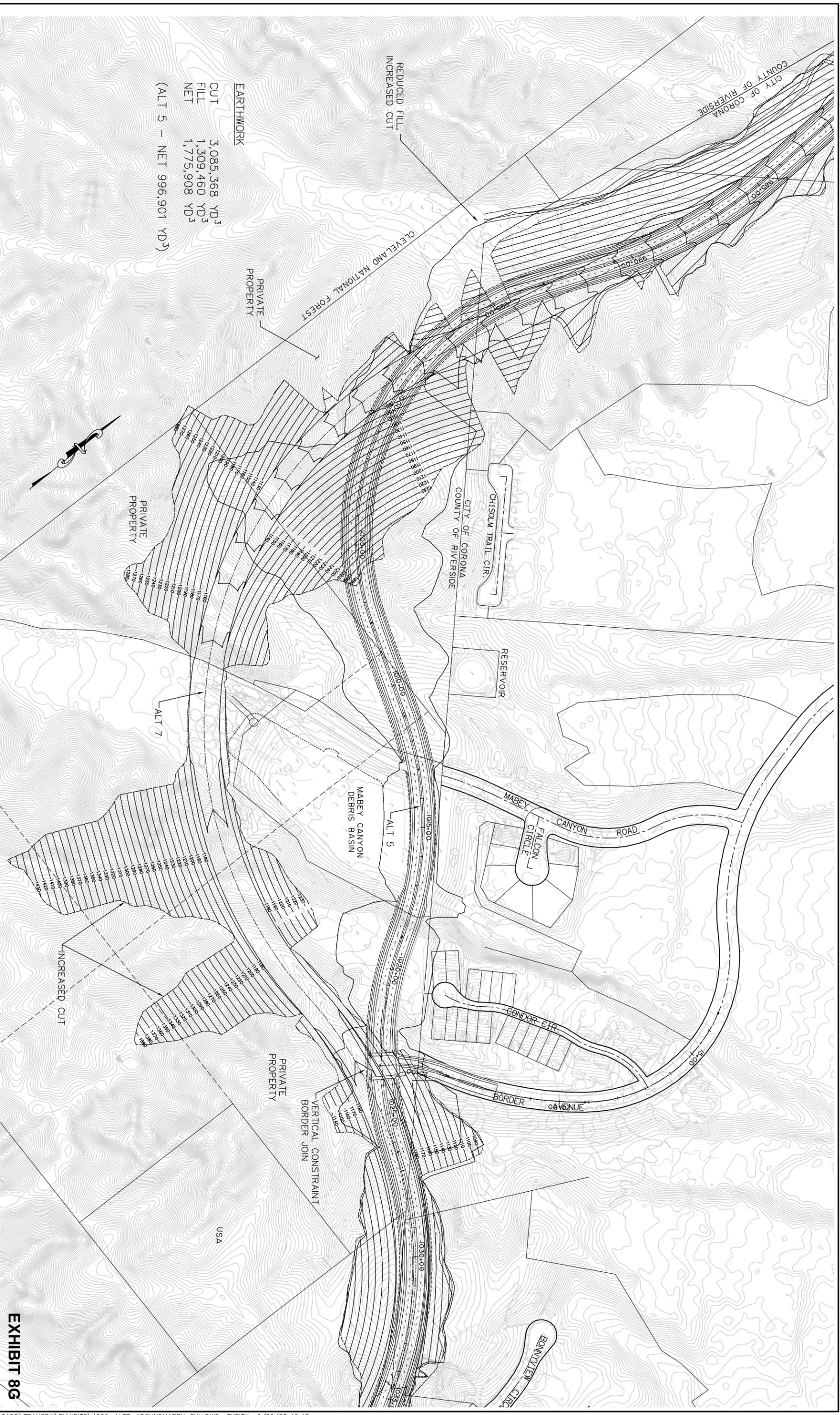
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 Alignment Study - Alt 6c - Horizontal Shift (from Alt 5) to allow for Trap Channel in Wardlow Cyn
 January 18, 2007

EXHIBIT 8F-3



FOOTHILL PARKWAY WESTERLY EXTENSION
Alignment Study - Alt 6d - Horizontal Shift (from Alt 5) to allow for Trap Channel in Wardlow Cyn
 January 18, 2007

EXHIBIT 8F-4

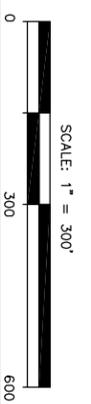


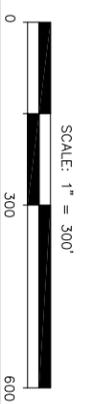
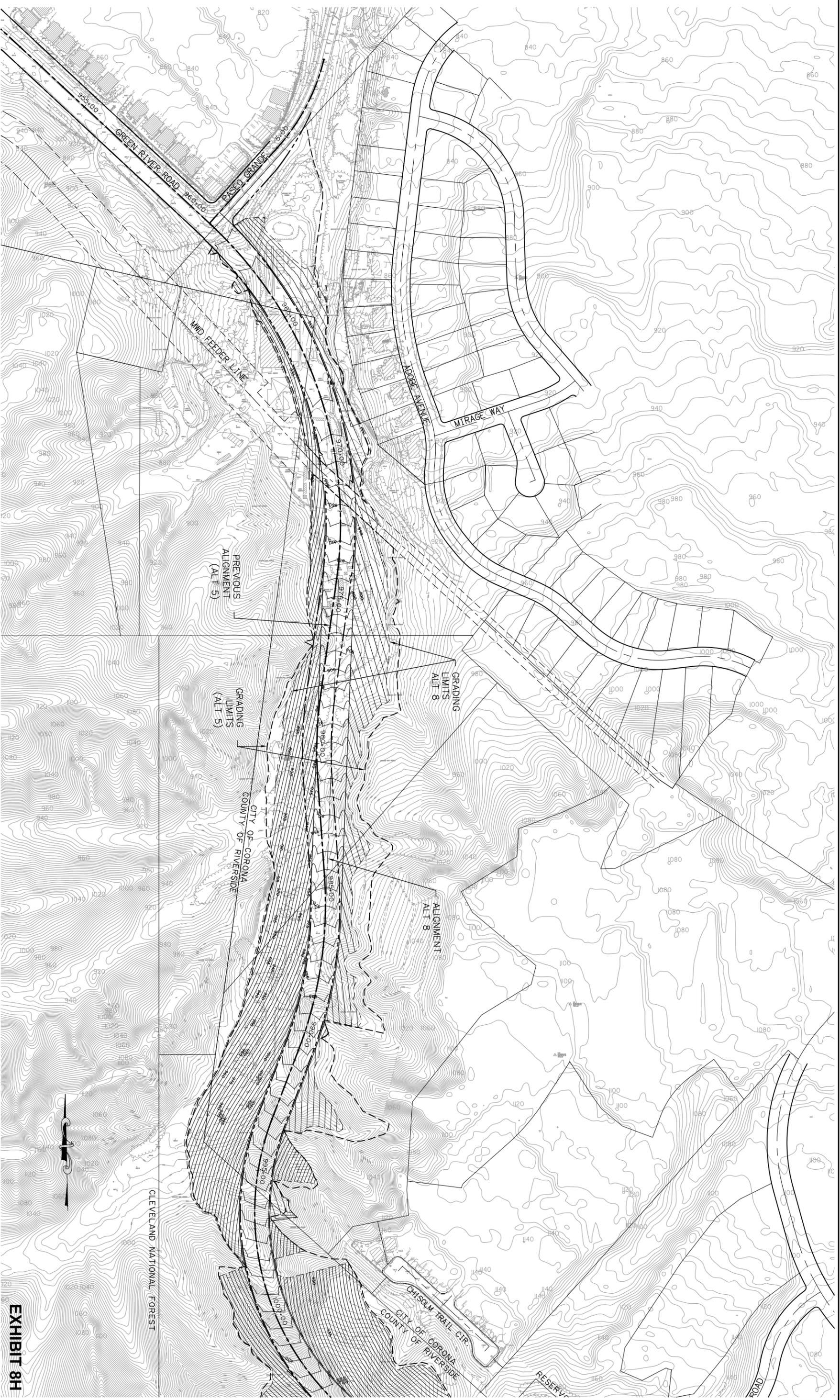
EARTHWORK

CUT	3,085,368	YD ³
FILL	1,309,460	YD ³
NET	1,775,908	YD ³

(ALT 5 - NET 996,901 YD³)

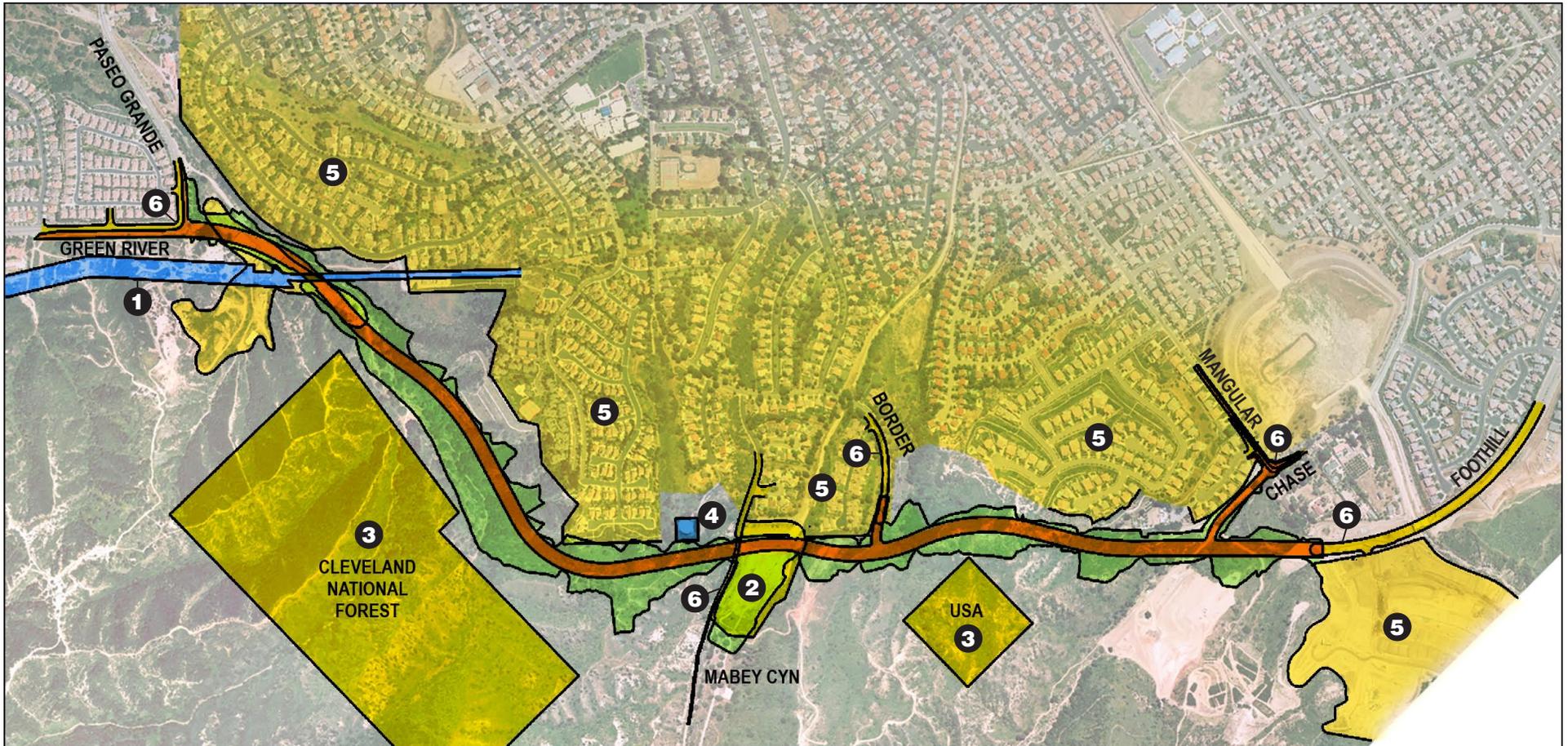
EXHIBIT 8G





FOOTHILL PARKWAY WESTERLY EXTENSION
Alignment Study - Alt 8 - Straightened Alignment through Wardlow Cyn
 March 2007

EXHIBIT 8H



- | | |
|-------------------------------------|----------------------------|
| 1 108" MWD Feeder Line | 4 Reservoir |
| 2 Mabeey Canyon Debris Basin | 5 Developed Areas |
| 3 Cleveland National Forest | 6 Existing Roadways |



MEETING MINUTES

JN 10-104629

TO: Attendees

FROM: Adrian Anderson

DATE: February 5, 2007

SUBJECT: Foothill Parkway Westerly Extension Project – Value Analysis Workshop

Attendees:

Name	Organization	Telephone	E-Mail
Steve Huff - Facilitator	RBF Consulting	(949) 855-3624	sjhuff@rbf.com
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Darin Johnson	RBF Consulting	(805) 383-3373	darinj@rbf.com
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Adrian Anderson	RBF Consulting	(949) 855-5780	atanderson@rbf.com

A Value Analysis (VA) Workshop was held at the City of Corona on Monday, January 29, 2007 to discuss alternative concepts for various aspects of the Foothill Parkway Westerly Extension Project by participants who were not part of the design team or agency reviews. The idea is that an independent review may lend a new perspective to benefit the project development process.

The City and the Design Team raised the following key considerations for the VA Team at the conclusion of the preceding project presentation meeting.

City and Design Team Key Considerations for VA Team

Roadway/Cross-Section

- The project is not encroaching into the Cleveland National Forest (CNF).
- Encroaching into CNF would require NEPA documentation, which would negatively impact the delivery and schedule of the project.
- Another project in the area is seeking a wildlife crossing between Chino Hills State Park and CNF, which may or may not have any bearing on this project.
- The MWD bridge crossing could provide trail and wildlife crossing opportunities as an environmental enhancement.
- There are only 3 local roadway connections in this 2-mile segment of Foothill Parkway.

- The 12' parkway width is a City standard, where parkway is 7' street adjacent and includes a 5' sidewalk.
- The City recommends modifying the typical cross sections to locate the sidewalk behind a 7' landscaped parkway.
- The originally proposed curb-adjacent sidewalk was an attempt to reduce the footprint in large cut areas while maintaining the City standard of 5' buffer/relief beyond the 12' parkway at the toe of cut slopes.
- Area behind the sidewalk is to provide 5' slough off area at toe of large cut slopes.
- The City said the 5' toe of cut slope buffer could be reduced to 2-3' from the toe of cut slopes.
- Between Border Avenue and Paseo Grande, the team assumed there would be a sidewalk on the south side of the roadway based on City direction.
- The City suggested considering a decomposed granite (DG) trail instead of a concrete sidewalk on the south side of the westerly segment of Foothill Parkway.
- The team looked at horizontal alignment shifts for Foothill Parkway, especially with 8% grades, but it resulted in undesirable horizontal alignment geometry.
- Where should irrigated landscaping end for slopes, at the bottom ten feet of slope as currently proposed or at the first terrace or higher?
- A dual-purpose use could be considered for the 15' wide City drainage-access road as a multi-purpose trail.
- The City asked about providing a fence adjacent to fill slopes along the DG trail.

Traffic/ Street Lighting

- Consider reducing street lighting from illuminating the entire length of the roadway (\$500k) to only providing safety lighting at intersections.
- The City suggested median street lighting with double mast arms.
- One stretch at Mabey Canyon does not include a median; therefore, street lighting would be required in the parkways at this location and at intersections.
- The City does not want Foothill Parkway to look like a freeway.
- Traffic issues are critical to the public outreach.
- The City would like to see traffic on Ontario Ave reduced to a reasonable volume.
- Freeway volume reduction may be a tough sell, just need to highlight reasons during public outreach efforts.

MWD Crossing

- The vertical profile grade has been increased from 7% to 8% to reduce the embankment elevation over the MWD crossing, which satisfies the Riverside County grade criteria for mountainous terrain.
- An at-grade crossing is less costly as it pertains to the MWD crossing.
- For MWD protection, consider the above ground arch with a pile footing instead of a spread footing considering the bedrock is approximately 10' below the pipe location.
- The team mentioned that a geotechnical engineer reviewed this alternative (see previous) and it is more costly than a spread footing.
- The MWD crossing is crossed by trails from a horse ranch, and the City would like to maintain trails into CNF and also consider wildlife crossings, therefore, the MWD bridge alternative may be appropriate from this standpoint.

Grading

- Near the west end of the alignment, the roadway profile was well above the canyon floor, now it is lowered to meet MWD pipeline crossing criteria, which creates a greater earthwork imbalance.
- Spoils could be used to create a 30' high contoured berm at a 3:1 slope to shield the roadway from residents and decrease export volumes.
- A trail or other recreation element could be included within the berm area.
- The City asked if the Design Team looked at reducing/balancing the total 1.5M CY of earthwork.
- Also, the City requested that the VA team look for opportunities to reduce export spoil, perhaps on an adjacent development area.
- The team did reduce earthwork by increasing grades from 7% to 8% (problem is the 1.2M CY cut through the hill near the top of the extended grade).
- Differences in export quantities for Foothill Parkway:
 - The team analyzed fill heights between 6' and 50' over the MWD pipeline.
 - Results showed that the difference is 900,000 CY of additional export to reduce the cover from 50' to 6' over the MWD pipeline.
 - The difference is 200,000 CY of additional export to reduce the cover from 50' to 20'..
 - The differences in export volumes are due to a reduction of roadway fill volumes.

Drainage

- Regarding drainage for Mabey Canyon Debris Basin, the City concurred with the currently preferred Alternative 2C.
- The City noted for Wardlow Canyon drainage that bulking the Q to allow for debris and sediment transport could be addressed by providing desilting/debris basins in advance of the inlets.
- Maintenance access needs to be addressed for inlets/outlets for drainage facilities.
- If possible, use a soft open-channel bottom, not concrete.
- The MWD bridge crossing could possibly be used for drainage considerations.

The City stressed the importance of the VA meeting. Also mentioned was the need to provide the highest project value to tax payers, not necessarily a lower project cost.

The VA team began deliberations once the project presentation meeting was concluded.

1. Identify Significant Project Features/Issues for Consideration

With only a few items accounting for nearly half of the project cost, major cost items would be targeted for consideration. The VA team focused on earthwork, roadway cross-section (specifically AC pavement and total width for cut/fill sections), Mabey Canyon Debris Basin, drainage – RCP, concrete channel, retaining walls, landscaping, and the PCC sidewalk. Other relevant issues were reviewed relative to the MWD crossing, design criteria, roadway alignment, environmental considerations (both for residential areas and for wildlife movement), and alignment constraints.

2. Alternatives Identification and Assessment

The VA team reviewed the alignment, grades, costs, and topography from project plans.

Wardlow Canyon Drainage (responsible party in parenthesis)

- What is the advantage of having an open channel? (City, Design Team)
- Why was an open channel considered for certain segments as opposed to a pipeline for the entire length? (City, Design Team)
- There is a parallel RCP storm drain system within Foothill Pkwy (approx. 1,700 LF). Could it be removed and consolidated with the Wardlow Canyon drainage system via lateral drains? (Design Team)
- Would there be a water quality issue with mixing runoff waters within the proposed Wardlow Canyon drainage system from the natural canyon and roadway volumes? (Design Team)
- Change the open channel in Wardlow Canyon to a pipe to increase fill within the canyon area (west end of project). (City, Design Team)

Roadway/ Alignment (responsible party in parenthesis)

- AASHTO maximum grade is 9% in mountainous terrain, but is 8% for urban setting.
- Alignment itself has many constraints that anchor the alignment horizontally.
- Moving the alignment north near the west end of the project would be a negative impact on residential area.
- Horizontally splitting the alignment by direction by increasing the median width was discussed, but this would require steeper than 8% grade.
- A potential wildlife corridor constraint is created near the end of the currently proposed trapezoidal channel where there is not much clearance between the channel, roadway, and the slope. Consider realigning Foothill Pkwy somewhat to allow for wildlife migration (if any). (Design Team)
- The shallow reverse curves within the extended 8% grade section could possibly be straightened without creating new cut by a higher profile and a tangent alignment from STA 973+00 to 986+00 (also increases natural corridor link width). (Design Team)
- Is street lighting needed all the way along Foothill Pkwy? (City, Design Team)
- Median street lighting placement may reduce ability to shield lights versus placing lighting along shoulders. (Design Team)
- Consider not including lighting or greatly increasing spacing (could be different on each side of roadway) as environmentally friendly option near CNF and residential areas. (City, Design Team)
- Street lighting may be desirable for illuminating sidewalk areas, although it was noted that some major streets don't have street lighting in long stretches (e.g. Newport Coast Drive, Irvine Boulevard).
- A tunnel concept for the major cut area was discussed. The tunnel length would be approximately 1200', and assumed as a dual-bore, longitudinally ventilated facility with a cost of roughly \$40k/LF, would come to roughly \$48M. The high costs appear to be prohibitive as would be the geometry of an 8% slope within the tunnel; therefore, the concept was ruled infeasible.
- Removal of irrigated vegetation for 13' height of slopes was considered. This may not result in a large enough project cost savings to be considered further. (Design Team)

- Sidewalk at a sustained 8% grade may incur ADA considerations and added costs. (City, Design Team)
- Eliminate concrete sidewalk and replace with DG path. May look like rural city street. Likely only recreational pedestrian use. (City, Design Team)
- DG may be perceived as a benefit by users. Reduces impervious area (reduces about ½ acre of concrete) and reduces cost. (Design Team)
- If there are no facilities on south side of Green River Road, then does creating a trail/sidewalk along south side of Foothill Parkway prompt construction of new facilities along Green River Road? (City, Design Team)
- Don't need sidewalk along any length of south side of Foothill Pkwy between Chase and Green River Road/Paseo Grande. (City)
- How is R/W being considered? Where is the cost being tracked/managed? (City, Design Team)

Traffic (responsible party in parenthesis)

- Regarding the east-west traffic volume graphic, would it increase volumes on north-south streets? (Design Team)
- With connection of Chase and Border Avenue to Foothill Pkwy, how are those streets impacted? (Design Team)
- A traffic analysis was completed, but results were not readily available to the VA team.

Grading/ Bridge (responsible party in parenthesis)

- Cut slope steeper than 2:1, pending geotechnical review. (Design Team)
- Push daylight lines for fill to near the City Limits boundary. (Design Team)
- Increase height/width of the spoil "berm" and backfill to create a new fill slope while considering aesthetics (Note: May not want to widen parkway bench cross-section in fill areas). (City, Design Team)
- With the quantity of material, reducing export volumes will be crucial.
- Can using a larger "bench" within the roadway-plane reduce export by increasing fill slopes (i.e. create a larger parkway width)? (Design Team)
- Is the large retaining wall (30' high by 300' long) for private development on the south side of Foothill Pkwy near the east end? (Design Team)
- If cut slope can be increased, cost savings for shorter retaining wall and earthwork can be realized. (Design Team)
- A reservoir is located above Mabey Canyon on north side of roadway. Can cut slope be increased below the reservoir? (Design Team)
- Different spoil amounts for 20' fill versus 6' fill over the MWD crossing was highlighted.
- It appears that there is not much benefit going from 20' fill to 6' fill as additional earthwork export cost offsets cost of bridge.
- Bridge would have roughly 14' vertical clearance.
- It does seem that there are many benefits to having a bridge at the MWD crossing. May slightly reduce cut through large hill and increase fill by virtue of the higher profile.
- Bridge also reduces the risk of a contractor adjusting bid prices for earthwork.
- Earthwork difference from 50' to 20' fill at MWD was only 200,000 CY. Why is the difference is so small compared to the 700,000 CY incremental difference in export from 20' to 6' fill., is this correct? (Design Team)
- Can still apply a berm with 20' fill for the MWD bridge crossing.

- If raise bridge by maybe a few feet, can possibly maximize fill quantity, help balance the site while not greatly increasing structure costs, and increase vertical clearance of the structure. (Design Team)
- The VA team mentioned that if the profile is raised, then a cost savings for earthwork is potentially realized, and could offset increased costs for a bridge crossing over MWD, which apparently is the superior alternative as it also provides other benefits as trail/wildlife crossing. (Design Team)
- Consider that the MWD easement does not include an accommodation for additional fill heights greater than 6' over existing.
- Direction for designers would be better for determining earthwork balancing once the MWD crossing is determined. (City)
- Try moving export into the canyon area with the berm, and backfill the berm on north side instead of creating the "berm hill". (Design Team)
- Near the intersection of Border Avenue/Foothill Parkway, could create a flat area with additional fill for potential City View Park (similar concept was applied along Newport Coast Drive in Orange County). Provides benefit for residents with easy pedestrian access. (City)
- Creating designated parks will require additional consideration for street furniture, maintenance, lighting, access, etc. (City, Design Team)
- Consider potential alternative bid options (e.g. open channel vs. pipe). (Design Team)

Drainage (responsible party in parenthesis)

- The Mabey Canyon Debris Basin was discussed, as it is a large capital cost. However, without additional data, and based on the fact that it appears as though it satisfies the flood control district, no further suggestions are offered.
 - Wardlow Canyon pipe vs. open channel (refer to Wardlow Canyon discussion above).
 - Any special water quality considerations for previous drainage concept? (Design Team)
 - Can 6'x8' RCB at Chase be replaced by RCP? (Design Team)
 - East and west of Mabey Canyon there may exist opportunities to fill and create view parks with pedestrian access provided from Border Avenue. Additional opportunities may exist elsewhere. (Design Team)

Typical Section (responsible party in parenthesis)

- Consider contour grading by varying the parkway width through large cut sections (say from 5' to 12') while maintaining standard lane and shoulder widths.
 - Would need to show cost savings to justify reduction of parkway standards for contour grading. (Design Team)
 - Consider < 10' median within cut. (City, Design Team)
 - Consider > 10' median in fill. (City, Design Team)
 - Parkway widths modified (hinges). (City, Design Team)
 - Reduce - Cut <12' vs. 12'
 - Increase - Fill > 12' vs. 12'
 - Consider 11' lanes vs. 11.5' or 12' lane(s) for #2 lane only (saves asphalt and earthwork). (City)
 - Reduce < 8' shoulder if significant cost savings. [6' to allow bike lane width (may create issue for parking)]. (City, Design Team)
 - Reduce gutter pan to < 24". Cost of reducing concrete gutter offset by increased asphalt, may not be significant cost savings. (City, Design Team)

- Eliminate 5' sidewalk on south side between Paseo Grande and Border Avenue only, or all the way to the end of the project. (City)
- If 12' parkway remains, consider 4:1 in parkway portion through cut. (Design Team)
- North side – In fill area use a 7'+ parkway width, 5' sidewalk, 5' hinge. (Design Team)
- Separate sidewalk from roadway in fill and elevate above roadway to maximize fill volume if feasible. (City, Design Team)

3. Value Added Discussion (responsible party in parenthesis)

Additional items that may or may not have a beneficial impact on project costs, but have other potential non-cost benefits are included for further consideration (responsible party in parenthesis):

- MWD bridge crossing will provide auxiliary benefits of recreational access and wildlife crossing opportunities. (City, Design Team)
- Consider rubberized AC to increase use of recycled materials, potential reduction of roadway noise for residents, potentially improve traction on grades (~20% cost increase). (City)
- Create City View Parks using additional fill. (City, Design Team)
- Consider rip-rap, cobbled-stone, or colored concrete versus plain concrete for terrace drains (would it be visible?). (City, Design Team)
- Replace concrete sidewalk on north side of Foothill Pkwy with a DG trail (save costs and reduce impervious area). (City)
- City master plan for ATMS includes communication connection in Foothill Pkwy. Installing conduit and pull boxes at this time would be desirable. (City)
- Provide contour grading of slopes and berms to replicate natural contours with minimal added cost. (City, Design Team)

4. VA Summary/Recommendations

Without the benefit of additional data or technical studies, the following recommendations are summarized for further consideration (responsible party in parenthesis):

- Provide for a bridge crossing of the MWD pipeline. (City, Design Team)
- Raise the profile within the extended grade portion of Foothill Parkway to reduce export material. (Design Team)
- Provide additional fill in certain canyons to create recreational view park opportunities. (City, Design Team)
- Increase cut slope ratios upon geotechnical study findings. (Design Team)
- Change the open channel in Wardlow Canyon to a pipe to increase fill within the canyon. (City, Design Team)
- Eliminate Foothill Parkway storm drain and consolidate drainage with Wardlow Canyon RCP via cross drains. (City, Design Team)
- Reduce/increase cross-section widths in cut/fill sections. (City, Design Team)
- Remove sidewalk and/or trail on south side of Foothill Parkway. (City)
- Decrease amount of street lighting (except for safety lighting at intersections). (City)
- Consider Value Added Discussion items (see #3 above). (City, Design Team)
- Evaluate other considerations noted in the discussion above (e.g. reducing curb and gutter pan width, etc.). (City, Design Team)

A follow up implementation meeting to the Value Analysis Workshop should be considered.

cc: Amad Qattan - City of Corona, Ned Ibrahim - City of Corona, Khalid Bazmi - City of Corona, Steve Enna - City of Corona, Gary Warkentin – RBF Consulting

FOOTHILL PARKWAY WESTERLY EXTENSION TRAFFIC ASSESSMENT

City of Corona

Prepared for

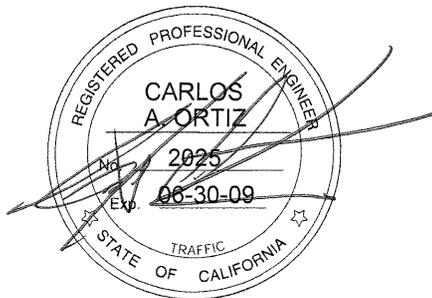


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June 2008

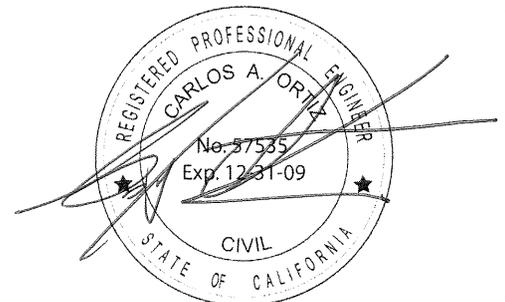


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INTRODUCTION

The proposed Foothill Parkway Westerly Extension project is located in the southern portion of the City of Corona along the base of the Santa Ana Mountains. It is a new roadway, approximately two miles in length. RBF has conducted a traffic assessment of forecast traffic volumes for opening year and build-out conditions, assumed for this project to be years 2010 and 2025, respectively. This assessment evaluates traffic operations for several project scenarios, including with and without the proposed Foothill Parkway Westerly Extension and other alternatives. This traffic assessment is based on travel demand modeling prepared by *Meyer, Mohaddes Associates* (MMA) for the proposed project, utilizing the City's approved General Plan traffic model, and will serve as a reference for the project's environmental document and Basis of Design report.

The proposed project consists of constructing Foothill Parkway between the terminus of Green River Road at Paseo Grande to the existing westerly terminus of Foothill Parkway, in the vicinity of Skyline Drive. Figure 1 shows the project site location and circulation system in the project vicinity. The proposed project will provide additional east-west corridor capacity in the City of Corona by connecting Green River Road to Foothill Parkway. The proposed Foothill Parkway Westerly Extension is planned to be constructed as a four-lane divided roadway, consistent with the City of Corona General Plan Circulation Element, which identifies the roadway as a Secondary 4-Lane Arterial roadway. Additional improvements related to the proposed project include connections and modifications to Border Avenue and Chase Drive. Modifications will also be made to Mangular Avenue, Green River Road, and Paseo Grande. Signalized intersections are proposed on Foothill Parkway at Paseo Grande, Border Avenue, and Chase Drive.

EXISTING CONDITIONS

Currently, Green River Road extends from State Route 91 (SR-91) east to Paseo Grande, and Foothill Parkway extends west from Interstate 15 at El Cerrito Road to approximately 600 feet west of Skyline Drive. Green River Road, between Tanglewood Drive and Paseo Grande, is a two-lane divided roadway with a continuous left-turn lane and curb, gutter, and sidewalk on the north side of the roadway. West of Tanglewood Drive, Green River Road is a four-lane divided roadway with a continuous left-turn lane and curb, gutter, and sidewalk on both sides. Paseo Grande is a two-lane divided roadway with a continuous left-turn lane. The westerly side of Paseo Grande is constructed with curb, gutter, and sidewalk. Foothill Parkway, at its current westerly terminus, is a four-lane divided roadway with a raised landscaped median and curb, gutter, and sidewalk on both sides. Border Avenue is a two-lane undivided roadway with curb, gutter, and sidewalk on both sides. Chase Drive is a two-lane undivided roadway with no curb or sidewalk. Mangular Avenue is a two-lane undivided roadway with curb, gutter, and sidewalk on the westerly side only.

TRAFFIC ANALYSIS METHODOLOGY

TRAFFIC MODEL

The traffic analysis conducted for this project utilized the City of Corona General Plan travel demand model to analyze forecast years 2010 and 2025, for both “with project” and “without project” conditions, as well as alternative scenarios. Travel demand models are intended to be most accurate at the arterial and freeway level, and provide an overall “big picture”, global perspective. The City of Corona also performed a more detailed analysis, focusing on local collector streets Border Avenue and Mangular Avenue, and their surrounding neighborhood (see the “Focused Neighborhood Traffic Study – Year 2010” section in this report).

Year 2010 is the approximate project Opening Day, and accounts for existing conditions, as well as a proportion of the planned local and regional transportation and land use improvements, relative to total build-out. The Build-Out scenario, year 2025 for this project, incorporates all of the local and regional transportation and land use improvements expected by that time, including the potential future Riverside County-Orange County corridor. In 2005, the Riverside County-Orange County Major Investment Study was conducted which examined five corridors to relieve congestion on SR-91. Corridor B, the extension of the planned Mid County Parkway to Orange County via a tunnel, was the corridor assumed in this traffic model.

Average daily traffic (ADT) counts were collected in year 2006 to refine approach and departure volumes included in the travel demand model in the vicinity of the proposed project. Figure 2 shows year 2006 (existing) ADT volumes for roadways in the vicinity of the proposed project.

In accordance with typical industry methods for forecast traffic volumes, the forecast year 2010 and 2025 conditions traffic volumes were conservatively determined by adding model forecast traffic growth to recently collected year 2006 traffic counts. Refinements to the travel demand model included the following steps:

- Modify the travel demand model roadway network to include the proposed Foothill Parkway Westerly Extension alignment and the proposed Border Avenue and Chase Drive connections;
- Run the model for 2025 using City of Corona Buildout land use information consistent with the General Plan;
- Calculate model volume growth between year 2001 and year 2025; and
- Apply traffic model forecasted growth of 4 years to year 2006 traffic volumes to determine forecast year 2010 traffic volumes, and 19 years to determine forecast year 2025 traffic volumes.

PROJECT SCENARIOS

Utilizing the travel demand model, Meyer, Mohaddes Associates provided RBF with forecast ADT volumes for years 2010 and 2025 for the following project scenarios. The resulting ADT volumes are shown in Figures 3 through 14.

- Without Foothill Parkway Westerly Extension (No Project);
- With Foothill Parkway Westerly Extension, with connections to both Border Avenue and Chase Drive (Proposed Project);
- With Foothill Parkway Westerly Extension only, no connections to Border Avenue or Chase Drive;
- With Foothill Parkway Westerly Extension, with connection to Border Avenue only;
- With Foothill Parkway Westerly Extension, with connection to Chase Drive only; and
- With Foothill Parkway Westerly Extension – 2-Lane Reduced Width, with connections to Border Avenue and Chase Drive

STUDY AREA ROADWAYS

The following fourteen roadways in the vicinity of the project area were analyzed as part of this assessment:

- 6th Street west of Smith Avenue;
- 10th Street west of Lincoln Avenue;
- Green River Road west of Palisades Drive;
- Serfas Club Drive south of SR-91;
- Paseo Grande north of Foothill Parkway;
- Ontario Avenue east of Paseo Grande;
- Ontario Avenue east of Lincoln Avenue;
- Green River Road west of Paseo Grande;
- Foothill Parkway east of Paseo Grande (with Project scenarios only);
- Foothill Parkway east of Lincoln Avenue;
- Upper Drive south of Foothill Parkway;
- Border Avenue north of Foothill Parkway;
- Mangular Avenue north of Foothill Parkway; and
- Lincoln Avenue north of Foothill Parkway.

TRAFFIC ANALYSIS – AVERAGE DAILY TRAFFIC VOLUMES

YEAR 2010

Foothill Parkway Westerly Extension with Border Avenue and Chase Drive Connections (Proposed Project)

Table 1, below, shows existing year 2006 Average Daily Traffic (ADT) volumes for the study area roadways, as well as forecast year 2010 ADT volumes for the “without project” (No Project) and “with project” (Proposed Project) scenarios.

Table 1
Forecast Year 2010 ADT Volume Summary
Foothill Parkway Westerly Extension with Border Avenue and Chase Drive Connections

Roadway Segment	Existing Year 2006	Forecast Year 2010 Without Foothill Parkway Extension	Forecast Year 2010 With Foothill Parkway Extension ¹	Decrease in 2010 ADT Volumes (Percent Change)	Increase in 2010 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	30,100	28,400	-1,700 (6%)	N/A
10 th St w/o Lincoln Ave	16,500	19,300	18,400	-900 (5%)	N/A
Green River Rd w/o Palisades Dr	18,700	25,100	26,600	N/A	+1,500 (6%)
Serfas Club Dr s/o SR-91	16,500	16,500	10,600	-5,900 (36%)	N/A
Paseo Grande n/o Foothill Pkwy	12,200	12,200	5,300	-6,900 (57%)	N/A
Ontario Ave e/o Paseo Grande	12,200	12,200	7,300	-4,900 (40%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	20,500	16,200	-4,300 (21%)	N/A
Green River Rd w/o Paseo Grande	12,900	13,900	17,900	N/A	+4,000 (29%)
Foothill Pkwy e/o Paseo Grande	N/A	N/A	11,000	N/A	+11,000 (N/A)
Foothill Pkwy e/o Lincoln Ave	3,700	3,800	10,500	N/A	+6,700 (176%)
Upper Dr s/o Foothill Pkwy	6,600	6,600	6,800	N/A	+200 (3%)
Border Ave n/o Foothill Pkwy	3,000	3,000	3,100	N/A	+100 (3%)
Mangular Ave n/o Foothill Pkwy	3,800	3,800	4,000	N/A	+200 (5%)
Lincoln Ave n/o Foothill Pkwy	9,200	10,600	9,600	-1,000 (9%)	N/A

Source: Meyer, Mohaddes Associates (June 2007)

1 = Assumes the Border Avenue and Chase Drive connections to Foothill Parkway.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 1, forecast year 2010 traffic volumes on 6th Street, 10th Street, Serfas Club Drive, Paseo Grande, Ontario Avenue, and Lincoln Avenue, in the vicinity of the proposed project area, are forecast to decrease relative to the “without project” scenario, assuming implementation of the Foothill Parkway Westerly Extension project. Additionally, the proposed project is forecast to reduce year 2010 traffic volumes on 6th Street, Serfas Club Drive, Paseo Grande, and Ontario Avenue to below existing traffic volumes. Most notably, the segments of Ontario Avenue east of Paseo Grande and Paseo Grande north of Foothill Parkway, which are both currently heavily impacted during peak travel times, are expected to see traffic volume decreases of 40 and 57 percent, respectively, compared to the “No Project” alternative. Traffic volumes are expected to increase on Green River Road, Foothill Parkway, Border Avenue, Mangular Avenue, and Upper Drive as a result of redistribution of traffic.

Foothill Parkway Westerly Extension without Local Connections

Table 2, below, shows existing year 2006 Average Daily Traffic (ADT) volumes for the study area roadways, as well as forecast year 2010 ADT volumes for the “without project” (No Project) and Foothill Parkway Westerly Extension without Local Connections scenarios.

Table 2
Forecast Year 2010 ADT Volume Summary
Foothill Parkway Westerly Extension without Local Connections

Roadway Segment	Existing Year 2006	Forecast Year 2010 Without Foothill Parkway Extension	Forecast Year 2010 With Foothill Parkway Extension ²	Decrease in 2010 ADT Volumes (Percent Change)	Increase in 2010 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	30,100	28,400	-1,700 (6%)	N/A
10 th St w/o Lincoln Ave	16,500	19,300	18,400	-900 (5%)	N/A
Green River Rd w/o Palisades Dr	18,700	25,100	26,600	N/A	+1,500 (6%)
Serfas Club Dr s/o SR-91	16,500	16,500	10,600	-5,900 (36%)	N/A
Paseo Grande n/o Foothill Pkwy	12,200	12,200	5,700	-6,500 (53%)	N/A
Ontario Ave e/o Paseo Grande	12,200	12,200	8,000	-4,200 (34%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	20,500	16,300	-4,200 (20%)	N/A
Green River Rd w/o Paseo Grande	12,900	13,900	17,900	N/A	+4000 (29%)
Foothill Pkwy e/o Paseo Grande	N/A	N/A	10,800	N/A	+10,800 (N/A)
Foothill Pkwy e/o Lincoln Ave	3,700	3,800	10,400	N/A	+6,600 (174%)
Upper Dr s/o Foothill Pkwy	6,600	6,600	6,800	N/A	+200 (3%)
Border Ave n/o Foothill Pkwy	3,000	3,000	3,000	N/A	N/A
Mangular Ave n/o Foothill Pkwy	3,800	3,800	3,800	N/A	N/A
Lincoln Ave n/o Foothill Pkwy	9,200	10,600	9,600	-1,000 (9%)	N/A

Source: Meyer, Mohaddes Associates (June 2007)

2 = Assumes no connections from Border Avenue and Chase Drive to Foothill Parkway.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 2, forecast year 2010 traffic volumes on 6th Street, 10th Street, Serfas Club Drive, Paseo Grande, Ontario Avenue, and Lincoln Avenue are forecast to decrease relative to the “without project” scenario, assuming implementation of the Foothill Parkway Westerly Extension without Local Connections alternative. This alternative, similar to the proposed project, is forecast to reduce year 2010 traffic volumes on 6th Street, Serfas Club Drive, Paseo Grande, and Ontario Avenue below existing traffic volumes, however the reductions are less than those expected for the proposed project. Traffic volumes are expected to increase on Green River Road, Foothill Parkway, and Upper Drive. Volumes on Border Avenue and Mangular Avenue are not expected to change as a result of implementation of this alternative.

Foothill Parkway Westerly Extension with Border Avenue Connection Only

Table 3, below, shows existing year 2006 Average Daily Traffic (ADT) volumes for the study area roadways, as well as forecast year 2010 ADT volumes for the “without project” (No Project) and Foothill Parkway Westerly Extension with Border Avenue Connection Only scenarios.

Table 3
Forecast Year 2010 ADT Volume Summary
Foothill Parkway Westerly Extension with Border Avenue Connection Only

Roadway Segment	Existing Year 2006	Forecast Year 2010 Without Foothill Parkway Extension	Forecast Year 2010 With Foothill Parkway Extension ³	Decrease in 2010 ADT Volumes (Percent Change)	Increase in 2010 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	30,100	28,400	-1,700 (6%)	N/A
10 th St w/o Lincoln Ave	16,500	19,300	18,400	-900 (5%)	N/A
Green River Rd w/o Palisades Dr	18,700	25,100	26,600	N/A	+1,500 (6%)
Serfas Club Dr s/o SR-91	16,500	16,500	10,600	-5,900 (36%)	N/A
Paseo Grande n/o Foothill Pkwy	12,200	12,200	5,400	-6,800 (56%)	N/A
Ontario Ave e/o Paseo Grande	12,200	12,200	7,300	-4,900 (40%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	20,500	16,300	-4,200 (20%)	N/A
Green River Rd w/o Paseo Grande	12,900	13,900	17,900	N/A	+4,000 (29%)
Foothill Pkwy e/o Paseo Grande	N/A	N/A	10,900	N/A	+10,900 (N/A)
Foothill Pkwy e/o Lincoln Ave	3,700	3,800	10,500	N/A	+6,700 (176%)
Upper Dr s/o Foothill Pkwy	6,600	6,600	6,800	N/A	+200 (3%)
Border Ave n/o Foothill Pkwy	3,000	3,000	3,200	N/A	+200 (7%)
Mangular Ave n/o Foothill Pkwy	3,800	3,800	3,800	N/A	N/A
Lincoln Ave n/o Foothill Pkwy	9,200	10,600	9,600	-1,000 (9%)	N/A

Source: Meyer, Mohaddes Associates (June 2007)

3 = Assumes Border Avenue connection to Foothill Parkway only.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 3, forecast year 2010 traffic volumes on 6th Street, 10th Street, Serfas Club Drive, Paseo Grande, Ontario Avenue, and Lincoln Avenue are forecast to decrease relative to the “without project” scenario, assuming implementation of the Foothill Parkway Westerly Extension with Border Avenue Connection Only alternative. This alternative, similar to the

proposed project, is forecast to reduce year 2010 traffic volumes on 6th Street, Serfas Club Drive, Paseo Grande, and Ontario Avenue below existing traffic volumes. Traffic volumes are expected to increase on Green River Road, Foothill Parkway, Upper Drive, and Border Avenue. Volumes on Mangular Avenue are not expected to change as a result of implementation of this alternative.

Foothill Parkway Westerly Extension with Chase Drive Connection Only

Table 4, below, shows existing year 2006 Average Daily Traffic (ADT) volumes for the study area roadways, as well as forecast year 2010 ADT volumes for the “without project” (No Project) and Foothill Parkway Westerly Extension with Chase Drive Connection Only scenarios.

Table 4
Forecast Year 2010 ADT Volume Summary
Foothill Parkway Westerly Extension with Chase Drive Connection Only

Roadway Segment	Existing Year 2006	Forecast Year 2010 Without Foothill Parkway Extension	Forecast Year 2010 With Foothill Parkway Extension ⁴	Decrease in 2010 ADT Volumes (Percent Change)	Increase in 2010 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	30,100	28,400	-1,700 (6%)	N/A
10 th St w/o Lincoln Ave	16,500	19,300	18,400	-900 (5%)	N/A
Green River Rd w/o Palisades Dr	18,700	25,100	26,600	N/A	+1,500 (6%)
Serfas Club Dr s/o SR-91	16,500	16,500	10,600	-5,900 (36%)	N/A
Paseo Grande n/o Foothill Pkwy	12,200	12,200	5,600	-6,600 (54%)	N/A
Ontario Ave e/o Paseo Grande	12,200	12,200	8,000	-4,200 (34%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	20,500	16,300	-4,200 (20%)	N/A
Green River Rd w/o Paseo Grande	12,900	13,900	18,000	N/A	+4,100 (29%)
Foothill Pkwy e/o Paseo Grande	N/A	N/A	10,900	N/A	+10,900 (N/A)
Foothill Pkwy e/o Lincoln Ave	3,700	3,800	10,400	N/A	+6,600 (174%)
Upper Dr s/o Foothill Pkwy	6,600	6,600	6,800	N/A	+200 (3%)
Border Ave n/o Foothill Pkwy	3,000	3,000	3,000	N/A	N/A
Mangular Ave n/o Foothill Pkwy	3,800	3,800	4,000	N/A	+200 (5%)
Lincoln Ave n/o Foothill Pkwy	9,200	10,600	9,600	-1,000 (9%)	N/A

Source: Meyer, Mohaddes Associates (June 2007)

4 = Assumes Chase Drive connection to Foothill Parkway only.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 4, forecast year 2010 traffic volumes on 6th Street, 10th Street, Serfas Club Drive, Paseo Grande, Ontario Avenue, and Lincoln Avenue are forecast to decrease relative to the “without project” scenario, assuming implementation of the Foothill Parkway Westerly Extension with Chase Drive Connection Only alternative. This alternative, similar to the proposed project, is forecast to reduce year 2010 traffic volumes on 6th Street, Serfas Club Drive, Paseo Grande, and Ontario Avenue below existing traffic volumes, however the reductions are less than those expected for the proposed project. Traffic volumes are expected to increase on Green River Road, Foothill Parkway, Upper Drive, and Mangular Avenue. Volumes on Border Avenue are not expected to change as a result of implementation of this alternative.

Foothill Parkway Westerly Extension, 2-Lane Reduced Width, with Border Avenue and Chase Drive Connections

Table 5, below, shows existing year 2006 Average Daily Traffic (ADT) volumes for the study area roadways, as well as forecast year 2010 ADT volumes for the “without project” (No Project) and Foothill Parkway Westerly Extension, 2-Lane Reduced Width, with Border Avenue and Chase Drive Connections scenarios.

Table 5
Forecast Year 2010 ADT Volume Summary
Foothill Parkway Westerly Extension, 2-Lane Reduced Width, with Local Connections

Roadway Segment	Existing Year 2006	Forecast Year 2010 Without Foothill Parkway Extension	Forecast Year 2010 With Foothill Parkway Extension ¹	Decrease in 2010 ADT Volumes (Percent Change)	Increase in 2010 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	30,100	28,200	-1,900 (6%)	N/A
10 th St w/o Lincoln Ave	16,500	19,300	18,200	-1,100 (6%)	N/A
Green River Rd w/o Palisades Dr	18,700	25,100	28,300	N/A	+3,200 (13%)
Serfas Club Dr s/o SR-91	16,500	16,500	12,300	-4,200 (25%)	N/A
Paseo Grande n/o Foothill Pkwy	12,200	12,200	5,500	-6,700 (55%)	N/A
Ontario Ave e/o Paseo Grande	12,200	12,200	7,400	-4,800 (39%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	20,500	16,900	-3,600 (18%)	N/A
Green River Rd w/o Paseo Grande	12,900	13,900	18,000	N/A	+4,100 (29%)
Foothill Pkwy e/o Paseo Grande	N/A	N/A	10,600	N/A	+10,600 (N/A)
Foothill Pkwy e/o Lincoln Ave	3,700	3,800	10,200	N/A	+6,400 (168%)
Upper Dr s/o Foothill Pkwy	6,600	6,600	6,800	N/A	+200 (3%)
Border Ave n/o Foothill Pkwy	3,000	3,000	3,100	N/A	+100 (3%)
Mangular Ave n/o Foothill Pkwy	3,800	3,800	4,000	N/A	+200 (5%)
Lincoln Ave n/o Foothill Pkwy	9,200	10,600	9,400	-1,200 (11%)	N/A

Source: Meyer, Mohaddes Associates (June 2007 and February 2008)

1 = Assumes the Border Avenue and Chase Drive connections to Foothill Parkway.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 5, forecast year 2010 traffic volumes on 6th Street, 10th Street, Serfas Club Drive, Paseo Grande, Ontario Avenue, and Lincoln Avenue are forecast to decrease relative to the “without project” scenario, assuming implementation of the Foothill Parkway Westerly Extension Reduced Width alternative. This alternative, similar to the proposed project, is forecast to reduce year 2010 traffic volumes on 6th Street, Serfas Club Drive, Paseo Grande, and Ontario Avenue below existing traffic volumes, however the reductions are less than those expected for the proposed project. Traffic volumes are expected to increase on Green River Road, Foothill Parkway, Upper Drive, Border Avenue, and Mangular Avenue.

YEAR 2025

Foothill Parkway Westerly Extension with Border Avenue and Chase Drive Connections (Proposed Project)

Table 6, below, shows existing year 2006 Average Daily Traffic (ADT) volumes for the study area roadways, as well as forecast year 2025 ADT volumes for the “without project” (No Project) and “with project” (Proposed Project) scenarios.

Table 6
Forecast Year 2025 ADT Volume Summary
Foothill Parkway Westerly Extension with Border Avenue and Chase Drive Connections

Roadway Segment	Existing Year 2006	Forecast Year 2025 Without Foothill Parkway Extension	Forecast Year 2025 With Foothill Parkway Extension ¹	Decrease in 2025 ADT Volumes (Percent Change)	Increase in 2025 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	44,800	42,700	-2,100 (5%)	N/A
10 th St w/o Lincoln Ave	16,500	24,200	21,700	-2,500 (10%)	N/A
Green River Rd w/o Palisades Dr	18,700	46,400	52,800	N/A	+6,400 (14%)
Serfas Club Dr s/o SR-91	16,500	30,200	28,700	-1,500 (5%)	N/A
Paseo Grande n/o Foothill Pkwy	12,200	15,800	7,400	-8,400 (53%)	N/A
Ontario Ave e/o Paseo Grande	12,200	12,200	10,700	-1,500 (12%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	22,200	18,800	-3,400 (15%)	N/A
Green River Rd w/o Paseo Grande	12,900	19,700	29,000	N/A	+9,300 (47%)
Foothill Pkwy e/o Paseo Grande	N/A	N/A	21,700	N/A	+21,700 (N/A)
Foothill Pkwy e/o Lincoln Ave	3,700	5,700	21,900	N/A	+16,200 (284%)
Upper Dr s/o Foothill Pkwy	6,600	7,400	7,900	N/A	+500 (7%)
Border Ave n/o Foothill Pkwy	3,000	3,000	3,600	N/A	+600 (20%)
Mangular Ave n/o Foothill Pkwy	3,800	3,800	4,500	N/A	+700 (18%)
Lincoln Ave n/o Foothill Pkwy	9,200	10,800	9,100	-1,700 (16%)	N/A

Source: Meyer, Mohaddes Associates (June 2007)

1 = Assumes the Border Avenue and Chase Drive connections to Foothill Parkway.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 6, forecast year 2025 traffic volumes on 6th Street, 10th Street, Serfas Club Drive, Paseo Grande, Ontario Avenue, and Lincoln Avenue, in the vicinity of the proposed project area, are forecast to decrease relative to the “without project” scenario, assuming implementation of the Foothill Parkway Westerly Extension project. The proposed project is forecast to reduce year 2025 traffic volumes on Paseo Grande and Ontario Avenue to below existing traffic volumes. Traffic volumes are expected to increase on Green River Road, Foothill Parkway, Border Avenue, Mangular Avenue, and Upper Drive.

Foothill Parkway Westerly Extension without Local Connections

Table 7, below, shows existing year 2006 Average Daily Traffic (ADT) volumes for the study area roadways, as well as forecast year 2025 ADT volumes for the “without project” (No Project) and Foothill Parkway Westerly Extension without Local Connections scenarios.

Table 7
Forecast Year 2025 ADT Volume Summary
Foothill Parkway Westerly Extension without Local Connections

Roadway Segment	Existing Year 2006	Forecast Year 2025 Without Foothill Parkway Extension	Forecast Year 2025 With Foothill Parkway Extension ²	Decrease in 2025 ADT Volumes (Percent Change)	Increase in 2025 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	44,800	42,700	-2,100 (5%)	N/A
10 th St w/o Lincoln Ave	16,500	24,200	21,700	-2,500 (10%)	N/A
Green River Rd w/o Palisades Dr	18,700	46,400	52,800	N/A	+6,400 (14%)
Serfas Club Dr s/o SR-91	16,500	30,200	28,700	-1,500 (5%)	N/A
Paseo Grande n/o Foothill Pkwy	12,200	15,800	7,700	-8,100 (51%)	N/A
Ontario Ave e/o Paseo Grande	12,200	12,200	11,600	-600 (5%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	22,200	18,800	-3,400 (15%)	N/A
Green River Rd w/o Paseo Grande	12,900	19,700	29,000	N/A	+9,300 (47%)
Foothill Pkwy e/o Paseo Grande	N/A	N/A	21,500	N/A	+21,500 (N/A)
Foothill Pkwy e/o Lincoln Ave	3,700	5,700	21,800	N/A	+16,100 (282%)
Upper Dr s/o Foothill Pkwy	6,600	7,400	7,900	N/A	+500 (7%)
Border Ave n/o Foothill Pkwy	3,000	3,000	3,000	N/A	N/A
Mangular Ave n/o Foothill Pkwy	3,800	3,800	3,800	N/A	N/A
Lincoln Ave n/o Foothill Pkwy	9,200	10,800	9,200	-1,600 (15%)	N/A

Source: Meyer, Mohaddes Associates (June 2007)

2 = Assumes no connections from Border Avenue and Chase Drive to Foothill Parkway.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 7, forecast year 2025 traffic volumes on 6th Street, 10th Street, Serfas Club Drive, Paseo Grande, Ontario Avenue, and Lincoln Avenue are forecast to decrease relative to the “without project” scenario, assuming implementation of the Foothill Parkway Westerly Extension without Local Connections alternative. This alternative, similar to the proposed

project, is forecast to reduce year 2025 traffic volumes on Paseo Grande and Ontario Avenue below existing traffic volumes, however the reductions are less than those expected for the proposed project. Traffic volumes are expected to increase on Green River Road, Foothill Parkway, and Upper Drive. Volumes on Border Avenue and Mangular Avenue are not expected to change as a result of implementation of this alternative.

Foothill Parkway Westerly Extension with Border Avenue Connection Only

Table 8, below, shows existing year 2006 Average Daily Traffic (ADT) volumes for the study area roadways, as well as forecast year 2025 ADT volumes for the “without project” (No Project) and Foothill Parkway Westerly Extension with Border Avenue Connection Only scenarios.

Table 8
Forecast Year 2025 ADT Volume Summary
Foothill Parkway Westerly Extension with Border Avenue Connection Only

Roadway Segment	Existing Year 2006	Forecast Year 2025 Without Foothill Parkway Extension	Forecast Year 2025 With Foothill Parkway Extension ³	Decrease in 2025 ADT Volumes (Percent Change)	Increase in 2025 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	44,800	42,700	-2,100 (5%)	N/A
10 th St w/o Lincoln Ave	16,500	24,200	21,700	-2,500 (10%)	N/A
Green River Rd w/o Palisades Dr	18,700	46,400	52,800	N/A	+6,400 (14%)
Serfas Club Dr s/o SR-91	16,500	30,200	28,700	-1,500 (5%)	N/A
Paseo Grande n/o Foothill Pkwy	12,200	15,800	7,500	-8,300 (53%)	N/A
Ontario Ave e/o Paseo Grande	12,200	12,200	11,200	-1,000 (8%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	22,200	18,700	-3,500 (16%)	N/A
Green River Rd w/o Paseo Grande	12,900	19,700	29,000	N/A	+9,300 (47%)
Foothill Pkwy e/o Paseo Grande	N/A	N/A	21,600	N/A	+21,600 (N/A)
Foothill Pkwy e/o Lincoln Ave	3,700	5,700	21,900	N/A	+16,200 (284%)
Upper Dr s/o Foothill Pkwy	6,600	7,400	7,900	N/A	+500 (7%)
Border Ave n/o Foothill Pkwy	3,000	3,000	3,800	N/A	+800 (27%)
Mangular Ave n/o Foothill Pkwy	3,800	3,800	3,800	N/A	N/A
Lincoln Ave n/o Foothill Pkwy	9,200	10,800	9,200	-1,600 (15%)	N/A

Source: Meyer, Mohaddes Associates (June 2007)

3 = Assumes Border Avenue connection to Foothill Parkway only.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 8, forecast year 2025 traffic volumes on 6th Street, 10th Street, Serfas Club Drive, Paseo Grande, Ontario Avenue, and Lincoln Avenue are forecast to decrease relative to the “without project” scenario, assuming implementation of the Foothill Parkway Westerly Extension with Border Avenue Connection Only alternative. This alternative, similar to the proposed project, is forecast to reduce year 2025 traffic volumes on Paseo Grande and Ontario Avenue below existing traffic volumes, however the reductions are less than those expected for the proposed project. Traffic volumes are expected to increase on Green River Road, Foothill Parkway, Upper Drive, and Border Avenue. Volumes on Mangular Avenue are not expected to change as a result of implementation of this alternative.

Foothill Parkway Westerly Extension with Chase Drive Connection Only

Table 9, below, shows existing year 2006 Average Daily Traffic (ADT) volumes for the study area roadways, as well as forecast year 2025 ADT volumes for the “without project” (No Project) and Foothill Parkway Westerly Extension with Chase Drive Connection Only scenarios.

Table 9
Forecast Year 2025 ADT Volume Summary
Foothill Parkway Westerly Extension with Chase Drive Connection Only

Roadway Segment	Existing Year 2006	Forecast Year 2025 Without Foothill Parkway Extension	Forecast Year 2025 With Foothill Parkway Extension ⁴	Decrease in 2025 ADT Volumes (Percent Change)	Increase in 2025 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	44,800	42,700	-2,100 (5%)	N/A
10 th St w/o Lincoln Ave	16,500	24,200	21,700	-2,500 (10%)	N/A
Green River Rd w/o Palisades Dr	18,700	46,400	52,800	N/A	+6,400 (14%)
Serfas Club Dr s/o SR-91	16,500	30,200	28,700	-1,500 (5%)	N/A
Paseo Grande n/o Foothill Pkwy	12,200	15,800	7,600	-8,200 (52%)	N/A
Ontario Ave e/o Paseo Grande	12,200	12,200	11,300	-900 (7%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	22,200	18,800	-3,400 (15%)	N/A
Green River Rd w/o Paseo Grande	12,900	19,700	29,000	N/A	+9,300 (47%)
Foothill Pkwy e/o Paseo Grande	N/A	N/A	21,600	N/A	+21,600 (N/A)
Foothill Pkwy e/o Lincoln Ave	3,700	5,700	21,800	N/A	+16,100 (282%)
Upper Dr s/o Foothill Pkwy	6,600	7,400	7,900	N/A	+500 (7%)
Border Ave n/o Foothill Pkwy	3,000	3,000	3,000	N/A	N/A
Mangular Ave n/o Foothill Pkwy	3,800	3,800	4,600	N/A	+800 (21%)
Lincoln Ave n/o Foothill Pkwy	9,200	10,800	9,100	-1,700 (16%)	N/A

Source: Meyer, Mohaddes Associates (June 2007)

4 = Assumes Chase Drive connection to Foothill Parkway only.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 9, forecast year 2025 traffic volumes on 6th Street, 10th Street, Serfas Club Drive, Paseo Grande, Ontario Avenue, and Lincoln Avenue are forecast to decrease relative to the “without project” scenario, assuming implementation of the Foothill Parkway Westerly Extension with Chase Drive Connection Only alternative. This alternative, similar to the

proposed project, is forecast to reduce year 2025 traffic volumes on Paseo Grande and Ontario Avenue below existing traffic volumes, however the reductions are less than those expected for the proposed project. Traffic volumes are expected to increase on Green River Road, Foothill Parkway, Upper Drive, and Mangular Avenue. Volumes on Border Avenue are not expected to change as a result of implementation of this alternative.

Foothill Parkway Westerly Extension, 2-Lane Reduced Width, with Border Avenue and Chase Drive Connections

Table 10, below, shows existing year 2006 Average Daily Traffic (ADT) volumes for the study area roadways, as well as forecast year 2025 ADT volumes for the “without project” (No Project) and Foothill Parkway Westerly Extension, 2-Lane Reduced Width, with Border Avenue and Chase Drive Connection scenarios.

Table 10
Forecast Year 2025 ADT Volume Summary
Foothill Parkway Westerly Extension, 2-Lane Reduced Width, with Local Connections

Roadway Segment	Existing Year 2006	Forecast Year 2025 Without Foothill Parkway Extension	Forecast Year 2025 With Foothill Parkway Extension ¹	Decrease in 2025 ADT Volumes (Percent Change)	Increase in 2025 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	44,800	43,000	-1,800 (4%)	N/A
10 th St w/o Lincoln Ave	16,500	24,200	22,000	-2,200 (9%)	N/A
Green River Rd w/o Palisades Dr	18,700	46,400	50,100	N/A	+3,700 (8%)
Serfas Club Dr s/o SR-91	16,500	30,200	28,800	-1,400 (5%)	N/A
Paseo Grande n/o Foothill Pkwy	12,200	15,800	9,500	-6,300 (40%)	N/A
Ontario Ave e/o Paseo Grande	12,200	12,200	11,100	-1,100 (9%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	22,200	21,300	-900 (4%)	N/A
Green River Rd w/o Paseo Grande	12,900	19,700	26,100	N/A	+6,400 (32%)
Foothill Pkwy e/o Paseo Grande	N/A	N/A	16,200	N/A	+16,200 (N/A)
Foothill Pkwy e/o Lincoln Ave	3,700	5,700	17,700	N/A	+12,000 (211%)
Upper Dr s/o Foothill Pkwy	6,600	7,400	7,900	N/A	+500 (7%)
Border Ave n/o Foothill Pkwy	3,000	3,000	3,600	N/A	+600 (20%)
Mangular Ave n/o Foothill Pkwy	3,800	3,800	4,500	N/A	+700 (18%)
Lincoln Ave n/o Foothill Pkwy	9,200	10,800	9,100	-1,700 (16%)	N/A

Source: Meyer, Mohaddes Associates (June 2007 and February 2008)

1 = Assumes the Border Avenue and Chase Drive connections to Foothill Parkway.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 10, forecast year 2025 traffic volumes on 6th Street, 10th Street, Serfas Club Drive, Paseo Grande, Ontario Avenue, and Lincoln Avenue are forecast to decrease relative to the “without project” scenario, assuming implementation of the Foothill Parkway Westerly Extension Reduced Width with Border Avenue and Chase Drive Connections alternative. This alternative, similar to the proposed project, is forecast to reduce year 2025 traffic volumes on Paseo Grande and Ontario Avenue, east of Paseo Grande, below existing traffic volumes, however the reductions are less than those expected for the proposed project. Traffic volumes are expected to increase on Green River Road, Foothill Parkway, Upper Drive, Border Avenue, and Mangular Avenue.

EAST WEST CORRIDOR ANALYSIS – YEAR 2025

The primary purpose of the Foothill Parkway Westerly Extension project is to complete a much-needed east/west connection across the City of Corona. On the south side of State Route 91, the primary existing east/west corridors across the City consist of 6th Street, 10th Street, and Ontario Avenue. Based on the traffic model results provided above, it is expected that the extension of Foothill Parkway will reduce volumes on those congested roadways, particularly Ontario Avenue, which is severely impacted by existing traffic volumes during peak hours. Figures 15 through 19 and Tables 11 through 15 focus on the ADT volumes for 6th Street, 10th Street, Green River Road, Ontario Avenue, and Foothill Parkway for the worst case scenario, year 2025.

Foothill Parkway Westerly Extension with Border Avenue and Chase Drive Connections (Proposed Project)

Table 11, below, shows forecast year 2025 ADT volumes for east-west roadways in the vicinity of the Foothill Parkway Westerly Extension for the “without project” and “with project” conditions.

Table 11
Forecast Year 2025 East-West Corridors ADT Volume Summary
Foothill Parkway Westerly Extension with Border Avenue and Chase Drive Connections

Roadway Segment	Existing Year 2006	Forecast Year 2025 Without Foothill Parkway Extension	Forecast Year 2025 With Foothill Parkway Extension ¹	Decrease in 2025 ADT Volumes (Percent Change)	Increase in 2025 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	44,800	42,700	-2,100 (5%)	N/A
10 th St w/o Lincoln Ave	16,500	24,200	21,700	-2,500 (10%)	N/A
Green River Rd w/o Palisades Dr	18,700	46,400	52,800	N/A	+6,400 (14%)
Ontario Ave e/o Paseo Grande	12,200	12,200	10,700	-1,500 (12%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	22,200	18,800	-3,400 (15%)	N/A
Foothill Pkwy e/o Lincoln Ave	3,700	5,700	21,900	N/A	+16,200 (284%)

Source: Meyer, Mohaddes Associates (June 2007)

1 = Assumes the Border Avenue and Chase Drive connections to Foothill Parkway.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 11, the additional roadway capacity associated with the Foothill Parkway Westerly Extension is forecast to reduce daily traffic by approximately 8,000 ADT on 6th Street, 10th Street, and Ontario Avenue. Figure 15 shows forecast year 2025 ADT volumes on the east-west corridors, both with and without the proposed Foothill Parkway Westerly Extension project. The “with project” forecast year 2025 ADT volumes shown in Figure 15 include the Border Avenue and Chase Drive connections.

Foothill Parkway Westerly Extension without Local Connections

Table 12, below, shows forecast year 2025 ADT volumes for east-west roadways in the vicinity of the Foothill Parkway Westerly Extension for the “without project” and Foothill Parkway Westerly Extension without Local Connections scenarios.

Table 12
Forecast Year 2025 East-West Corridors ADT Volume Summary
Foothill Parkway Westerly Extension without Local Connections

Roadway Segment	Existing Year 2006	Forecast Year 2025 Without Foothill Parkway Extension	Forecast Year 2025 With Foothill Parkway Extension ²	Decrease in 2025 ADT Volumes (Percent Change)	Increase in 2025 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	44,800	42,700	-2,100 (5%)	N/A
10 th St w/o Lincoln Ave	16,500	24,200	21,700	-2,500 (10%)	N/A
Green River Rd w/o Palisades Dr	18,700	46,400	52,800	N/A	+6,400 (14%)
Ontario Ave e/o Paseo Grande	12,200	12,200	11,600	-600 (5%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	22,200	18,800	-3,400 (15%)	N/A
Foothill Pkwy e/o Lincoln Ave	3,700	5,700	21,800	N/A	+16,100 (282%)

Source: Meyer, Mohaddes Associates (June 2007)

² = Assumes no connections from Border Avenue and Chase Drive to Foothill Parkway.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 12, the additional roadway capacity associated with the Foothill Parkway Westerly Extension without Local Connections alternative is forecast to reduce daily traffic by approximately 8,000 ADT on 6th Street, 10th Street, and Ontario Avenue, similar to the proposed project. However, the volume decrease on the segment of Ontario Avenue east of Paseo Grande is reduced from 1,500 ADT in the proposed project to 600 ADT in this alternative. Figure 16 illustrates the 2025 ADT volumes shown above, including the “without project” and “with project” volumes. The “with project” volumes reflect the Foothill Parkway Westerly Extension without the Border Avenue and Chase Drive connections.

Foothill Parkway Westerly Extension with Border Avenue Connection Only

Table 13, below, shows forecast year 2025 ADT volumes for east-west roadways in the vicinity of the Foothill Parkway Westerly Extension for the “without project” and Foothill Parkway Westerly Extension with Border Avenue Connection Only scenarios.

Table 13
Forecast Year 2025 East-West Corridors ADT Volume Summary
Foothill Parkway Westerly Extension with Border Avenue Connection Only

Roadway Segment	Existing Year 2006	Forecast Year 2025 Without Foothill Parkway Extension	Forecast Year 2025 With Foothill Parkway Extension ³	Decrease in 2025 ADT Volumes (Percent Change)	Increase in 2025 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	44,800	42,700	-2,100 (5%)	N/A
10 th St w/o Lincoln Ave	16,500	24,200	21,700	-2,500 (10%)	N/A
Green River Rd w/o Palisades Dr	18,700	46,400	52,800	N/A	+6,400 (14%)
Ontario Ave e/o Paseo Grande	12,200	12,200	11,200	-1,000 (8%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	22,200	18,700	-3,500 (16%)	N/A
Foothill Pkwy e/o Lincoln Ave	3,700	5,700	21,900	N/A	+16,200 (284%)

Source: Meyer, Mohaddes Associates (June 2007)

3 = Assumes Border Avenue connection to Foothill Parkway only.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 13, the additional roadway capacity associated with the Foothill Parkway Westerly Extension with Border Avenue Connection Only alternative is forecast to reduce daily traffic by approximately 8,100 ADT on 6th Street, 10th Street, and Ontario Avenue. However, the volume decrease on the segment of Ontario Avenue east of Paseo Grande is reduced from 1,500 ADT in the proposed project to 1,000 ADT in this alternative. Figure 17 illustrates the 2025 ADT volumes shown above, including the “without project” and “with project” volumes. The “with project” volumes reflect the Foothill Parkway Westerly Extension with a connection at Border Avenue only.

Foothill Parkway Westerly Extension with Chase Drive Connection Only

Table 14, below, shows forecast year 2025 ADT volumes for east-west roadways in the vicinity of the Foothill Parkway Westerly Extension for the “without project” and Foothill Parkway Westerly Extension with Chase Drive Connection Only scenarios.

Table 14
Forecast Year 2025 East-West Corridors ADT Volume Summary
Foothill Parkway Westerly Extension with Chase Drive Connection Only

Roadway Segment	Existing Year 2006	Forecast Year 2025 Without Foothill Parkway Extension	Forecast Year 2025 With Foothill Parkway Extension ⁴	Decrease in 2025 ADT Volumes (Percent Change)	Increase in 2025 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	44,800	42,700	-2,100 (5%)	N/A
10 th St w/o Lincoln Ave	16,500	24,200	21,700	-2,500 (10%)	N/A
Green River Rd w/o Palisades Dr	18,700	46,400	52,800	N/A	+6,400 (14%)
Ontario Ave e/o Paseo Grande	12,200	12,200	11,300	-900 (7%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	22,200	18,800	-3,400 (15%)	N/A
Foothill Pkwy e/o Lincoln Ave	3,700	5,700	21,800	N/A	+16,100 (282%)

Source: Meyer, Mohaddes Associates (June 2007)

⁴ = Assumes Chase Drive connection to Foothill Parkway only.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 14, the additional roadway capacity associated with the Foothill Parkway Westerly Extension with Chase Drive Connection Only alternative is forecast to reduce daily traffic by approximately 8,000 ADT on 6th Street, 10th Street, and Ontario Avenue. However, the volume decrease on the segment of Ontario Avenue east of Paseo Grande is reduced from 1,500 ADT in the proposed project to 900 ADT in this alternative. Figure 18 illustrates the 2025 ADT volumes shown above, including the “without project” and “with project” volumes. The “with project” volumes reflect the Foothill Parkway Westerly Extension with a connection at Chase Drive only.

Foothill Parkway Westerly Extension, 2-Lane Reduced Width, with Border Avenue and Chase Drive Connections

Table 15, below, shows forecast year 2025 ADT volumes for east-west roadways in the vicinity of the Foothill Parkway Westerly Extension for the “without project” and Reduced Width Foothill Parkway Westerly Extension with Border Avenue and Chase Drive Connections scenarios.

Table 15
Forecast Year 2025 East-West Corridors ADT Volume Summary
Foothill Parkway Westerly Extension, 2-Lane Reduced Width, with Local Connections

Roadway Segment	Existing Year 2006	Forecast Year 2025 Without Foothill Parkway Extension	Forecast Year 2025 With Foothill Parkway Extension ¹	Decrease in 2025 ADT Volumes (Percent Change)	Increase in 2025 ADT Volumes (Percent Change)
6 th St w/o Smith Ave	30,100	44,800	43,000	-1,800 (4%)	N/A
10 th St w/o Lincoln Ave	16,500	24,200	22,000	-2,200 (9%)	N/A
Green River Rd w/o Palisades Dr	18,700	46,400	50,100	N/A	+3,700 (8%)
Ontario Ave e/o Paseo Grande	12,200	12,200	11,100	-1,100 (9%)	N/A
Ontario Ave e/o Lincoln Ave	20,500	22,200	21,300	-900 (4%)	N/A
Foothill Pkwy e/o Lincoln Ave	3,700	5,700	17,700	N/A	+12,000 (211%)

Source: Meyer, Mohaddes Associates (June 2007 and February 2008)

1 = Assumes the Border Avenue and Chase Drive connections to Foothill Parkway.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 15, the additional roadway capacity associated with the Reduced Width Foothill Parkway Westerly Extension with Border Avenue and Chase Drive Connections alternative is forecast to reduce daily traffic by approximately 5,100 ADT on 6th Street, 10th Street, and Ontario Avenue. The volume decrease on the segment of Ontario Avenue east of Paseo Grande is reduced from 1,500 ADT in the proposed project to 1,100 ADT in this alternative. Figure 19 illustrates the 2025 ADT volumes shown above, including the “without project” and “with project” volumes. The “with project” volumes reflect the Reduced Width Foothill Parkway Westerly Extension with the Border Avenue and Chase Drive connections.

BORDER AVENUE & MANGULAR AVENUE TRAFFIC VOLUMES – YEAR 2025

Traffic volumes are expected to change on Border Avenue and Mangular Avenue due to traffic redistribution resulting from the proposed connections of Border Avenue and Chase Drive to Foothill Parkway. The proposed Chase Drive connection is a short segment with no homes directly fronting the new segment. The short Chase Drive segment will provide a connection between Foothill Parkway and Mangular Avenue. Mangular Avenue is a north/south local collector, like Border Avenue, and is analyzed as part of this study. Typically, traffic utilizing

Border Avenue and Mangular Avenue is local traffic associated with the adjacent residential land uses. Table 16, below, shows forecast ADT volumes for Border Avenue and Mangular Avenue north of the Foothill Parkway Westerly Extension for the worst-case scenario, year 2025.

**Table 16
Forecast Year 2025 Border Avenue & Mangular Avenue Traffic Volumes**

Roadway Segment	Existing Year 2006	Forecast Year 2025 Without Foothill Parkway Extension	Forecast Year 2025 With Foothill Parkway Extension ¹	Increase in 2025 ADT Volumes (Percent Change)
Border Ave n/o Foothill Pkwy	3,000	3,000	3,600	600 (20%)
Mangular Ave n/o Foothill Pkwy	3,800	3,800	4,500	700 (18%)

Source: Meyer, Mohaddes Associates (June 2007)

1 = Assumes the Border Avenue and Chase Drive connections to Foothill Parkway.

Note: N/A = Not Available/Not Applicable. e/o = east of, w/o = west of, n/o = north of, s/o = south of.

As shown in Table 16, assuming connection of Border Avenue and Chase Drive to the proposed Foothill Parkway Westerly Extension, the forecast year 2025 daily traffic volumes on Border Avenue and Mangular Avenue are expected to increase by approximately twenty percent. Note that these are ADT volumes, calculated near the midpoints of the roadways between Foothill Parkway and Ontario Avenue. It is expected that the south ends of Border Avenue and Mangular Avenue, near Foothill Parkway, will experience a larger increase, since each roadway currently terminates on the south end, similar to a cul-de-sac, and currently have very low traffic volumes. Farther north, near Ontario Avenue, it is expected that the segments of Border Avenue and Mangular Avenue will experience a decrease in traffic volumes. Figures 20 through 22 show a focused area, centered on Border Avenue and Mangular Avenue, and include Ontario Avenue and Foothill Parkway. Volumes shown on these figures are forecast year 2025 ADT volumes, both with and without the proposed Foothill Parkway Westerly Extension project. Figure 20 shows volumes that correspond to a connection at Border Avenue only. Figure 21 shows volumes for a connection at Chase Drive only. Figure 22 shows volumes given that both connections are made.

FOCUSED NEIGHBORHOOD TRAFFIC STUDY – YEAR 2010

In April 2007, the City of Corona conducted a focused neighborhood traffic study near the east end of the proposed project to evaluate existing and potential cut through traffic in the area. Existing Foothill Parkway, west of Lincoln Avenue, is currently accessible to adjacent neighborhoods to the northwest via Elysia Street. Four Kings Road connects Elysia Street to Chase Drive. Elysia Street and Four Kings Road are residential streets with homes fronting both sides. City staff conducted coincident license plate surveys at the corners of Four Kings Road at Chase Drive and Elysia Street at Foothill Parkway during three peak hours. With the data collected, license plate numbers and the times they passed the survey locations were matched up to determine the amount of traffic cutting through that neighborhood from nearby neighborhoods off of Oak Avenue and Mangular Avenue. The analysis from the three study periods concluded that approximately 65% of the 1700 ADT on Four Kings Road is cut through traffic in the existing condition, without the Foothill Parkway Westerly Extension. See Figure 23.

With the results from the neighborhood study and traffic volume forecasts provided by MMA, City staff performed a detailed analysis of the streets in the neighborhood bounded by Border

Avenue, Lincoln Avenue, Ontario Avenue, and Foothill Parkway. The purpose of this analysis was to examine traffic distribution in the near term, rather than evaluate deficiencies in the long term. Year 2010 volumes were projected for six scenarios:

1. Without Foothill Parkway (No Project)
2. Foothill Parkway Westerly Extension with Border Avenue and Chase Drive connections (the proposed Project)
3. Foothill Parkway Westerly Extension only, no connections to Border Avenue or Chase Drive
4. Foothill Parkway Westerly Extension with Border Avenue connection only (no connection at Chase Drive)
5. Foothill Parkway Westerly Extension with Chase Drive connection only (no connection at Border Avenue)
6. Foothill Parkway Westerly Extension, 2-Lane Reduced Width, with Border Avenue and Chase Drive connections

Figures 24 through 29 illustrate the resulting traffic volumes in this area for year 2010 for the scenarios listed above.

Scenario 1 assumes that the Foothill Parkway Westerly Extension and connections to Border Avenue and Chase Drive will not be constructed. The resulting analysis determined that volumes on the study roadways would not change between existing and year 2010 conditions. Without alternative travel routes, existing cut through traffic on Four Kings Road and Elysia Street is expected to remain the same. See Figure 24.

The results of Scenario 2 showed that cut through traffic on Four Kings Road and Elysia Street would be reduced greatly with the extension of Foothill Parkway and connections at both Chase Drive and Border Avenue. Traffic volumes on Mangular Avenue and Border Avenue near Ontario Avenue are expected to decrease, as well. Most of the existing traffic on these roadways is generated from adjacent residences traveling north to Ontario Avenue and parallel east/west roadways. With the connections on Border Avenue and Chase Drive, it is expected that a portion of that traffic will redirect to the south to access Foothill Parkway as an alternative to Ontario Avenue. Near Foothill Parkway, the traffic volumes on those two streets are expected to increase, as Border Avenue and Mangular Avenue both terminate at the south end, similar to a cul-de-sac, and currently have very little traffic. These increases, however, are well below the expected traffic volumes for collector roadways, consistent with the City's General Plan. See Figure 25.

In Scenario 3, without the connections at Border Avenue and Chase Drive, the traffic volumes on the study roadways are not expected to change, similar to Scenario 1. Although Foothill Parkway will be extended, without the connections to the neighborhoods at Border Avenue and Chase Drive, traffic will not be able to redistribute within the neighborhood, and travelers are expected to continue to cut through Four Kings Road and Elysia Street to reach Foothill Parkway. See Figure 26.

In Scenario 4, without the connection at Chase Drive, the traffic volumes on Four Kings Road will decrease, but by a lesser amount than in Scenarios 2 and 5. With the connection at Border Avenue, traffic volumes on Border Avenue will increase at the south end. Near Ontario Avenue, however, volumes on Border Avenue are expected to decrease, similarly to Scenario 2. The City's analysis concluded that new cut through traffic might develop between Border Avenue and Mangular Avenue through a residential neighborhood via Mesquite Lane, Peacock Lane, Earl Street, Patriot Way, and Freedom Drive. Traffic volumes along Mangular Avenue are expected to decrease along the entire length of the roadway, due to traffic cutting through adjacent neighborhoods to Foothill Parkway via Four Kings Road and to Border Avenue via Freedom Drive. See Figure 27.

Scenario 5 yielded similar results to Scenario 2, with reductions in volumes on Four Kings Road and on the north end of Mangular Avenue, near Ontario. It is expected that much of the traffic on Four Kings Road will shift from that residential street to the proposed Chase Drive connection, a designated collector road. Traffic volumes on Border Avenue are expected to remain approximately the same without the Border Avenue connection. As in Scenario 4, with only one connection to Foothill Parkway, cut through will likely occur between Border Avenue and Mangular Avenue through a residential neighborhood via Mesquite Lane, Peacock Lane, Earl Street, Patriot Way, and Freedom Drive. See Figure 28.

In Scenario 6, with the reduced-width extension of Foothill Parkway and connections at Border Avenue and Chase Drive, it is expected that traffic will redistribute through the neighborhood similarly to Scenario 2, the proposed project. Cut through traffic on Four Kings Road and Elysia Street would be reduced greatly. Traffic volumes on Mangular Avenue and Border Avenue near Ontario Avenue are expected to decrease, as well. Near Foothill Parkway, the traffic volumes on those two streets are expected to increase, as Border Avenue and Mangular Avenue both terminate at the south end, similar to a cul-de-sac, and currently have very low traffic volumes. These increases, however, are well below the expected traffic volumes for collector roadways, consistent with the City's General Plan. See Figure 29.

TRAFFIC ANALYSIS – LEVEL OF SERVICE

METHODOLOGY

Level of Service (LOS) is commonly used as a qualitative description of roadway operation, and is based on the capacity of the roadway segment and the volume of traffic using the roadway segment. The ADT capacity thresholds analysis method is utilized by the City of Corona to determine the operating LOS of the study roadways. This method describes the operation of a roadway segment using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on corresponding Volume/Capacity (V/C) ratios shown in Table 17.

Table 17
V/C & LOS Ranges for Roadway Segments

LOS	V/C Ratio
A	≤ 0.60
B	0.61 – 0.70
C	0.71 – 0.80
D	0.81 – 0.90
E	0.91 – 1.00
F	≥ 1.00

PERFORMANCE CRITERIA

The City of Corona General Plan Environmental Impact Report (EIR) indicates that the City has not adopted a set threshold for an acceptable LOS for roadway segments. However, the General Plan Circulation Element Policy 6.1.6, under Goal 6.1, calls for improvements to maintain LOS D or better on arterial streets wherever possible. At some key locations, such as at heavily traveled freeway interchanges, LOS E may be adopted as the acceptable standard, on a case-by-case basis. Therefore, any roadway expected to operate at LOS E or LOS F is considered deficient, with the exception of roadways operating at LOS E that have been deemed acceptable by the City. Roadway segments are considered to operate over-capacity when the future forecast daily traffic volume exceeds the daily capacity values. The General Plan EIR defines daily capacity values, in average daily traffic (ADT), as follows:

- Major Arterial six lane – 53,900 ADT
- Major Arterial four lane – 35,900 ADT
- Secondary – 25,900 ADT
- Collector – 13,000 ADT

PROJECT SCENARIOS – YEARS 2010 AND 2025

Existing Year 2006

The existing year 2006 ADT capacity, volume, and LOS of the study are roadways are presented in Table 18, below.

**Table 18
Existing Year 2006 ADT Volumes and LOS**

Study Roadway Segment	Capacity (ADT)	Existing Volume (ADT)	Existing V/C – LOS
6 th St west of Smith Ave	35,900	30,100	0.84 – D
10 th St west of Lincoln Ave	25,900	16,500	0.64 – B
Green River Rd west of Palisades Dr	13,000	18,700	1.44 – F
Serfas Club Dr south of SR-91	35,900	16,500	0.46 – A
Paseo Grande north of Foothill Pkwy	13,000	12,200	0.94 – E
Ontario Ave east of Paseo Grande	13,000	12,200	0.94 – E
Ontario Ave east of Lincoln Ave	35,900	20,500	0.57 – A
Green River Rd west of Paseo Grande	35,900	12,900	0.36 – A
Foothill Pkwy east of Paseo Grande	N/A	N/A	N/A
Foothill Pkwy east of Lincoln Ave	25,900	3,700	0.14 – A
Upper Dr south of Foothill Pkwy	35,900	6,600	0.18 – A
Border Ave north of Foothill Pkwy	13,000	3,000	0.23 – A
Mangular Ave north of Foothill Pkwy	13,000	3,800	0.29 – A
Lincoln Ave north of Foothill Pkwy	35,900	9,200	0.26 – A
Notes: ADT = Average Daily Traffic LOS = Level of Service V/C = Volume to Capacity ratio; deficient roadway segment operation shown in bold . Source: Meyer, Mohaddes Associates, June 2007.			

As shown in Table 18 above, the study roadway segments are currently operating acceptably per the City of Corona performance criteria, with the exception of the Green River Road segment west of Palisades Drive, Paseo Grande north of Foothill Parkway, and Ontario Avenue east of Paseo Grande. Paseo Grande and Ontario Avenue currently operate at LOS E, based on their designated roadway capacities, and Green River Road, west of Palisades Drive, currently operates at LOS F.

No Project

Table 19, below, summarizes the modeled 2010 and 2025 ADT capacity, volume, and LOS of the study roadway segments if the Foothill Parkway Westerly Extension is not constructed.

Table 19
Years 2010 and 2025 ADT Volumes and LOS
No Foothill Parkway Westerly Extension

Study Roadway Segment	Capacity (ADT)	2010 Volume (ADT)	2010 V/C – LOS	2025 Volume (ADT)	2025 V/C – LOS
6 th St west of Smith Ave	53,900 ¹	30,100	0.56 – A	44,800	0.83 – D
10 th St west of Lincoln Ave	25,900	19,300	0.75 – C	24,200	0.93 – E
Green River Rd west of Palisades Dr	53,900 ¹	25,100	0.47 – A	46,400	0.86 – D
Serfas Club Dr south of SR-91	35,900	16,500	0.46 – A	30,200	0.84 – D
Paseo Grande north of Foothill Pkwy	13,000	12,200	0.94 – E	15,800	1.22 – F
Ontario Ave east of Paseo Grande	13,000	12,200	0.94 – E	12,200	0.94 – E
Ontario Ave east of Lincoln Ave	35,900	20,500	0.57 – A	22,200	0.62 – B
Green River Rd west of Paseo Grande	35,900	13,900	0.39 – A	19,700	0.55 – A
Foothill Pkwy east of Paseo Grande	N/A	N/A	N/A	N/A	N/A
Foothill Pkwy east of Lincoln Ave	25,900	3,800	0.15 – A	5,700	0.22 – A
Upper Dr south of Foothill Pkwy	35,900	6,600	0.18 – A	7,400	0.21 – A
Border Ave north of Foothill Pkwy	13,000	3,000	0.23 – A	3,000	0.23 – A
Mangular Ave north of Foothill Pkwy	13,000	3,800	0.29 – A	3,800	0.29 – A
Lincoln Ave north of Foothill Pkwy	35,900	10,600	0.30 – A	10,800	0.30 – A
Notes: ADT = Average Daily Traffic LOS = Level of Service V/C = Volume to Capacity ratio; deficient roadway segment operation shown in bold . ¹ ADT capacity reflects programmed improvements to 6 th Street (west of Smith Avenue) and Green River Road (west of Palisades), to be completed in 2010. Source: Meyer, Mohaddes Associates, June 2007.					

As shown in Table 19, the study roadways are forecast to operate acceptably, according to City of Corona performance criteria, for forecast year 2010 without Project conditions, with the exception of the Paseo Grande segment north of Foothill Parkway and Ontario Avenue east of Paseo Grande. For the forecast year 2025 without Project conditions, the study area roadways are expected to operate acceptably with the exception of 10th Street west of Lincoln, Paseo Grande north of Foothill Parkway, and Ontario Avenue east of Paseo Grande. The segment of Paseo Grande is expected to operate at LOS F in year 2025. Ontario Avenue, east of Paseo Grande, and 10th Street, west of Lincoln Avenue, are expected to operate at LOS E.

**Foothill Parkway Westerly Extension with Border Avenue and Chase Drive Connections
(Proposed Project)**

Table 20, below, summarizes the modeled 2010 and 2025 ADT capacity, volume, and LOS of the study roadway segments if the Foothill Parkway Westerly Extension is constructed, as well as both the Border Avenue and Chase Drive connections.

**Table 20
Years 2010 and 2025 ADT Volumes and LOS
Foothill Parkway Westerly Extension with Border Avenue and Chase Drive Connections**

Study Roadway Segment	Capacity (ADT)	2010 Volume (ADT)	2010 V/C – LOS	2025 Volume (ADT)	2025 V/C – LOS
6 th St west of Smith Ave	53,900 ¹	28,400	0.53 – A	42,700	0.79 – C
10 th St west of Lincoln Ave	25,900	18,400	0.71 – C	21,700	0.84 – D
Green River Rd west of Palisades Dr	53,900 ¹	26,600	0.49 – A	52,800	0.98 – E
Serfas Club Dr south of SR-91	35,900	10,600	0.30 – A	28,700	0.80 – C
Paseo Grande north of Foothill Pkwy	13,000	5,300	0.41 – A	7,400	0.57 – A
Ontario Ave east of Paseo Grande	13,000	7,300	0.56 – A	10,700	0.82 – D
Ontario Ave east of Lincoln Ave	35,900	16,200	0.45 – A	18,800	0.52 – A
Green River Rd west of Paseo Grande	35,900	17,900	0.50 – A	29,000	0.81 – D
Foothill Pkwy east of Paseo Grande	25,900	11,000	0.42 – A	21,700	0.84 – D
Foothill Pkwy east of Lincoln Ave	25,900	10,500	0.41 – A	21,900	0.85 – D
Upper Dr south of Foothill Pkwy	35,900	6,800	0.19 – A	7,900	0.22 – A
Border Ave north of Foothill Pkwy	13,000	3,100	0.24 – A	3,600	0.28 – A
Mangular Ave north of Foothill Pkwy	13,000	4,000	0.31 – A	4,500	0.35 – A
Lincoln Ave north of Foothill Pkwy	35,900	9,600	0.27 – A	9,100	0.25 – A
Notes: ADT = Average Daily Traffic LOS = Level of Service V/C = Volume to Capacity ratio; deficient roadway segment operation shown in bold . ¹ ADT capacity reflects programmed improvements to 6 th Street (west of Smith Avenue) and Green River Road (west of Palisades), to be completed in 2010. Source: Meyer, Mohaddes Associates, June 2007.					

As shown in Table 20, the Proposed Project provides LOS A or LOS C for all of the study area roadway segments for the forecast 2010 condition, which is well within the City of Corona performance criteria. In the forecast 2025 condition, the Proposed Project will provide a minimum LOS D for all study area roadway segments, with the exception of Green River Road west of Palisades Drive. Due to the roadway geometry and close proximity of this segment to State Route 91, this arterial is considered a critical link of the interchange; therefore the City of Corona has identified LOS E as acceptable for this heavily traveled freeway interchange, consistent with the City of Corona General Plan Circulation Element Policy 6.1.6. Therefore, all study roadways are forecast to operate acceptably according to City of Corona performance criteria for forecast years 2010 and 2025 with Project conditions.

Foothill Parkway Westerly Extension without Local Connections

Table 21, below, summarizes the modeled 2010 and 2025 ADT capacity, volume, and LOS of the study roadway segments if the Foothill Parkway Westerly Extension is constructed, without the Border Avenue and Chase Drive connections.

Table 21
Years 2010 and 2025 ADT Volumes and LOS
Foothill Parkway Westerly Extension without Local Connections

Study Roadway Segment	Capacity (ADT)	2010 Volume (ADT)	2010 V/C – LOS	2025 Volume (ADT)	2025 V/C – LOS
6 th St west of Smith Ave	53,900 ¹	28,400	0.53 – A	42,700	0.79 – C
10 th St west of Lincoln Ave	25,900	18,400	0.71 – C	21,700	0.84 – D
Green River Rd west of Palisades Dr	53,900 ¹	26,600	0.49 – A	52,800	0.98 – E
Serfas Club Dr south of SR-91	35,900	10,600	0.30 – A	28,700	0.80 – C
Paseo Grande north of Foothill Pkwy	13,000	5,700	0.44 – A	7,700	0.59 – A
Ontario Ave east of Paseo Grande	13,000	8,000	0.62 – B	11,600	0.89 – D
Ontario Ave east of Lincoln Ave	35,900	16,300	0.45 – A	18,800	0.52 – A
Green River Rd west of Paseo Grande	35,900	17,900	0.50 – A	29,000	0.81 – D
Foothill Pkwy east of Paseo Grande	25,900	10,800	0.42 – A	21,500	0.83 – D
Foothill Pkwy east of Lincoln Ave	25,900	10,400	0.40 – A	21,800	0.84 – D
Upper Dr south of Foothill Pkwy	35,900	6,800	0.19 – A	7,900	0.22 – A
Border Ave north of Foothill Pkwy	13,000	3,000	0.23 – A	3,000	0.23 – A
Mangular Ave north of Foothill Pkwy	13,000	3,800	0.29 – A	3,800	0.29 – A
Lincoln Ave north of Foothill Pkwy	35,900	9,600	0.27 – A	9,200	0.26 – A
Notes: ADT = Average Daily Traffic LOS = Level of Service V/C = Volume to Capacity ratio; deficient roadway segment operation shown in bold . ¹ ADT capacity reflects programmed improvements to 6 th Street (west of Smith Avenue) and Green River Road (west of Palisades), to be completed in 2010. Source: Meyer, Mohaddes Associates, June 2007.					

As shown in Table 21, all study roadways are forecast to operate acceptably according to City of Corona performance criteria for forecast years 2010 under this alternative. In forecast year 2025, all roadways are expected to operate at LOS D or better, with the exception of the segment of Green River Road west of Palisades Drive, which is expected to operate at LOS E. Due to the roadway geometry and close proximity of this segment to State Route 91, this arterial is considered a critical link of the interchange; therefore the City of Corona has identified LOS E as acceptable for this heavily traveled freeway interchange, consistent with the City of Corona General Plan Circulation Element Policy 6.1.6. Therefore, all study roadways are forecast to operate acceptably according to City of Corona performance criteria for forecast years 2010 and 2025 for this alternative. None of the roadways analyzed are expected to exceed their capacity for forecast years 2010 and 2025 for this alternative.

Foothill Parkway Westerly Extension with Border Avenue Connection Only

Table 22, below, summarizes the modeled 2010 and 2025 ADT capacity, volume, and LOS of the study roadway segments if the Foothill Parkway Westerly Extension is constructed with the Border Avenue connection only.

Table 22
Years 2010 and 2025 ADT Volumes and LOS
Foothill Parkway Westerly Extension with Border Avenue Connection Only

Study Roadway Segment	Capacity (ADT)	2010 Volume (ADT)	2010 V/C – LOS	2025 Volume (ADT)	2025 V/C – LOS
6 th St west of Smith Ave	53,900 ¹	28,400	0.53 – A	42,700	0.79 – C
10 th St west of Lincoln Ave	25,900	18,400	0.71 – C	21,700	0.84 – D
Green River Rd west of Palisades Dr	53,900 ¹	26,600	0.49 – A	52,800	0.98 – E
Serfas Club Dr south of SR-91	35,900	10,600	0.30 – A	28,700	0.80 – C
Paseo Grande north of Foothill Pkwy	13,000	5,400	0.42 – A	7,500	0.58 – A
Ontario Ave east of Paseo Grande	13,000	7,300	0.56 – A	11,200	0.86 – D
Ontario Ave east of Lincoln Ave	35,900	16,300	0.45 – A	18,700	0.52 – A
Green River Rd west of Paseo Grande	35,900	17,900	0.50 – A	29,000	0.81 – D
Foothill Pkwy east of Paseo Grande	25,900	10,900	0.42 – A	21,600	0.83 – D
Foothill Pkwy east of Lincoln Ave	25,900	10,500	0.41 – A	21,900	0.85 – D
Upper Dr south of Foothill Pkwy	35,900	6,800	0.19 – A	7,900	0.22 – A
Border Ave north of Foothill Pkwy	13,000	3,200	0.25 – A	3,800	0.29 – A
Mangular Ave north of Foothill Pkwy	13,000	3,800	0.29 – A	3,800	0.29 – A
Lincoln Ave north of Foothill Pkwy	35,900	9,600	0.27 – A	9,200	0.26 – A
Notes: ADT = Average Daily Traffic LOS = Level of Service V/C = Volume to Capacity ratio; deficient roadway segment operation shown in bold . ¹ ADT capacity reflects programmed improvements to 6 th Street (west of Smith Avenue) and Green River Road (west of Palisades), to be completed in 2010. Source: Meyer, Mohaddes Associates, June 2007.					

As shown in Table 22, all study roadways are forecast to operate acceptably according to City of Corona performance criteria for forecast years 2010 under this alternative. In forecast year 2025, all roadways are expected to operate at LOS D or better, with the exception of the segment of Green River Road west of Palisades Drive, which is expected to operate at LOS E. Due to the roadway geometry and close proximity of this segment to State Route 91, this arterial is considered a critical link of the interchange; therefore the City of Corona has identified LOS E as acceptable for this heavily traveled freeway interchange, consistent with the City of Corona General Plan Circulation Element Policy 6.1.6. Therefore, all study roadways are forecast to operate acceptably according to City of Corona performance criteria for forecast years 2010 and 2025 for this alternative. None of the roadways analyzed are expected to exceed their capacity for forecast years 2010 and 2025 for this alternative.

Foothill Parkway Westerly Extension with Chase Drive Connection Only

Table 23, below, summarizes the modeled 2010 and 2025 ADT capacity, volume, and LOS of the study roadway segments if the Foothill Parkway Westerly Extension is constructed with the Chase Drive connection only.

Table 23
Years 2010 and 2025 ADT Volumes and LOS
Foothill Parkway Westerly Extension with Chase Drive Connection Only

Study Roadway Segment	Capacity (ADT)	2010 Volume (ADT)	2010 V/C – LOS	2025 Volume (ADT)	2025 V/C – LOS
6 th St west of Smith Ave	53,900 ¹	28,400	0.53 – A	42,700	0.79 – C
10 th St west of Lincoln Ave	25,900	18,400	0.71 – C	21,700	0.84 – D
Green River Rd west of Palisades Dr	53,900 ¹	26,600	0.49 – A	52,800	0.98 – E
Serfas Club Dr south of SR-91	35,900	10,600	0.30 – A	28,700	0.80 – C
Paseo Grande north of Foothill Pkwy	13,000	5,600	0.43 – A	7,600	0.58 – A
Ontario Ave east of Paseo Grande	13,000	8,000	0.62 – B	11,300	0.87 – D
Ontario Ave east of Lincoln Ave	35,900	16,300	0.45 – A	18,800	0.52 – A
Green River Rd west of Paseo Grande	35,900	18,000	0.50 – A	29,000	0.81 – D
Foothill Pkwy east of Paseo Grande	25,900	10,900	0.42 – A	21,600	0.83 – D
Foothill Pkwy east of Lincoln Ave	25,900	10,400	0.40 – A	21,800	0.84 – D
Upper Dr south of Foothill Pkwy	35,900	6,800	0.19 – A	7,900	0.22 – A
Border Ave north of Foothill Pkwy	13,000	3,000	0.23 – A	3,000	0.23 – A
Mangular Ave north of Foothill Pkwy	13,000	4,000	0.31 – A	4,600	0.35 – A
Lincoln Ave north of Foothill Pkwy	35,900	9,600	0.27 – A	9,100	0.25 – A
Notes: ADT = Average Daily Traffic LOS = Level of Service V/C = Volume to Capacity ratio; deficient roadway segment operation shown in bold . ¹ ADT capacity reflects programmed improvements to 6 th Street (west of Smith Avenue) and Green River Road (west of Palisades), to be completed in 2010. Source: Meyer, Mohaddes Associates, June 2007.					

As shown in Table 23, all study roadways are forecast to operate acceptably according to City of Corona performance criteria for forecast years 2010 under this alternative. In forecast year 2025, all roadways are expected to operate at LOS D or better, with the exception of the segment of Green River Road west of Palisades Drive, which is expected to operate at LOS E. Due to the roadway geometry and close proximity of this segment to State Route 91, this arterial is considered a critical link of the interchange; therefore the City of Corona has identified LOS E as acceptable for this heavily traveled freeway interchange, consistent with the City of Corona General Plan Circulation Element Policy 6.1.6. Therefore, all study roadways are forecast to operate acceptably according to City of Corona performance criteria for forecast years 2010 and 2025 for this alternative. None of the roadways analyzed are expected to exceed their capacity for forecast years 2010 and 2025 for this alternative.

Foothill Parkway Westerly Extension, 2-Lane Reduced Width, with Border Avenue and Chase Drive Connections

Table 24, below, summarizes the modeled 2010 and 2025 ADT capacity, volume, and LOS of the study roadway segments if the Reduced Width (2-Lane) Foothill Parkway Westerly Extension is constructed with the Border Avenue and Chase Drive connections.

Table 24
Years 2010 and 2025 ADT Volumes and LOS
Foothill Parkway Westerly Extension, 2-Lane Reduced Width, with Local Connections

Study Roadway Segment	Capacity (ADT)	2010 Volume (ADT)	2010 V/C – LOS	2025 Volume (ADT)	2025 V/C – LOS
6 th St west of Smith Ave	53,900 ¹	28,200	0.52 – A	43,000	0.80 - C
10 th St west of Lincoln Ave	25,900	18,200	0.70 – B	22,000	0.85 - D
Green River Rd west of Palisades Dr	53,900 ¹	28,300	0.53 – A	50,100	0.93 - E
Serfas Club Dr south of SR-91	35,900	12,300	0.34 – A	28,800	0.80 - C
Paseo Grande north of Foothill Pkwy	13,000	5,500	0.42 – A	9,500	0.73 - C
Ontario Ave east of Paseo Grande	13,000	7,400	0.57 – A	11,100	0.85 - D
Ontario Ave east of Lincoln Ave	35,900	16,900	0.47 – A	21,300	0.59 - A
Green River Rd west of Paseo Grande	35,900	18,000	0.50 – A	26,100	0.73 - C
Foothill Pkwy east of Paseo Grande	13,000	10,600	0.82 – D	16,200	1.25 - F
Foothill Pkwy east of Lincoln Ave	25,900	10,200	0.39 – A	17,700	0.68 - B
Upper Dr south of Foothill Pkwy	35,900	6,800	0.19 – A	7,900	0.22 - A
Border Ave north of Foothill Pkwy	13,000	3,100	0.24 – A	3,600	0.28 - A
Mangular Ave north of Foothill Pkwy	13,000	4,000	0.31 – A	4,500	0.35 - A
Lincoln Ave north of Foothill Pkwy	35,900	9,400	0.26 – A	9,100	0.25 - A
Notes: ADT = Average Daily Traffic LOS = Level of Service V/C = Volume to Capacity ratio; deficient roadway segment operation shown in bold . ¹ ADT capacity reflects programmed improvements to 6 th Street (west of Smith Avenue) and Green River Road (west of Palisades), to be completed in 2010. Source: Meyer, Mohaddes Associates, February 2008.					

As shown in Table 24, all study roadways are forecast to operate acceptably according to City of Corona performance criteria for forecast year 2010 under this alternative. In forecast year 2025, Foothill Parkway is expected to operate at LOS F as a two-lane collector, with a volume to capacity ratio of 1.25. The segment of Green River Road west of Palisades Drive is expected to operate at LOS E. Due to the roadway geometry and close proximity of this segment to State Route 91, this arterial is considered a critical link of the interchange; therefore the City of Corona has identified LOS E as acceptable for this heavily traveled freeway interchange, consistent with the City of Corona General Plan Circulation Element Policy 6.1.6. All other roadways in the study area are expected to operate at LOS D or better. Expected volumes on

Foothill Parkway, as a two-lane roadway, will exceed its capacity, therefore the roadway will be deficient.

CONSISTENCY WITH CITY OF CORONA GENERAL PLAN

The proposed Foothill Parkway Westerly Extension is planned to be constructed as a four-lane divided roadway, consistent with the City of Corona General Plan Circulation Element, which identifies the roadway as a Secondary Four-lane Arterial roadway. The Foothill Parkway Westerly Extension is included as a planned arterial in the City of Corona's General Plan Circulation Element, and has been a part of the City's planning process for over 20 years. The primary purpose of the Foothill Parkway Westerly Extension project is to complete a critical east-west connection from its current terminus, approximately 600 feet west of Skyline Drive, to Green River Road. The roadway extension is forecast to alleviate existing and future traffic congestion on the local circulation network and accommodate traffic generated by approved and planned development in south Corona. Additionally, Foothill Parkway can provide improved emergency response vehicle access to the southern portion of Corona. The operation goal for the roadway is to achieve a minimum of a level of service (LOS) "D" which has been adopted by the City as the standard for local streets and arterial highways. It is the City's goal to identify the most cost-effective improvements that would be compatible with existing and future adjoining improvements along Foothill Parkway.

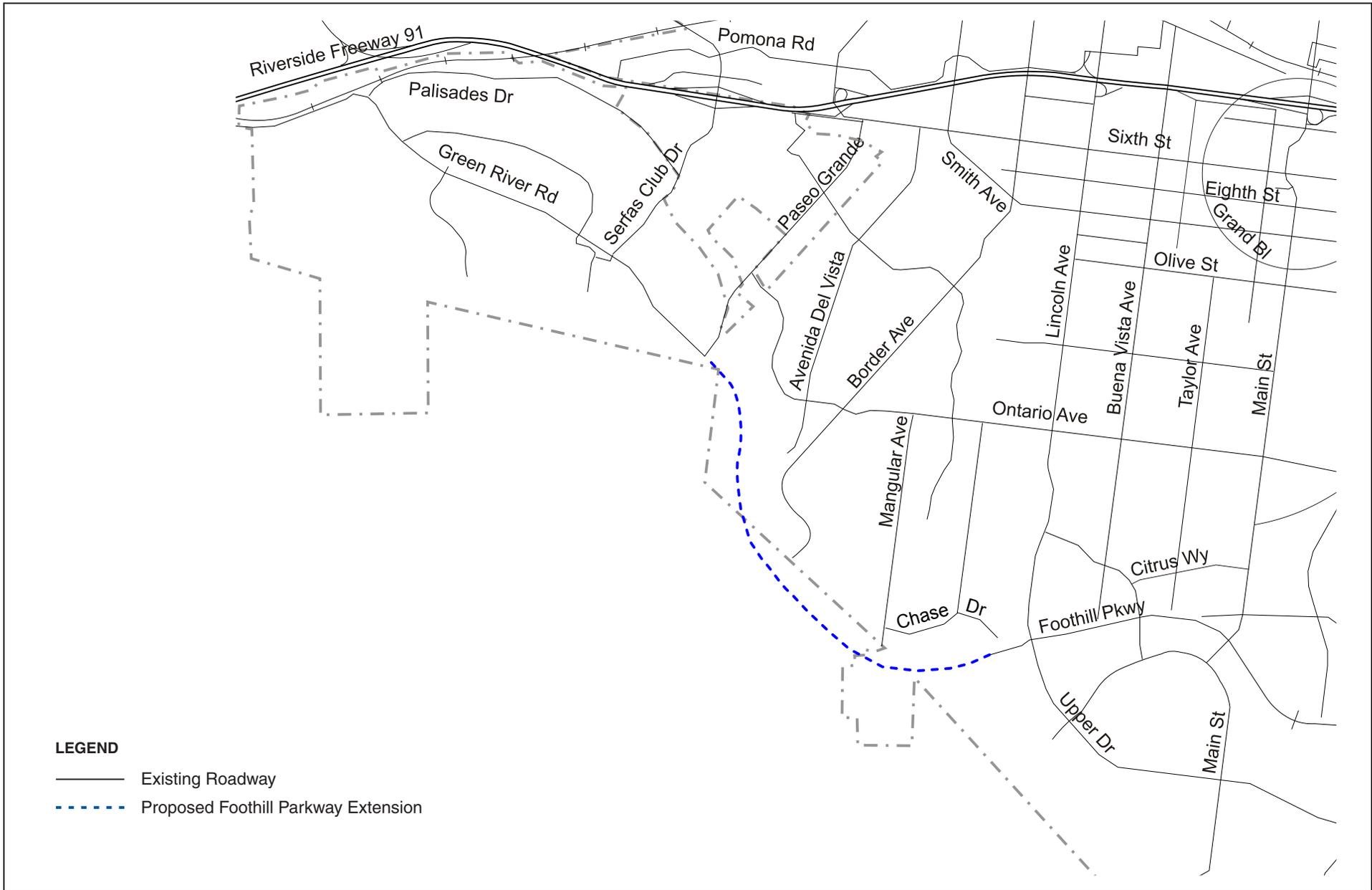
SUMMARY

Foothill Parkway is an integral part of the City's circulation plan, providing a much needed east/west arterial and increasing mobility in the area. Recent growth in population and land uses, both within south Corona and in adjacent communities, has put increasing pressures on the City's arterial and local street system. Additionally, congestion on SR-91 and I-15, as well as congestion at the interchange of the two freeways, has resulted in local and regional traffic using City streets to avoid freeway delays. Ontario Avenue traverses the southeastern portion of Corona. It is a primary east/west arterial serving south Corona, and has become increasingly congested with vehicles attempting to reach the freeway during peak periods. Ontario Avenue does not provide a direct freeway connection to SR-91, causing vehicles to utilize residential streets to access the Green River Road, Maple Street, and Serfas Club Drive interchanges.

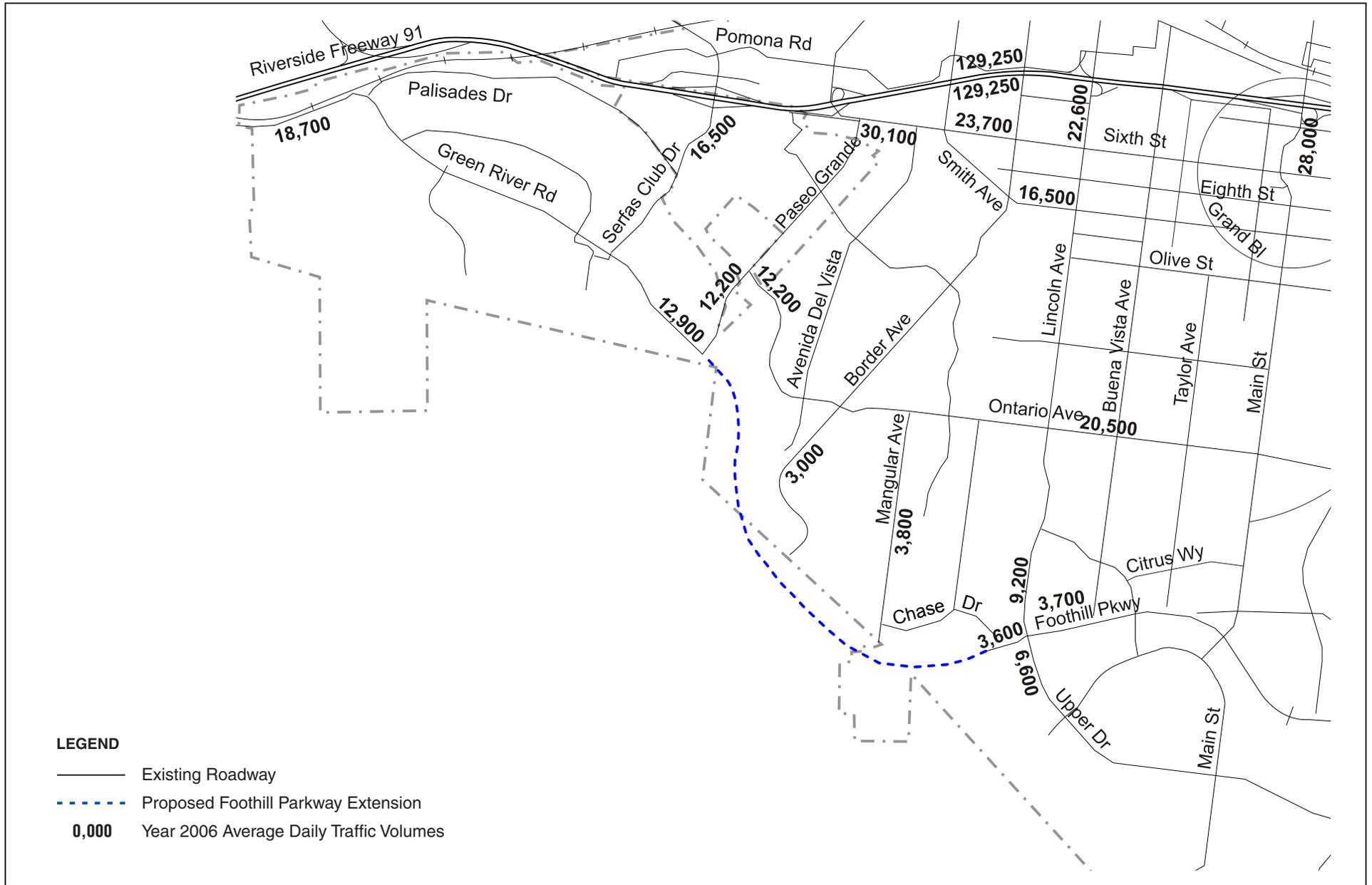
In the existing condition, three roadways within the study area operate at deficient levels of service (LOS), per the City of Corona roadway performance criteria. Paseo Grande, north of Foothill Parkway, and Ontario Avenue, east of Paseo Grande, operate at LOS E. Green River Road, west of Palisades Drive, operates at LOS F. For forecast year 2010, it is anticipated that the same segments of Paseo Grande and Ontario Avenue will continue to operate at LOS E without implementation of the Foothill Parkway Westerly Extension. Planned improvements to Green River Road, west of Palisades Drive, are expected to increase its capacity and bring the level of service on that segment up to LOS A in forecast year 2010. In year 2025, without the construction of the Foothill Parkway Westerly Extension, the operation of Paseo Grande is forecast to reduce to LOS F. Ontario Avenue, east of Paseo Grande, will remain at LOS E, and 10th Street, west of Lincoln Avenue, will be reduced to LOS E. All other roadways are expected to operate at LOS D or better. Construction of the Foothill Parkway Westerly Extension and connections to Border Avenue and Chase Drive will redistribute traffic through the study area. In year 2010, with the proposed project, all roadways in the study area are forecast to operate between LOS A and LOS C. In year 2025, all roadways in the study area are expected to operate acceptably, based on City of Corona performance criteria.

Forecast year 2010 and 2025 traffic volumes on parallel east/west roadways, including 6th Street, 10th Street, and Ontario Avenue, are forecast to decrease relative to the “without project” scenario, as a result of implementation of the Foothill Parkway Westerly Extension project. Construction of the Foothill Parkway Westerly Extension will provide additional east-west corridor capacity, reducing traffic congestion in the City of Corona by diverting approximately 8,000 daily trips onto Foothill Parkway from these parallel roadways. Additionally, the proposed project is forecast to reduce future traffic volumes on Paseo Grande and Ontario Avenue, the nearest parallel roadway, to below existing traffic volumes.

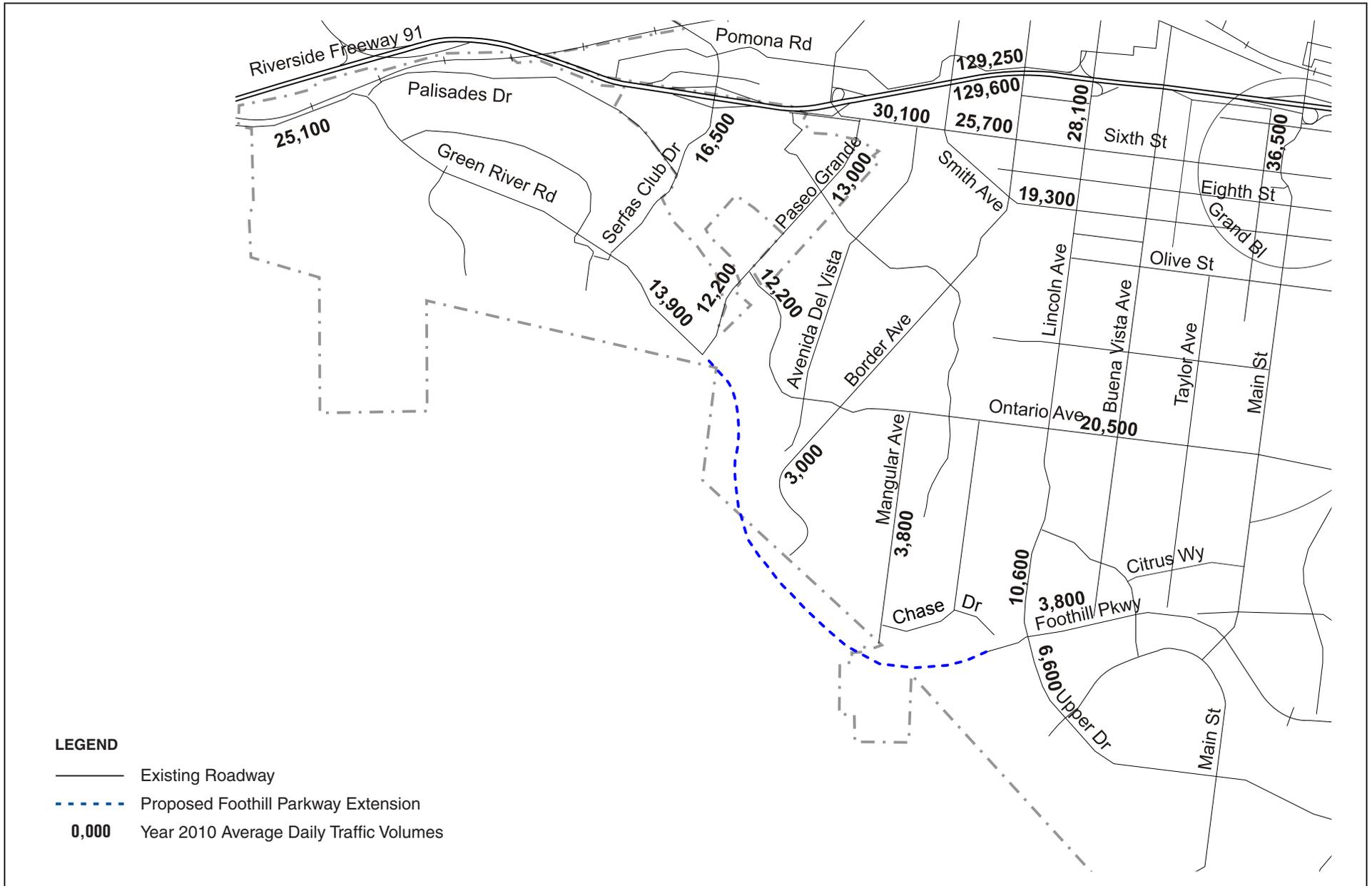
Connections of Border Avenue and Chase Drive to Foothill Parkway would further increase benefits to the City roadway system, providing alternate routes to Foothill Parkway and dispersing traffic more evenly throughout the area, as planned in the City’s General Plan Circulation Element. Most of the existing traffic on Border Avenue and Mangular Avenue near Ontario Avenue is generated from local development, with residents traveling to and from Ontario Avenue and parallel arterials to the north for east/west movement through the City. It is expected that a portion of that neighborhood traffic will redirect to the south to access Foothill Parkway as an alternate east/west route. This redirection will cause the traffic volumes on those two streets to increase at the southern ends near Foothill Parkway. These increases, however, are well below the designated capacity for collector roadways, and are consistent with the City’s General Plan. Conversely, it is expected that the volumes on Border Avenue and Mangular Avenue will decrease near Ontario Avenue, as a result of the redistribution of traffic. Without the local connections, the anticipated volume reduction on Ontario Avenue from the existing condition to the forecast year 2025 will decrease from 1,500 ADT, in the Project condition, to 600 ADT, in the No Connections alternative, therefore providing less relief to this highly congested roadway.



Source: Meyer, Mohaddes Associates, June 2007.



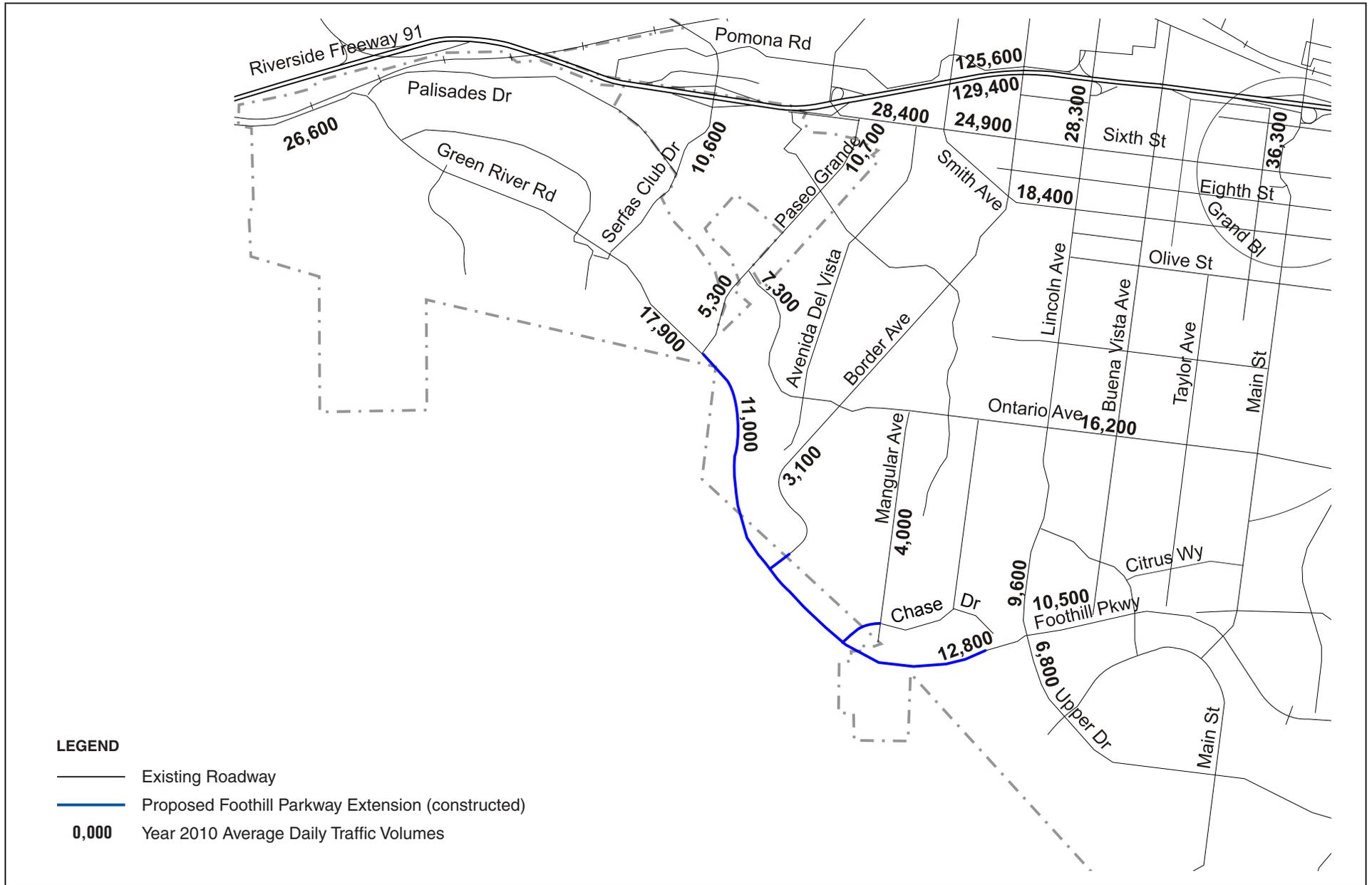
Source: Meyer, Mohaddes Associates, June 2007.



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

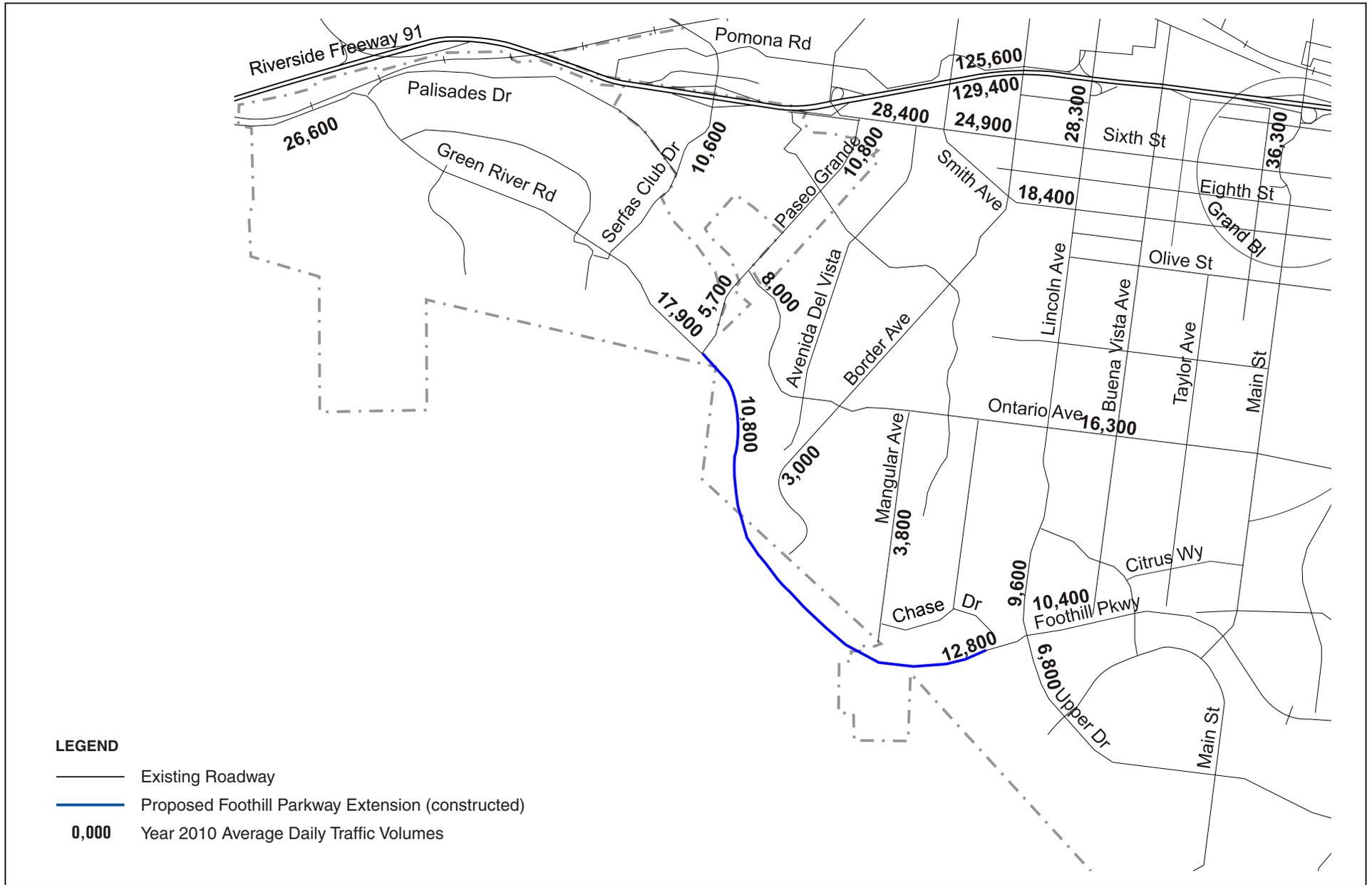
Year 2010 ADT Volumes No Foothill Extension



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

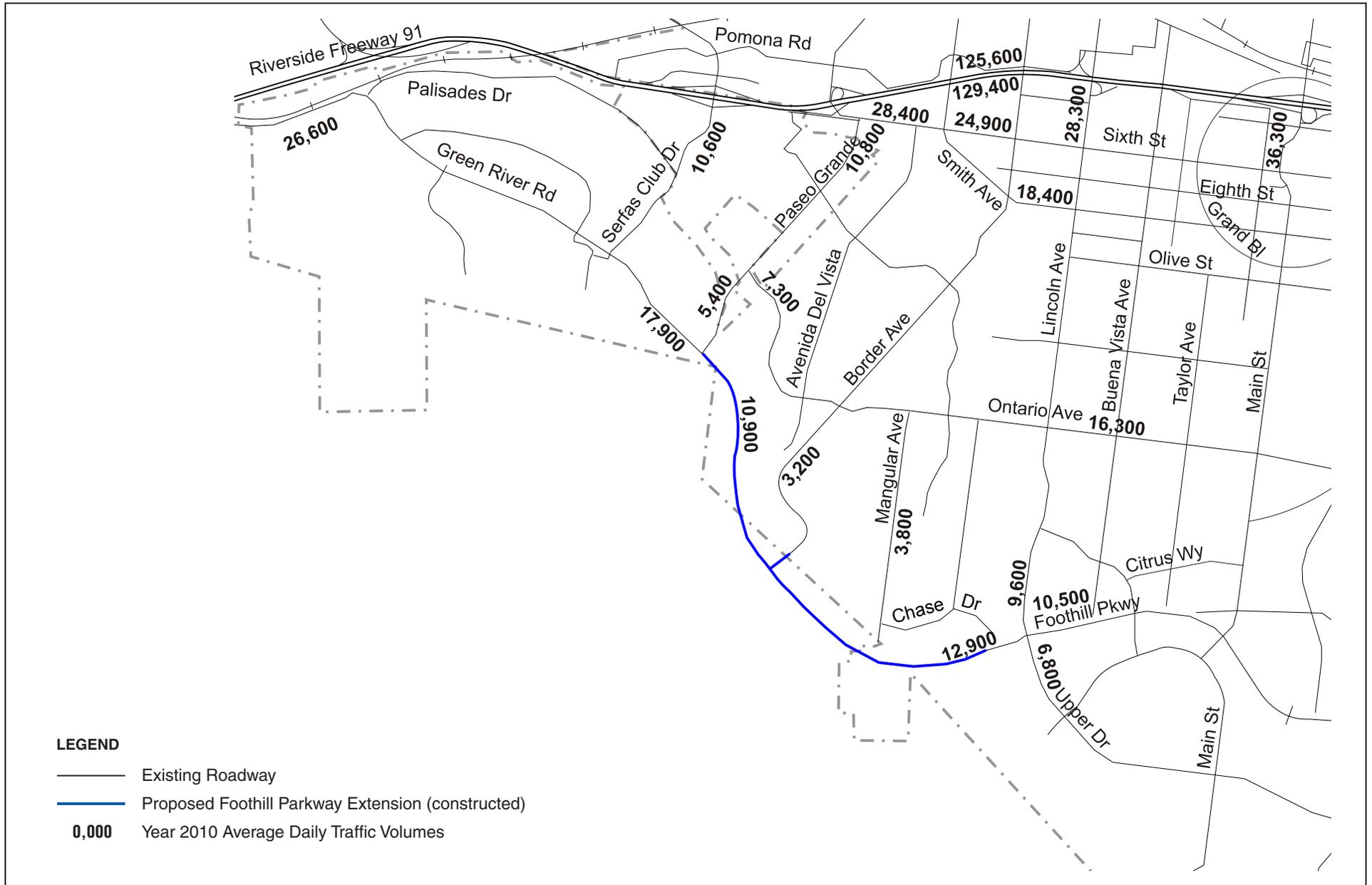
Year 2010 ADT Volumes Border Ave. + Chase Dr. Connections



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

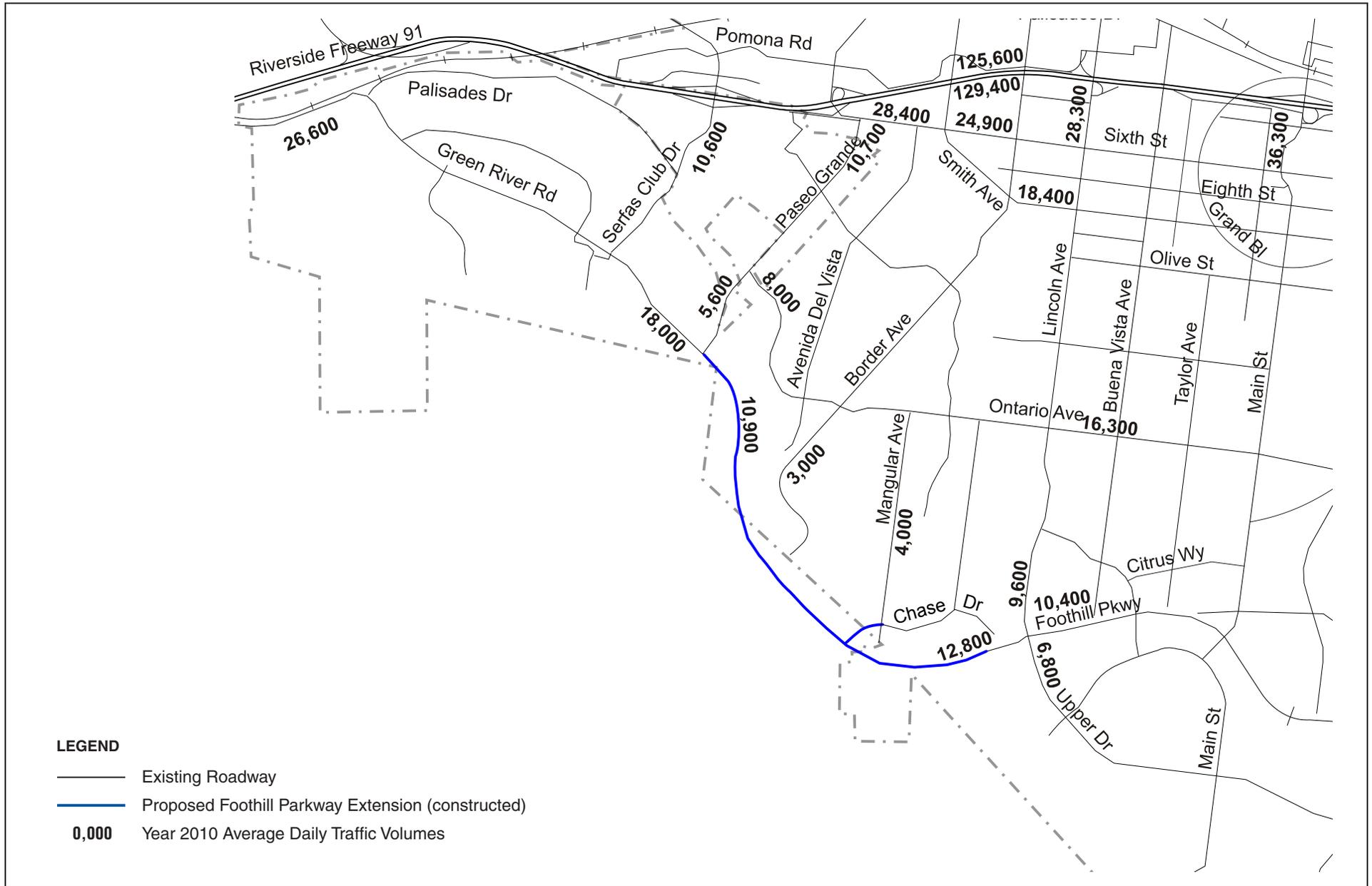
Year 2010 ADT Volumes No Border Ave. or Chase Dr. Connection



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

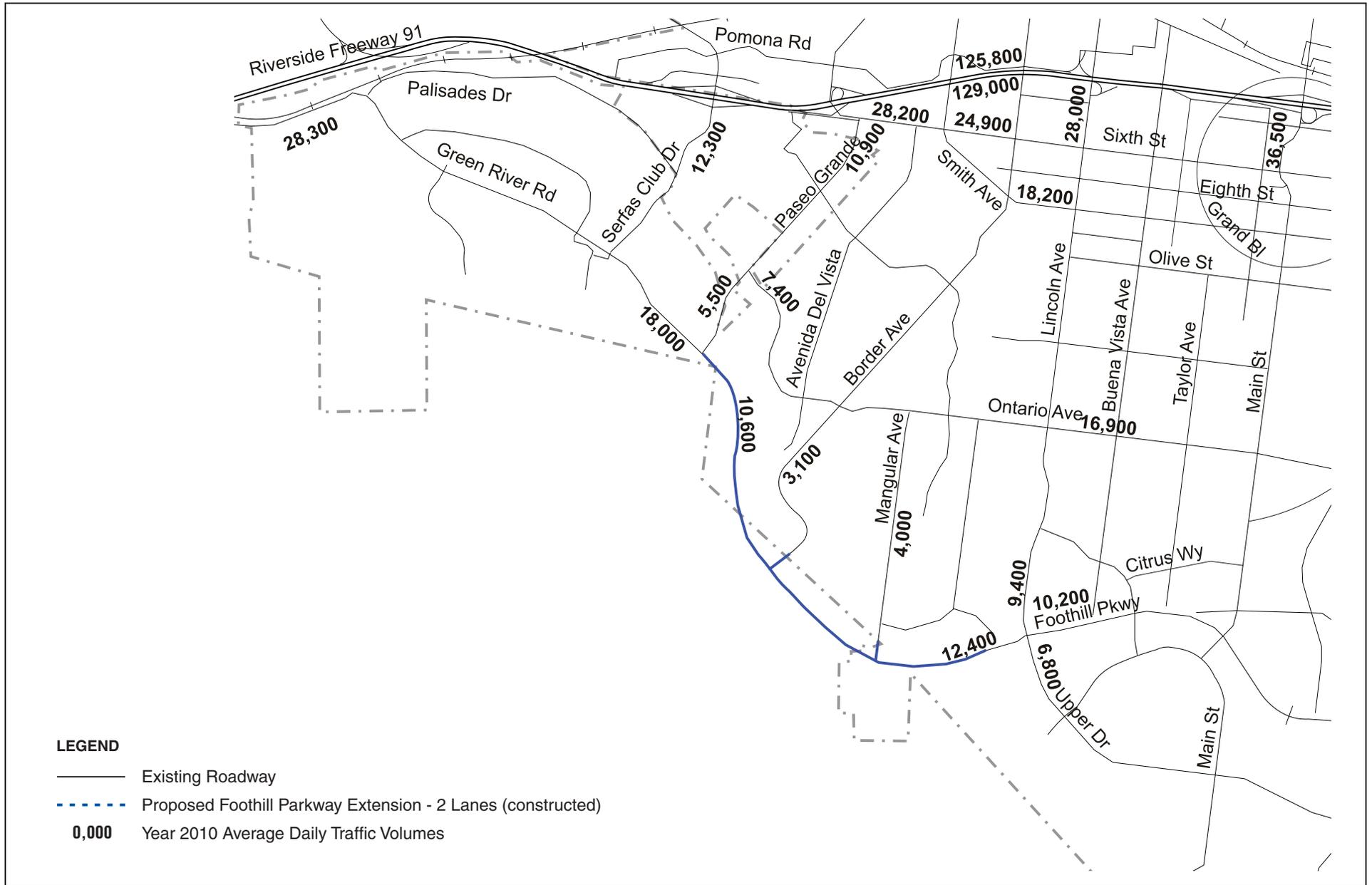
Year 2010 ADT Volumes Border Ave. Connection Only



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

Year 2010 ADT Volumes Chase Dr. Connection Only



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

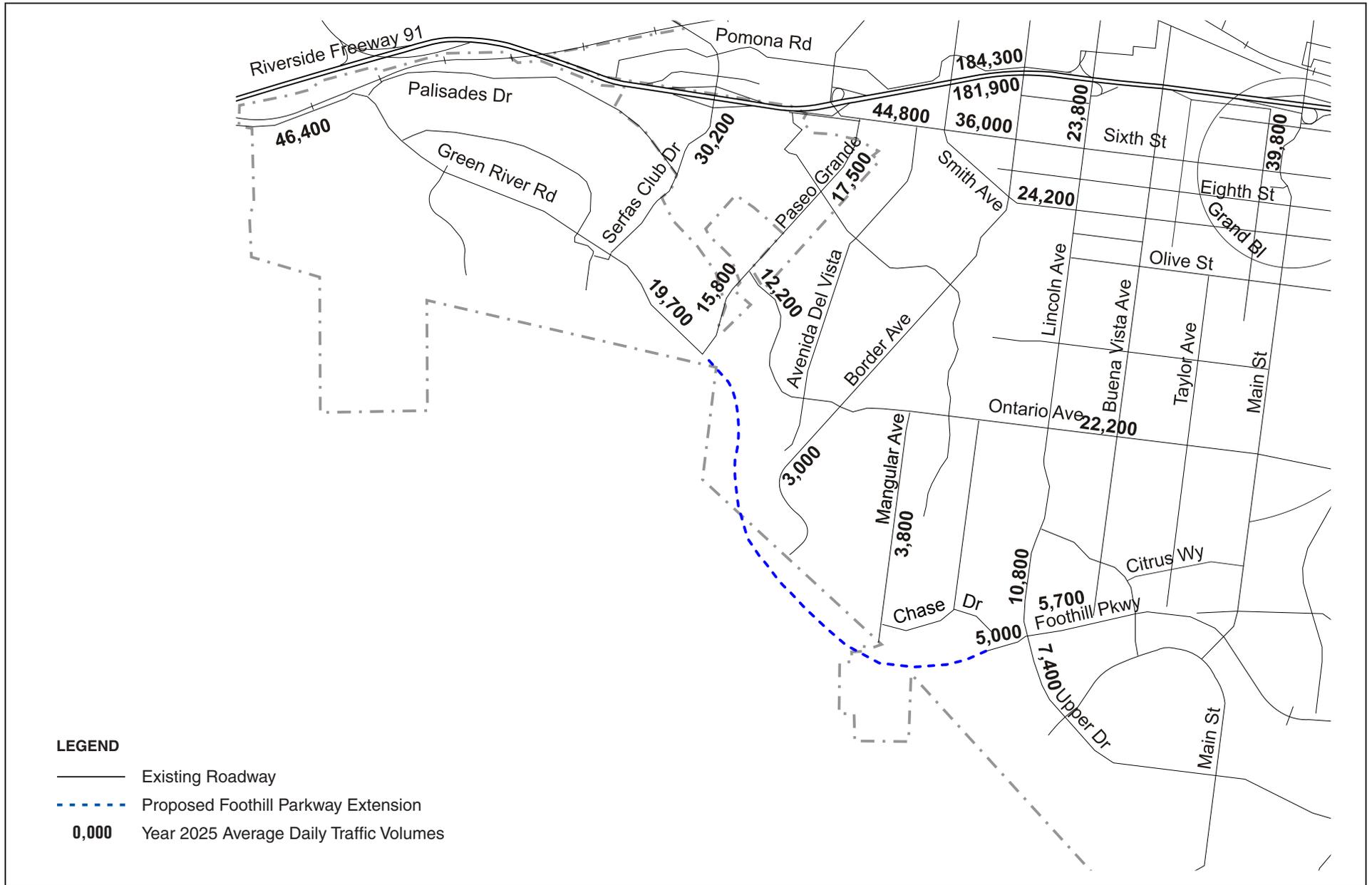
Year 2010 ADT Volumes

2-Lane Reduced-Width Foothill Pkwy. with Border Ave. + Chase Dr. Connections



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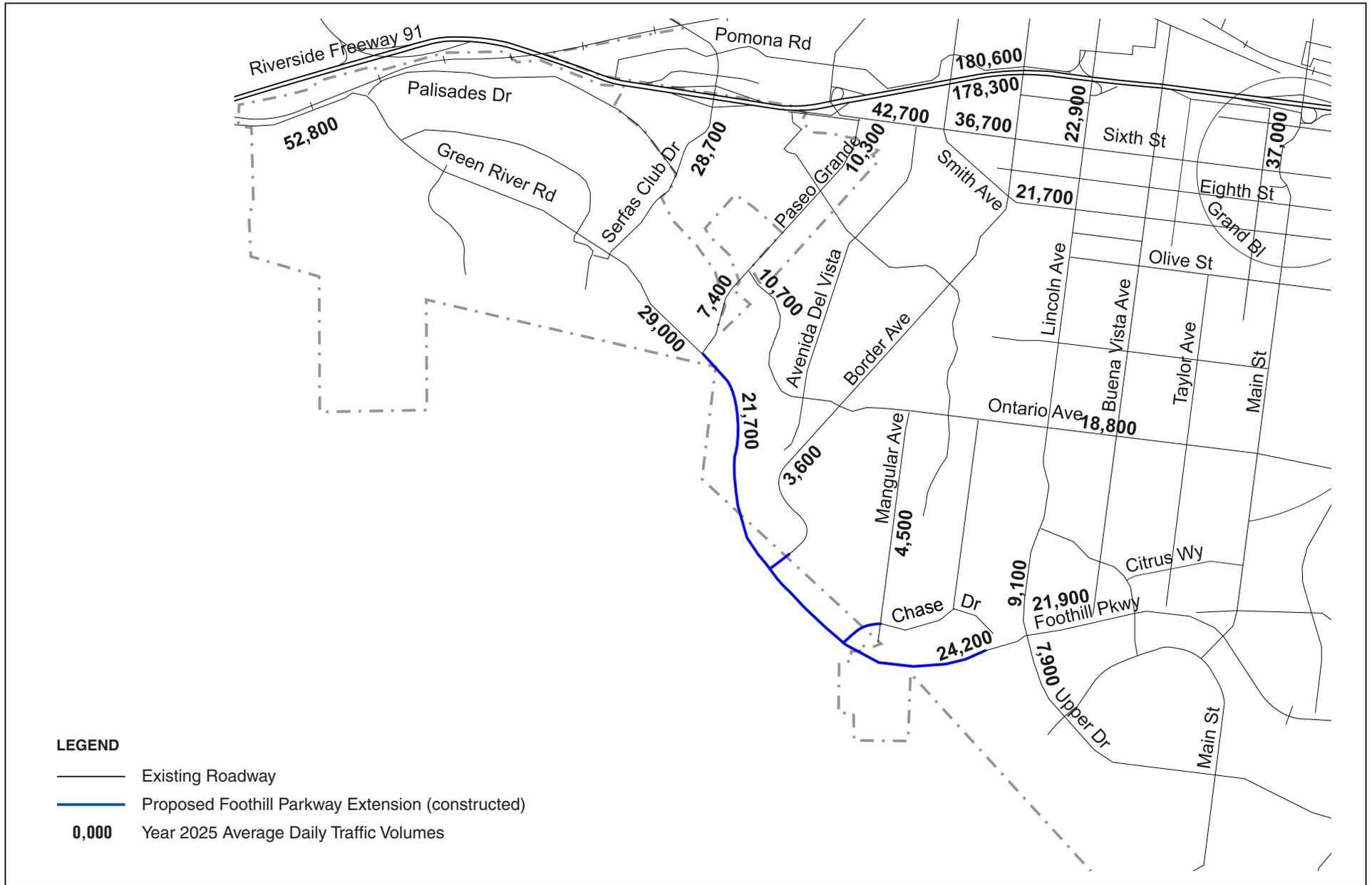
Figure 8



Source: Meyer, Mohaddes Associates, June 2007.

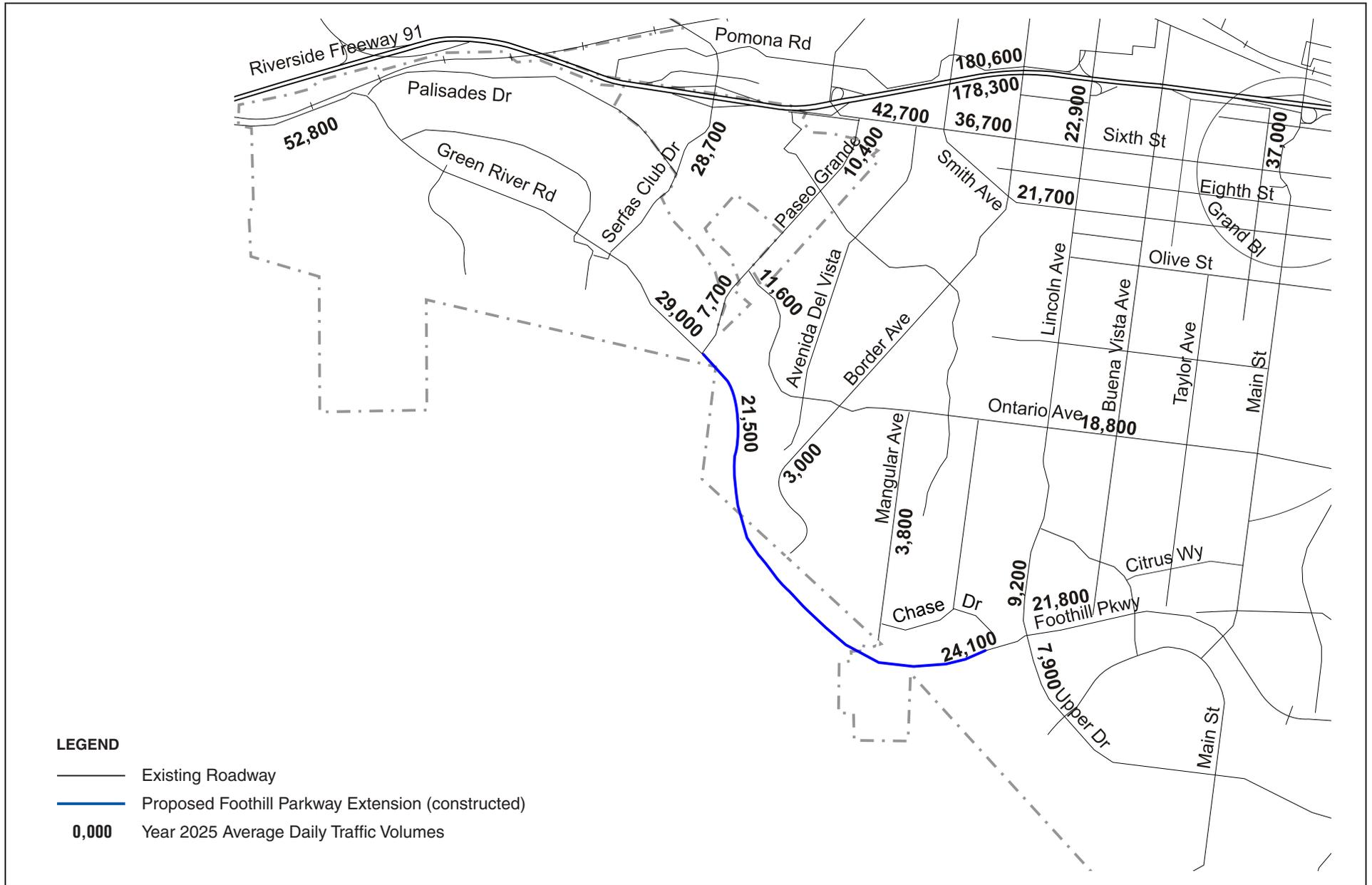
FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

Year 2025 ADT Volumes No Foothill Extension



Source: Meyer, Mohaddes Associates, June 2007.

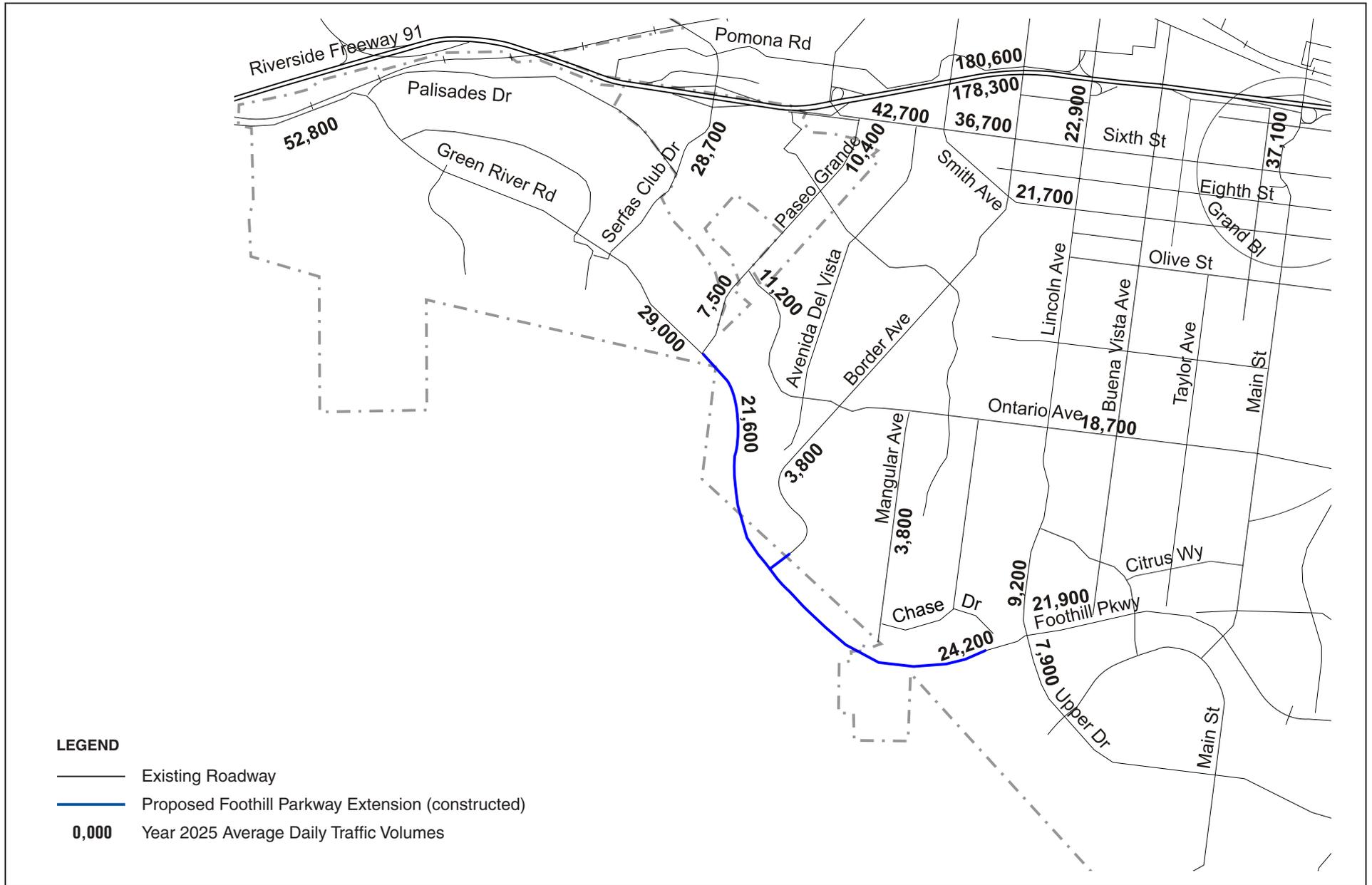
FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

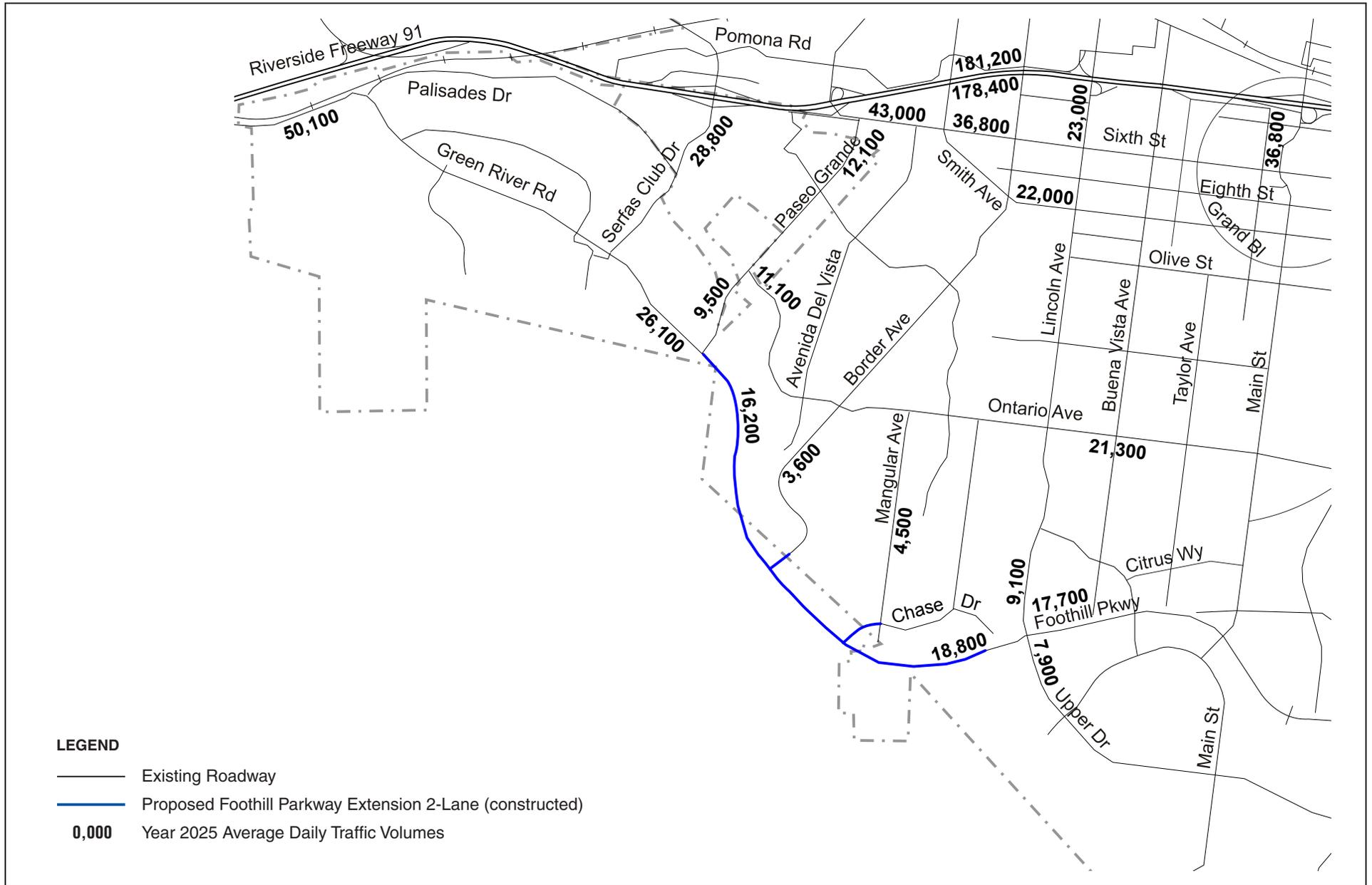
Year 2025 ADT Volumes No Border Ave. or Chase Dr. Connections



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

Year 2025 ADT Volumes Border Ave. Connection Only



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

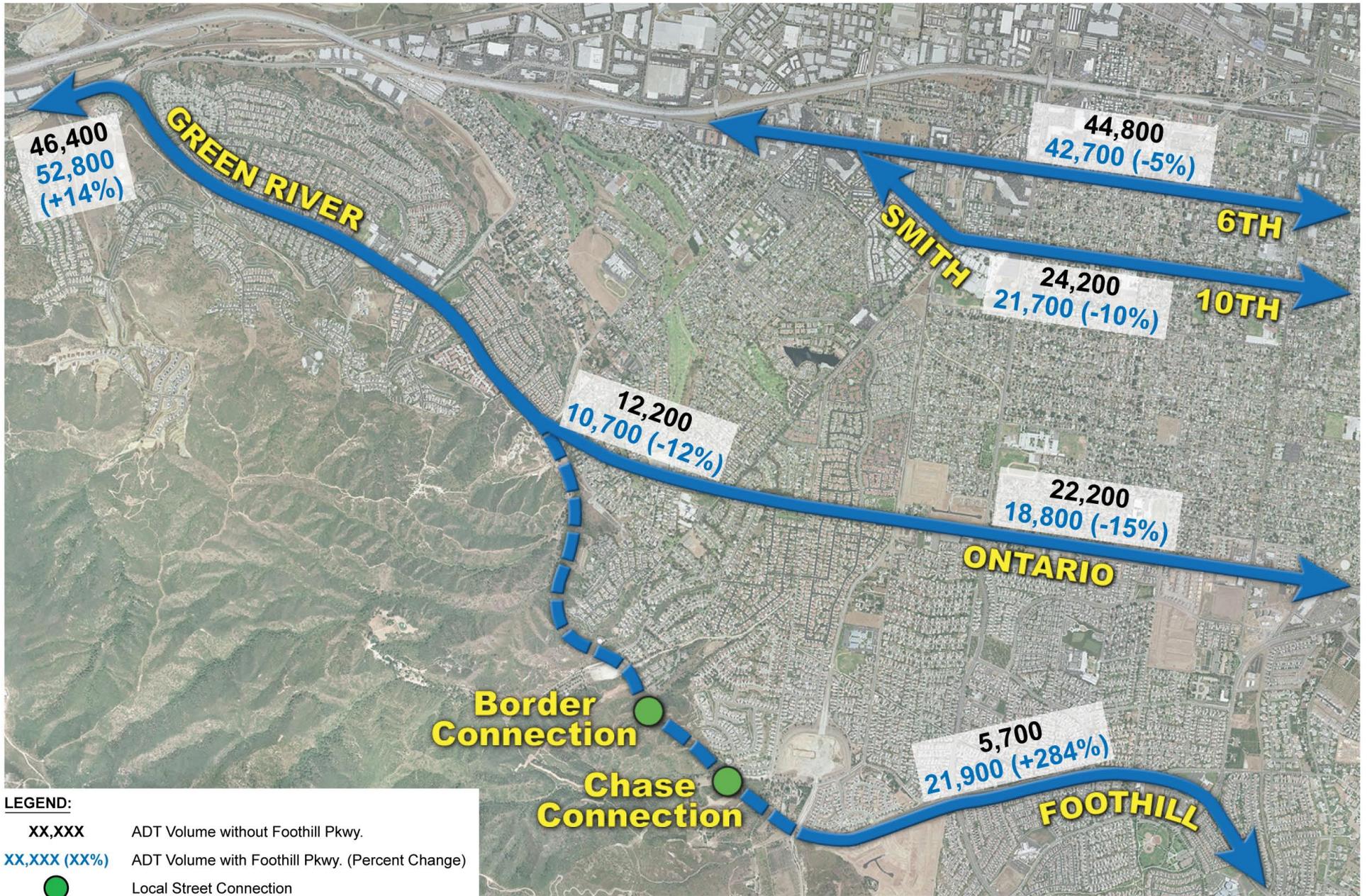
Year 2025 ADT Volumes

2-Lane Reduced-Width Foothill Pkwy. with Border Ave. + Chase Dr. Connections



4/21/08 JN 10-104629-13393

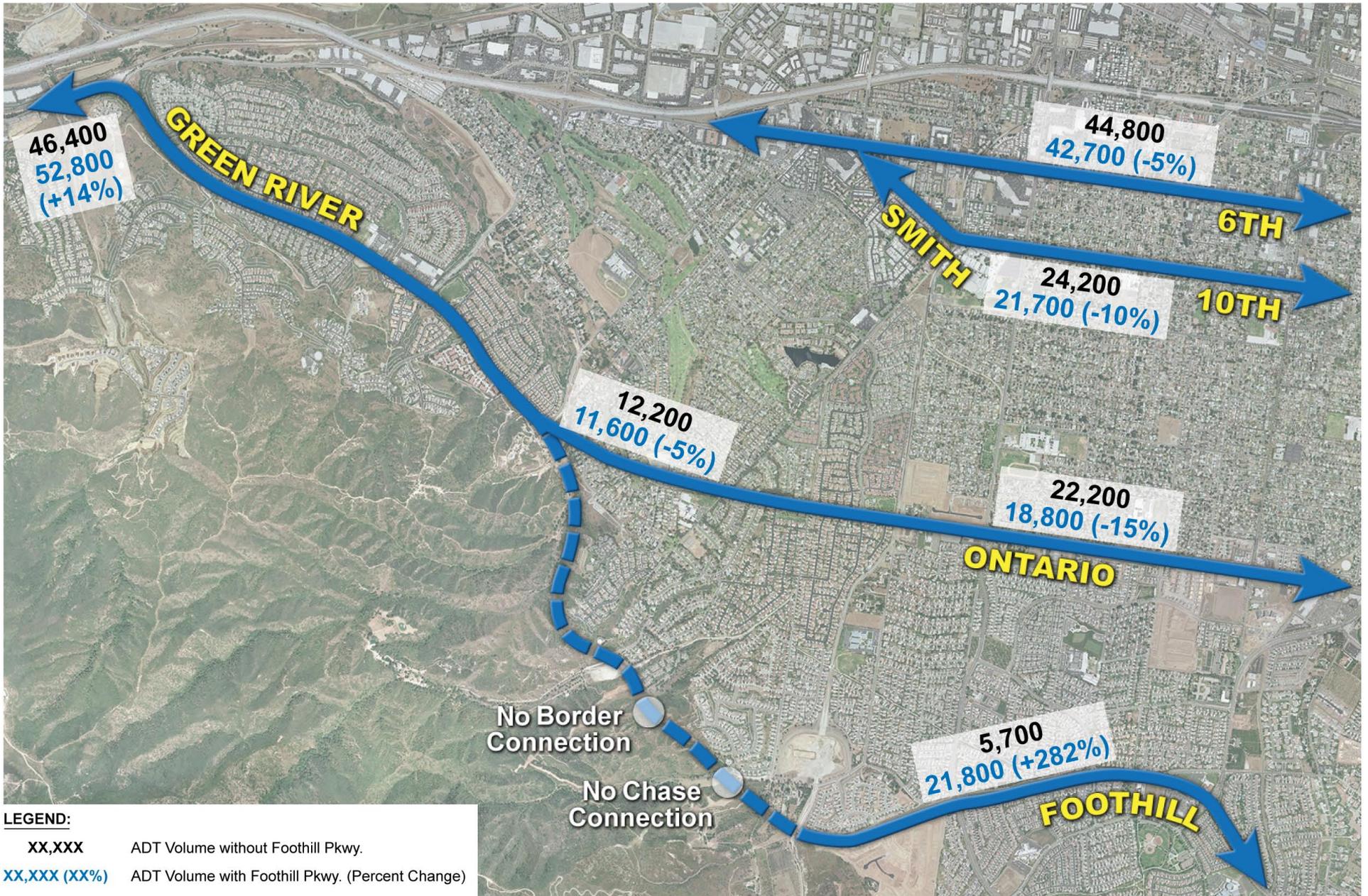
Figure 14



LEGEND:
 XX,XXX ADT Volume without Foothill Pkwy.
 XX,XXX (XX%) ADT Volume with Foothill Pkwy. (Percent Change)
 ● Local Street Connection

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

Forecast Year 2025 with Local Street Connections East-West Corridors ADT Volumes



FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING
Forecast Year 2025 without Local Street Connections
East-West Corridors ADT Volumes



LEGEND:
 XX,XXX ADT Volume without Foothill Pkwy.
 XX,XXX (XX%) ADT Volume with Foothill Pkwy. (Percent Change)
 ● Local Street Connection

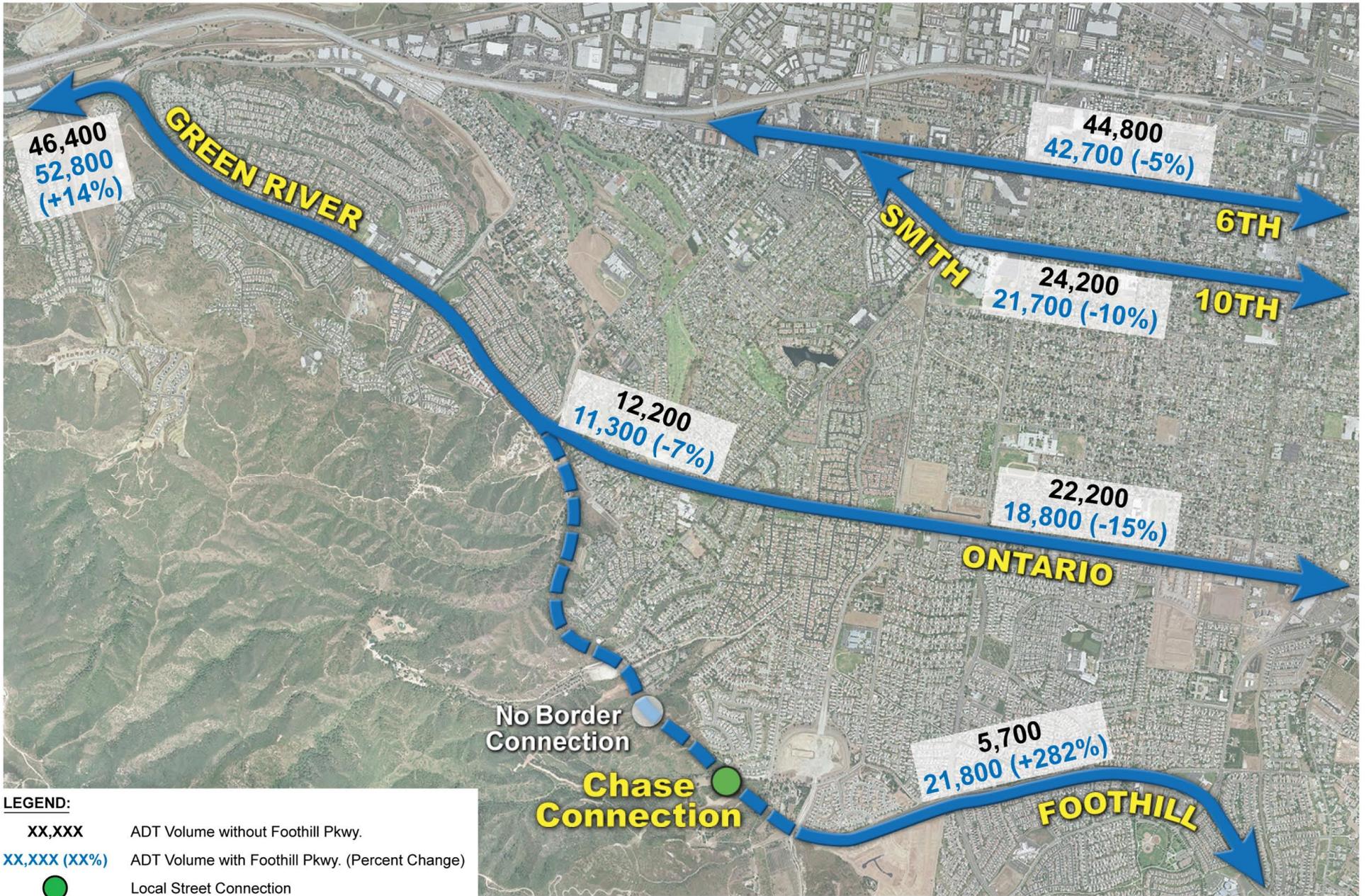
FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

Forecast Year 2025 with Border Avenue Connection East-West Corridors ADT Volumes



2/8/08 JN 10-104629-13393

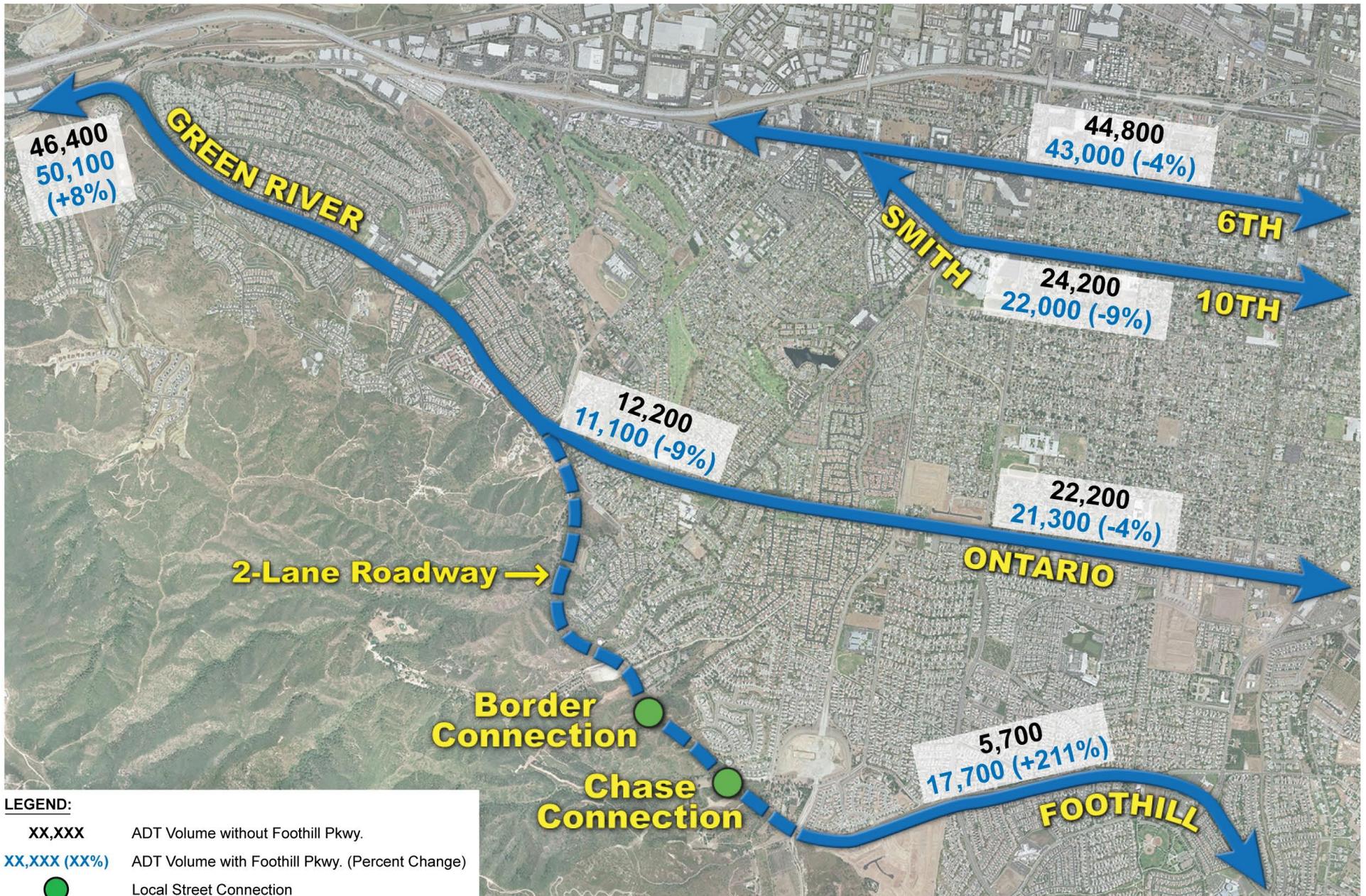
Figure 17



LEGEND:
 XX,XXX ADT Volume without Foothill Pkwy.
 XX,XXX (XX%) ADT Volume with Foothill Pkwy. (Percent Change)
 ● Local Street Connection

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING
Forecast Year 2025 with Chase Drive Connection
East-West Corridors ADT Volumes

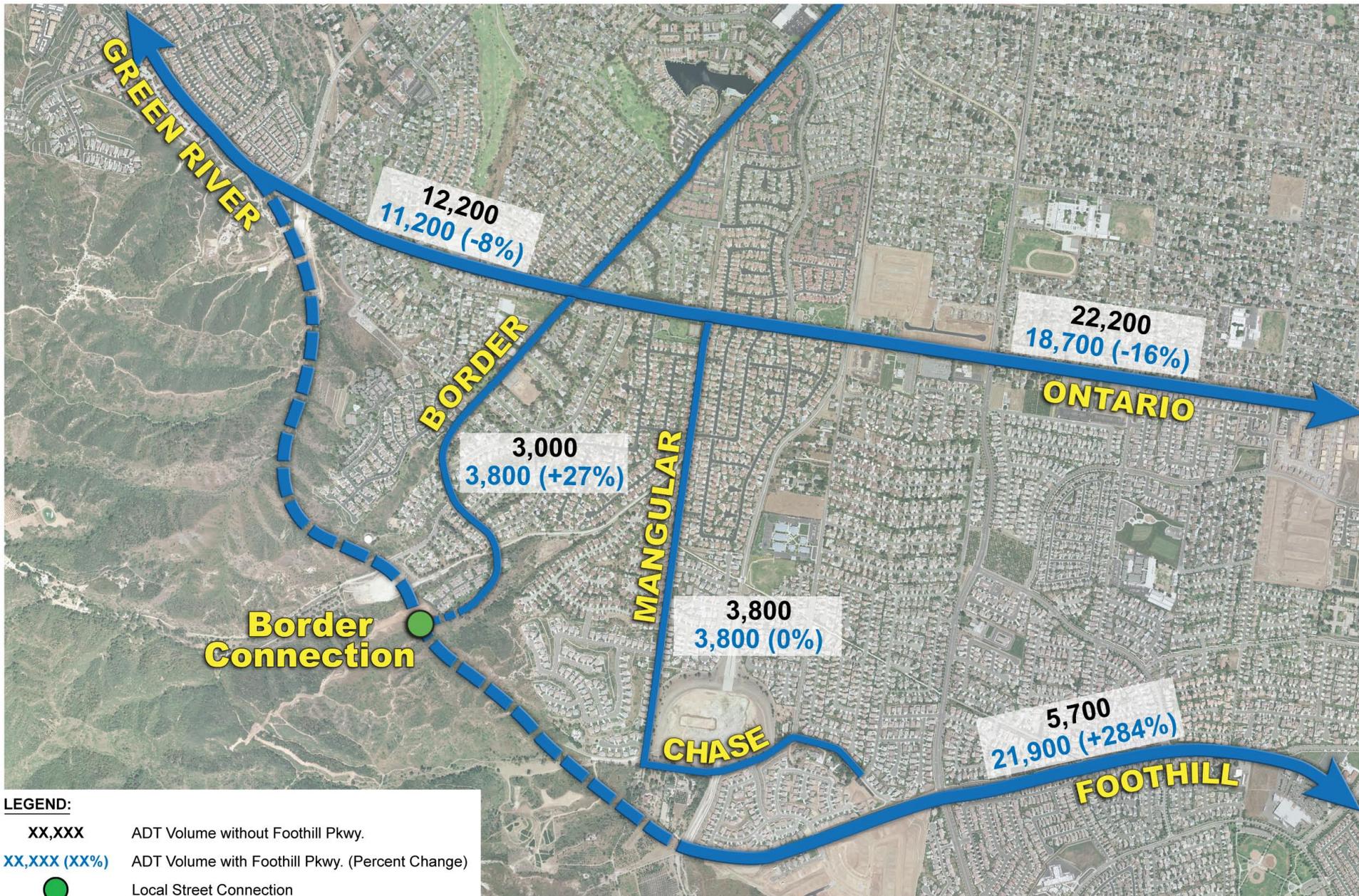
Figure 18



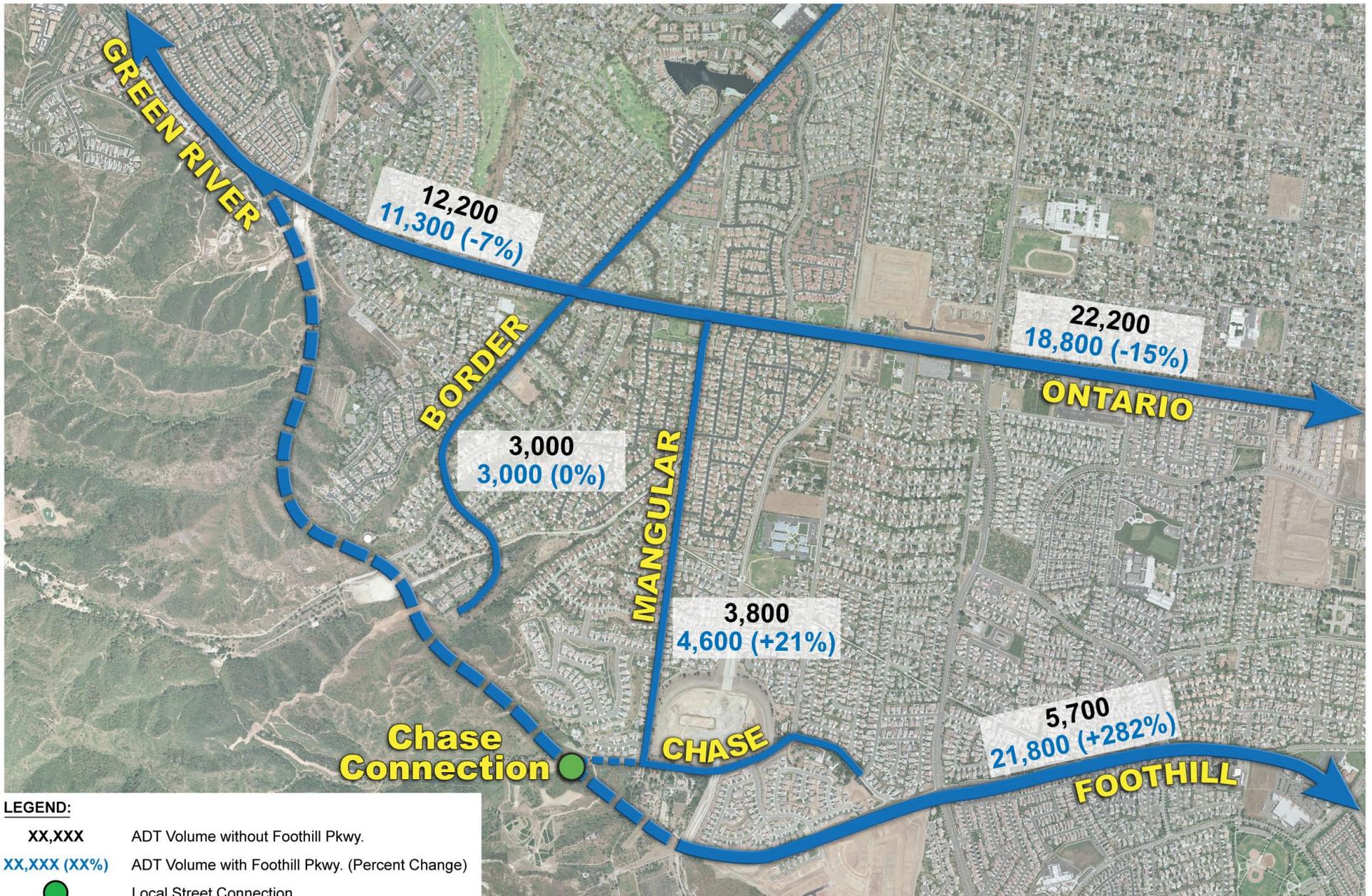
LEGEND:
 XX,XXX ADT Volume without Foothill Pkwy.
 XX,XXX (XX%) ADT Volume with Foothill Pkwy. (Percent Change)
 ● Local Street Connection

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

Forecast Year 2025 Reduced Width with Local Street Connections East-West Corridors ADT Volumes



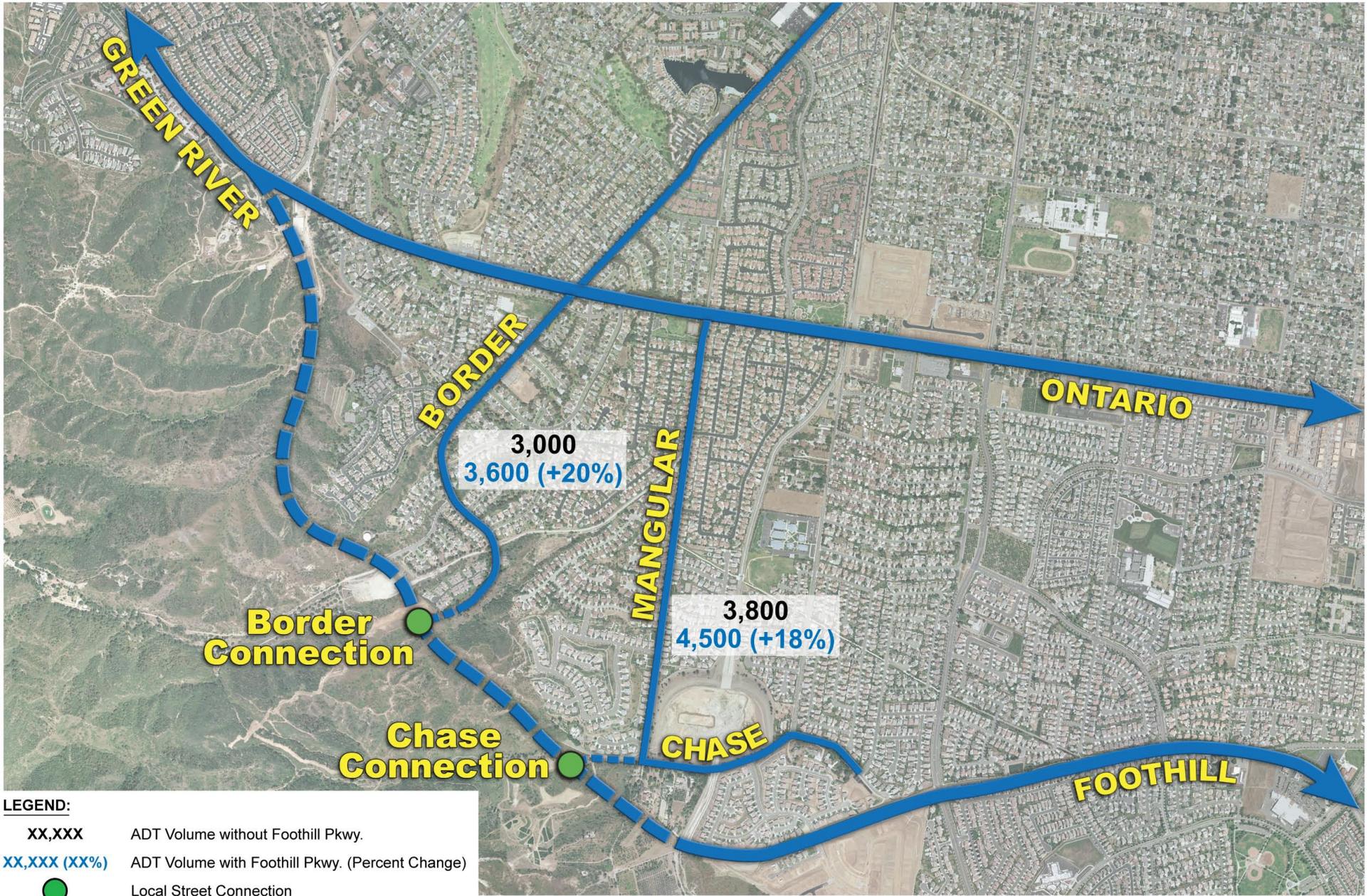
FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING
Forecast Year 2025 • Border Ave. Connection Only
Local Connector ADT Volumes



LEGEND:

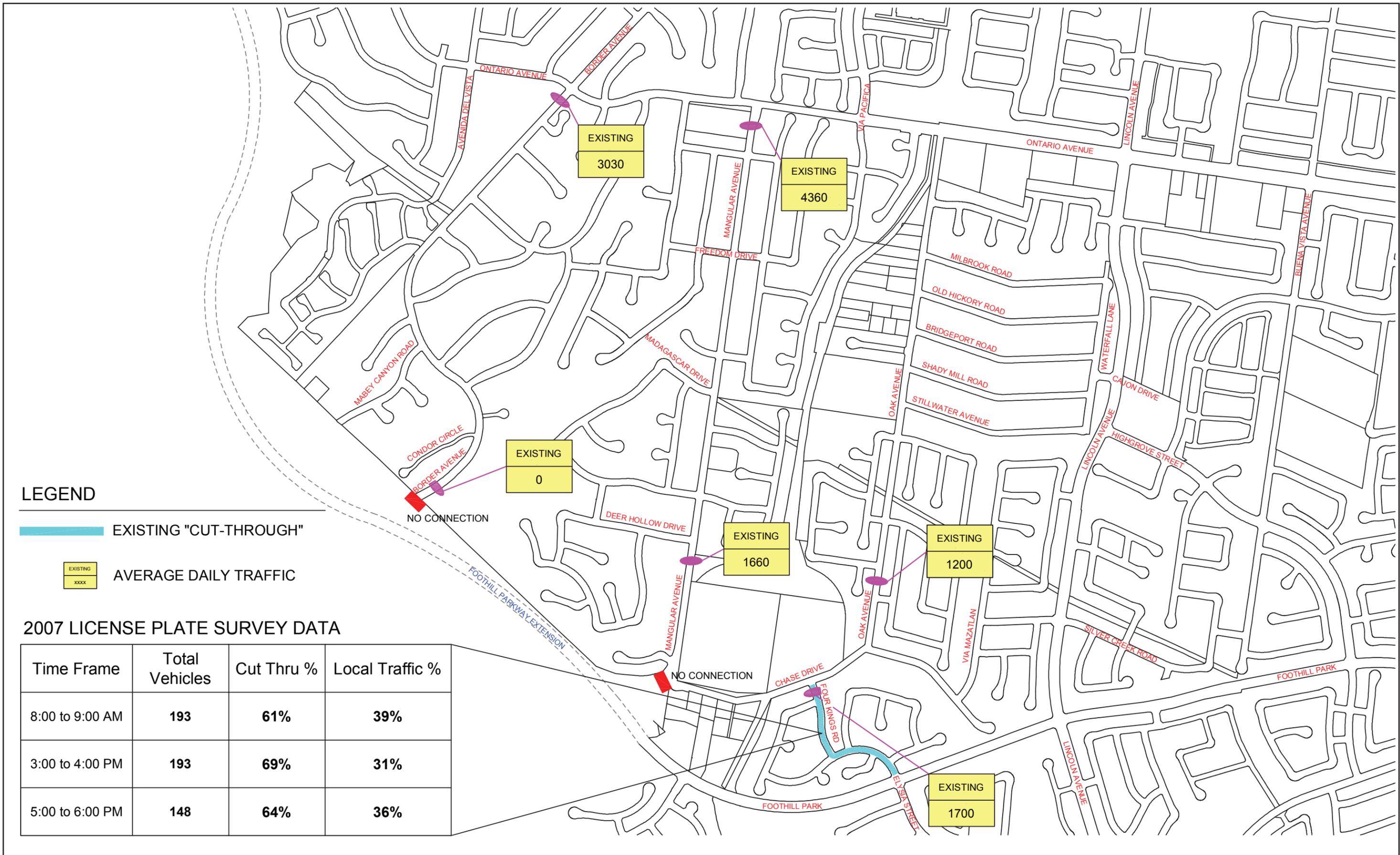
- XX,XXX ADT Volume without Foothill Pkwy.
- XX,XXX (XX%) ADT Volume with Foothill Pkwy. (Percent Change)
- Local Street Connection

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING
Forecast Year 2025 • Chase Dr. Connection Only
Local Connector ADT Volumes



FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • CITY-WIDE TRAFFIC MODELING

Forecast Year 2025 • Border Ave. & Chase Dr. Connections Local Connector ADT Volumes



LEGEND

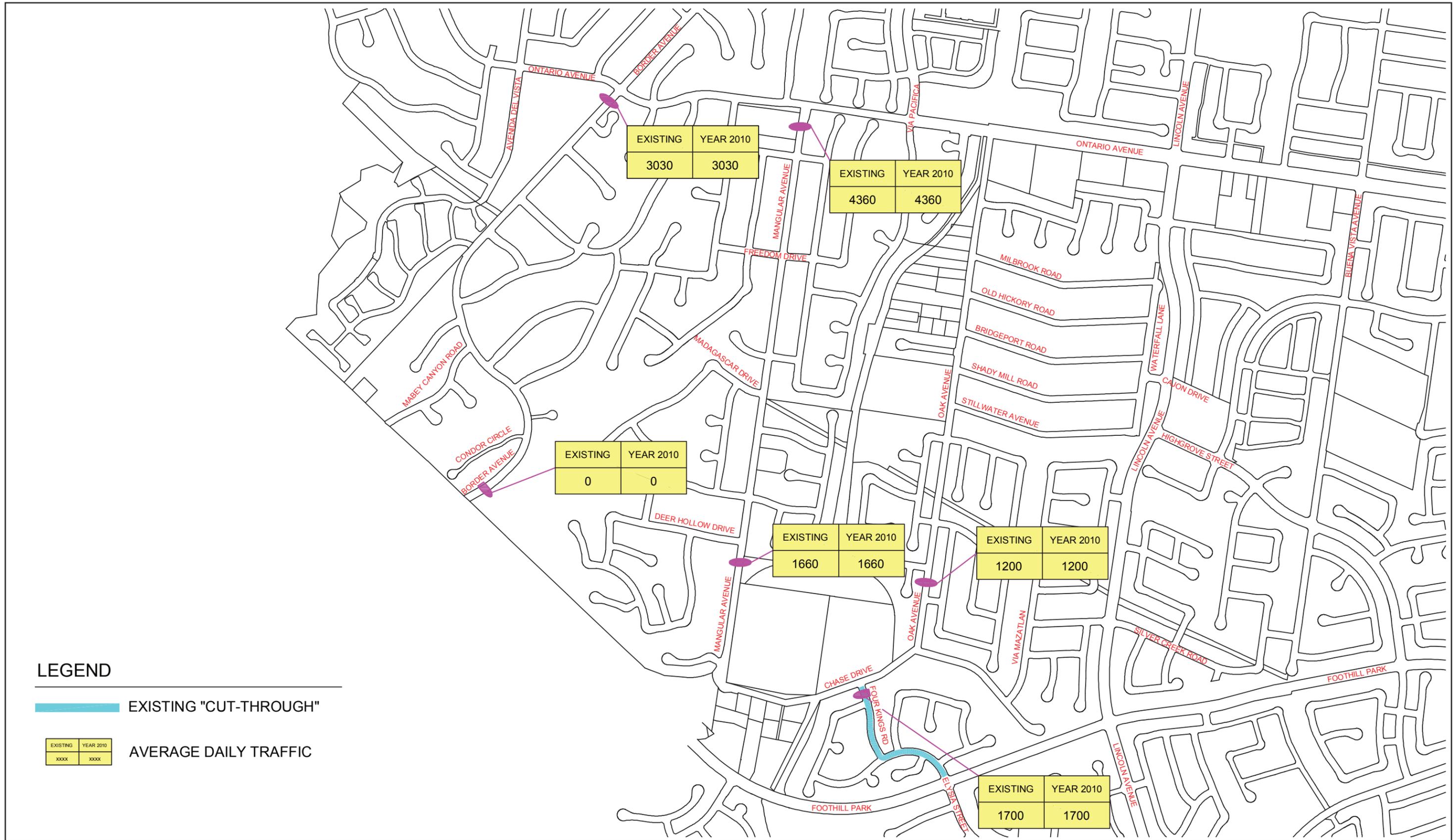
- EXISTING "CUT-THROUGH"
- EXISTING
xxxx AVERAGE DAILY TRAFFIC

2007 LICENSE PLATE SURVEY DATA

Time Frame	Total Vehicles	Cut Thru %	Local Traffic %
8:00 to 9:00 AM	193	61%	39%
3:00 to 4:00 PM	193	69%	31%
5:00 to 6:00 PM	148	64%	36%

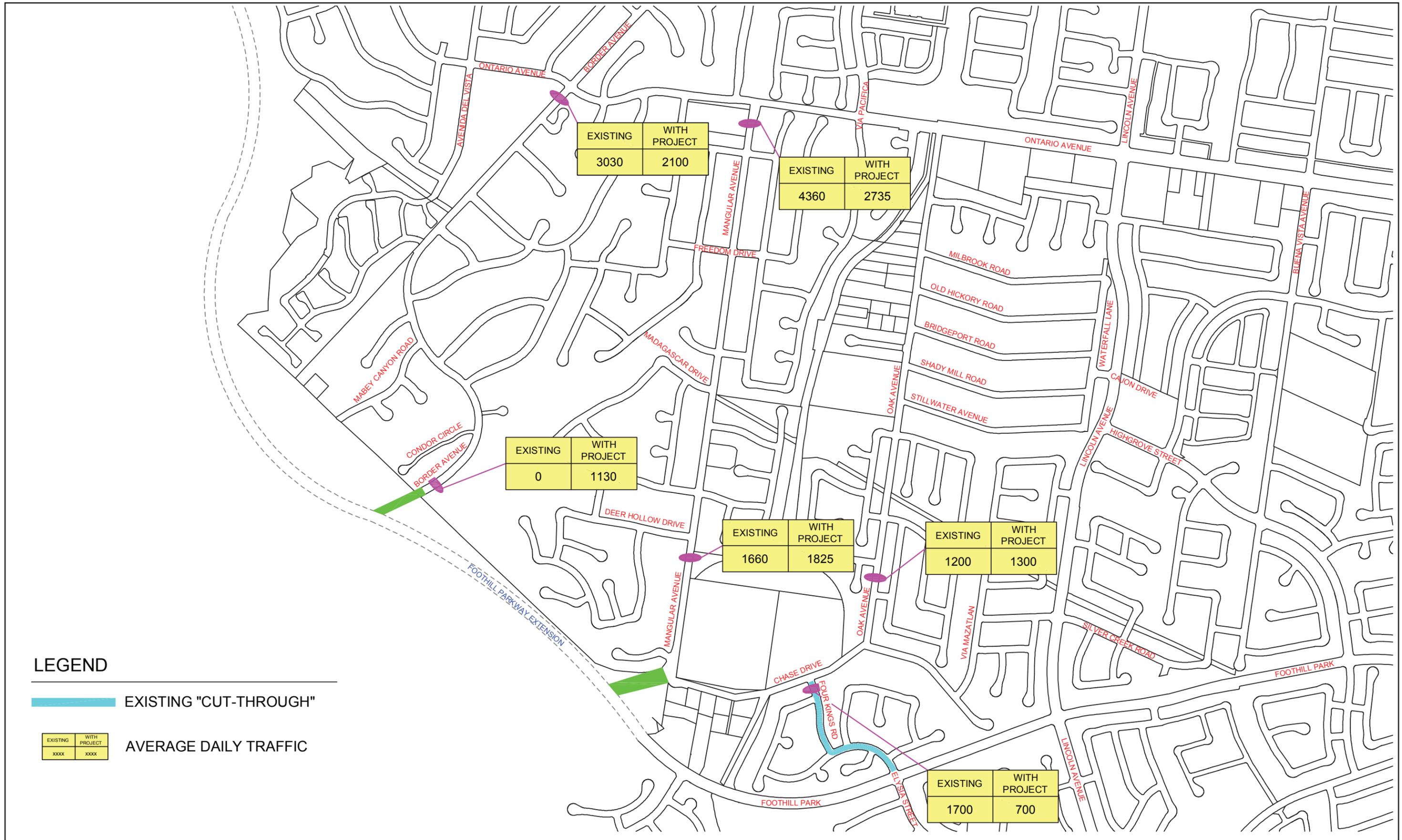
Source: City of Corona Traffic Engineering Department, 6/13/07.





Source: City of Corona Traffic Engineering Department, 2/20/08.

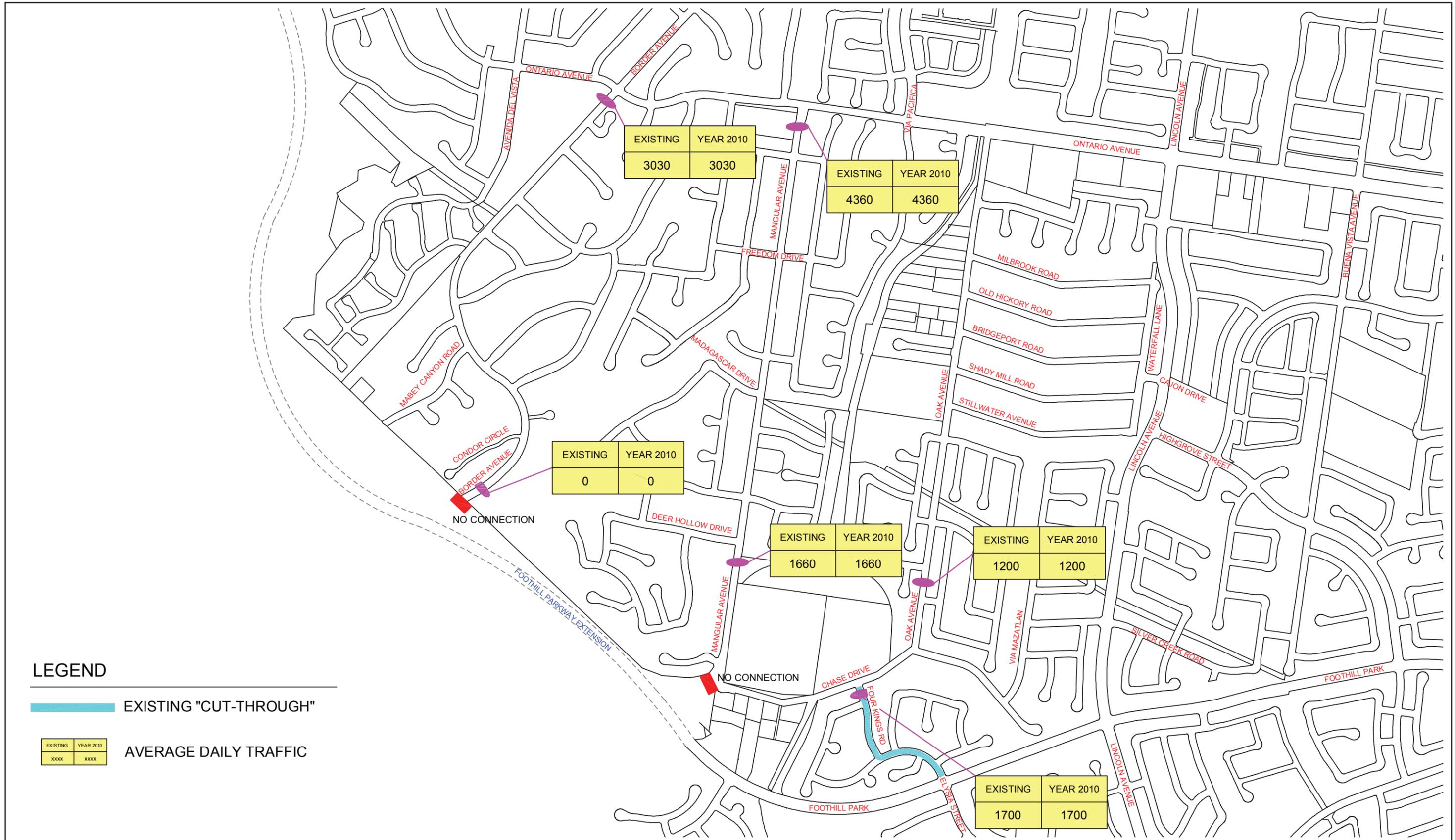
FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • FOCUSED TRAFFIC VOLUMES



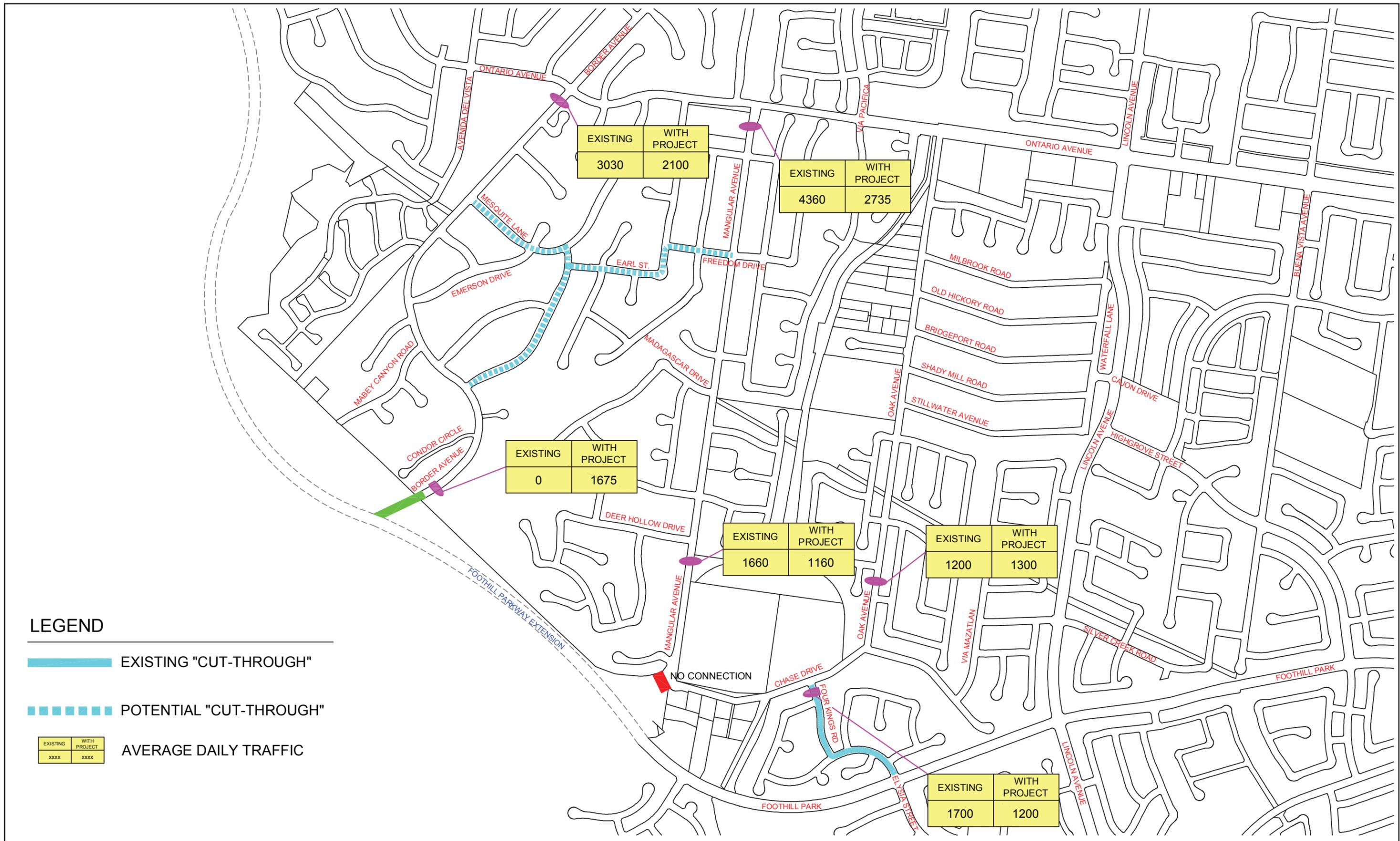
Source: City of Corona Traffic Engineering Department, 6/13/07.

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • FOCUSED TRAFFIC VOLUMES

**Existing (Year 2007) and With Project (Year 2010)
with Border Ave. & Chase Dr. Connections**



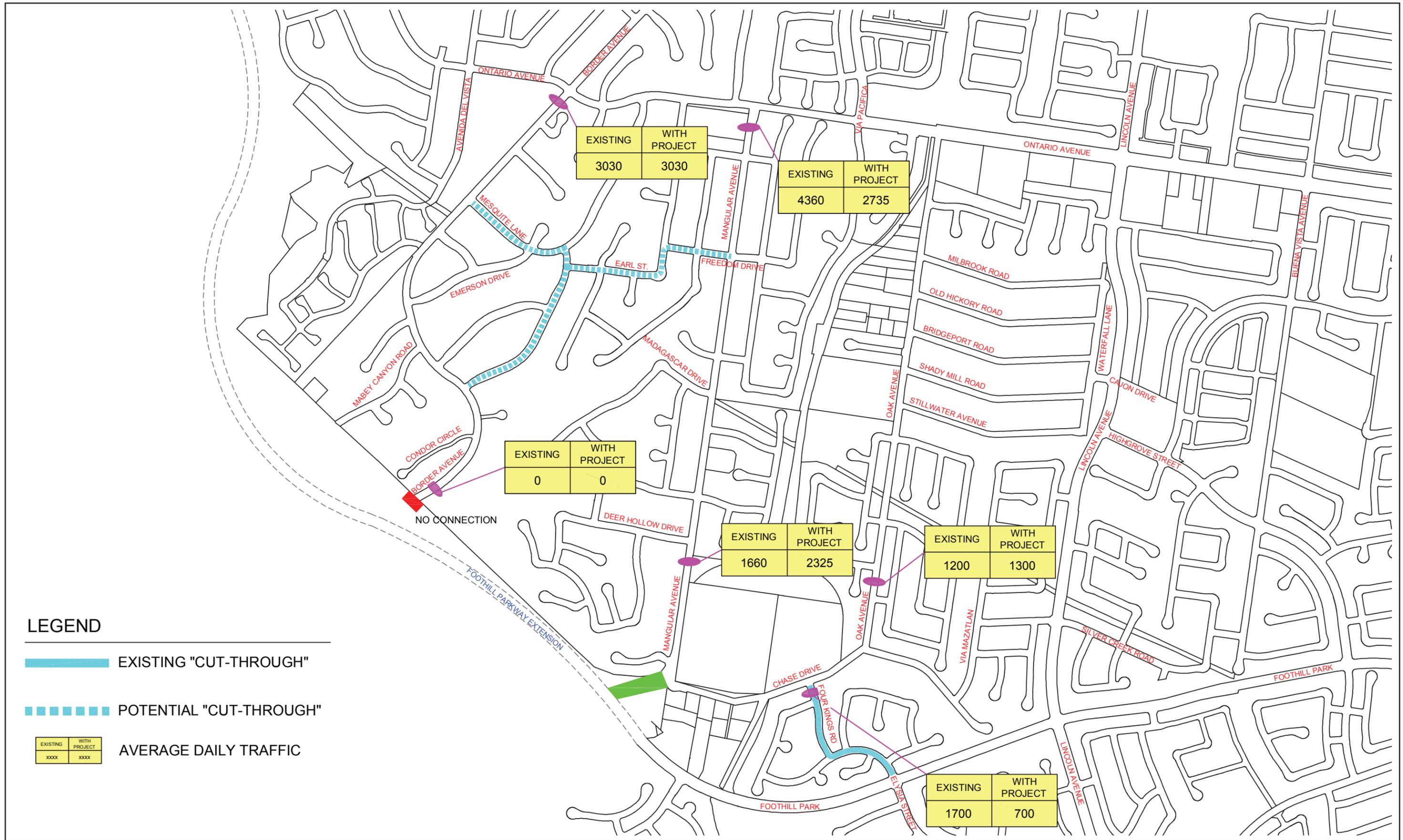
Source: City of Corona Traffic Engineering Department, 2/20/08.



Source: City of Corona Traffic Engineering Department, 6/13/07.

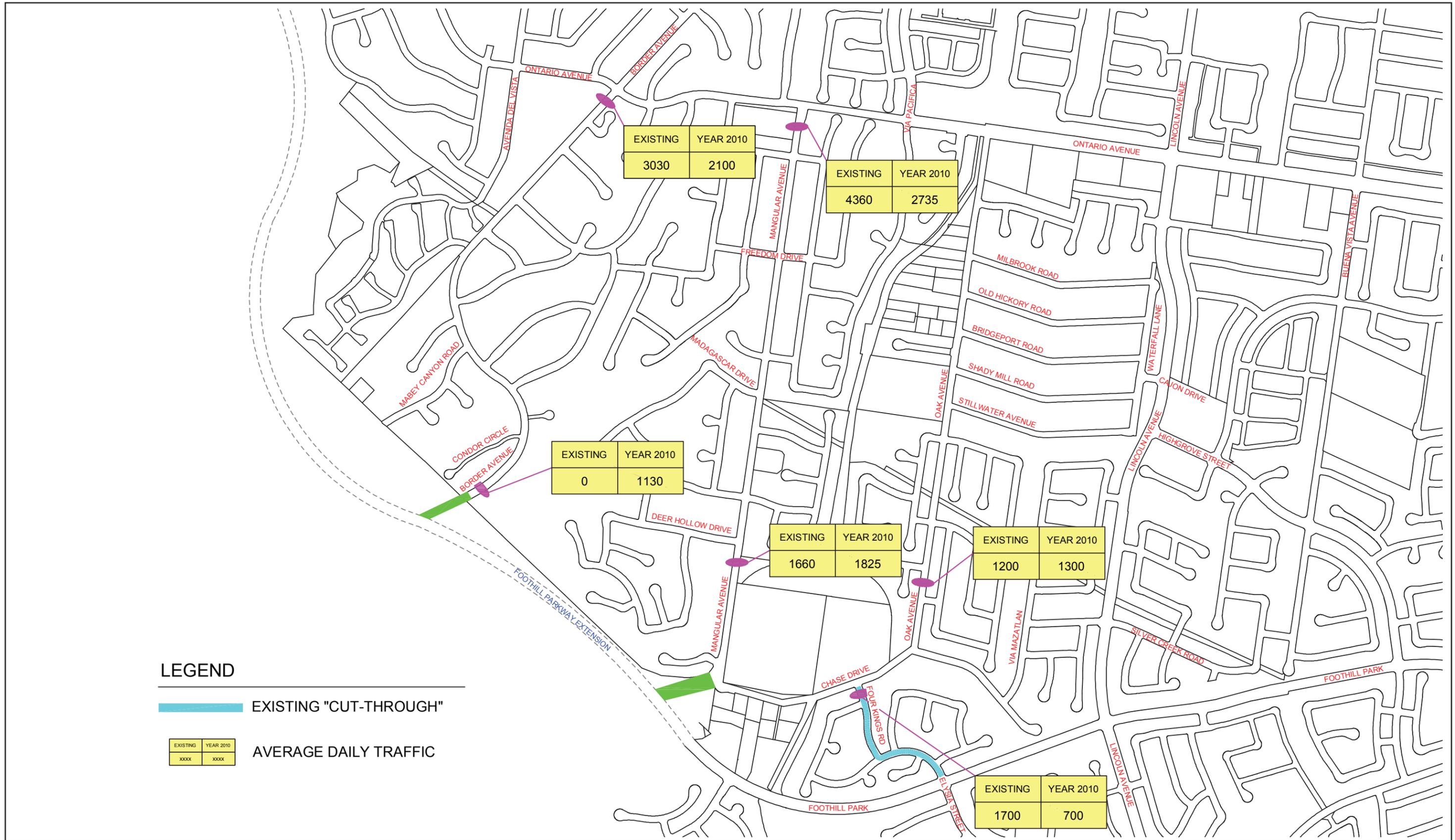
FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • FOCUSED TRAFFIC VOLUMES

**Existing (Year 2007) and With Project (Year 2010)
with Border Ave. Connection Only**



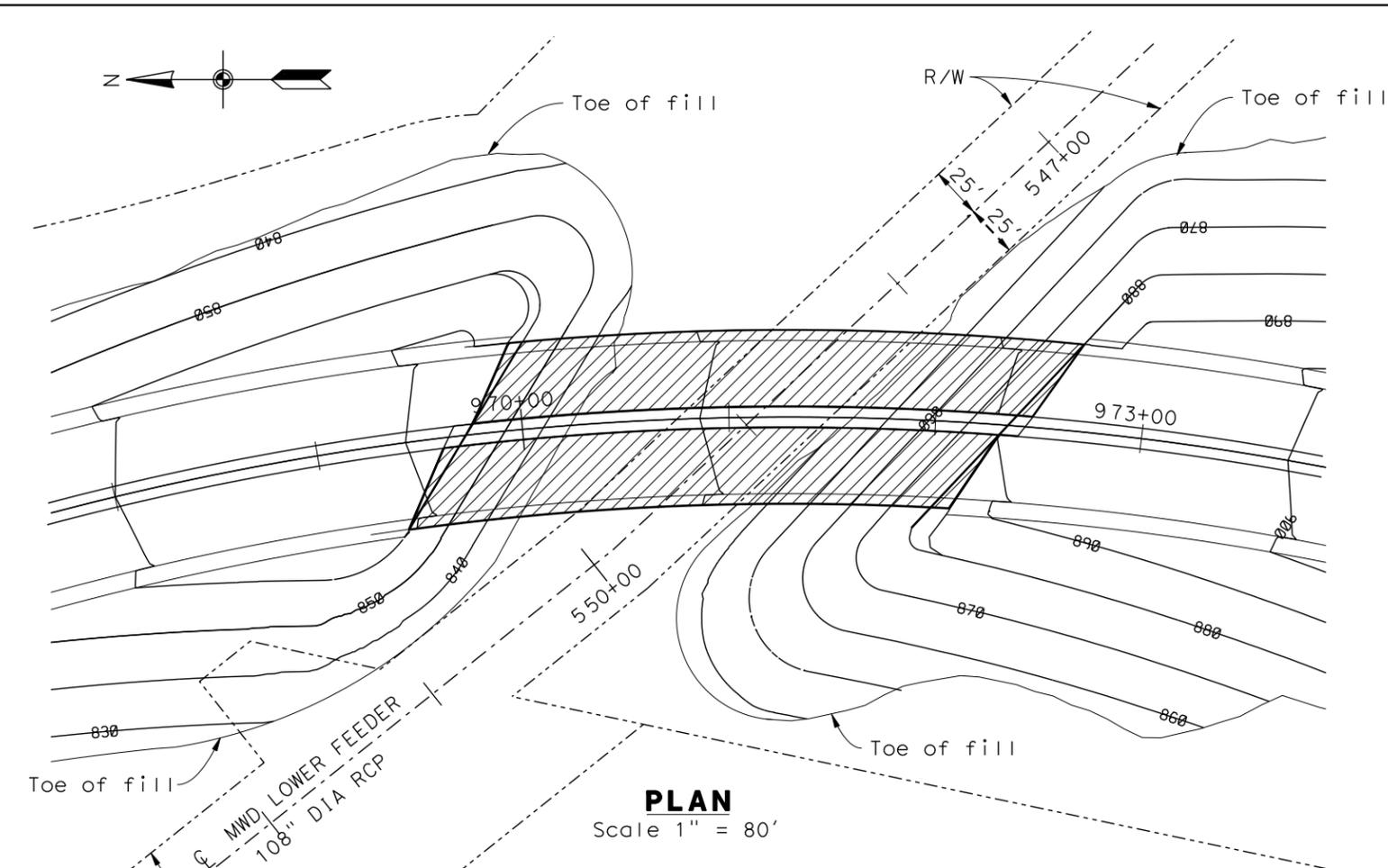
Source: City of Corona Traffic Engineering Department, 6/13/07.

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • FOCUSED TRAFFIC VOLUMES
Existing (Year 2007) and With Project (Year 2010)
with Chase Dr. Connection Only



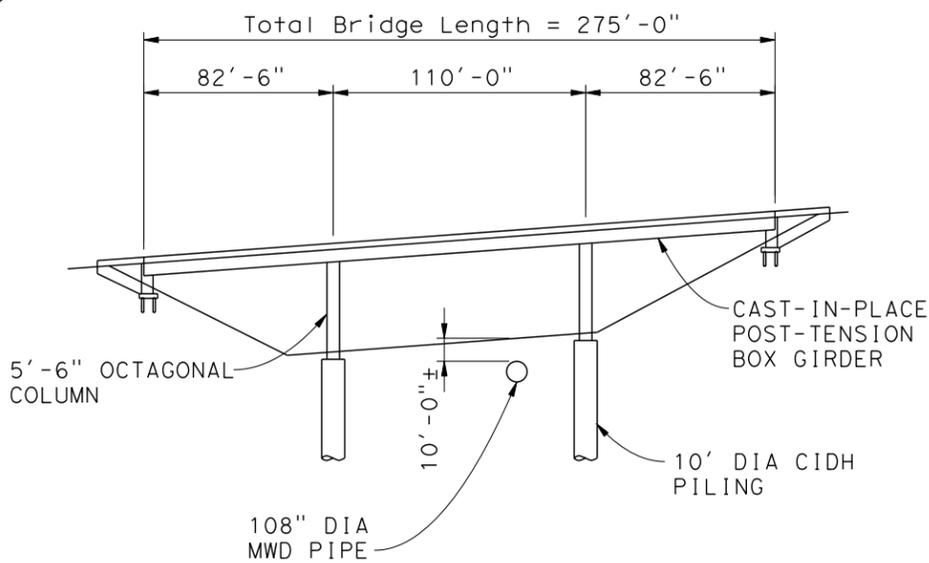
Source: City of Corona Traffic Engineering Department, 2/20/08.

FOOTHILL PARKWAY WESTERLY EXTENSION • TRAFFIC ASSESSMENT • FOCUSED TRAFFIC VOLUMES



PLAN

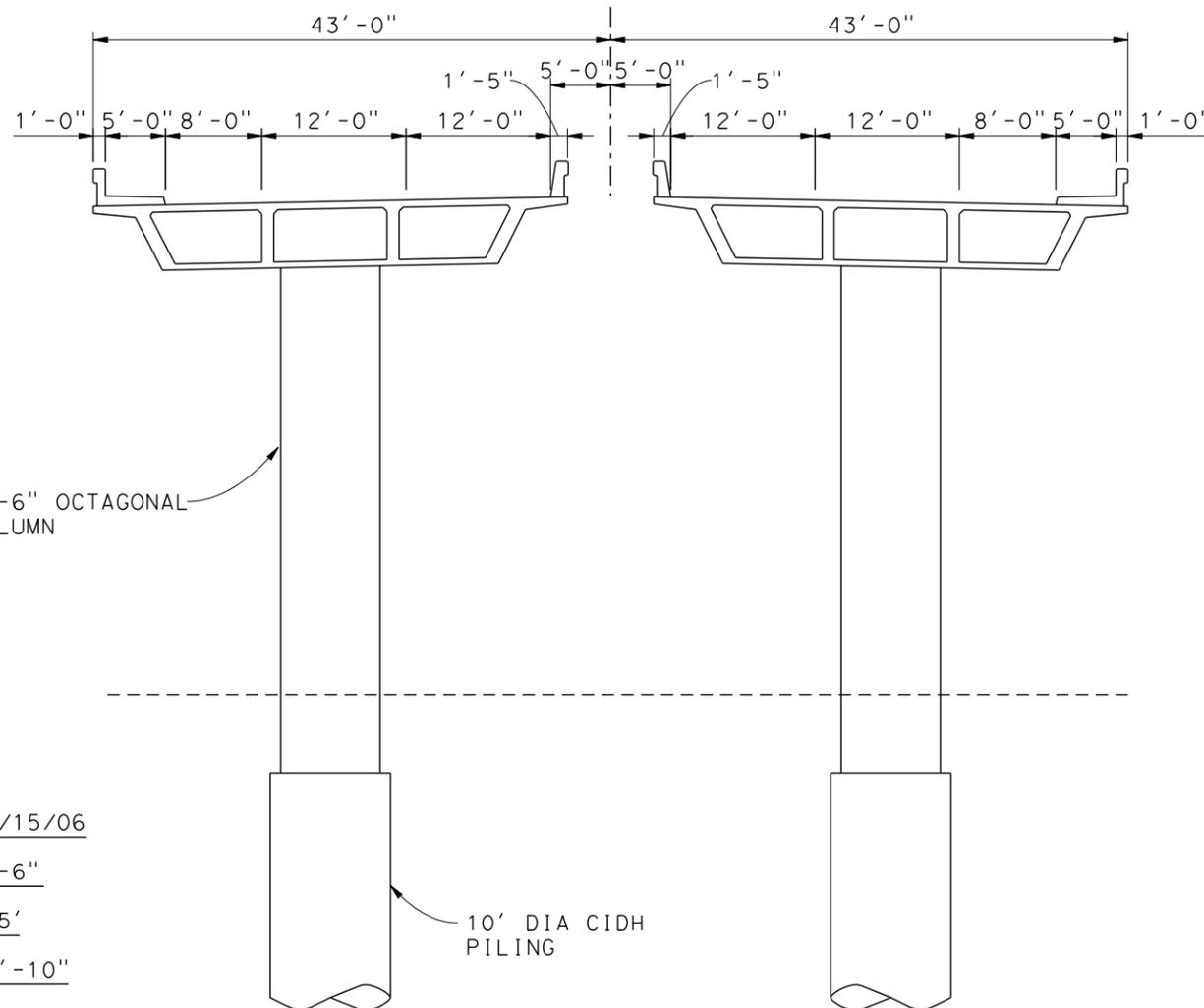
Scale 1" = 80'



ELEVATION

Scale 1" = 80'

DATE OF ESTIMATE	11/15/06
STRUCTURE DEPTH	5'-6"
LENGTH	275'
WIDTH	78'-10"
AREA	21,678 SQ FT
COST / SQ FT INCL. 10% MOBILIZATION & 25% CONTINGENCY	\$237
TOTAL COST	\$5,140,000



TYPICAL SECTION

Scale 1" = 15'

EXHIBIT 11A

PLAN PREPARED BY:



PLANNING ■ DESIGN ■ CONSTRUCTION

14725 ALTON PARKWAY
IRVINE, CALIFORNIA 92618-2027
949.472.3505 ■ FAX 949.472.8373 ■ www.RBF.com

**FOOTHILL PARKWAY
WESTERLY EXTENSION
MWD CROSSING -
PRELIMINARY STRUCTURE PLAN**

JOB NO.
10-104629

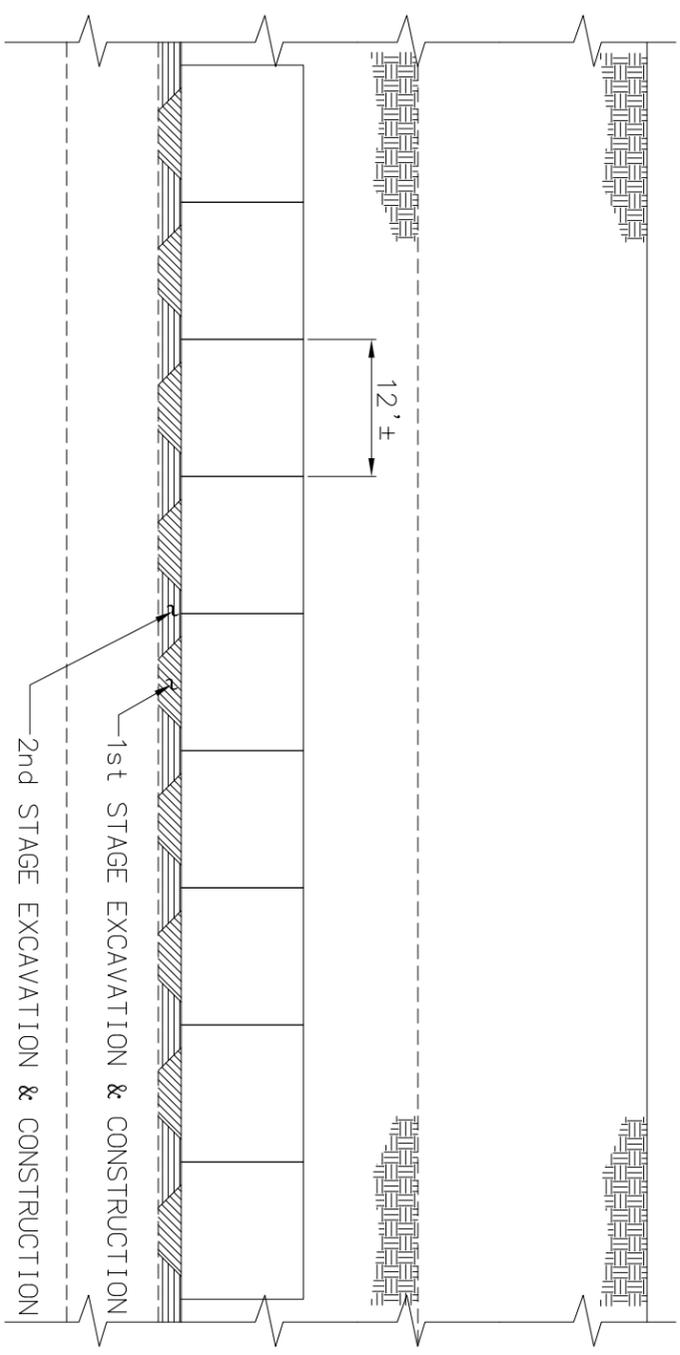
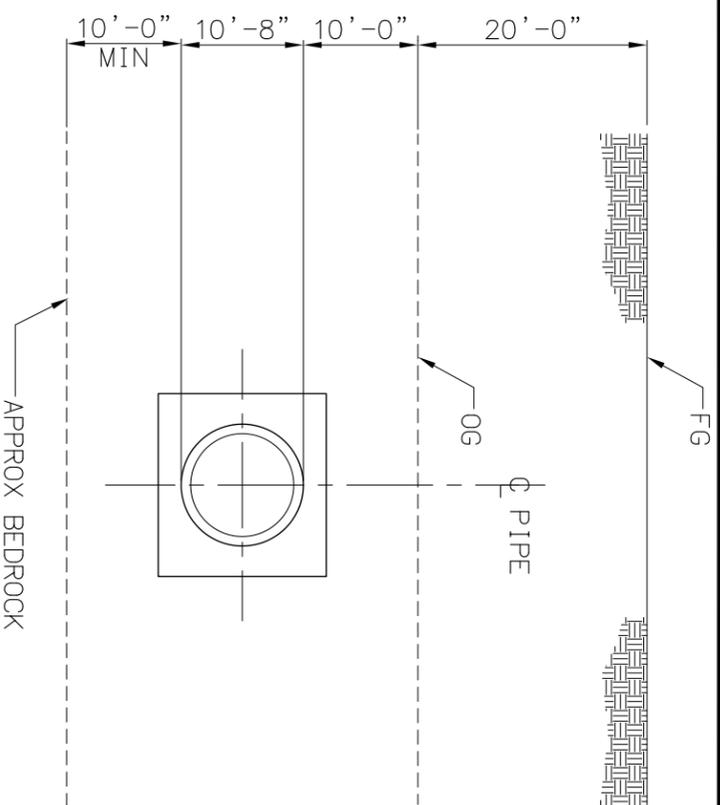
FIGURE

1

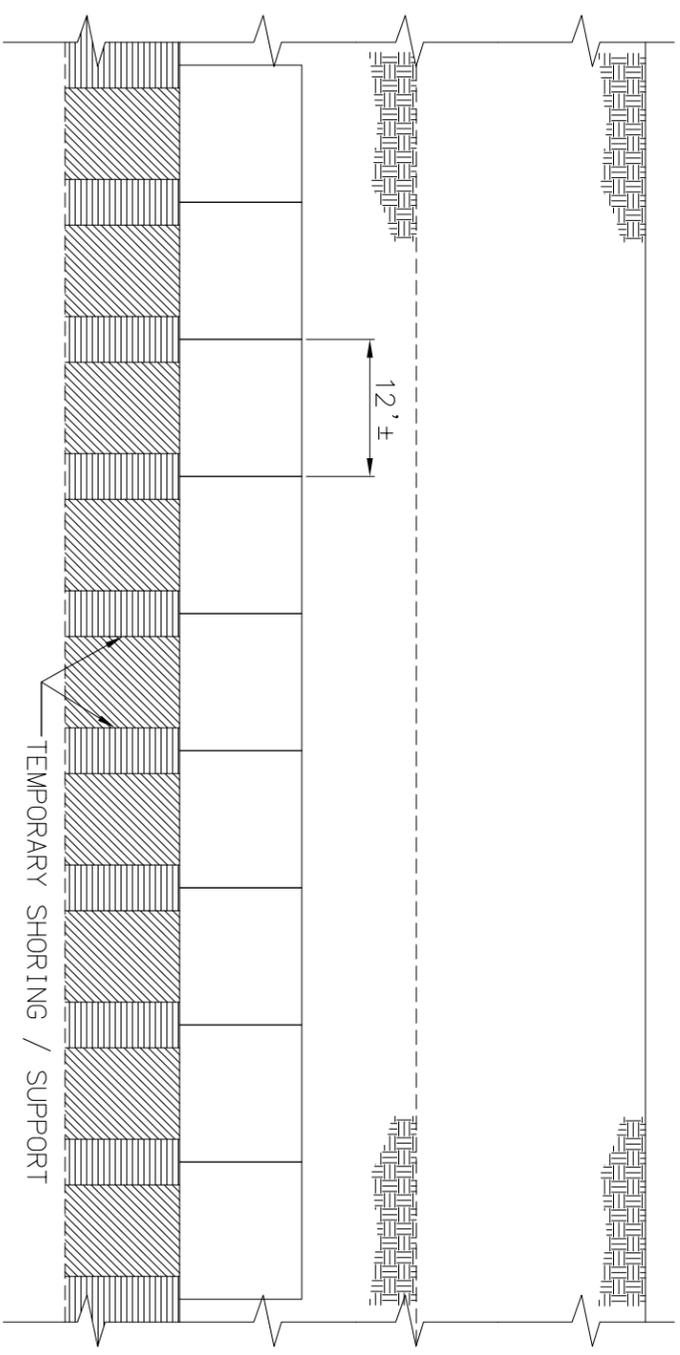
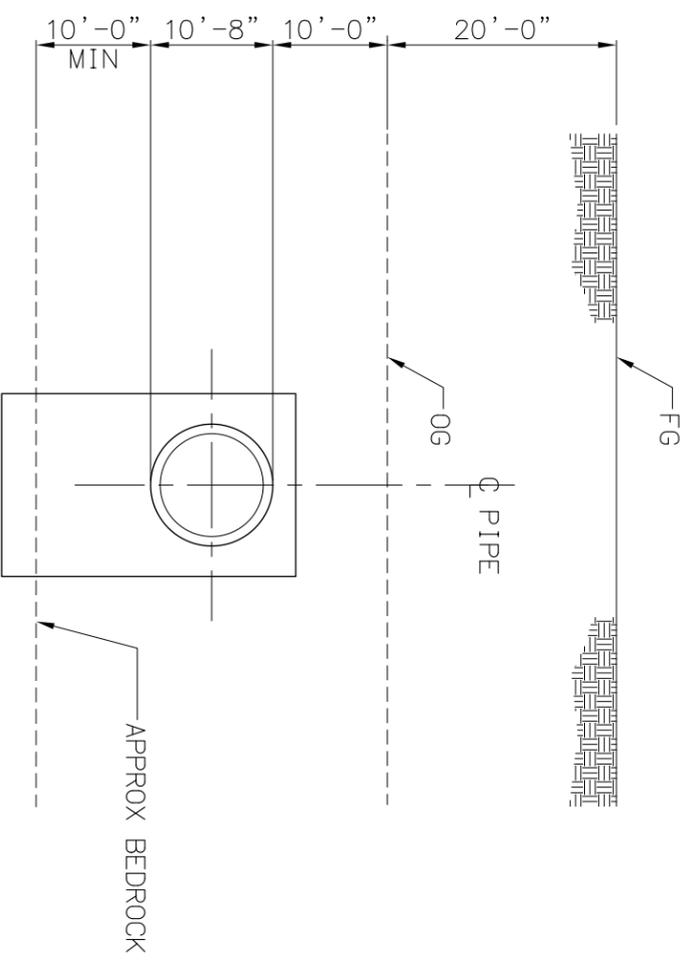
11/15/2007 03:04:11 R:\VPDATA\10104629\CADD\TransPlan\Exhibit11a\Structure-307\FBrogan\104629_MWD_Bridge_Prel1.mxd

Alternative Matrix (with 20' fill)

Alternative No.	Structure Type	Adverse impact to pipe	Maintenance & Private Vehicle Access	Access to pipe for repairs	Cost	Rank
1	Encasement around pipe	Yes Exceeds settlement criteria	Access roads	None	-	-
2	Encasement to bedrock	No	Access roads	None	Not constructible	-
3	Buried Concrete Arch	No	Access roads	Difficult	\$2.6M	3
4	Above Grade Arch	No	Continuous	Yes	\$2.4M	2
5	Bridge	No	Continuous	Yes	\$2.2M	1



SCALE: 1/8" = 1'-0"



SCALE: 1/8" = 1'-0"

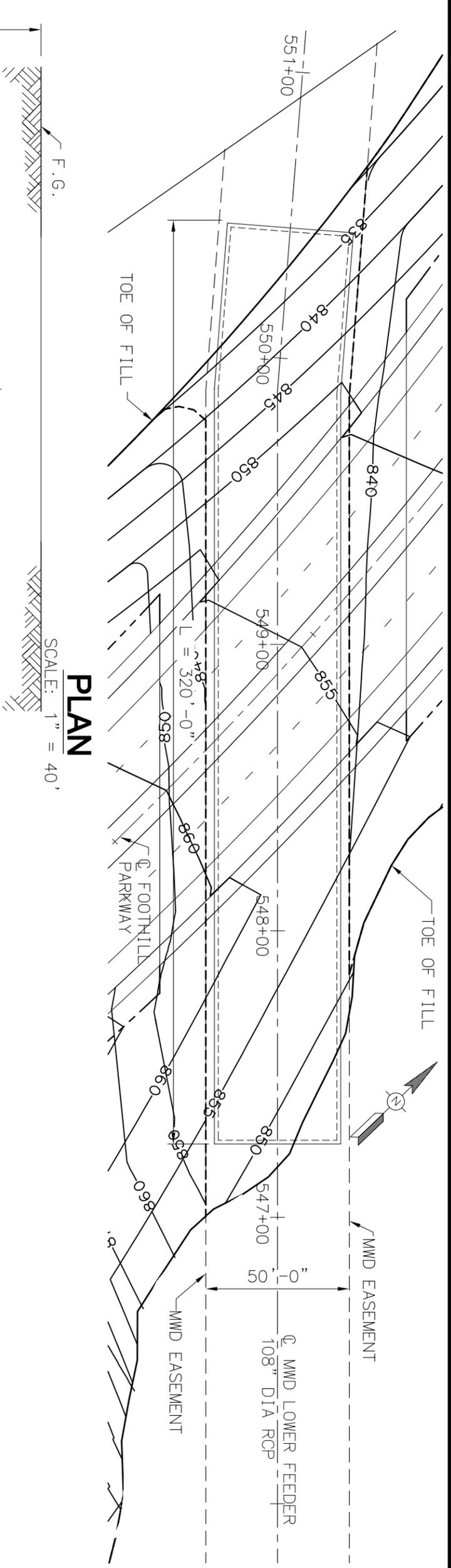
SECTION

ENCASEMENT TO BEDROCK

PROFILE

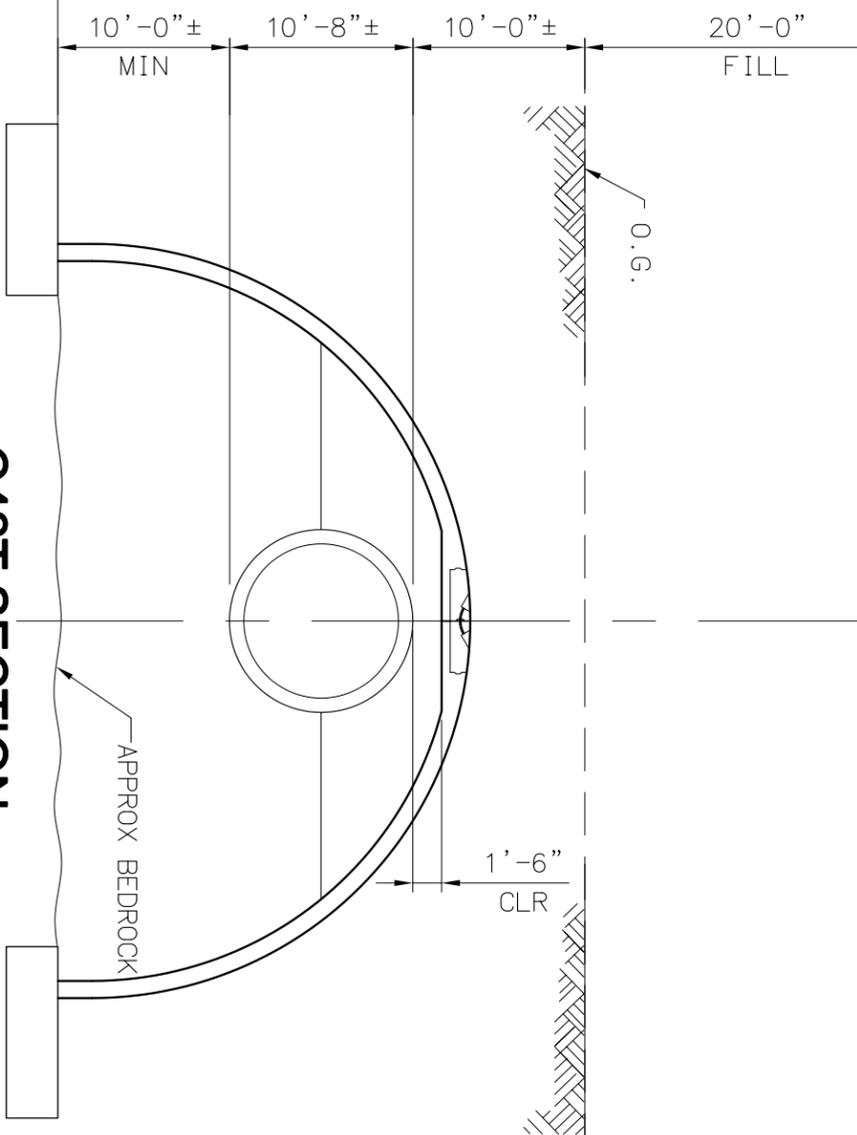
EXHIBIT 11C

PLAN PREPARED BY: RBF CONSULTING PLANNING ■ DESIGN ■ CONSTRUCTION 4726 ALTON PARKWAY IRVINE, CALIFORNIA 92618-2027 949.4723806 • FAX 949.4723573 • WWW.RBF.COM		DESIGNED BY: R.F. DATE: 01-25-07	PROJECT ENGINEER R.F.	PLANNING STUDY
DRAWN BY: J.S. DATE: 01-25-07	CHECKED BY: P.Y. DATE: 01-25-07	APPROVED DATE	ENCASEMENT OPTIONS	



PLAN

SCALE: 1" = 40'



C42T SECTION

SCALE: 3/32" = 1"

DATE OF ESTIMATE	01/22/07
STRUCTURE WIDTH	42'
LENGTH	320'
COST/LF	8,125 LF
TOTAL COST	2,600,000

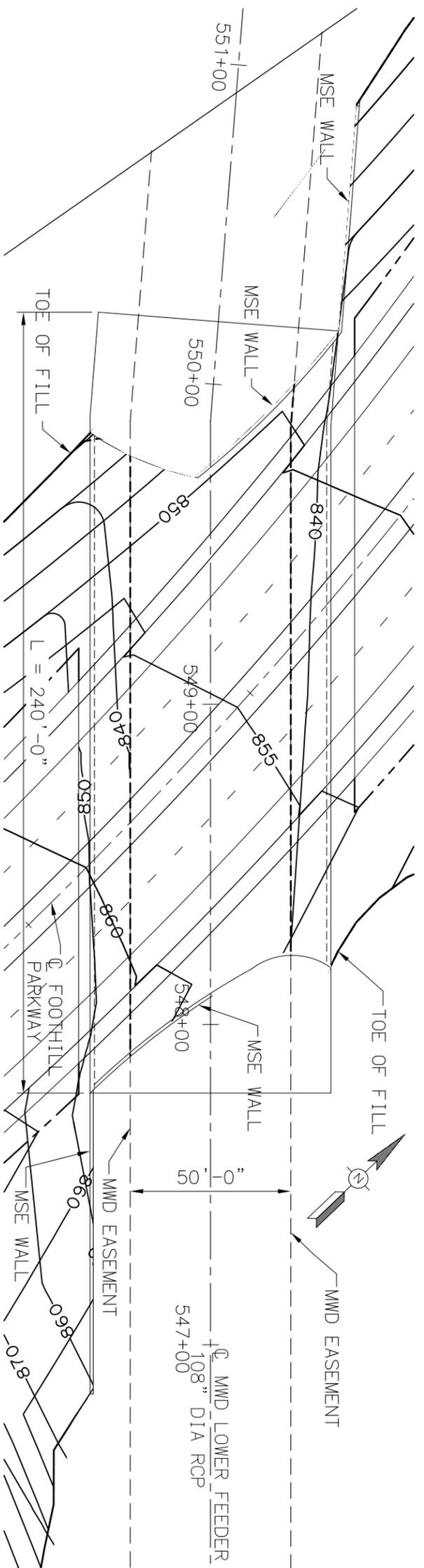
PLAN PREPARED BY: **RBF CONSULTING**
 PLANNING ■ DESIGN ■ CONSTRUCTION
 1725 ALTON PARKWAY
 IRVINE, CALIFORNIA 92614-2027
 949.472.3000 • FAX 949.472.2573 • WWW.RBF.COM

DESIGNED BY	R. F.	DATE	01-25-07
DRAWN BY	J. S.	DATE	01-25-07
CHECKED BY	P. Y.	DATE	01-25-07
APPROVED		DATE	

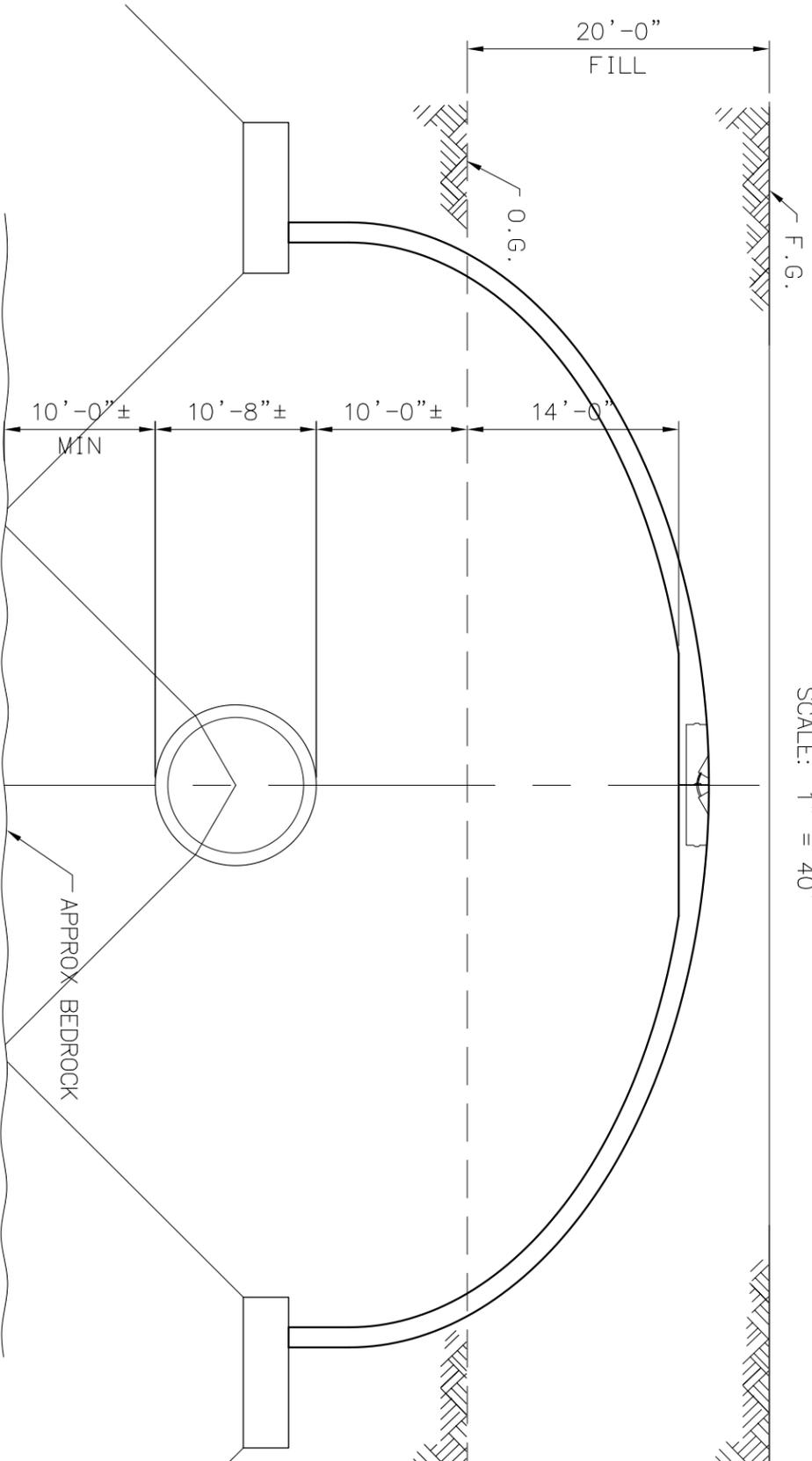
R. F.
PROJECT ENGINEER

PLANNING STUDY
BURIED CONCRETE
ARCH OPTION

EXHIBIT 11D



PLAN
SCALE: 1" = 40'



E72T SECTION
SCALE: 3/32" = 1"

DATE OF ESTIMATE	01/22/07
STRUCTURE WIDTH	72'
LENGTH	240'
COST/LF	\$8,875 LF
ARCH COST	\$2,130,000
MSE WALL	\$270,000
TOTAL COST	\$2,400,000

EXHIBIT 11E

PLAN PREPARED BY: **RBF CONSULTING**
 PLANNING ■ DESIGN ■ CONSTRUCTION
 1725 ALTON PARKWAY
 IRVINE, CALIFORNIA 92618-2027
 949.472.3806 • FAX 949.472.5073 • WWW.RBF.COM

DESIGNED BY	R. F.	DATE	01-25-07
DRAWN BY	J. S.	DATE	01-25-07
CHECKED BY	P. Y.	DATE	01-25-07
APPROVED		DATE	

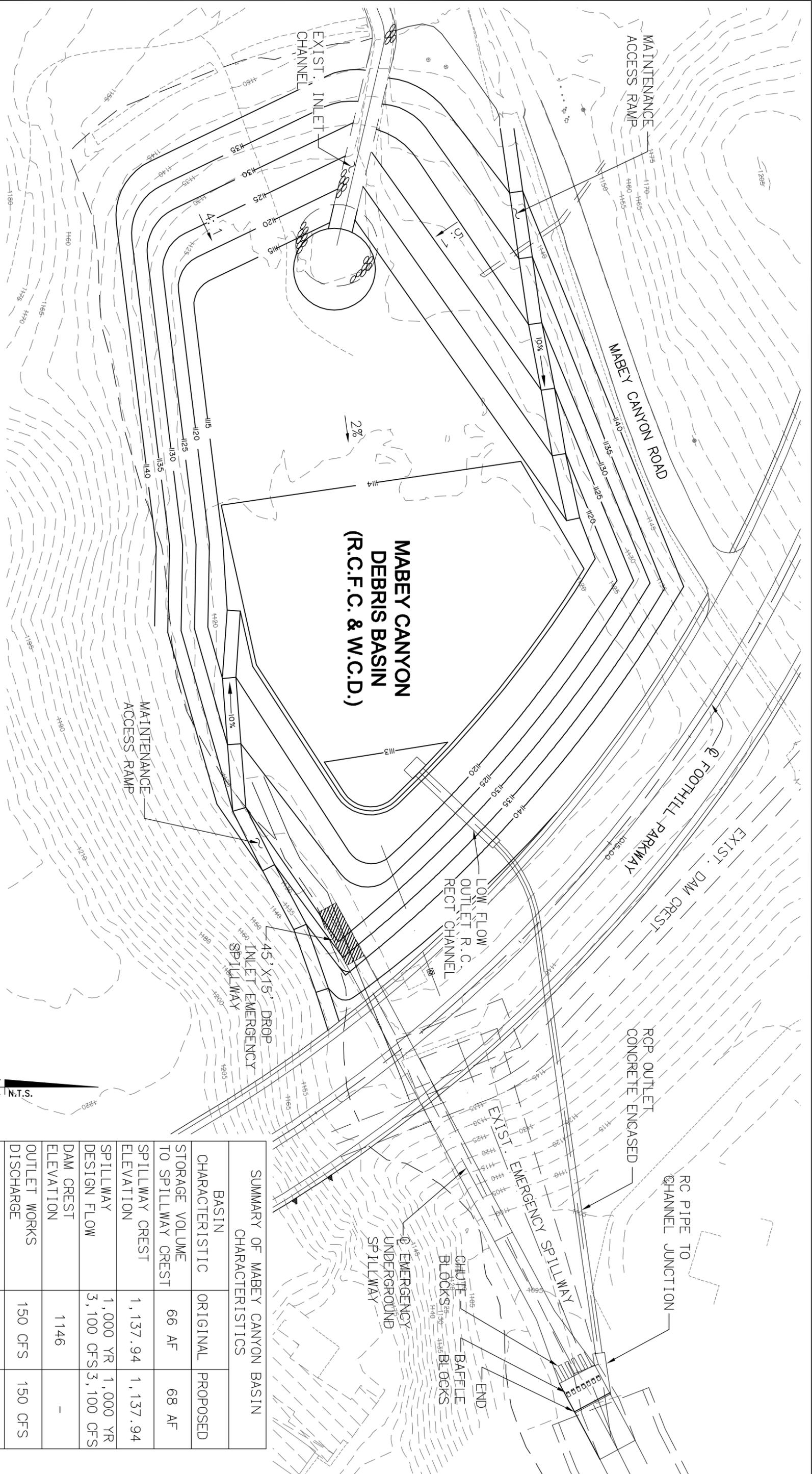
R. F.
PROJECT ENGINEER

PLANNING STUDY
ABOVE GRADE CONCRETE
ARCH OPTION

Mabey Canyon Basin

Summary of Cost Estimates

Alternative	Description	Option	Cost	Comment
2	Single Span Bridge	A	\$ 2,700,000	Additional right of way acquisition will be necessary.
	Double Span Bridge	B	\$ 2,650,000	
	Triple Box Culvert	C	\$ 2,230,000	
1	15'X45' RCB Drop Inlet	n/a	\$ 3,125,000	No additional right of way acquisition will be necessary.



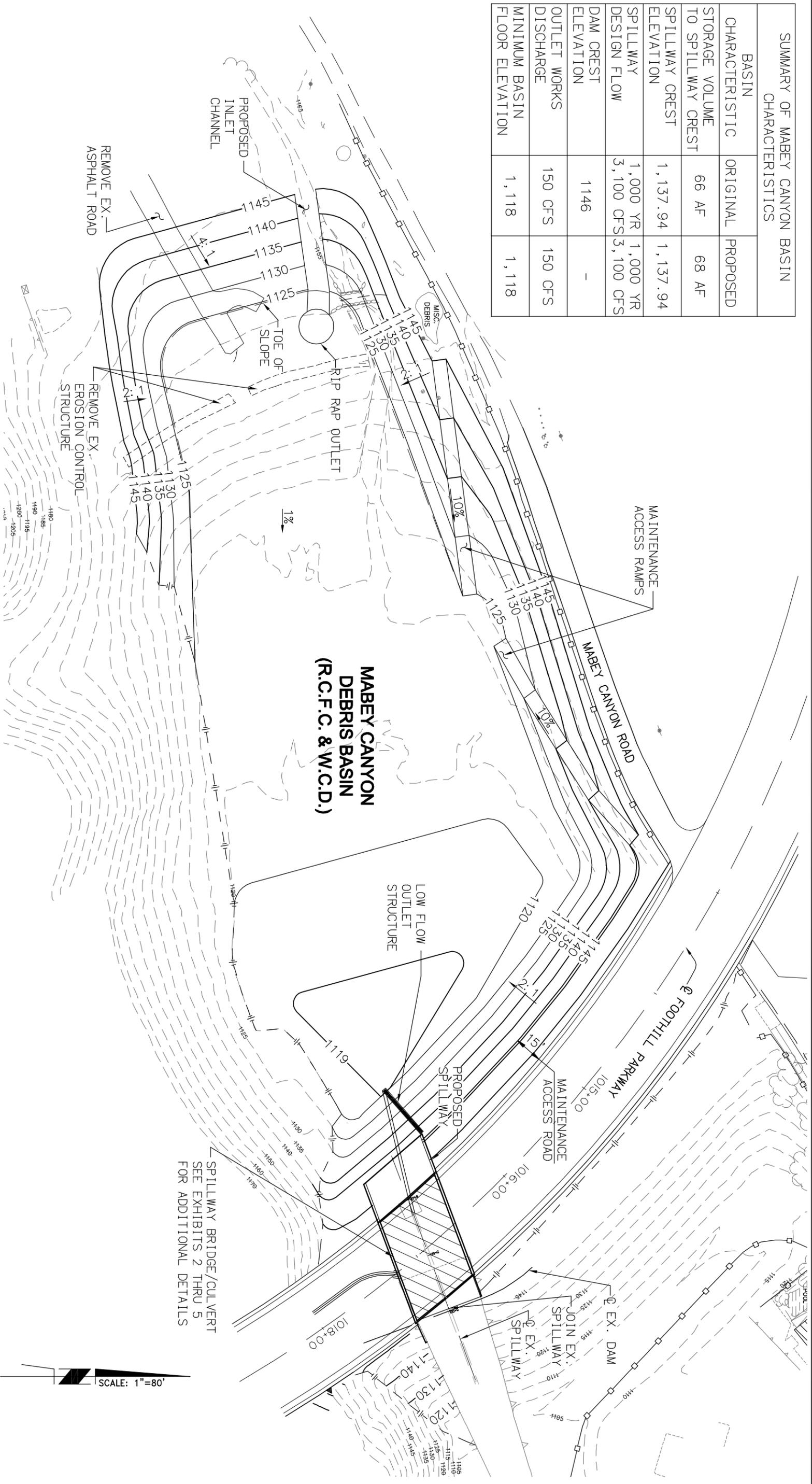
**MABEY CANYON
DEBRIS BASIN
(R.C.F.C. & W.C.D.)**

**MABEY CANYON DEBRIS BASIN AND SPILLWAY PLAN
ALTERNATIVE 1**

N.T.S.

SUMMARY OF MABEY CANYON BASIN CHARACTERISTICS		
BASIN CHARACTERISTIC	ORIGINAL	PROPOSED
STORAGE VOLUME TO SPILLWAY CREST	66 AF	68 AF
SPILLWAY CREST ELEVATION	1,137.94	1,137.94
SPILLWAY DESIGN FLOW	1,000 YR 3,100 CFS	1,000 YR 3,100 CFS
DAM CREST ELEVATION	1146	-
OUTLET WORKS DISCHARGE	150 CFS	150 CFS
MINIMUM BASIN FLOOR ELEVATION	1,118	1,118

SUMMARY OF MABEY CANYON BASIN CHARACTERISTICS			
BASIN CHARACTERISTIC	ORIGINAL	PROPOSED	
STORAGE VOLUME TO SPILLWAY CREST	66 AF	68 AF	
SPILLWAY CREST ELEVATION	1,137.94	1,137.94	
SPILLWAY DESIGN FLOW	1,000 YR 3,100 CFS	1,000 YR 3,100 CFS	
DAM CREST ELEVATION	1146	-	
OUTLET WORKS DISCHARGE	150 CFS	150 CFS	
MINIMUM BASIN FLOOR ELEVATION	1,118	1,118	



MABEY CANYON DEBRIS BASIN AND SPILLWAY PLAN
 ALTERNATIVE 2

SCALE: 1"=80'

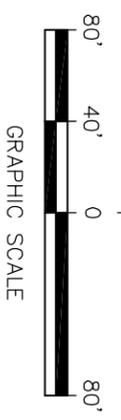
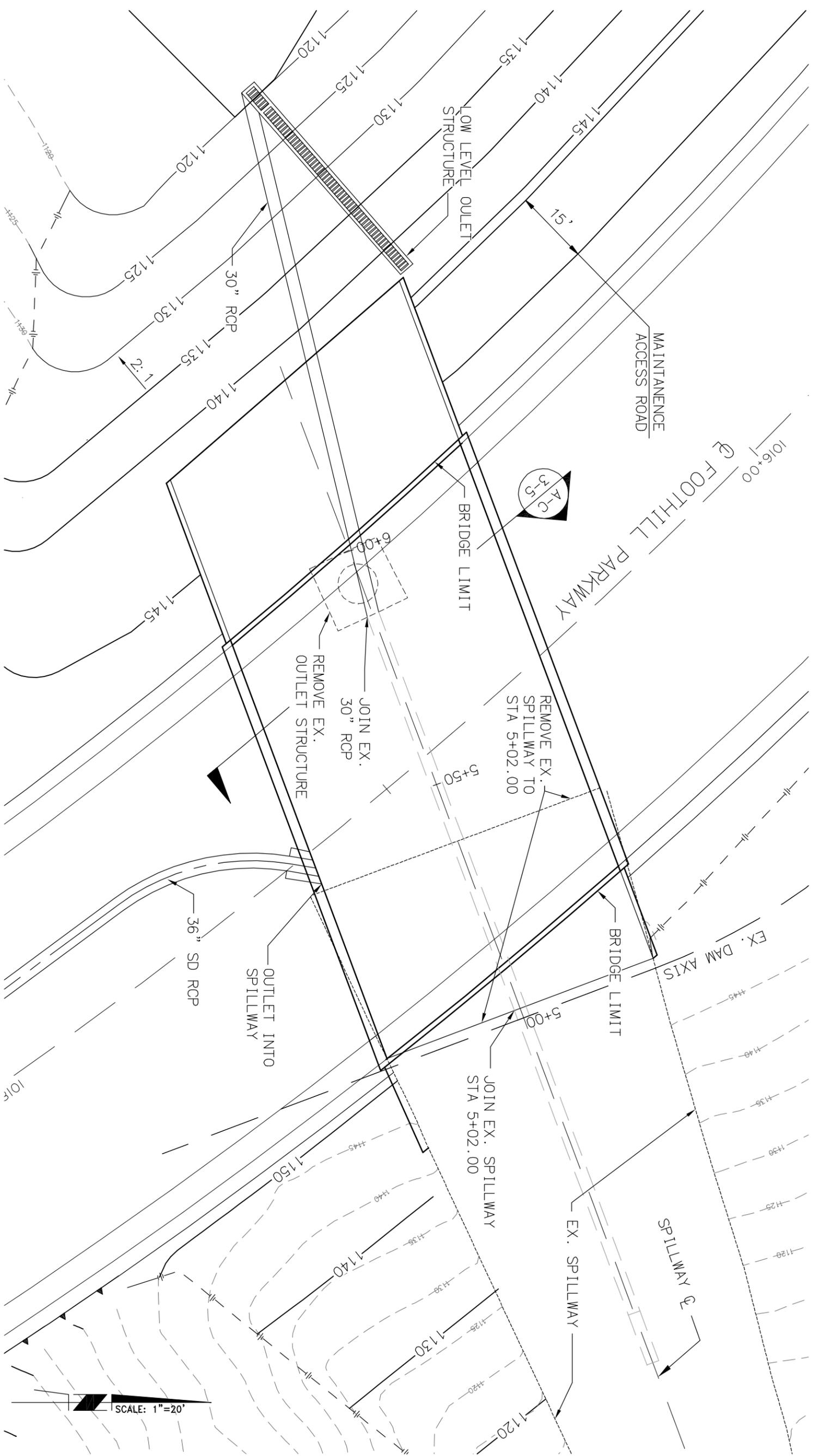
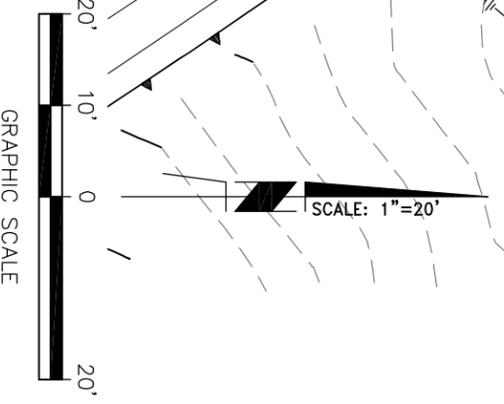


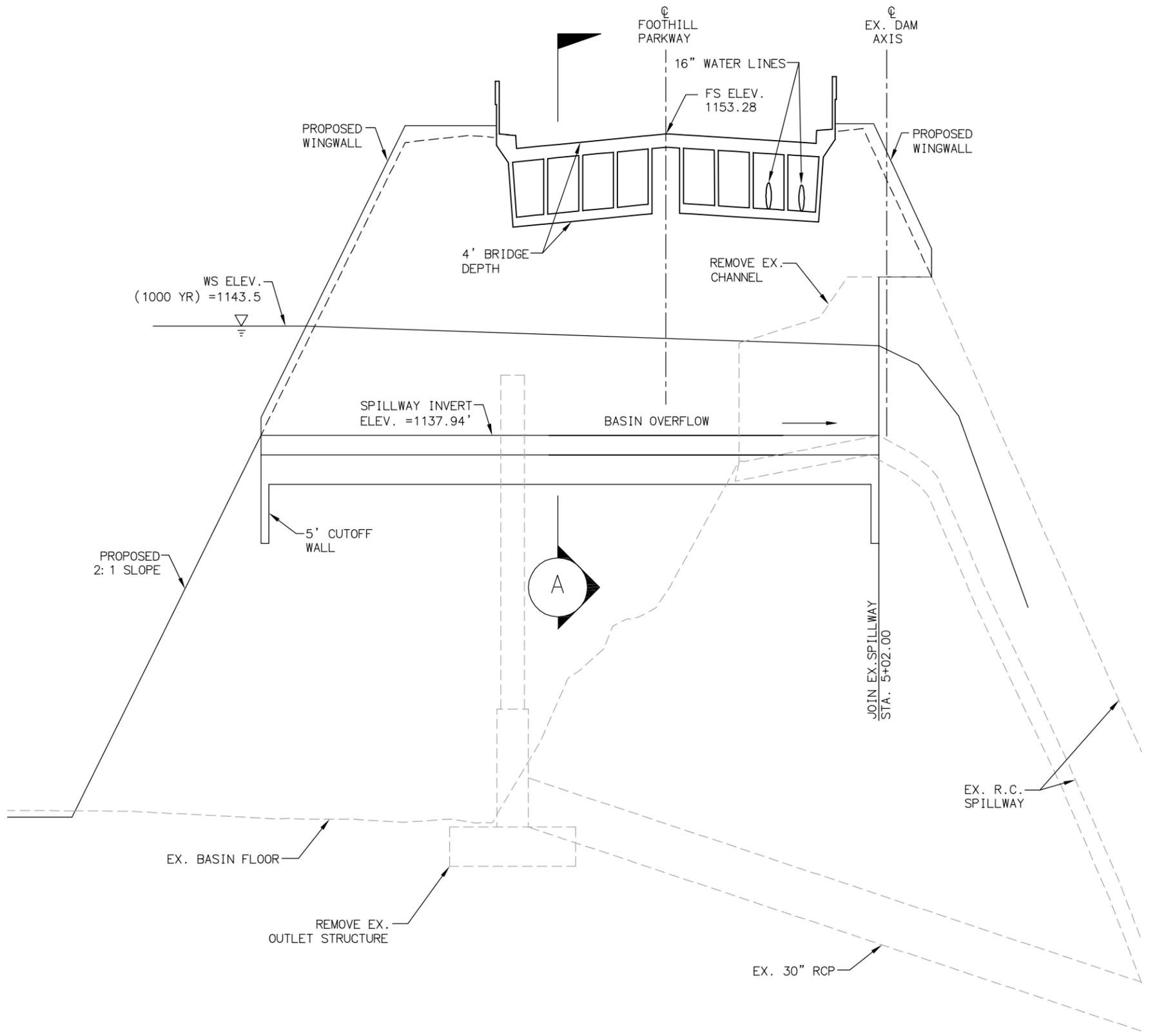
EXHIBIT 1 OF 5
 FOOTHILL PARKWAY
 MABEY CANYON DEBRIS BASIN



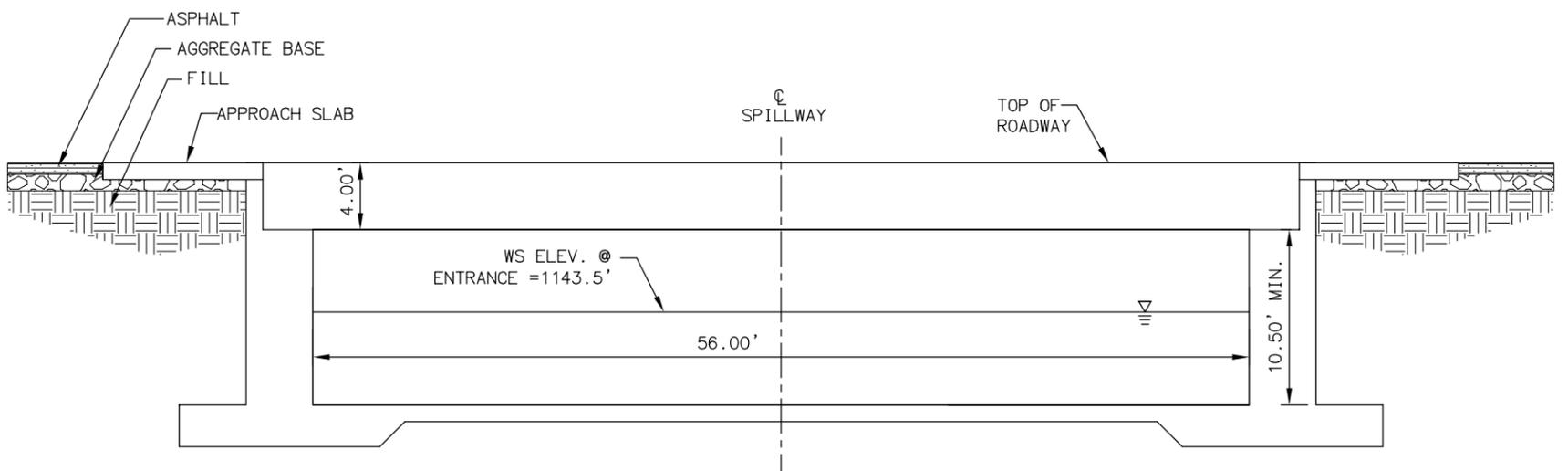
MABEY CANYON BASIN SPILLWAY PLAN

SCALE 1"=20'

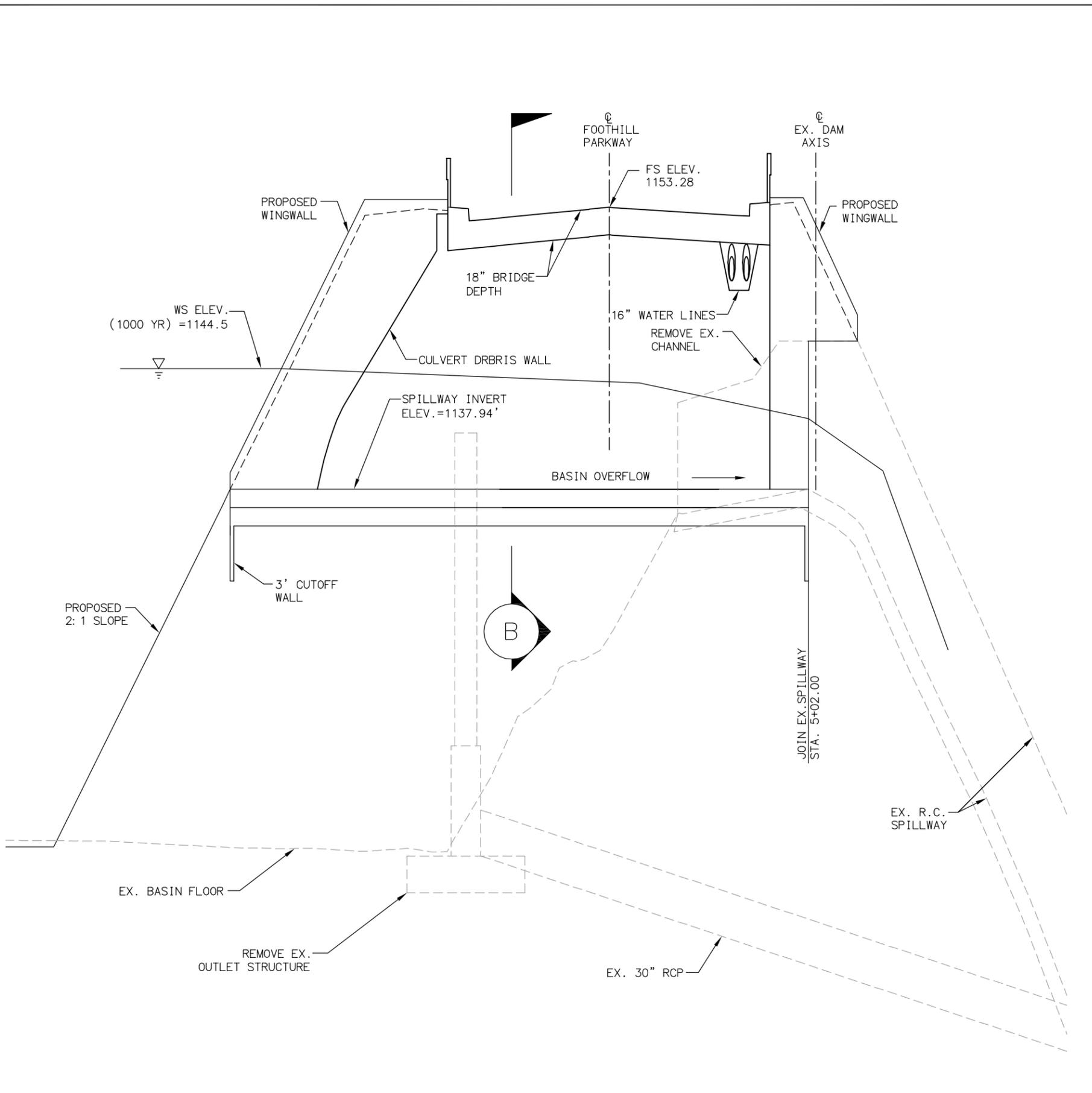




CLEAR SPAN BRIDGE SPILLWAY PROFILE
N.T.S.

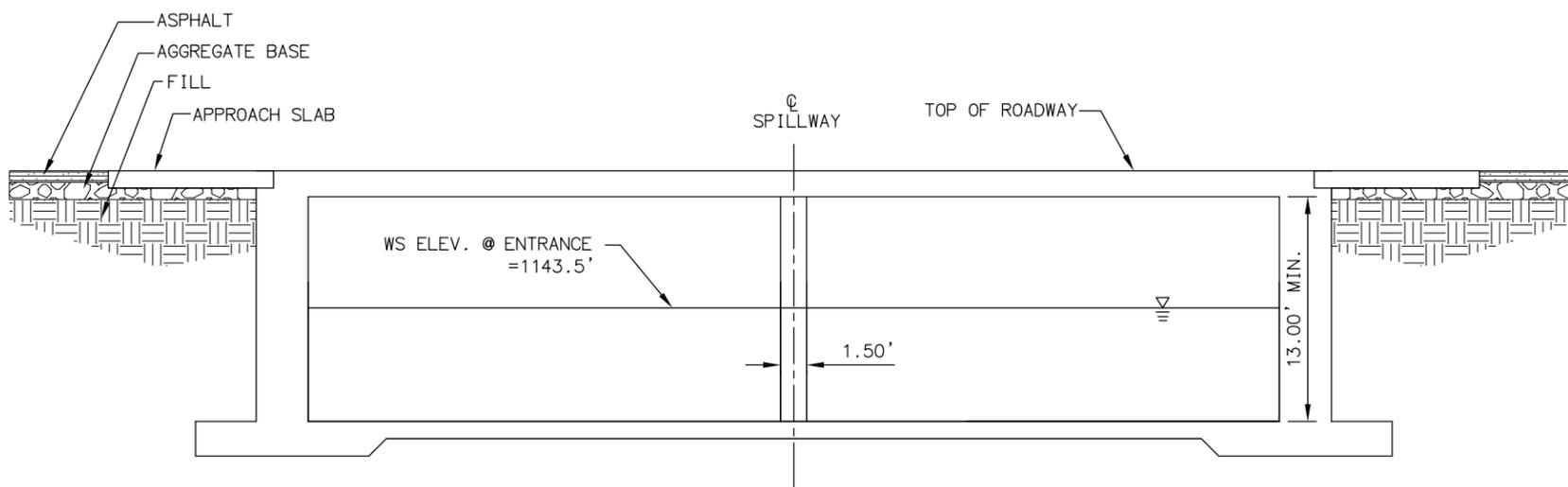


A CLEAR SPAN BRIDGED SPILLWAY SECTION
N.T.S.



2-SPAN BRIDGE SPILLWAY PROFILE

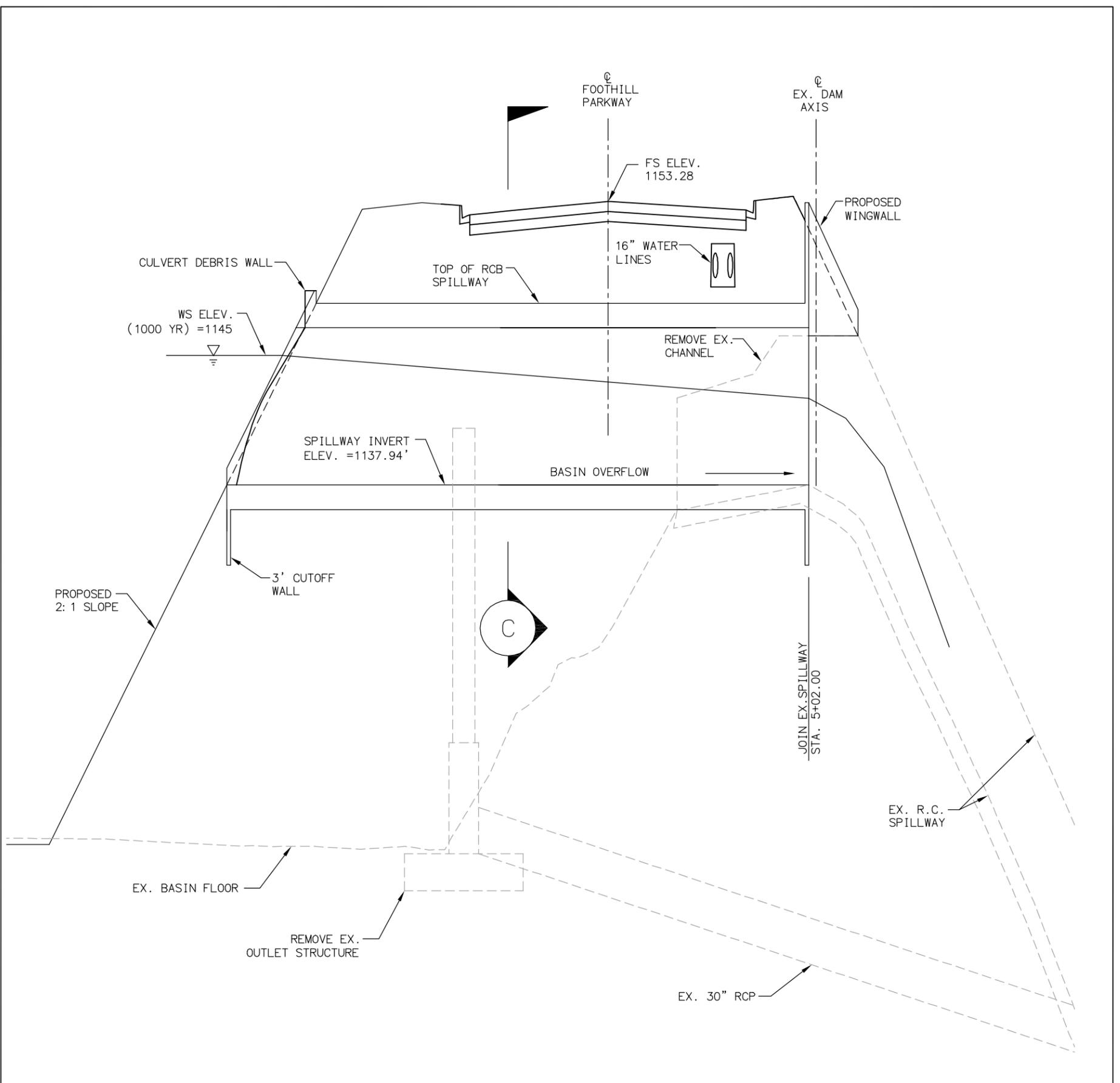
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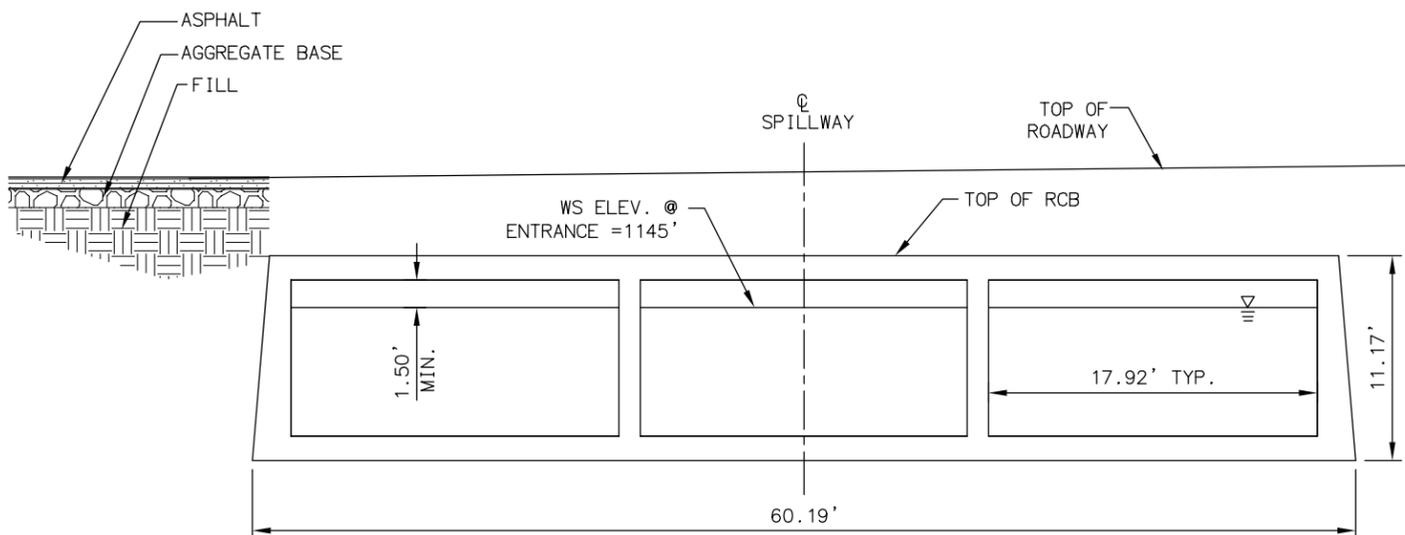
B

2-SPAN BRIDGE SPILLWAY SECTION

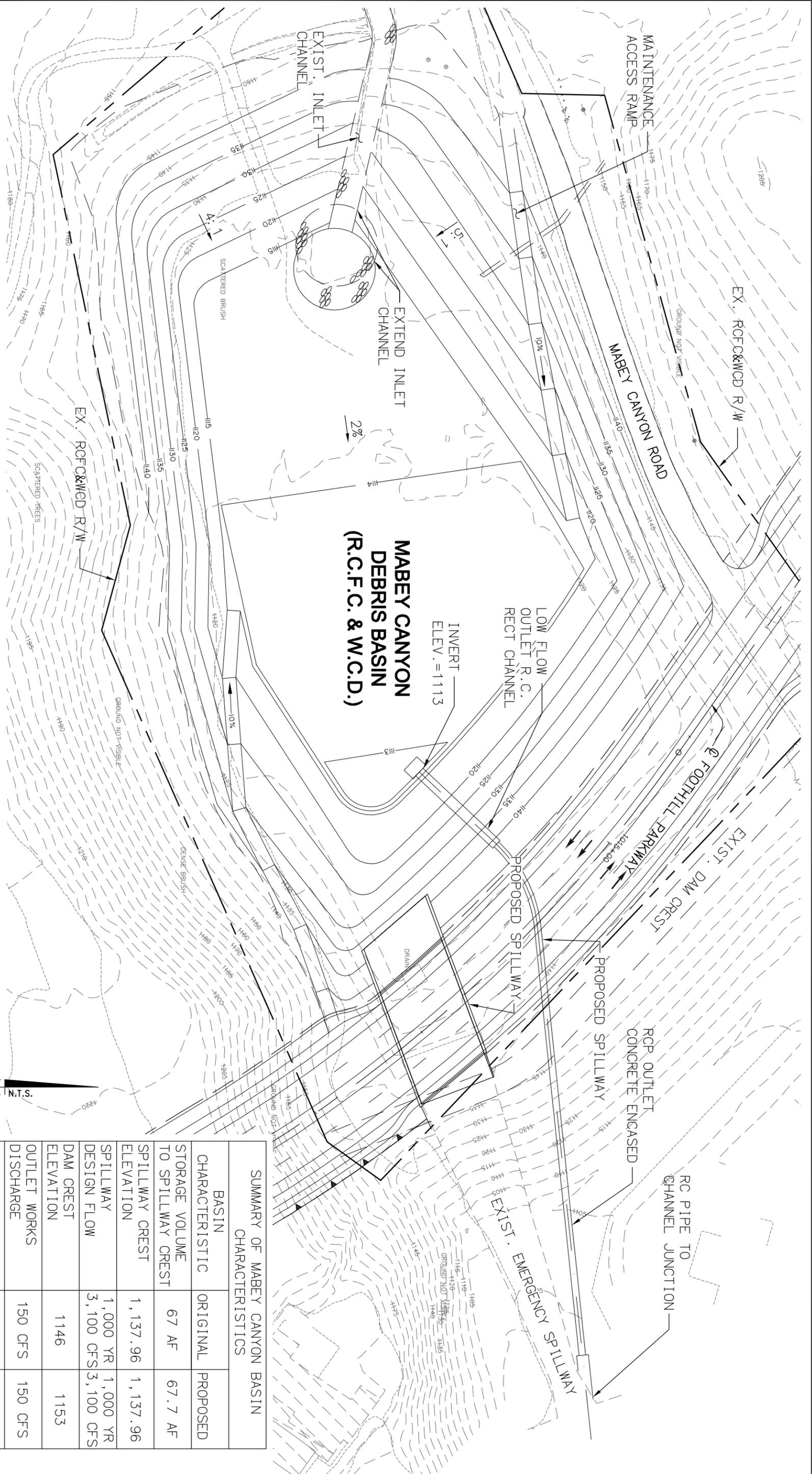
N.T.S.



REINFORCED CONCRETE BOX SPILLWAY PROFILE
N.T.S.



C REINFORCED CONCRETE BOX SPILLWAY SECTION
N.T.S.

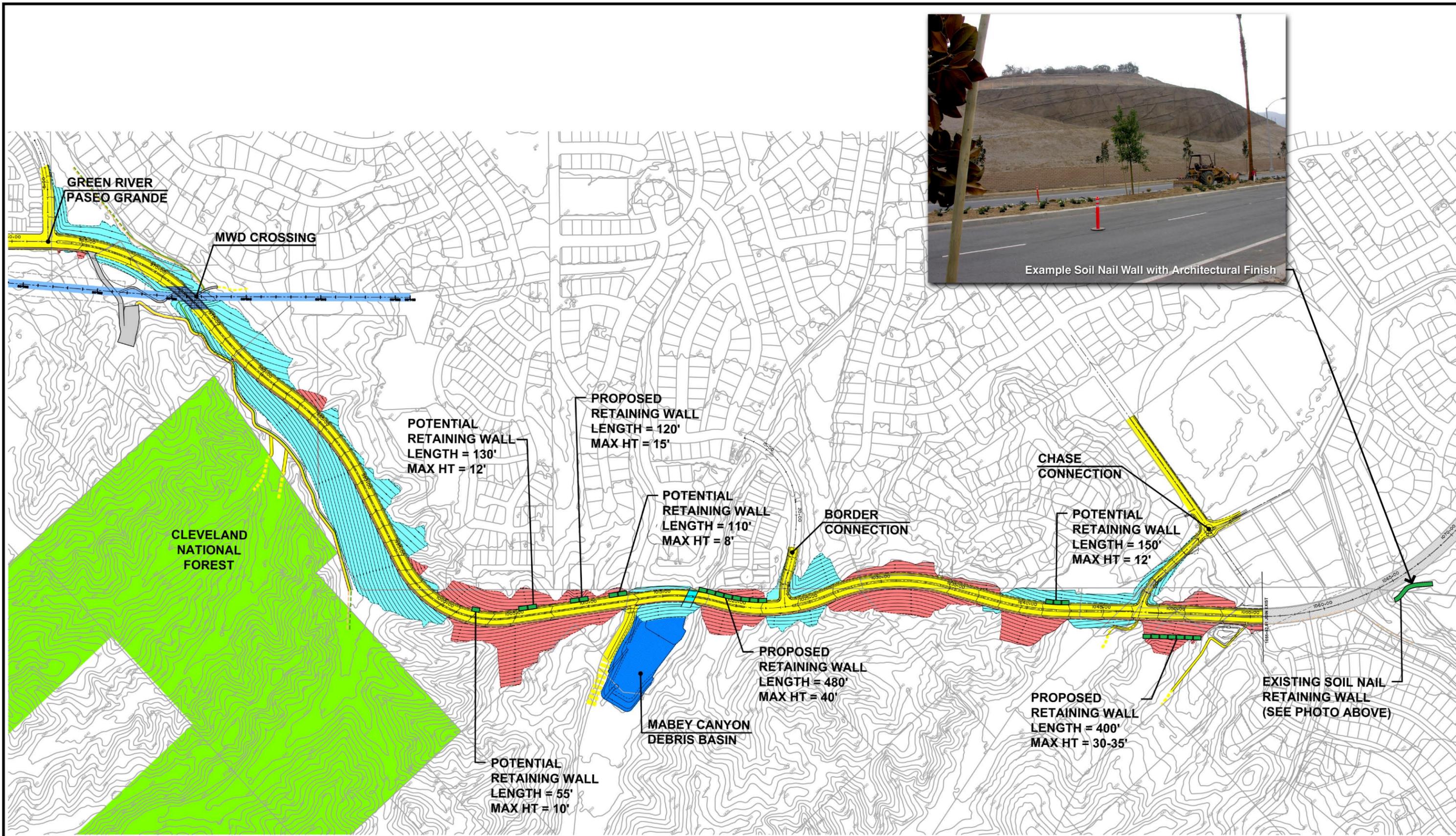


**MABEY CANYON
DEBRIS BASIN
(R.C.F.C. & W.C.D.)**

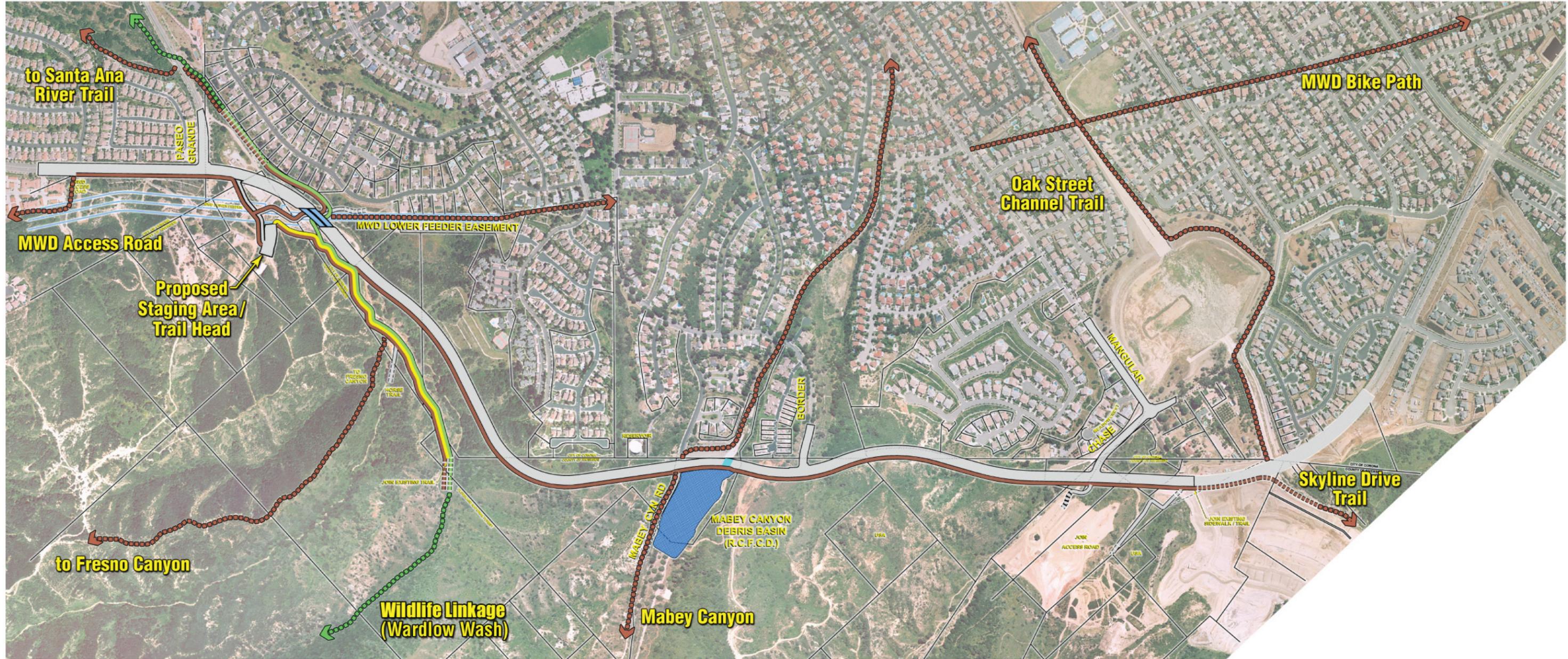
**MABEY CANYON DEBRIS BASIN AND SPILLWAY PLAN
ALTERNATIVE 3**

N.T.S.

SUMMARY OF MABEY CANYON BASIN CHARACTERISTICS			
BASIN CHARACTERISTIC	ORIGINAL	PROPOSED	
STORAGE VOLUME TO SPILLWAY CREST	67 AF	67.7 AF	
SPILLWAY CREST ELEVATION	1,137.96	1,137.96	
SPILLWAY DESIGN FLOW	1,000 YR 3,100 CFS	1,000 YR 3,100 CFS	
DAM CREST ELEVATION	1146	1153	
OUTLET WORKS DISCHARGE	150 CFS	150 CFS	
MINIMUM BASIN FLOOR ELEVATION	1,118	1,113	
COST	\$2,469,950		

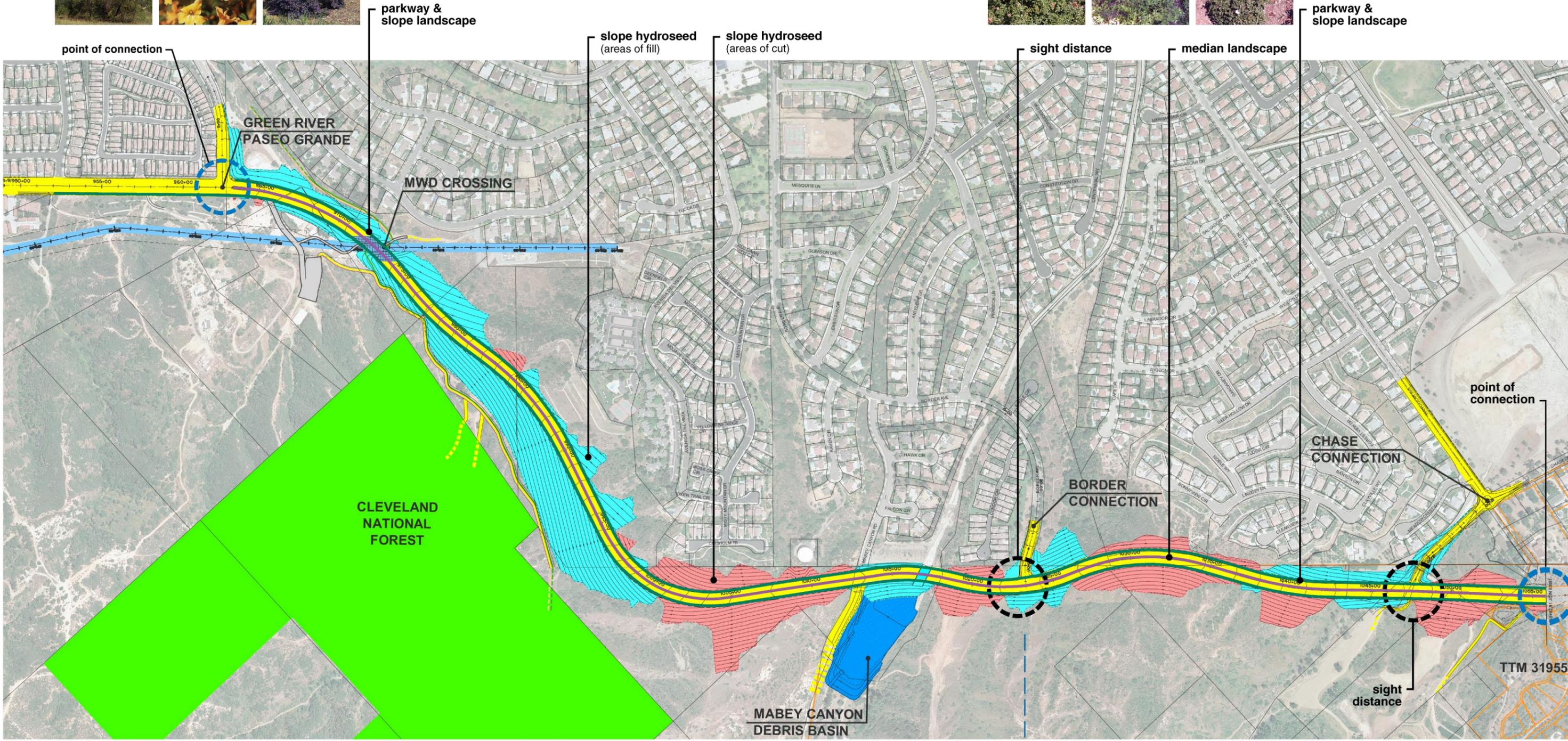


Example Soil Nail Wall with Architectural Finish



LEGEND

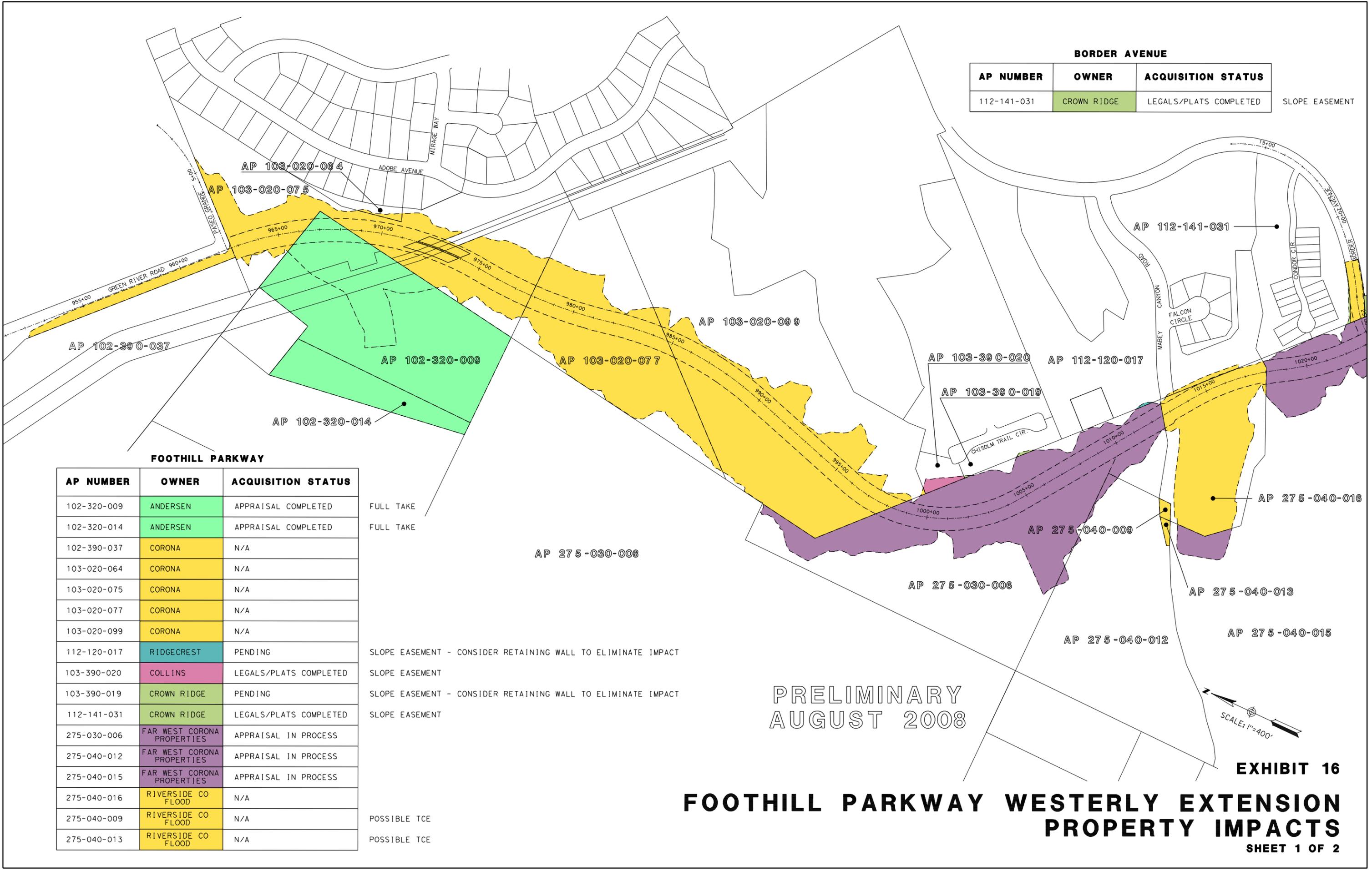
- | | | | |
|--|--|--|---|
|  SPILLWAY STRUCTURE |  ROADWAY |  PROPOSED TRAIL |  PROPOSED WILDLIFE LINKAGE |
|  BASIN |  PROPOSED ACCESS ROAD |  EXISTING / POTENTIAL TRAIL |  EXISTING WILDLIFE LINKAGE |
|  MWD CROSSING | | | |



- LEGEND:**
- ROADWAY IMPROVEMENTS
 - CUT AREA
 - FILL AREA
 - MWD LINE
 - BASIN IMPROVEMENTS
 - PROPOSED DEVELOPMENTS

Proposed landscape planting palette on parkways and median will be consistent with a "rural highway" feel. Fill slopes will be hydroseeded. Cut slopes will be planted up to the first drainage terrace, and hydroseeded beyond.

Proposed landscape planting palette will be consistent with landscaped parkways and slopes on existing Foothill Parkway. Slopes will be planted where visible to adjacent development. Other slopes will be planted to the first terrace, and hydroseeded beyond.



BORDER AVENUE		
AP NUMBER	OWNER	ACQUISITION STATUS
112-141-031	CROWN RIDGE	LEGALS/PLATS COMPLETED

SLOPE EASEMENT

AP NUMBER	OWNER	ACQUISITION STATUS
102-320-009	ANDERSEN	APPRAISAL COMPLETED
102-320-014	ANDERSEN	APPRAISAL COMPLETED
102-390-037	CORONA	N/A
103-020-064	CORONA	N/A
103-020-075	CORONA	N/A
103-020-077	CORONA	N/A
103-020-099	CORONA	N/A
112-120-017	RIDGECREST	PENDING
103-390-020	COLLINS	LEGALS/PLATS COMPLETED
103-390-019	CROWN RIDGE	PENDING
112-141-031	CROWN RIDGE	LEGALS/PLATS COMPLETED
275-030-006	FAR WEST CORONA PROPERTIES	APPRAISAL IN PROCESS
275-040-012	FAR WEST CORONA PROPERTIES	APPRAISAL IN PROCESS
275-040-015	FAR WEST CORONA PROPERTIES	APPRAISAL IN PROCESS
275-040-016	RIVERSIDE CO FLOOD	N/A
275-040-009	RIVERSIDE CO FLOOD	N/A
275-040-013	RIVERSIDE CO FLOOD	N/A

FULL TAKE
FULL TAKE

SLOPE EASEMENT - CONSIDER RETAINING WALL TO ELIMINATE IMPACT
SLOPE EASEMENT
SLOPE EASEMENT - CONSIDER RETAINING WALL TO ELIMINATE IMPACT
SLOPE EASEMENT

POSSIBLE TCE
POSSIBLE TCE

PRELIMINARY
AUGUST 2008

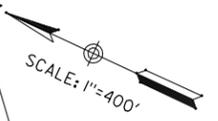
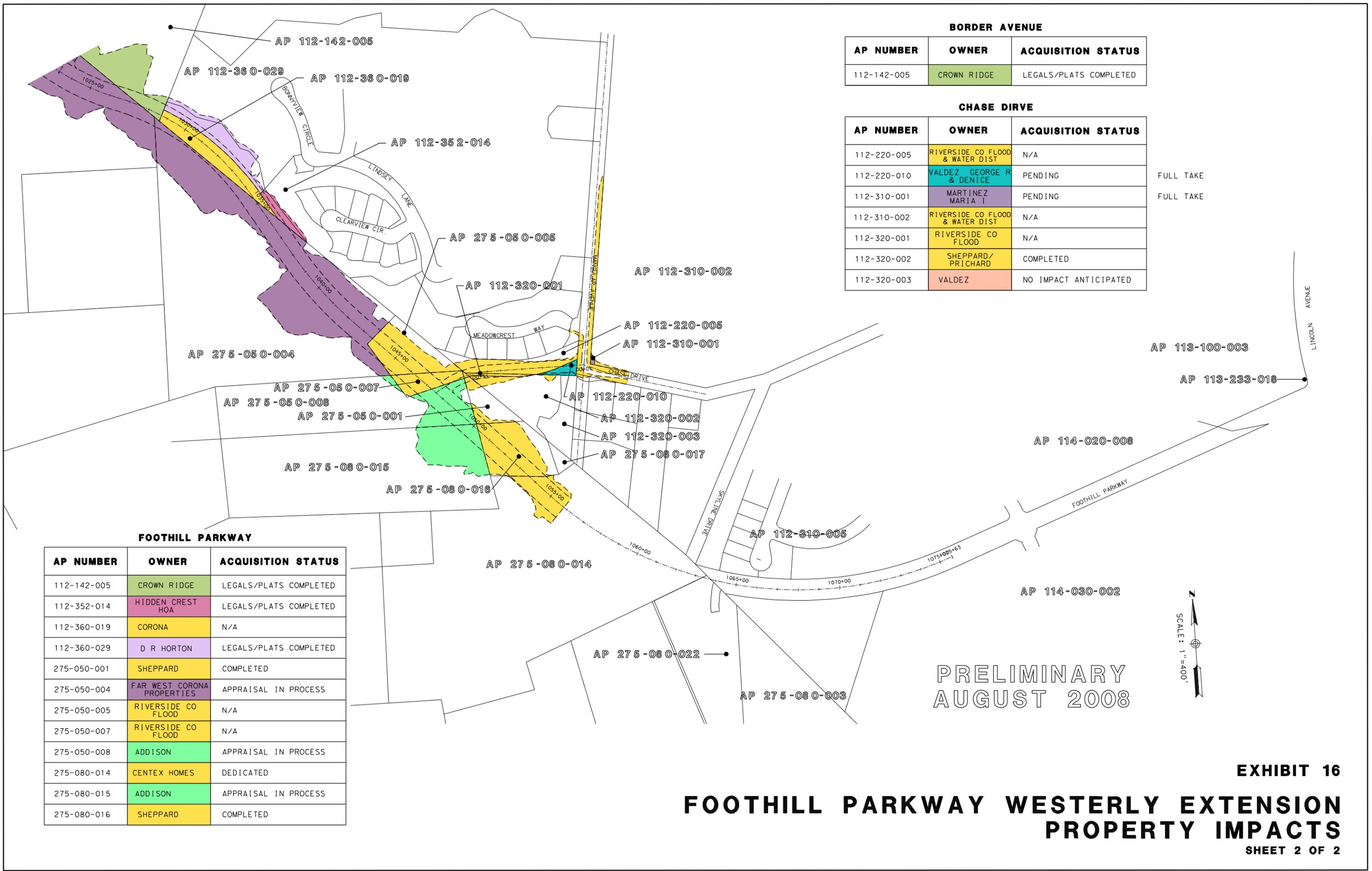


EXHIBIT 16
FOOTHILL PARKWAY WESTERLY EXTENSION
PROPERTY IMPACTS
SHEET 1 OF 2



BORDER AVENUE

AP NUMBER	OWNER	ACQUISITION STATUS
112-142-005	CROWN RIDGE	LEGALS/PLATS COMPLETED

CHASE DRIVE

AP NUMBER	OWNER	ACQUISITION STATUS
112-220-005	RIVERSIDE CO FLOOD & WATER DIST	N/A
112-220-010	VALDEZ GEORGE R & DENICE	PENDING
112-310-001	MARTINEZ MARIA I	PENDING
112-310-002	RIVERSIDE CO FLOOD & WATER DIST	N/A
112-320-001	RIVERSIDE CO FLOOD	N/A
112-320-002	SHEPPARD/PRICHARD	COMPLETED
112-320-003	VALDEZ	NO IMPACT ANTICIPATED

FULL TAKE
FULL TAKE

FOOTHILL PARKWAY

AP NUMBER	OWNER	ACQUISITION STATUS
112-142-005	CROWN RIDGE	LEGALS/PLATS COMPLETED
112-352-014	HIDDEN CREST HOA	LEGALS/PLATS COMPLETED
112-360-019	CORONA	N/A
112-360-029	D R HORTON	LEGALS/PLATS COMPLETED
275-050-001	SHEPPARD	COMPLETED
275-050-004	FAR WEST CORONA PROPERTIES	APPRAISAL IN PROCESS
275-050-005	RIVERSIDE CO FLOOD	N/A
275-050-007	RIVERSIDE CO FLOOD	N/A
275-050-008	ADDISON	APPRAISAL IN PROCESS
275-080-014	CENTEX HOMES	DEDICATED
275-080-015	ADDISON	APPRAISAL IN PROCESS
275-080-016	SHEPPARD	COMPLETED

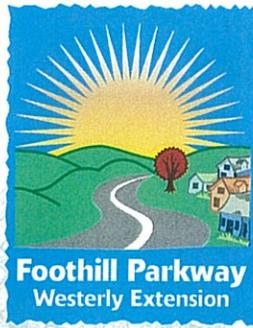
PRELIMINARY
AUGUST 2008



EXHIBIT 16

**FOOTHILL PARKWAY WESTERLY EXTENSION
PROPERTY IMPACTS**

SHEET 2 OF 2

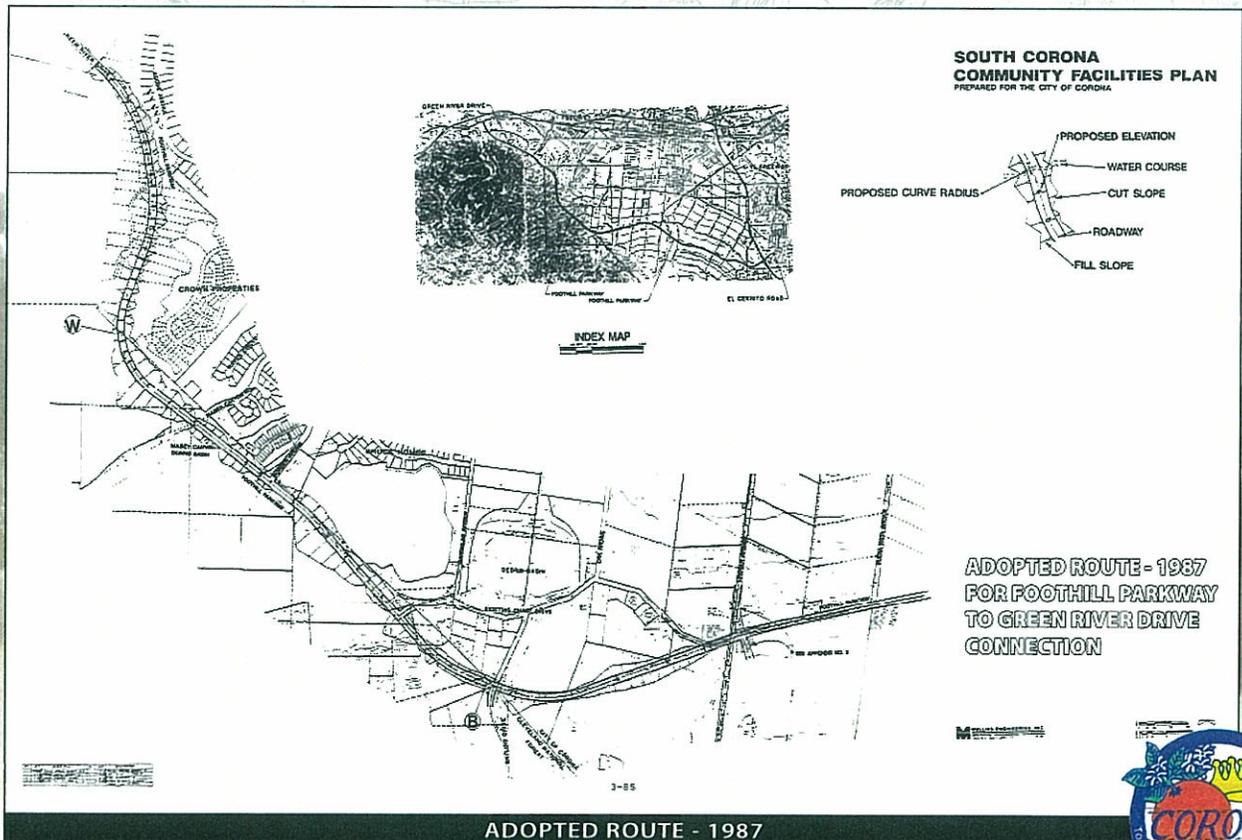


Foothill Parkway Westerly Extension Project Community Workshop

June 28, 2007
City Library, 650 S. Main St.
6:30 p.m. - 8:30 p.m.

Project History

The extension of Foothill Parkway has been planned since the mid-1980's, when it was included in the Sierra Del Oro General Plan Amendment and then adopted as part of the South Corona Community Facilities Plan in 1987. In 2004, it was included in the City's General Plan Update. Now, in 2007, the final planning and design for this important project will be taking place.



Project Description / Schedule

The **City of Corona** is initiating the formal environmental review for the proposed Foothill Parkway Westerly Extension Project. Foothill Parkway currently extends approximately five miles in south Corona to Skyline Drive. The project will construct two miles of new roadway from Skyline Drive to Paseo Grande at Green River Road, connecting Sierra del Oro to south Corona and providing relief to existing east-west City roads, including Ontario Avenue and 6th Street. Potential connections to the new section of Foothill Parkway from both Chase Drive and Border Avenue are also being considered as part of the overall project.

In designing the new roadway, careful analysis and mitigation of potential impacts to scenic resources, noise, and traffic are key. In addition, considerable environmental review and engineering is also necessary to ensure compliance with federal, state, and local laws and ordinances. To meet these objectives, a three-phased schedule is being undertaken:

Phase 1: Preliminary Design & Environmental Review (Summer 2006 to Summer 2007)

While a conceptual alignment has already been laid out for the roadway, this phase refines the alignment to maximize compatibility with existing and planned development and open space.

Phase 2: Final Engineering & Design (Spring 2007 to Winter 2007)

During this phase, the final details of the roadway design will be determined, including right-of-way, landscaping, lighting and drainage facilities.

Phase 3: Construction (Fall 2008 to Fall 2010)

Construction will commence in 2008 and take approximately 24 months, with construction scheduled to be completed in 2010.

Community Workshop



What to Expect

The initial open house and workshop for the Foothill Parkway Extension Project is scheduled for **June 28, 2007 at the City Library, 650 S. Main St. at 6:30 p.m.**

6:30-7:30 p.m. Open House

7:30-8:00 p.m. Presentation

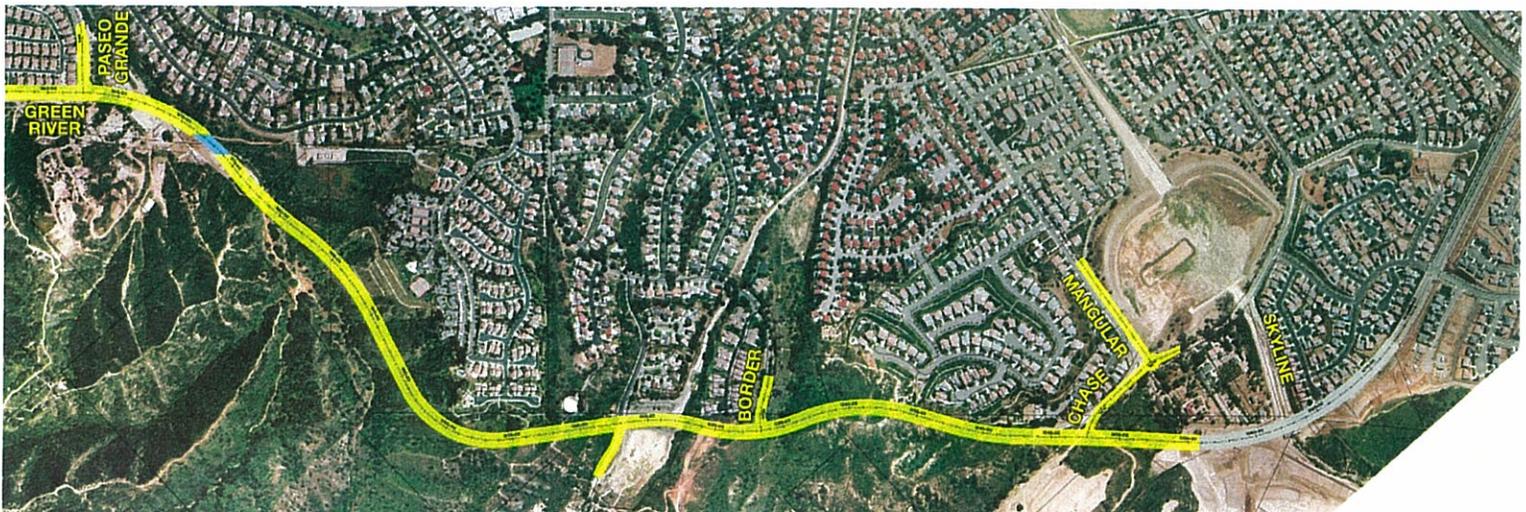
8:00-8:30 p.m. Open House

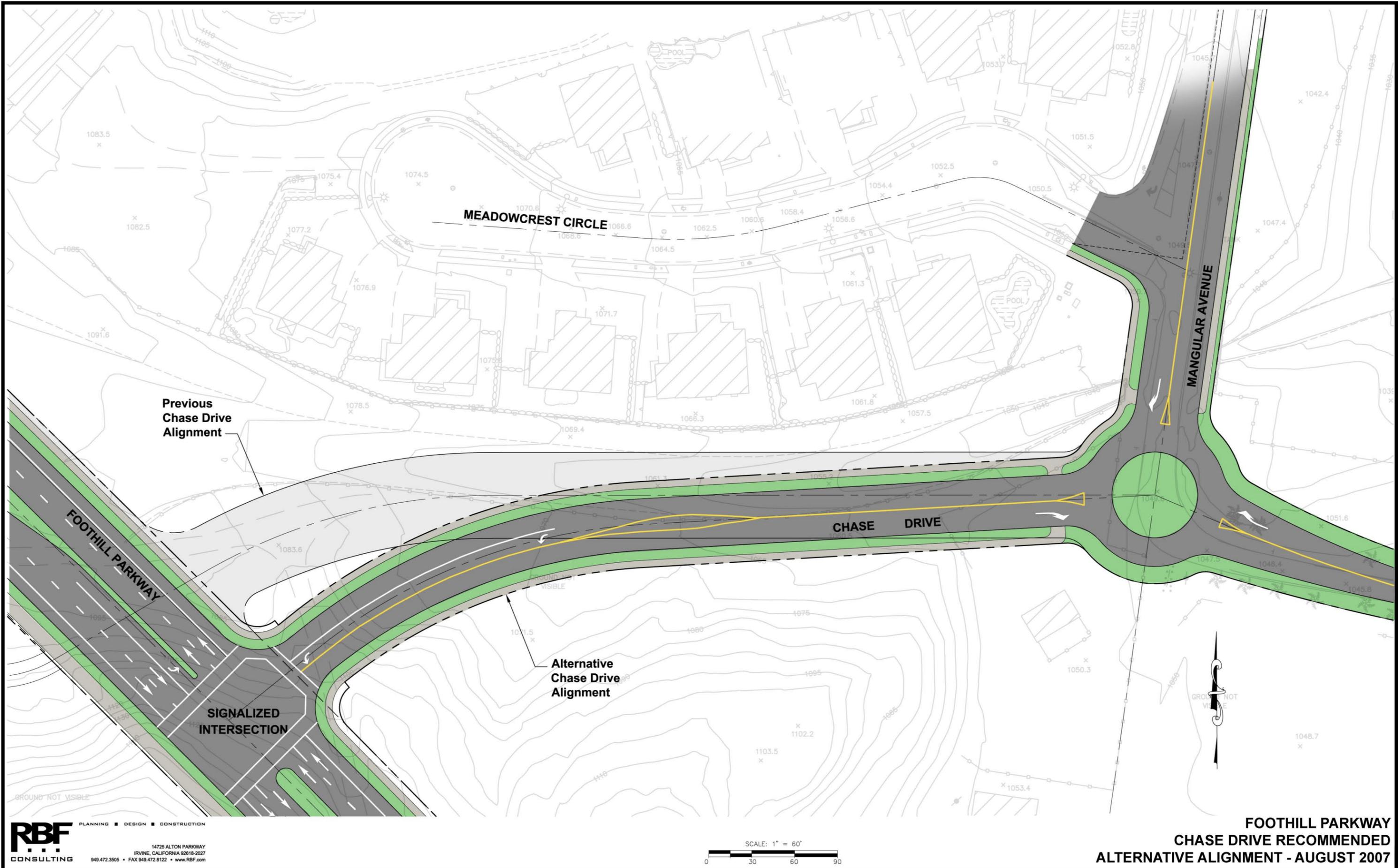
This is your opportunity to:

- Find out about the project history and purpose
- Explore exhibits & displays illustrating: environmental analysis, traffic, visual analysis, and engineering
- Interact with and ask specific questions of project team members
- Provide your comments and feedback on the project

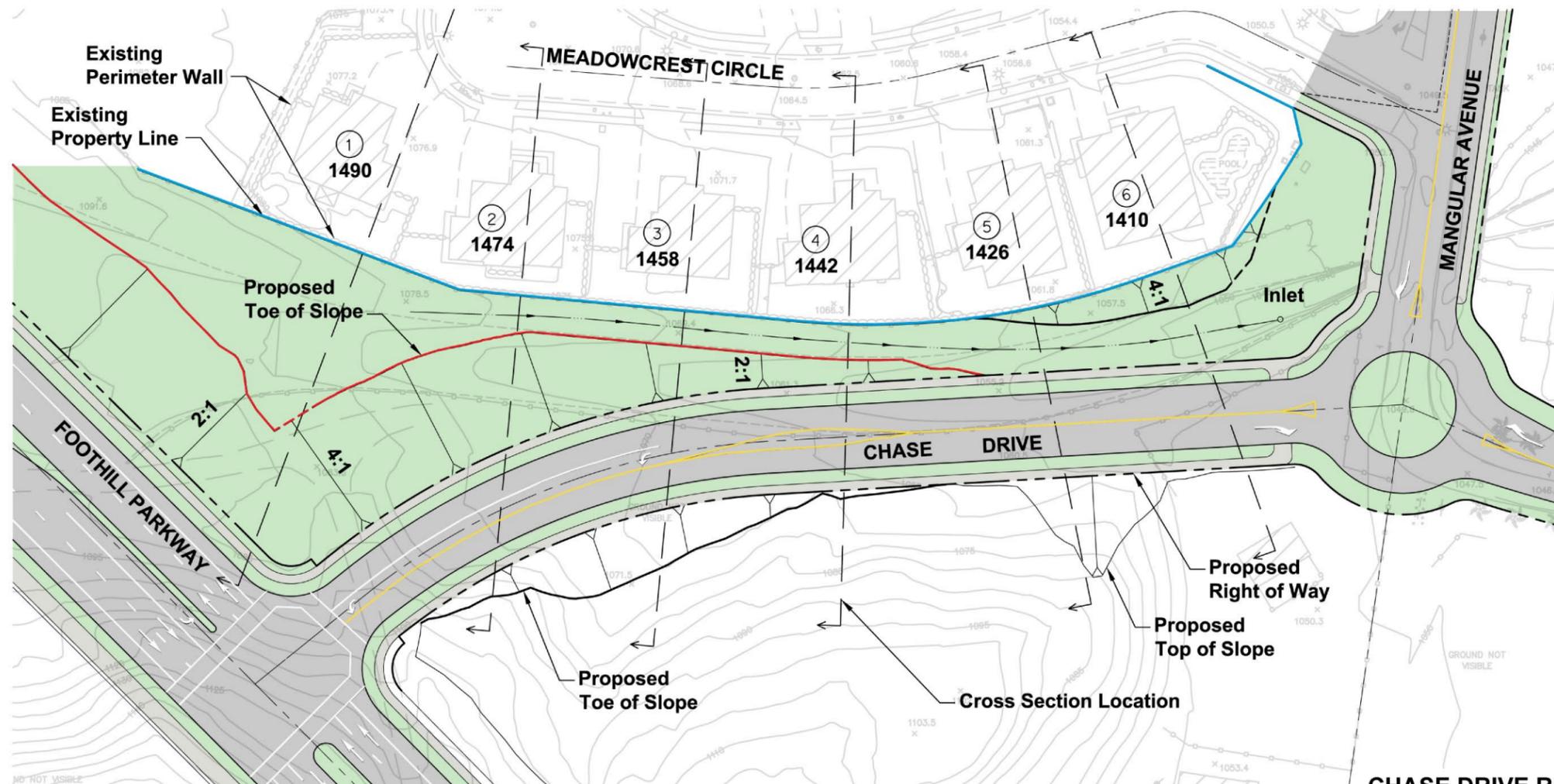
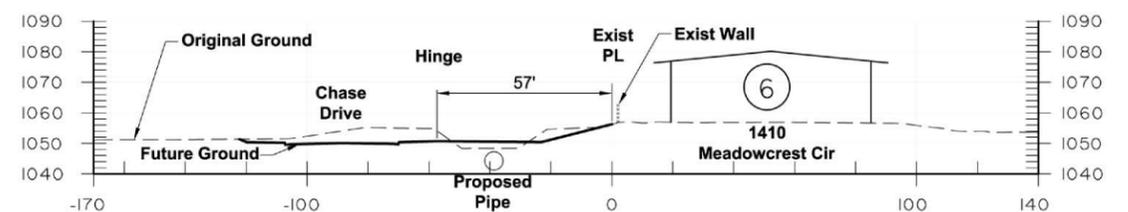
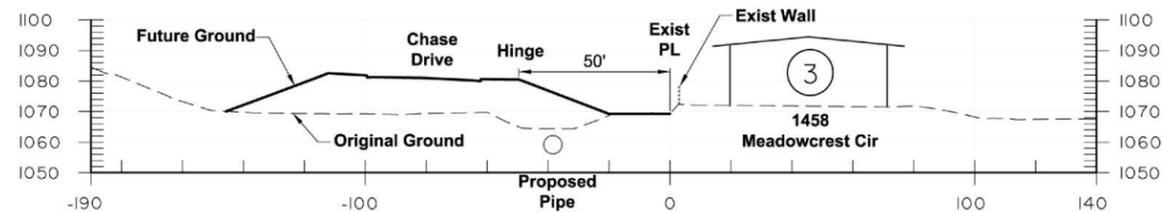
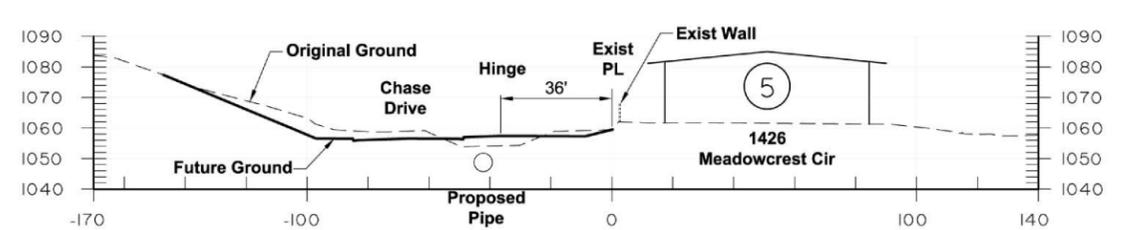
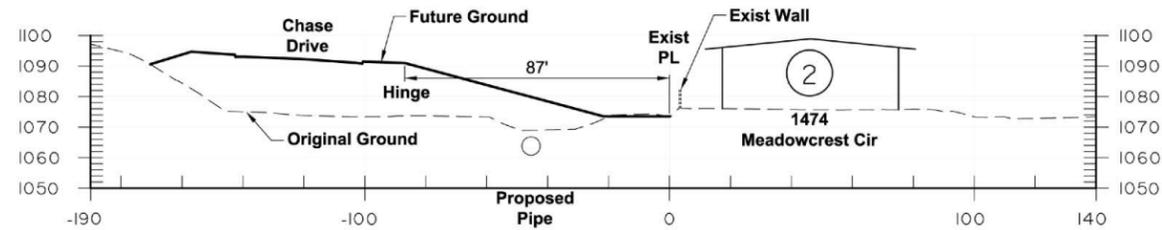
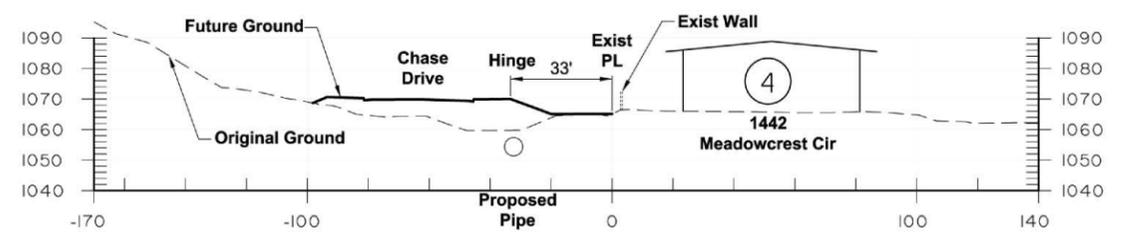
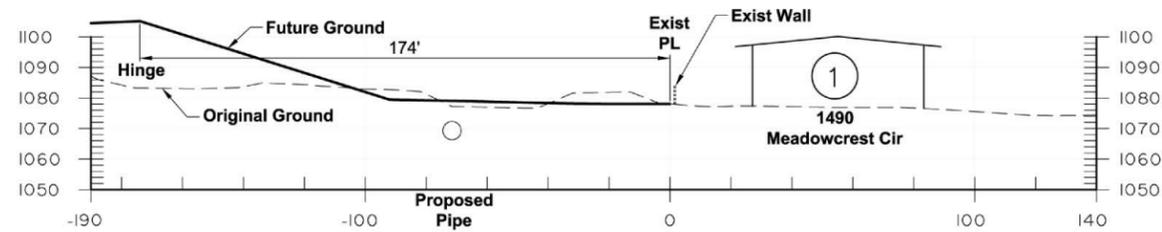
Please join your fellow residents and other interested community members for this important community workshop and open house!

For more information, please visit www.foothillwest.com or call the Project Hotline at 951-279-3509





H:\pdata\10104629\CADD\TransPW\Exhibits\Meadowcrest\ChaseShitt_Plan_Only.dwg 08/08/07 - 4:46pm TKEITH



WARREN D. WILLIAMS
General Manager - Chief Engineer



1995 MARKET STREET
RIVERSIDE, CA 92501
951.955.1200
951.788.9965 FAX
www.floodcontrol.co.riverside.ca.us
110060

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

October 10, 2006

RECEIVED

OCT 16 2006

RBF CONSULTING

Mr. John McCarthy
RBF Consulting
Post Office Box 57057
Irvine, CA 92619-7057

Dear Mr. McCarthy:

Re: Mabey Canyon Debris Basin
Proposed Foothill Parkway Crossing

Thank you for the opportunity to review and comment on the referenced feasibility report for the proposed roadway extension. Our review has raised a few concerns that we wish to share with you at this time.

- The proposed basin grading would result in 25-foot deep cuts at the upstream end of the reservoir. Cuts of this magnitude will likely result in severe headcutting upstream onto private properties. The reservoir may well need to be expanded farther upstream at a lesser longitudinal grade in order to minimize cuts yet gain the additional storage volume necessitated by the roadway fill. Further, additional rights of way would need to be secured and conveyed to the District. Existing inlet channels and collection facilities would need to be redesigned and reconstructed.
- The proposed box drop inlet to the spillway structure is unacceptable as proposed. We feel that it poses a serious health and safety hazard to the public and to District Maintenance and Survey staff. It would be interesting to learn how other agencies with such structures have dealt with such safety and liability issues.
- Please note that the existing spillway structure is not an emergency spillway, but rather a service spillway. The structure is utilized to convey runoff during even small to moderate events should the existing inlet of either structure plug or have its capacity exceeded.
- District policy prohibits the installation of underground utilities within its embankments, levees and dams.
- Be advised that as with other critical District facilities, no construction activities will be allowed to take place between October 1st and March 30th (rainy season). Construction scheduling for the roadway project should reflect the available construction window.

As you know, Mabey Canyon Dam is regulated by the California State Division of Safety of Dams (DSOD). All coordination with DSOD related to this District facility should be made by or through District staff. We are in the process of setting up a meeting between District and DSOD staff to present and discuss your proposal. Following that meeting we will be in a position to provide further comments and guidance for your design effort.

EXHIBIT 20A

Mr. John McCarthy
RBF Consulting
Re: Mabey Canyon Debris Basin

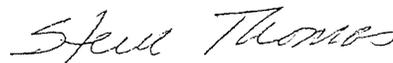
-2-

October 6, 2006

Subsequent to our approval of your conceptual plan, a cooperative agreement specifying the roles and responsibilities of the City of Corona and District for the project will be prepared by District staff. A special account will be established to accurately track agreement preparation, plan check and construction inspection costs.

We look forward to working with you on this project. Should you have any questions regarding this matter, please feel free to contact me at 951.955.1280.

Very truly yours,



STEPHEN C. THOMAS
Chief of Operations and
Maintenance Division

c: City of Corona
Attn: Steven Enna, Senior Civil Engineer
Michael Rawson
Clyde Johnson
Tom Rheiner

SCT: rlp

WARREN D. WILLIAMS
General Manager-Chief Engineer



1995 MARKET STREET
RIVERSIDE, CA 92501
951.955.1200
FAX 951.788.9965
www.rcflood.org

119961

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

July 3, 2008

RECEIVED
JUL 07 2008
RBF Consulting

Mr. Kip Field
Assistant Public Works Director
City of Corona
Post Office Box 940
Corona, CA 92878-0940

Dear Mr. Field:

Re: Mabey Canyon Debris Basin
Proposed Foothill Parkway Crossing
Alternatives #2 and #3

Thank you for meeting with us on June 24, 2008 and for providing us the opportunity to review and comment on the referenced conceptual alternatives for the proposed Foothill Parkway roadway extension. The road will displace debris storage at the upstream face of the Mabey Canyon Debris Dam. We understand that these alternatives aim to preserve the debris capture, and storage capacity and functioning of the existing debris basin after the road crossing is constructed over the dam embankment. After review of the alternatives, it is our opinion that Alternative #2, which preserves the bottom elevation of the existing dam, is preferred over Alternative #3 for a number of reasons relating to safety and liability. We find Alternative #3 unacceptable for the following reasons:

- The proposed basin grading would result in deeper cuts at the upstream end of the reservoir, a concern expressed in our October 10, 2006 letter to RBF Consulting. Cuts of this magnitude will likely result in severe headcutting upstream onto private properties.
- We believe that the bore and jack methods proposed for Alternate #3 to install a new low flow outlet has a strong potential to destabilize the existing dam core as well as to create a possible seepage path along the new pipe, compromising the stability of the dam.

In addition, for maintenance purposes we prefer the larger basin bottom area afforded by Alternative #2. This allows for thinner deposition layers and for more maneuvering area in order to manage the piling, drying and loading of sediment and debris accumulating in the basin after storm events.

As stated in our October 10, 2006 letter, subsequent to our approval of your conceptual plan, a cooperative agreement specifying the roles and responsibilities of the City of Corona and District for the project will be prepared by District staff. A special account will be established to accurately track agreement preparation, plan check and construction inspection costs.

EXHIBIT 20B

Mr. Kip Field
City of Corona

-2-

119961
July 3, 2008

Re: Mabey Canyon Debris Basin
Proposed Foothill Parkway Crossing
Alternatives #2 and #3

We look forward to working with you on this project. Should you have any questions regarding this matter, please feel free to contact me at 951.955.1280.

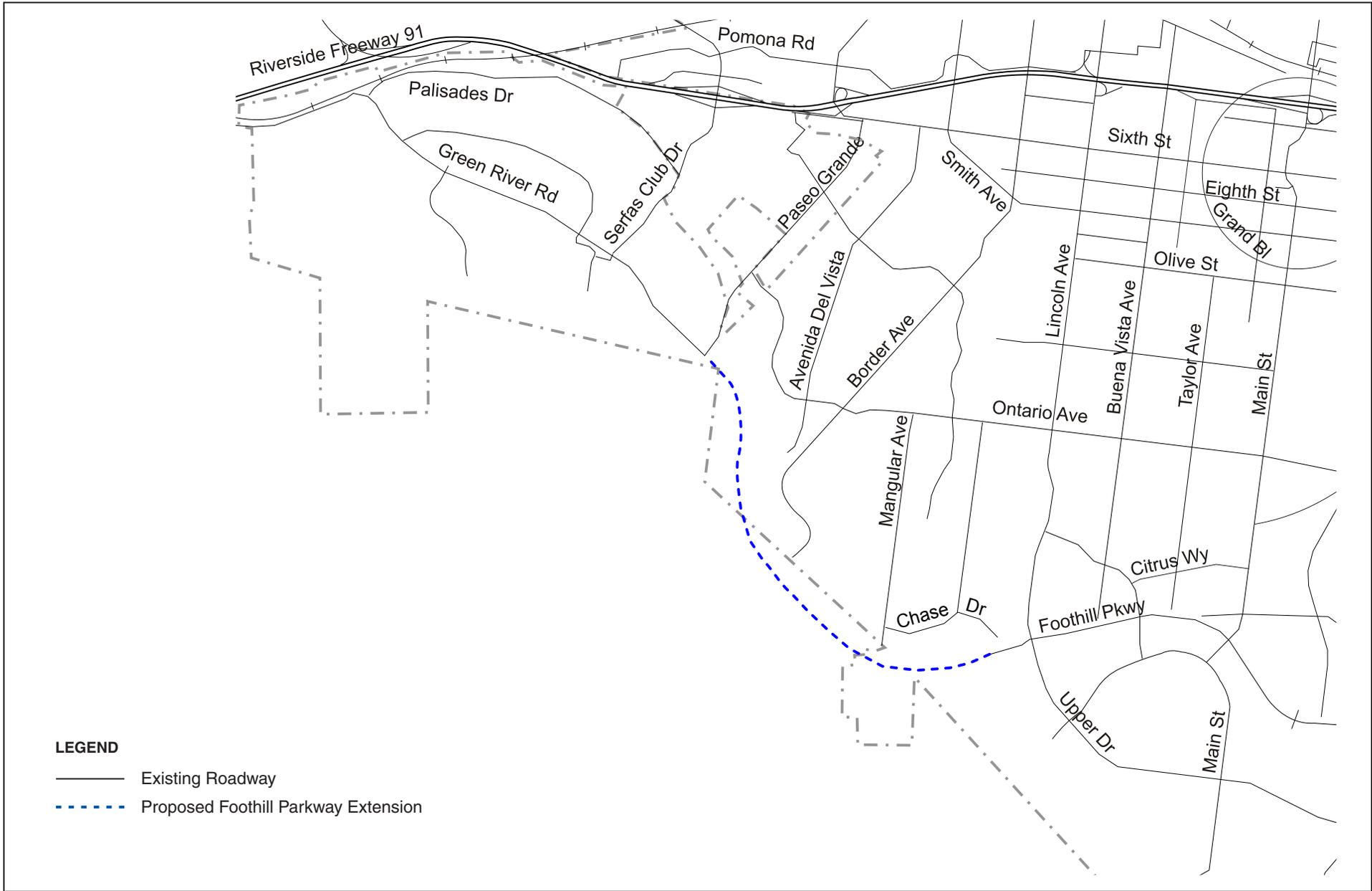
Very truly yours,



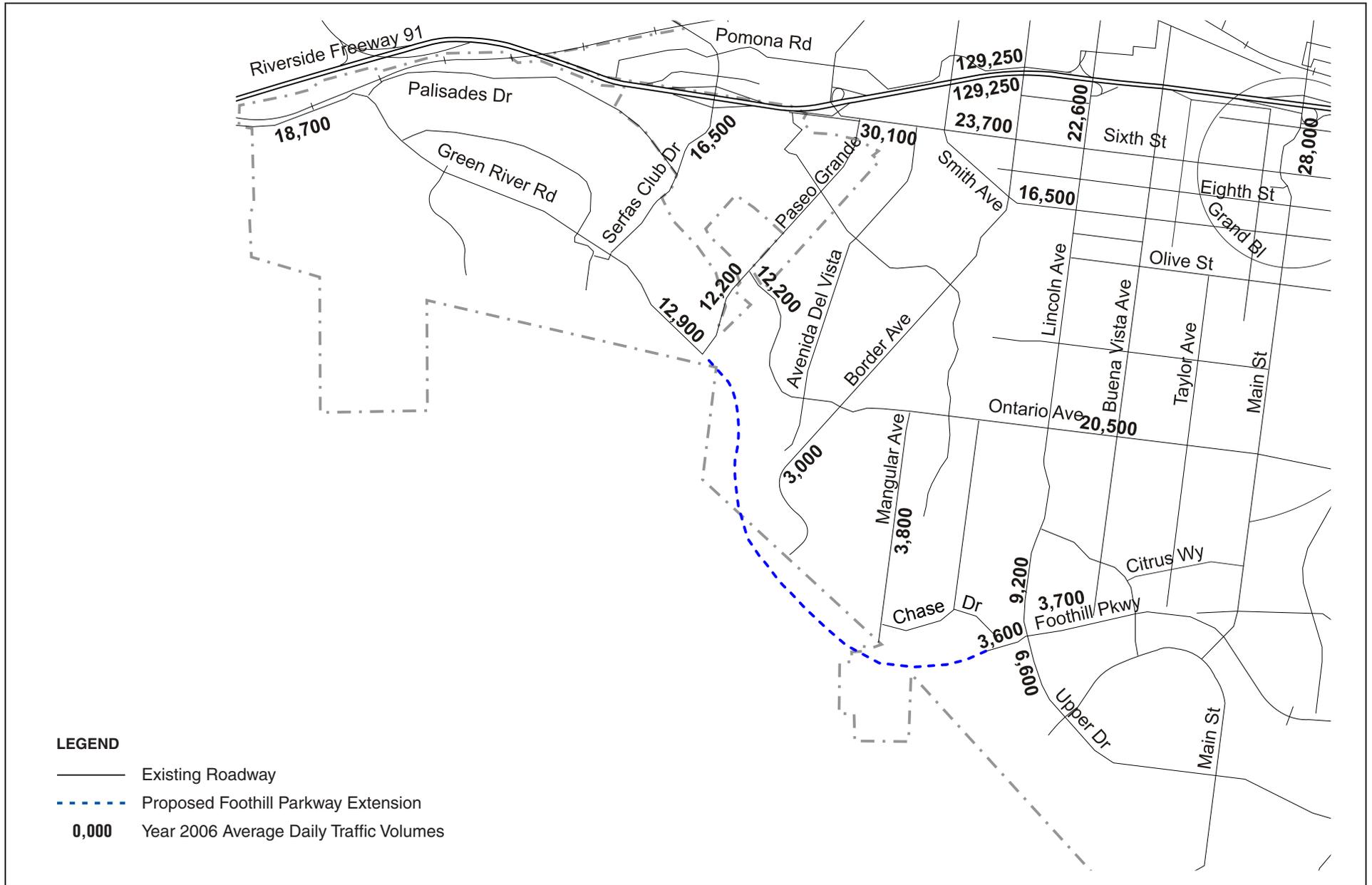
STEPHEN E. STUMP
Chief of Operations and
Maintenance Division

c: City of Corona
Attn: Clint Herrera, Senior Civil Engineer
RBF Consulting, Irvine Office
Attn: Trisha C. Keith, PE
Steve Thomas
Robert Cullen
Tom Rheiner

SES:rlp



Source: Meyer, Mohaddes Associates, June 2007.



LEGEND

- Existing Roadway
- - - Proposed Foothill Parkway Extension
- 0,000 Year 2006 Average Daily Traffic Volumes

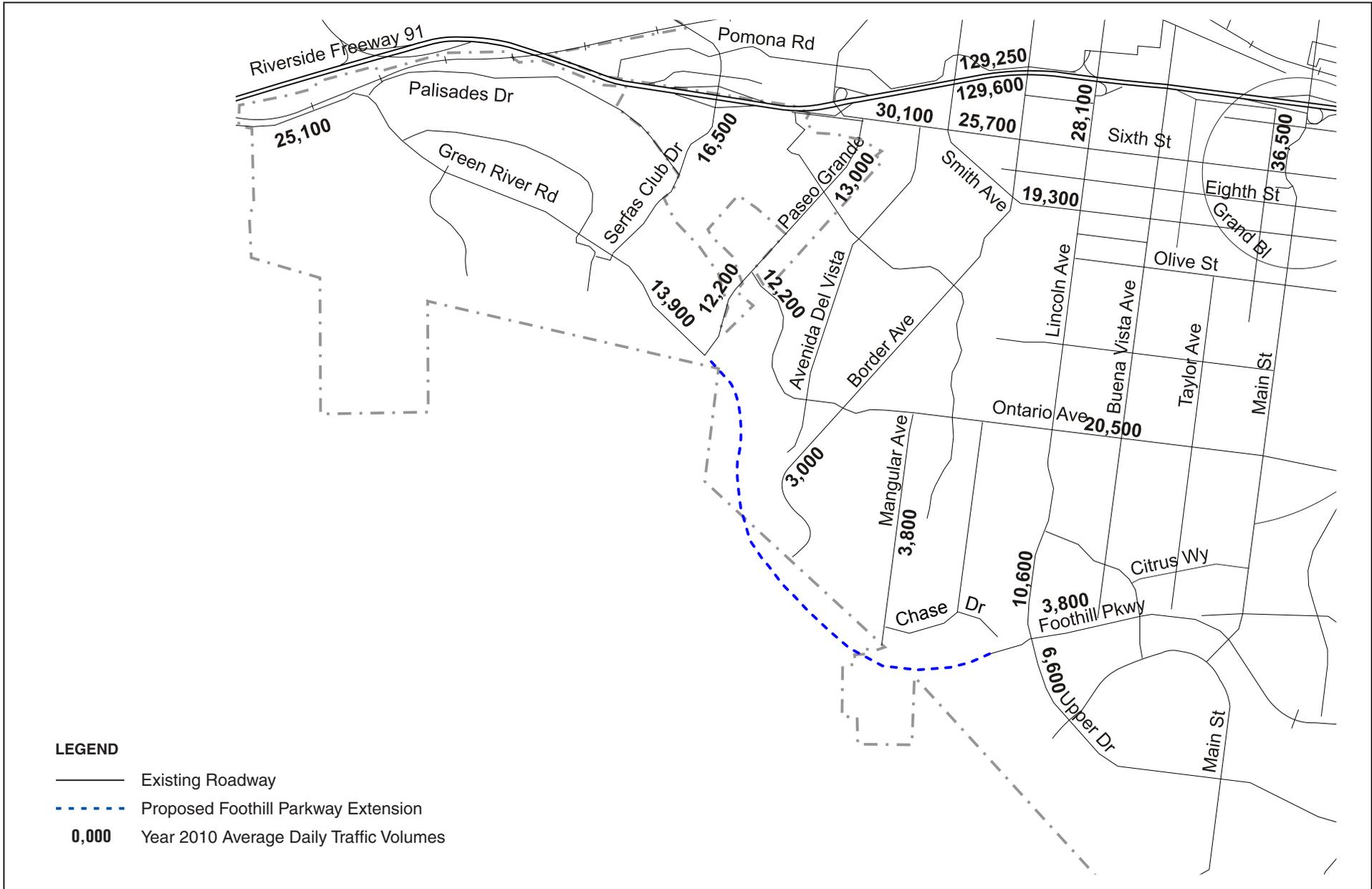
Source: Meyer, Mohaddes Associates, June 2007.



4/21/08 JN 10-104629-13393

FOOTHILL PARKWAY WESTERLY EXTENSION • BASIS OF DESIGN
Existing Conditions (Year 2006) ADT Volumes

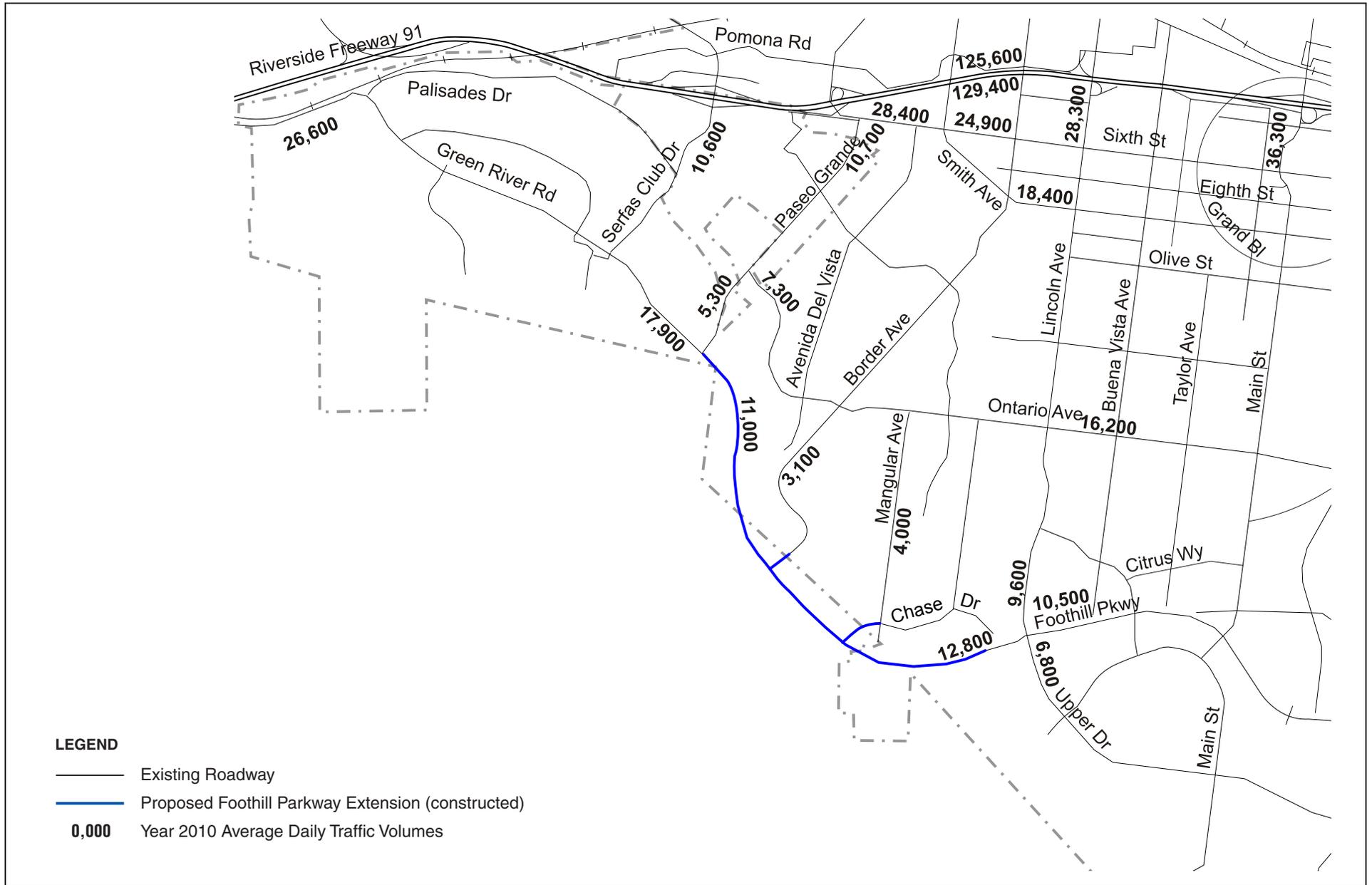
Exhibit 21B



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • BASIS OF DESIGN

Year 2010 ADT Volumes No Foothill Extension

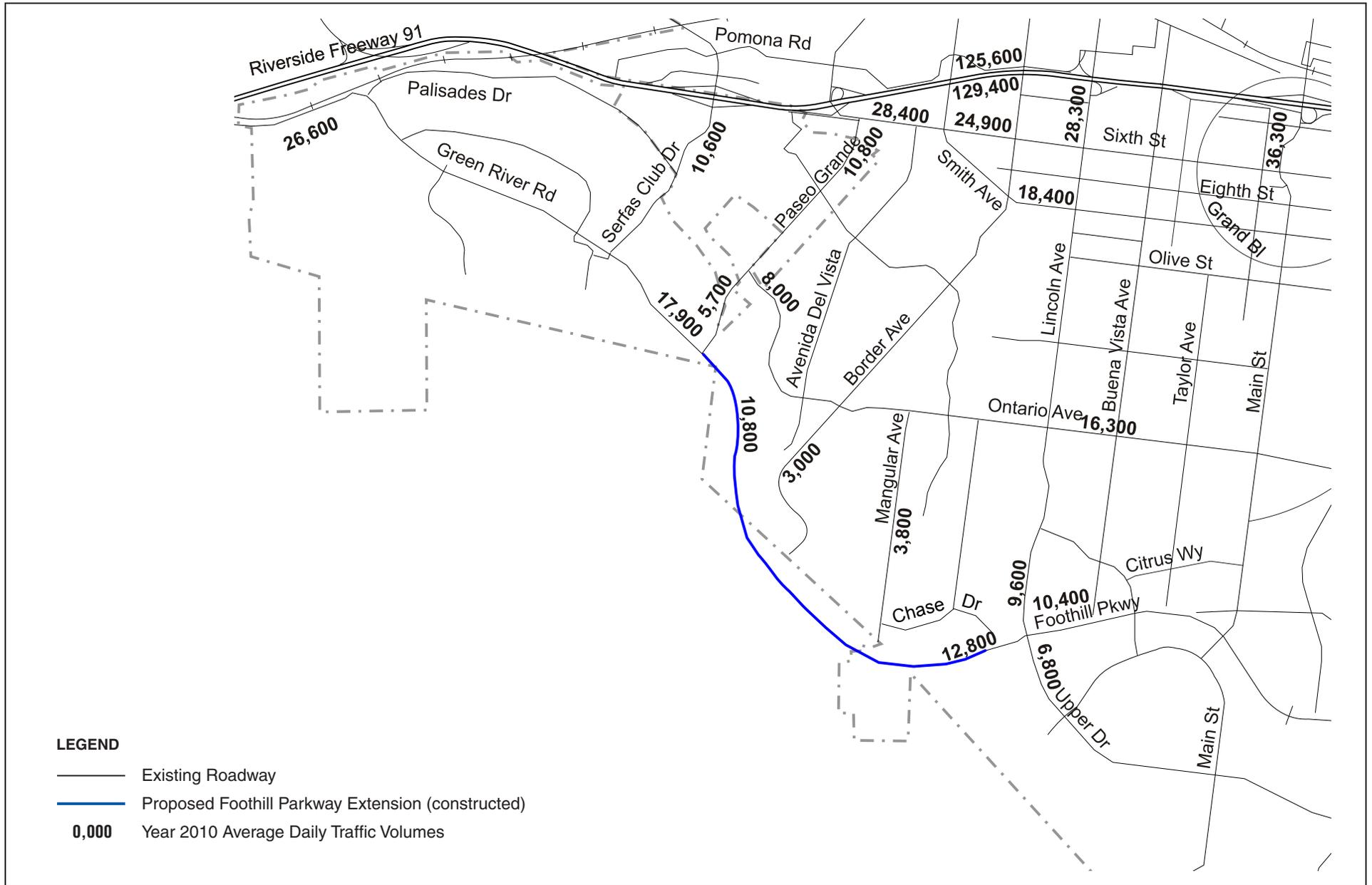


Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • BASIS OF DESIGN

Year 2010 ADT Volumes

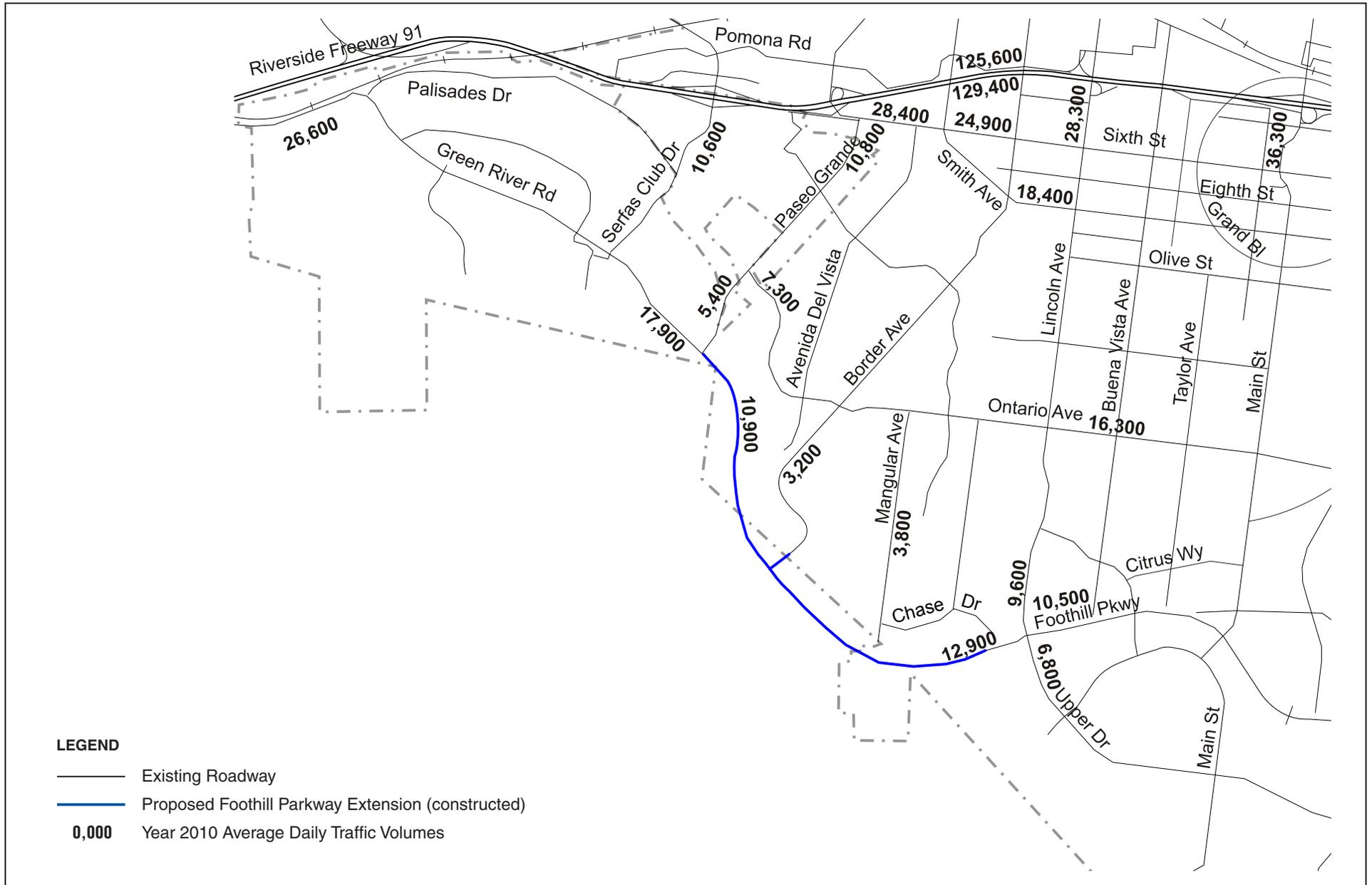
Border Ave. + Chase Dr. Connections



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • BASIS OF DESIGN

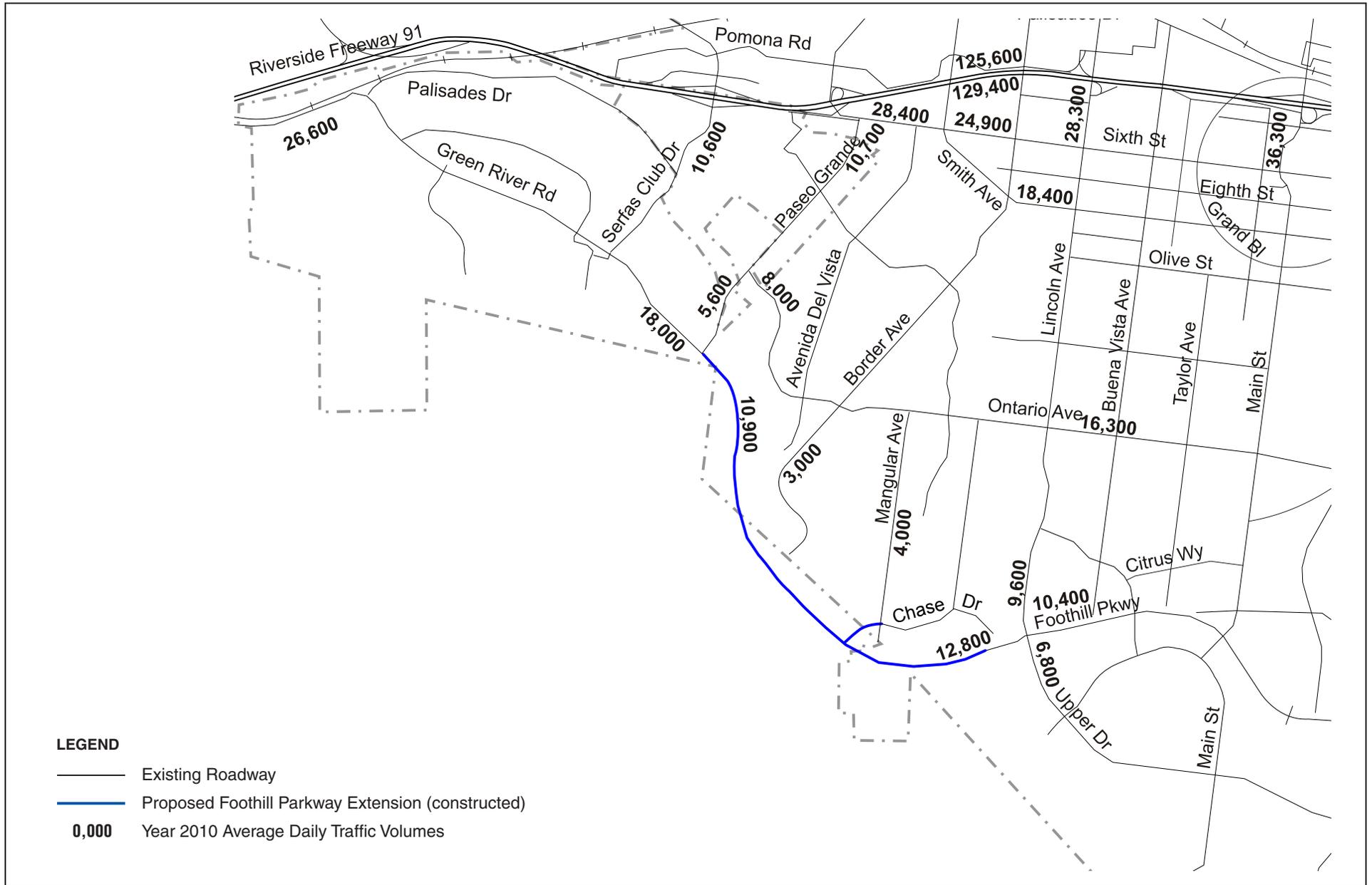
Year 2010 ADT Volumes No Border Ave. or Chase Dr. Connection



Source: Meyer, Mohaddes Associates, June 2007.

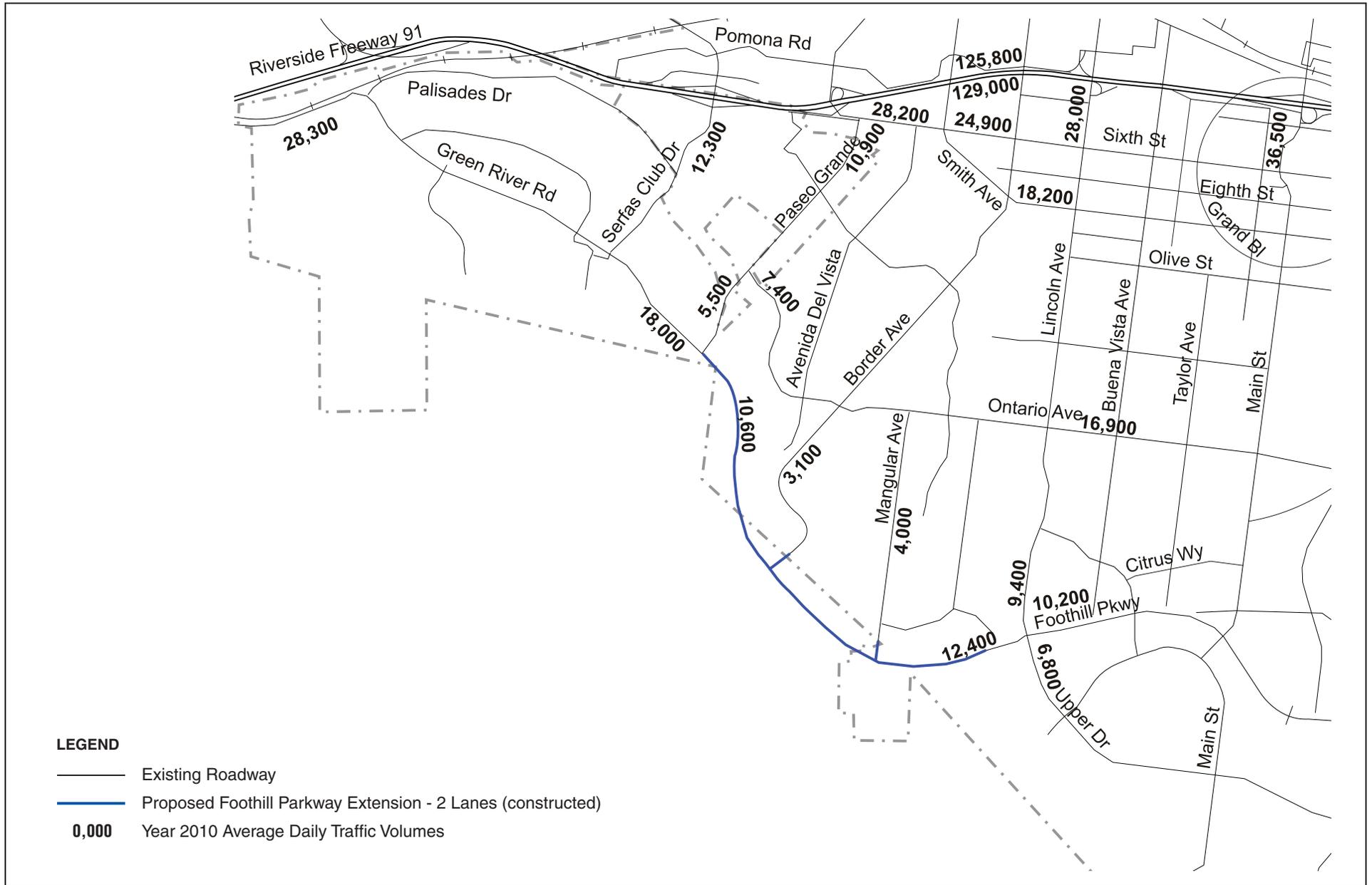
FOOTHILL PARKWAY WESTERLY EXTENSION • BASIS OF DESIGN

Year 2010 ADT Volumes Border Ave. Connection Only



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • BASIS OF DESIGN
Year 2010 ADT Volumes
Chase Dr. Connection Only



Source: Meyer, Mohaddes Associates, June 2007.

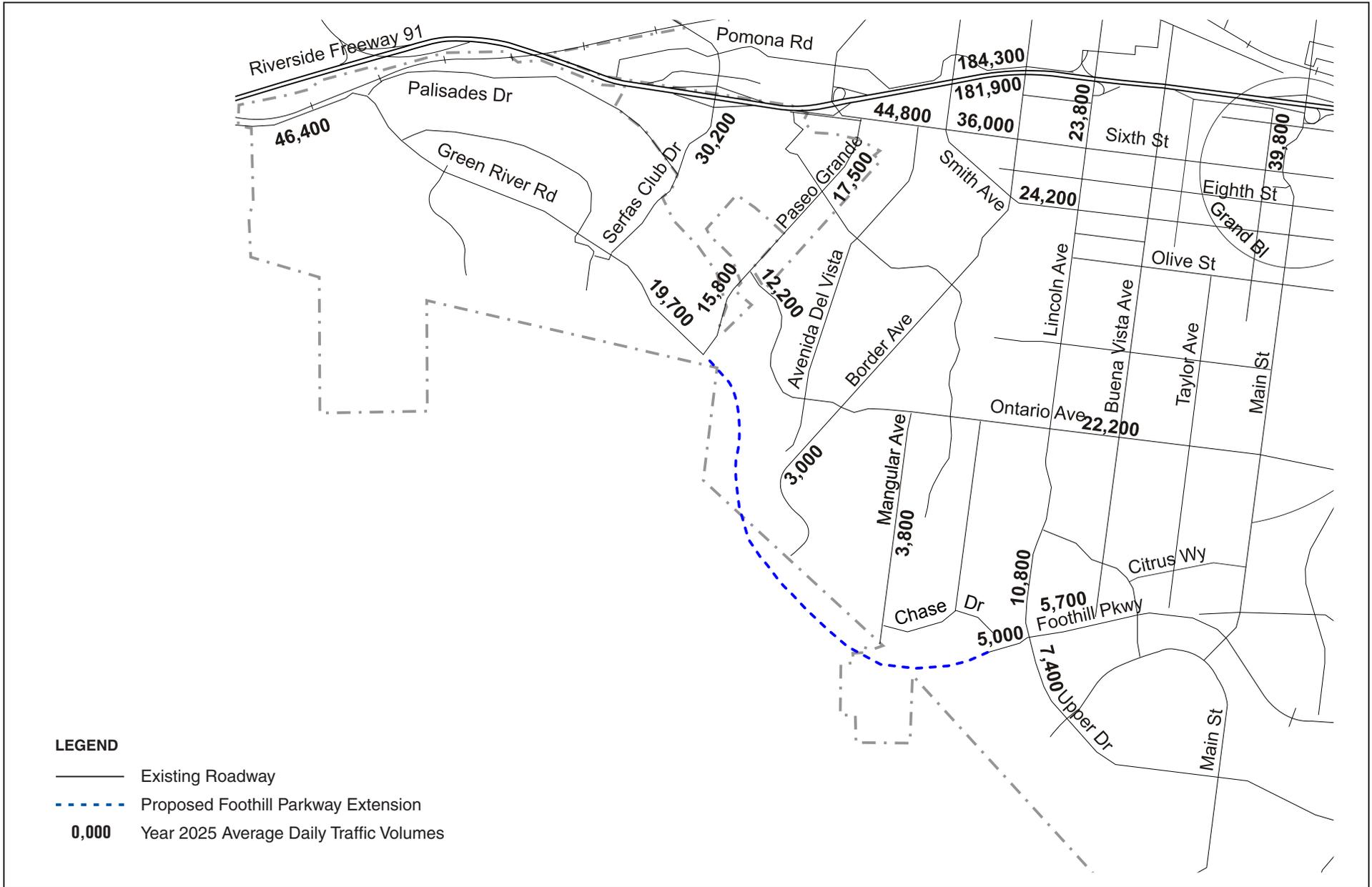
FOOTHILL PARKWAY WESTERLY EXTENSION • BASIS OF DESIGN

Year 2010 ADT Volumes

2-Lane Reduced-Width Foothill Pkwy. with Border Ave. + Chase Dr. Connections



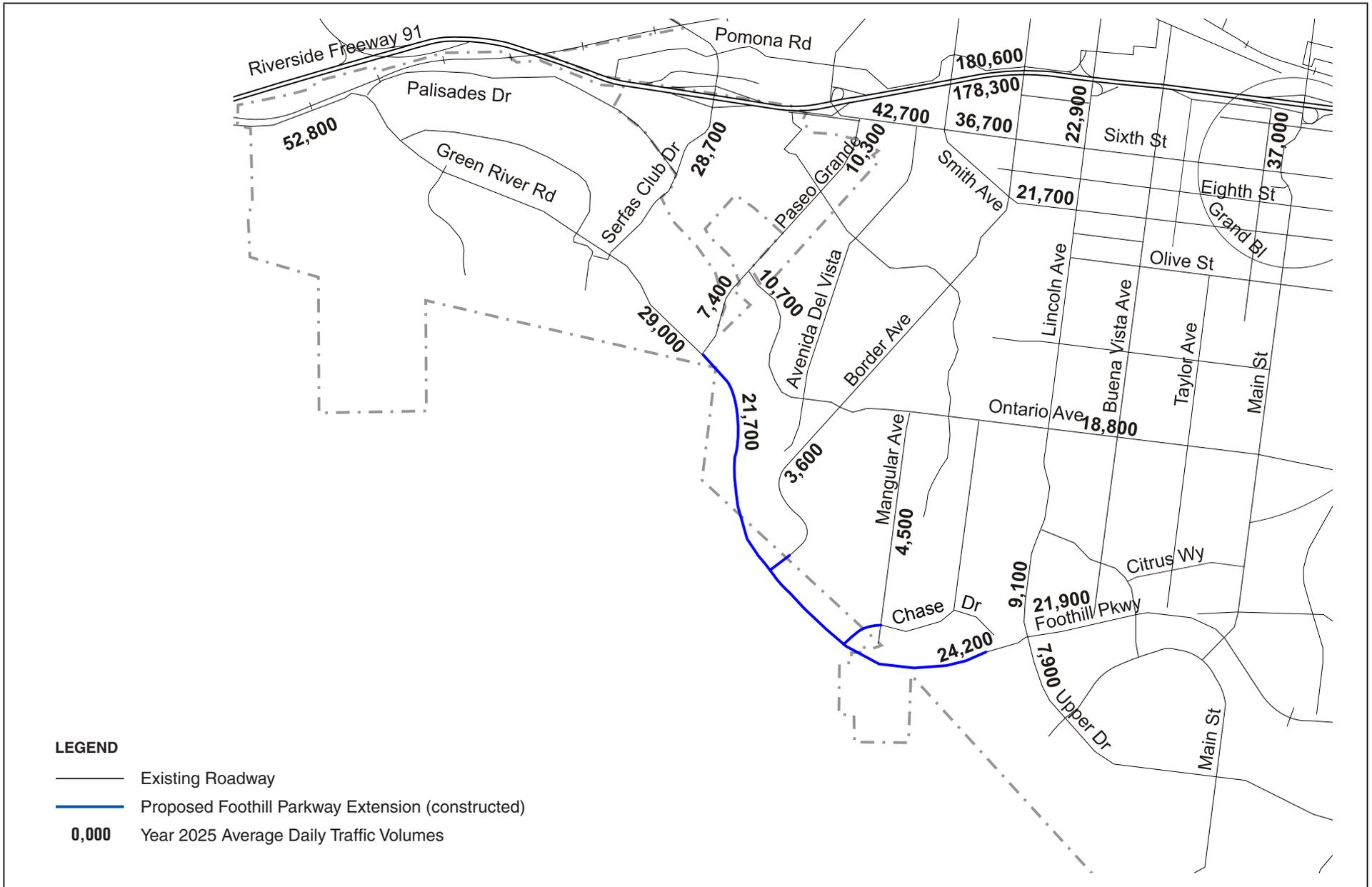
4/21/08 JN 10-104629-13393



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • BASIS OF DESIGN

Year 2025 ADT Volumes No Foothill Extension



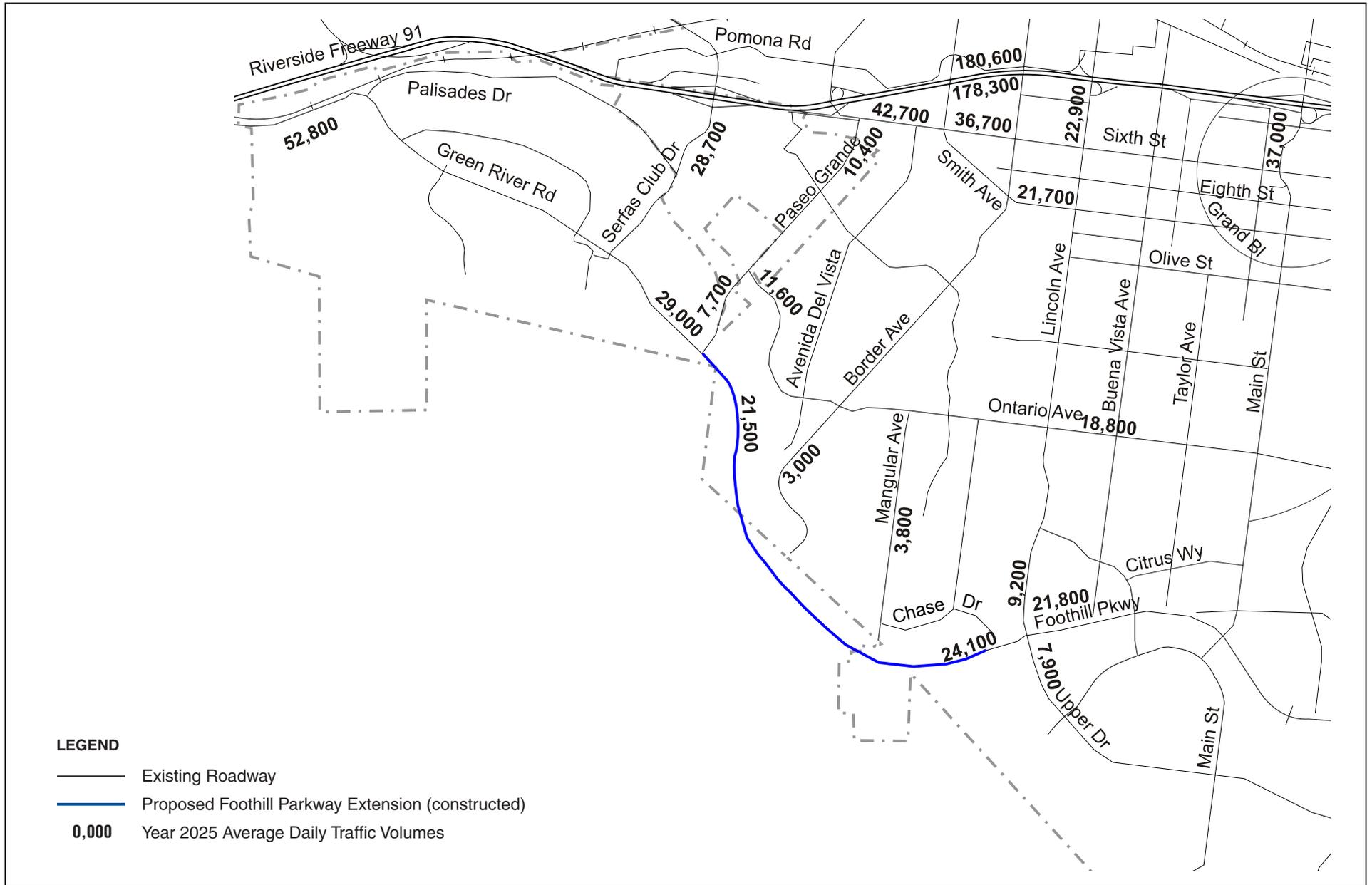
Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • BASIS OF DESIGN

Year 2025 ADT Volumes Border Ave. + Chase Dr. Connection



4/21/08 JN 10-104629-13393

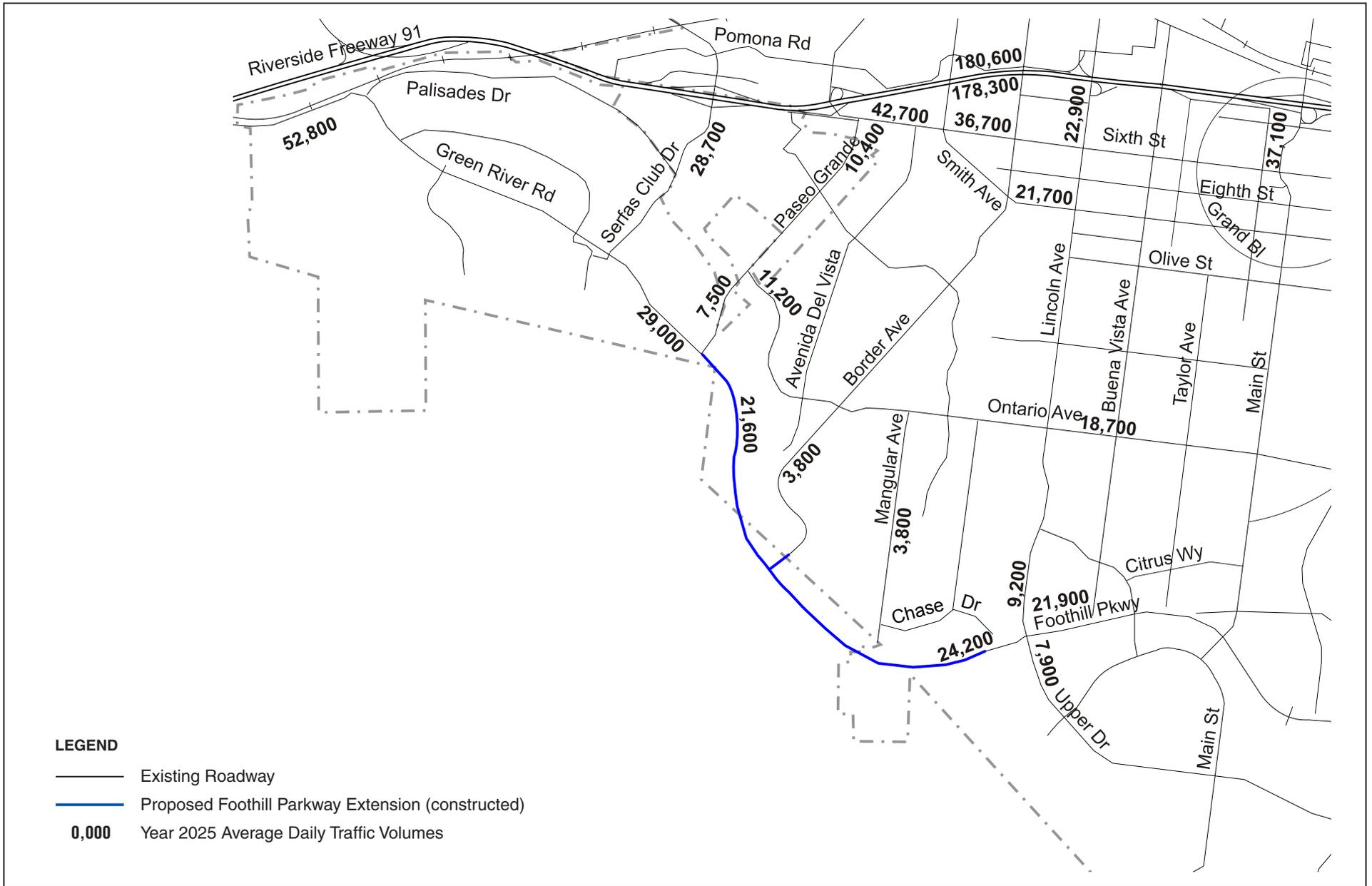


Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • BASIS OF DESIGN

Year 2025 ADT Volumes

No Border Ave. or Chase Dr. Connections



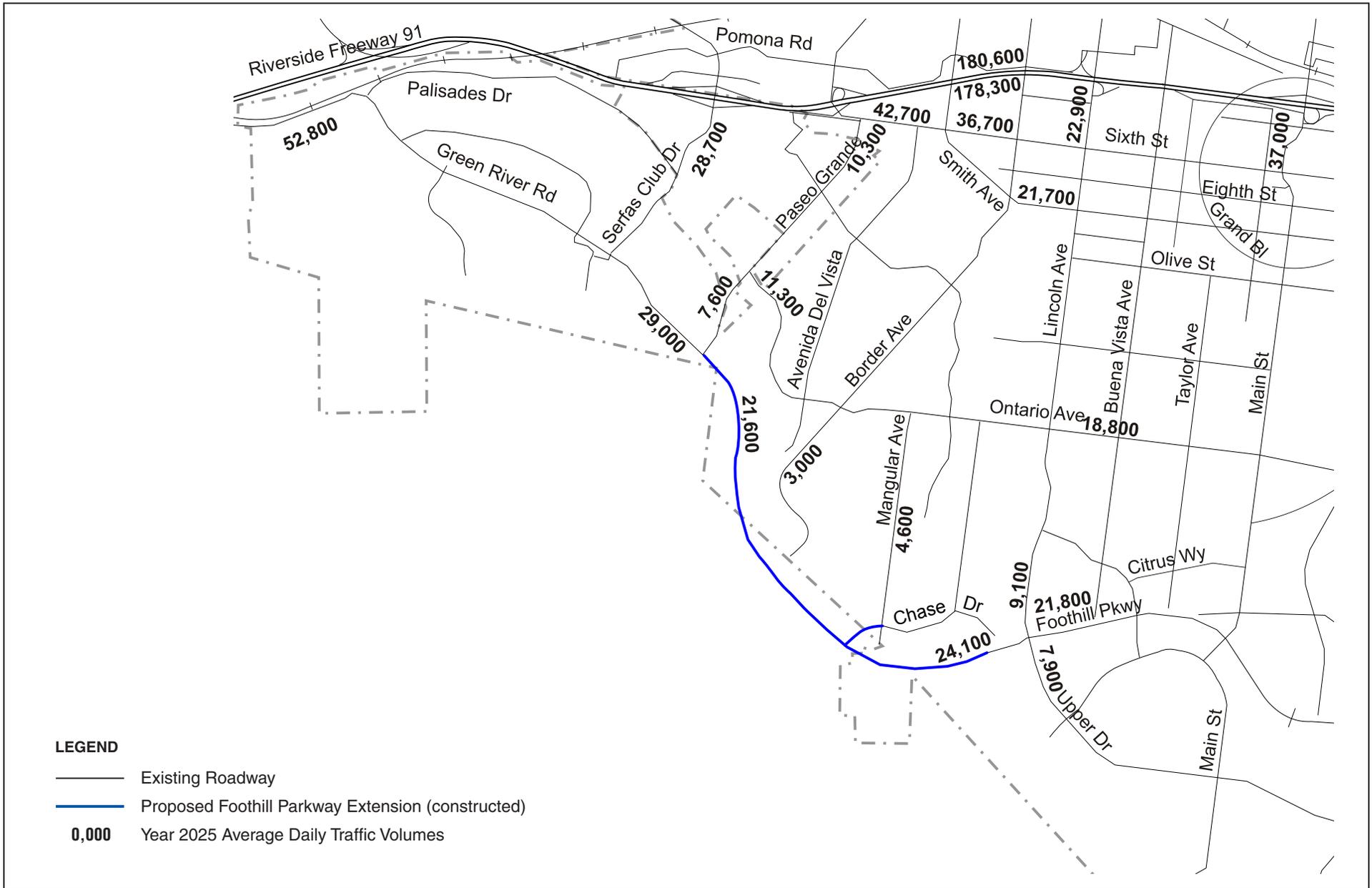
Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • BASIS OF DESIGN

Year 2025 ADT Volumes Border Ave. Connection Only



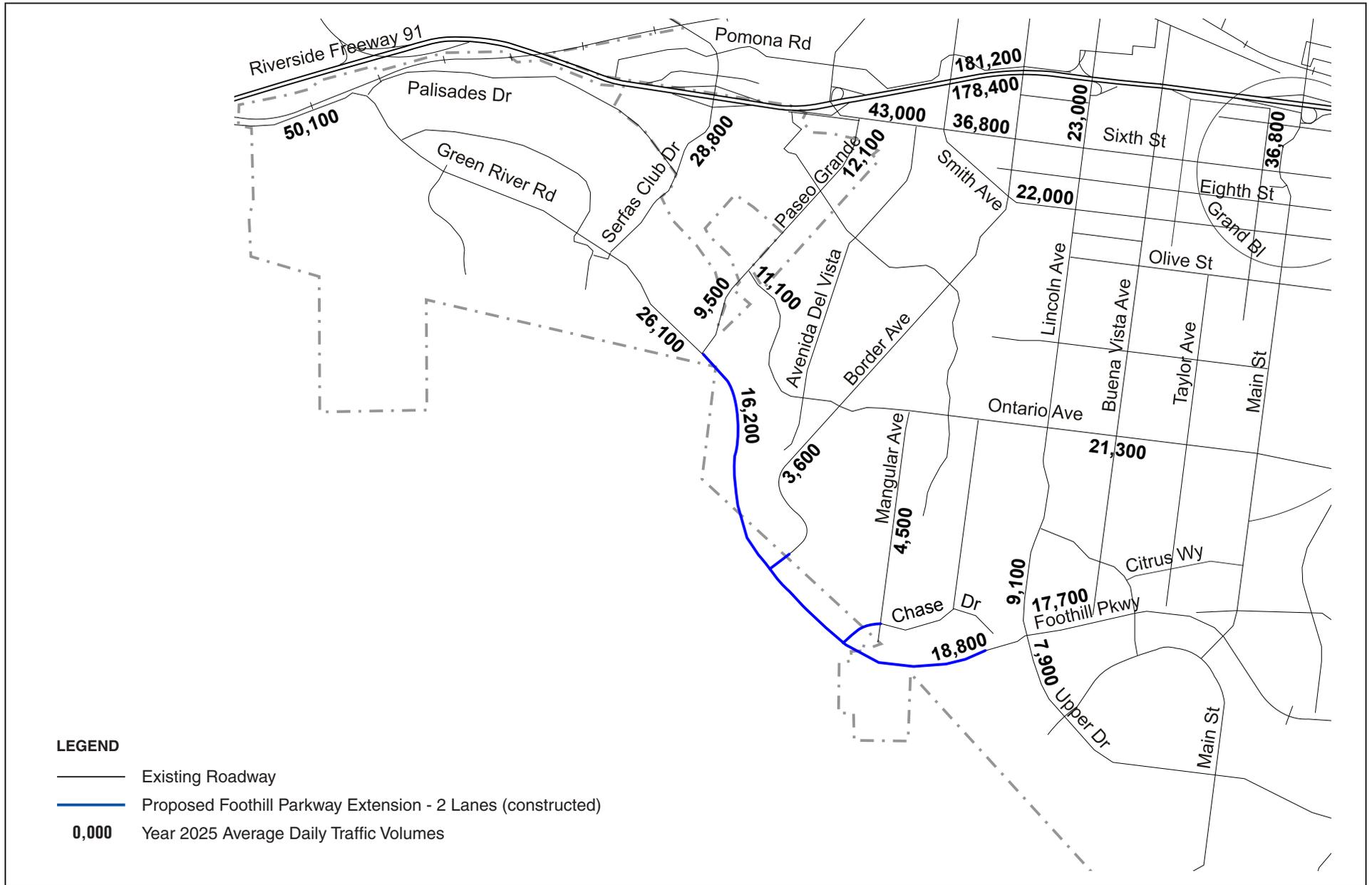
4/21/08 JN 10-104629-13393



Source: Meyer, Mohaddes Associates, June 2007.

FOOTHILL PARKWAY WESTERLY EXTENSION • BASIS OF DESIGN

Year 2025 ADT Volumes Chase Dr. Connection Only



Source: Meyer, Mohaddes Associates, June 2007.

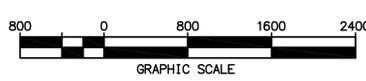
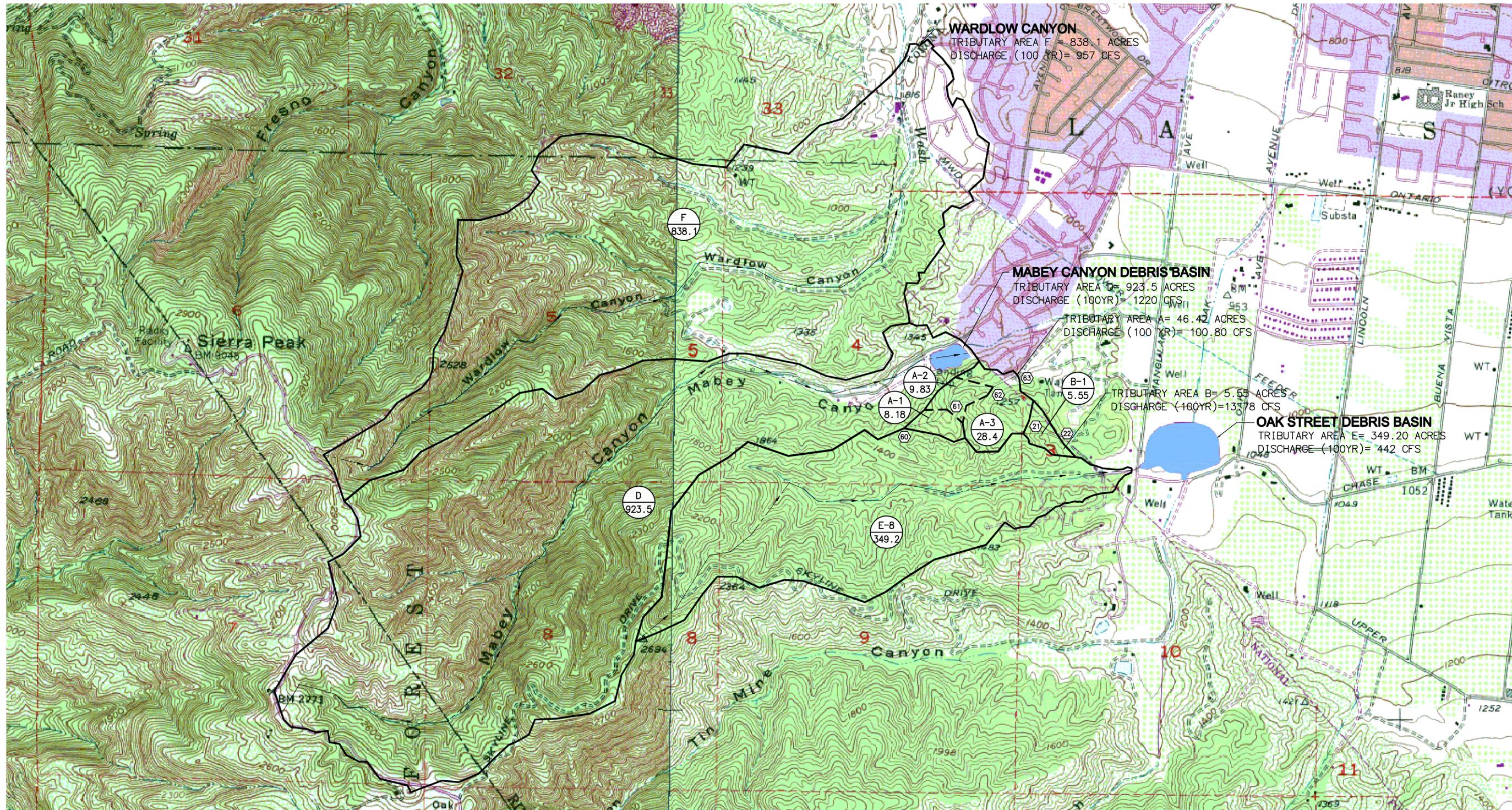
FOOTHILL PARKWAY WESTERLY EXTENSION • BASIS OF DESIGN

Year 2025 ADT Volumes

2-Lane Reduced-Width Foothill Pkwy. with Border Ave. + Chase Dr. Connections



4/21/08 JN 10-104629-13393

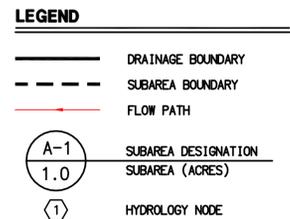
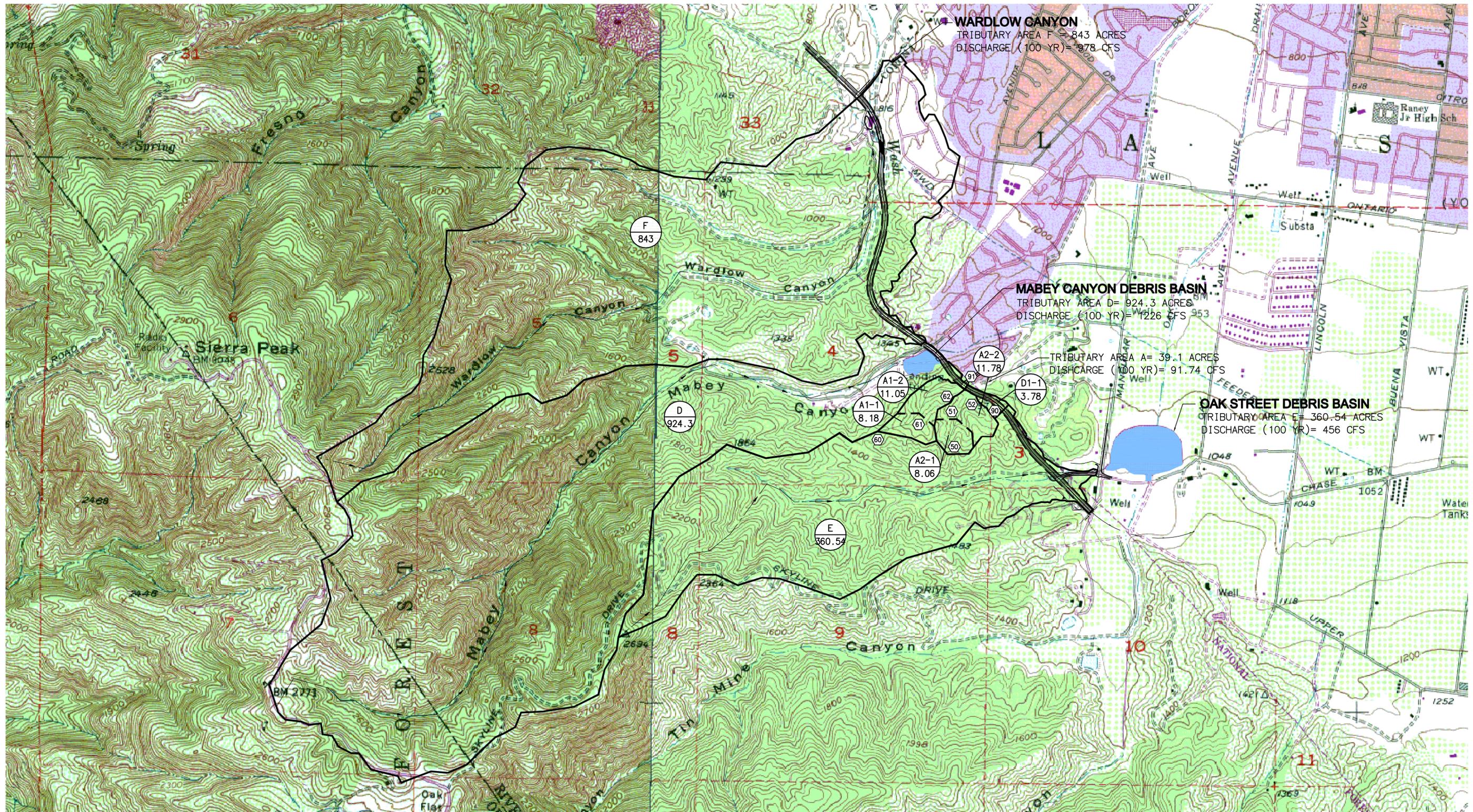


LEGEND

	DRAINAGE BOUNDARY
	SUBAREA BOUNDARY
	FLOW PATH
	SUBAREA DESIGNATION SUBAREA (ACRES)
	HYDROLOGY NODE

RBF CONSULTING PLANNING ■ DESIGN ■ CONSTRUCTION
 14725 ALTON PARKWAY
 IRVINE, CALIFORNIA 92618-2027
 949.472.3505 ■ FAX 949.472.8373 ■ www.RBF.com

**EXHIBIT 23-A
 CORONA/FOOTHILL PKWY
 EXISTING CONDITION HYDROLOGY MAP**



RBF CONSULTING
 PLANNING ■ DESIGN ■ CONSTRUCTION

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EXHIBIT 23-B
CORONA/FOOTHILL PKWY
PROJECT CONDITION HYDROLOGY MAP