

PRE-SCOPING ANALYSIS DOCUMENT FOR MEASURE BB SCOPING ALLOCATION



I-880 / WINTON AVENUE INTERCHANGE IMPROVEMENT PROJECT HAYWARD, CALIFORNIA

ALAMEDA COUNTY TRANSPORTATION COMMISSION (ACTC)
TEP COMMITMENT No. 40: **I-880 Local Access and Safety Improvements**

PREPARED FOR:

CITY OF HAYWARD

PUBLIC WORKS DEPARTMENT

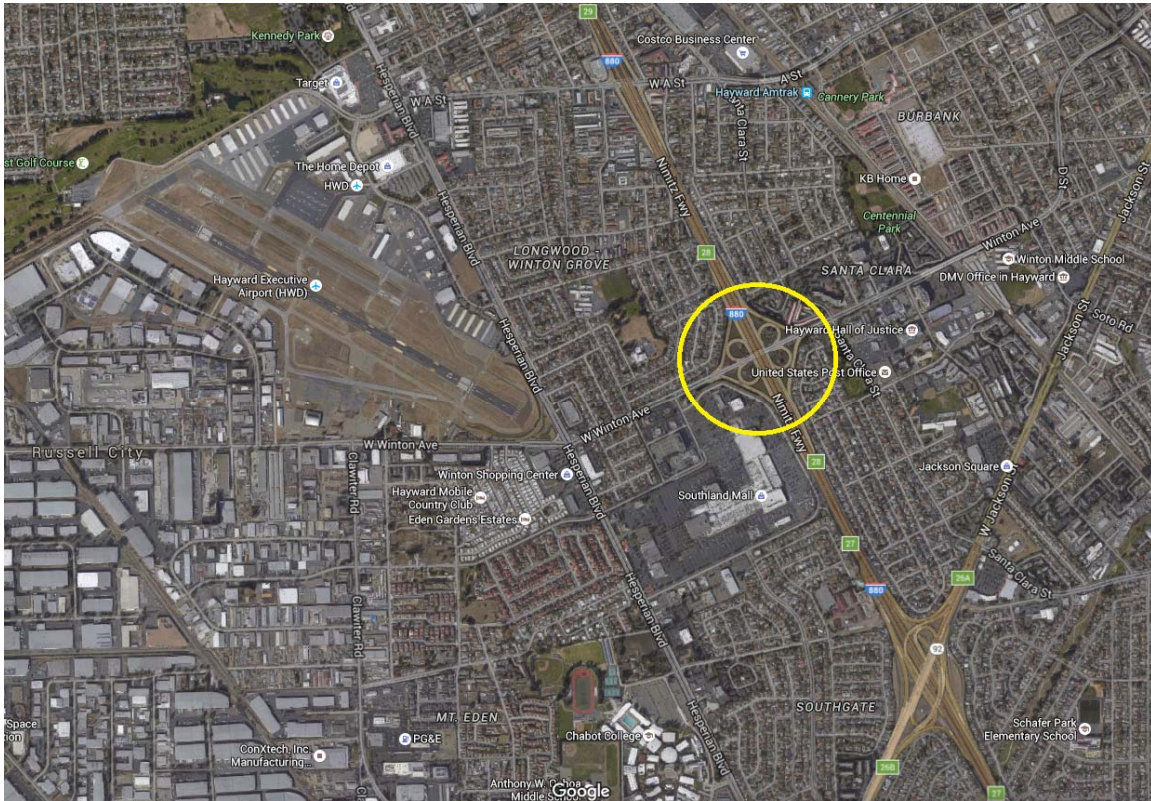
Transportation and Engineering

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Vicinity Map



I-880 between south of SR 92 and north of A Street

1. INTRODUCTION

The I-880 / Winton Avenue Interchange Improvement project is recognized in Measure BB Program under I-880 Local Access and Safety Analysis program (TEP: 040). The first step for project implementation was the preparation of the Countywide Transportation Plan (CTP) application for this project, which was submitted to ACTC before the July 31, 2015 deadline.

ACTC approved the FY 15/16 Measure BB 2-Year Allocation Plan in March 2015, representing the first allocations of funding from the 2014 Measure BB. The approved allocations included funding for the scoping phase of capital projects and programs from various commitments included in the 2014 Transportation Expenditure Plan (TEP). The scoping funds are intended to provide resources to sponsors of individual capital projects named in the Measure with a unique commitment amount. Sponsors of the projects also are eligible for Measure BB funding through one of the “grouped capital” or program commitments in the TEP.

Scoping phase allocations of individual capital projects named in the Measure with a unique commitment amount are intended to reimburse expenditures incurred by the implementing agency to develop a detailed project delivery strategy and further project development. The minimum deliverable for the scoping funding is a document laying out a well-defined implementation plan for the proposed project with a clear scope definition of the Measure BB-funded elements within the overall project.

The TEP has budgeted \$50,000 in scoping funds for the projects identified in I-880 Local Access and Safety Analysis program (TEP: 040). The City of Hayward requested these scoping funds for I-880 / Winton Avenue to develop a project specific scoping document.

The intent of this pre-scoping analysis document is to provide Alameda CTC project information before this scoping allocation is provided to the City.

2. BACKGROUND

Constructed in 1968, the existing I-880 / Winton Avenue interchange has seen no significant improvements over the past 47 years.

Hayward's Southland Mall is currently undergoing revitalization efforts with plans to add new retail and restaurant tenants to enhance the overall shopping experience. The existing Winton Avenue interchange, which provides access from I-880, has an inadequate four-quadrant cloverleaf interchange configuration with freeway ramps running freely onto Winton Avenue without stopping.

The current interchange does not provide comfortable environments for bicyclists and pedestrians because of the free-running ramps at uncontrolled intersections from the freeway onto Winton Avenue. Pedestrians and bicyclists must cautiously look for fast-moving vehicles when crossing the ramps along Winton Avenue.

The major traffic operational issue is the weaving of vehicles heading to South Land Mall Drive via the westbound Winton left-turn lane and through traffic. There are times this weaving movement creates congestion along westbound Winton Avenue, resulting in queuing along the southbound off-ramp and affecting freeway operations. At times, this situation is unsuitable enough that the City sets up barricades to prohibit this short weave.

The proposed interchange improvements will provide better access to the major retail centers (Southland Mall and Winton Shopping Center), Chabot College, Hayward Airport, office and industrial parks to the west; and City and County services and facilities, Hayward School District Office and other schools -- all to the east. With improved access through the interchange, local residents and

commuters of all ages have the option to bike, walk or take transit along Winton Avenue to their final destinations.

In 2009, ACTC funded the *Project Initiation Document (PID) to Support the Central Alameda County Local Alternative Transportation Improvement Program (LATIP)* study, evaluating freeway segments in the same corridor as the Route 238 Hayward Bypass as noted below:

- I-880 between Davis Street and Whipple Road
- SR 238 between I-880 and I-580
- I-580 between SR 238 and Crow Canyon Road

This project was identified as an improvement along I-880 as Project N: I-880 / West Winton Avenue Interchange.

3. **PROJECT DESCRIPTION**

I-880 / Winton Avenue Interchange Improvement Project proposes to modify the existing deficient four-quadrant cloverleaf (L-10) interchange configuration to a partial cloverleaf (L-10) by making the on- and off-ramp connections intersect at 90-degrees with Winton Avenue. The project also proposes a direct connection from southbound I-880 off-ramp to the Southland Mall with access to La Playa Drive, providing a new direct route to the mall and avoiding the short weave from the interchange to Winton Avenue left-turn lanes to Southland Mall Drive. The 2009 LATIP study identifies a conceptual interchange geometric.

Other interchange improvements include implementing Complete Streets designs with bike lanes and sidewalks on both sides of the bridge overcrossing, eliminating free-flowing ramps onto Winton Avenue and signaling ramp intersections. The major items of work include pavement reconstruction, earthwork, retaining walls, ramp improvements, street lights, signing and striping, new traffic signals and stage construction.

For the freeway on-ramps, the geometric will need to be design for ramp metering and HOV preferential lane or bypass lane if right of way is available.

It should also be noted that the current conceptual interchange geometric spacing or separation on Winton Avenue between the new southbound on-ramp and the direct access road to La Playa Drive (via Southland Mall) will require Mandatory Design Exception approval from Caltrans approval.

See Attachment A for Preliminary Interchange Geometric.

4. PROJECT BENEFITS

This interchange modification project will benefit all modes of transportation – pedestrians, bicyclists, transit and motorists by implementing Caltrans Complete Streets design per the Highway Design Manual (HDM) dated July 2015. The project will change the existing four-quadrant cloverleaf interchange to a partial-cloverleaf with 90-degree intersections at the on- and off-ramps. A new direct connection from the southbound off-ramp to Southland Mall is expected to improve and provide direct access to the mall.

The off-ramps will be widened to accommodate future traffic demands, bridge overcrossing modified to provide Class II bike lanes and sidewalks; and all bicycle / pedestrian / vehicle / transit conflicts reduced at a signalized intersection, making the interchange safer and more accommodating for all users.

The project also will enhance travel times for AC transit routes 22, 86, 386 and M – all traveling along Winton Avenue with connections at the Southland Mall transit center.

5. PRELIMINARY TRAFFIC ANALYSIS

The proposed project is expected to produce operational, safety and connectivity benefits. The reconfiguration of the interchange from a four-quadrant cloverleaf interchange to a partial (two-quadrant) cloverleaf interchange will enhance traffic flow by eliminating short weave sections between loop on- and off-ramps. This applies on both the I-880 northbound and southbound collector-distributor roads (under the overcrossing) and on Winton Avenue in the westbound and eastbound directions.

The provision of a direct connection from southbound I-880 off-ramp to La Playa Drive with access to Southland Mall will allow traffic from the off-ramp to avoid the westbound short weave from the interchange to Winton Avenue left-turn lanes to Southland Mall Drive. This direct connection also will reduce volumes and congestion at the Winton Avenue intersections west of the interchange. While the reconfiguration will introduce new traffic signals at the off-ramp termini, the off-ramps will be widened to accommodate the required number of turning lanes for the future traffic demands. In addition, it is expected that these signals would be coordinated with each other and adjacent signals, as appropriate, to facilitate the flow of traffic through the interchange. Elimination of the weave sections also is expected to produce safety benefits for motorists.

Modifying the interchange configuration to make the on- and off-ramp connections intersect at 90- degrees with Winton Avenue, rather than free-flowing right turns, will enhance safety for bicyclists and pedestrians. The interchange configuration will reduce the number of crossings for pedestrians and cyclists from four to two in each direction on Winton Avenue.

In addition to improving connectivity between the interchange and La Playa Drive and Southland Mall, this project will enhance multimodal connectivity by implementing Caltrans Complete Streets design and provide bike lanes and sidewalks on both sides of Winton Avenue to and from Chabot College on the west of I-880 and a middle school, Cal State East Bay and other neighborhoods on the east side of I-880. The project should reduce vehicle miles traveled (VMT) for residents who live and work in the area by allowing a mode shift to walking, biking or transit. The provision of new dedicated bike lanes on Winton Avenue through the interchange also will enhance cyclist safety.

A detailed traffic forecast and analysis reports will be prepared as part of the preliminary engineering in the project approval and environmental documentation (PA&ED) phase to determine the preferred geometric alternative interchange at this location.

6. INITIAL ENVIRONMENTAL ASSESSMENT

The majority of the proposed project improvements are anticipated within Caltrans/State Right of Way and City of Hayward's Public Right of Way with the exception of the new Southland Mall roadway direct connection. This connection will require right of way from the Mall property owner. The City has initiated early discussions with the owner about this right of way impact, which will provide a significant benefit to the mall access.

Initial assessment by field observation at this time suggests no major environmental impacts with this project area as it relates to biological or cultural sensitive areas. In addition to traffic, biological and cultural studies, other anticipated technical studies include noise, air, visual, preliminary geotechnical, initial site assessment and hazardous materials. Environmental documentation will be part of the PA&ED (Project Approval and Environmental Documentation) phase of the project.

7. SCOPING DOCUMENT

A preliminary cost estimate was prepared as part of the CTP application. See Attachment B for a detail breakdown.

The preliminary cost estimate for this I-880/Winton Avenue Interchange improvement based on the preliminary interchange geometric concept is about \$38.9 Million. Alameda CTC has programmed only \$85 Million of Measure BB funds for TEP 40: I-880 Local Access and Safety Improvement Program, which will only provide partial funding for this project. The City will need to seek other local, state or federal transportation funds to fully fund this project.

At this time, the I-880/Winton Avenue Interchange Improvement project has no approved Caltrans documentation in place and is not fully funded. For a project implementation schedule, a typical Caltrans timeline is about 7 years for a fully funded project and about 10 years for other projects depending on complexities such as right of way issues, environmental mitigation, funding, public concerns, etc. Also, this project will be led by the City of Hayward or Alameda CTC staff and a Cooperative Agreement with Caltrans will be needed along with a Caltrans' Encroachment Permit for Construction.

A breakdown of a typical Caltrans interchange project implementation schedule is note below:

Preparation of PSR-PDS (Project Initiation Development (PID) approval)	1-2 years
Preparation of PA&ED (including Project Report, Preferred Geometric Alternative and Environmental Document)	2-3 years
Preparation of PS&E (Plans, Specification and Estimate)	2 years
Construction	2-3 years

I-880/Winton Avenue Interchange Improvement Scoping Document will assist the City in developing a well-defined implementation plan for the proposed project with a clear scope definition of the Measure BB-funded elements within the overall project. The scoping document will identify all the required project implementation phases noted above and in the Caltrans Project Development Procedure Manual (PDPM) such as the PID, PA&ED. Final PS&E, Right of Way and Construction. The scoping document may also identify preparation of an initial Alternative Analysis study, which will develop early geometric alternatives that can be used for the PSR-PDS (Project Study Report-Project Development Support)

ATTACHMENTS:

The City of Hayward submitted a Countywide Plan application for this project on July 2015. These attachments are exhibits required for this application process.

- A) PRELIMINARY INTERCHANGE GEOMETRIC CONCEPT
- B) PRELIMINARY COST ESTIMATE

SANTA CLARA ST



WINTON AVE



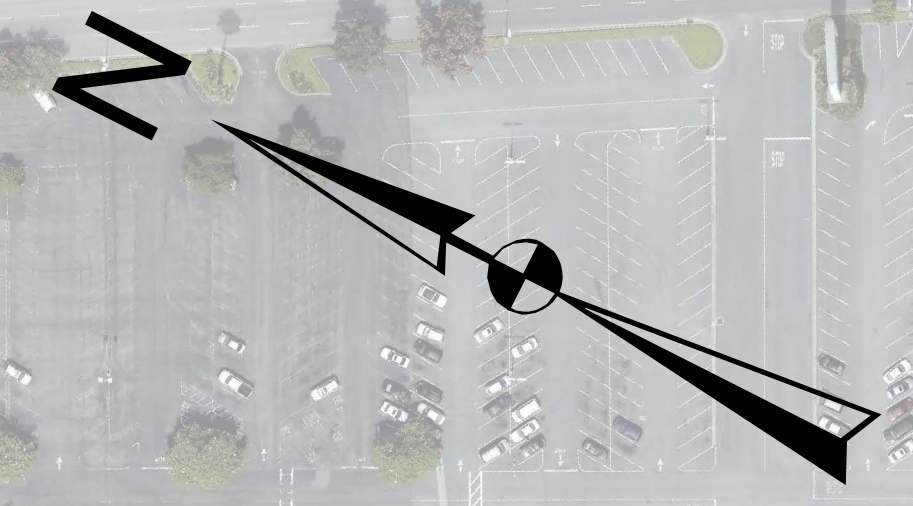
LA PLAYA DR

SOUTHLAND MALL

WINTON AVE / I-880 INTERCHANGE
CITY OF HAYWARD



MARK THOMAS & COMPANY



CONCEPTUAL ESTIMATE
WINTON AVE / I-880 INTERCHANGE
CITY OF HAYWARD



July 30, 2015

ROADWAY ITEMS	QUANTITY	UNIT	UNIT COST	TOTAL ⁽¹⁾	2017 ESCALATED COST ⁽²⁾
Site preparation	1	LS	\$1,870,000	\$1,870,000	
Earthwork	1	LS	\$1,500,000	\$1,500,000	
Remove Base and Surfacing	10,900	CY	\$40	\$436,000	
Hot Mix Asphalt	11,400	TON	\$120	\$1,368,000	
Aggregate Base Class 3	6,800	CY	\$90	\$612,000	
Aggregate Sub-base Class 4	10,700	CY	\$80	\$856,000	
Drainage Systems	1	LS	\$2,000,000	\$2,000,000	
Soundwall	20,000	SF	\$20	\$400,000	
Concrete Barrier	1,300	LF	\$120	\$156,000	
Maintenace Vehicle Pullout	7,800	SF	\$15	\$117,000	
Landscaping	9,700	SF	\$25	\$242,500	
Signalized Intersection	3	EA	\$300,000	\$900,000	
Minor Concrete (Sidewalk)	17,000	SF	\$12	\$204,000	
Minor Concrete (Curb and Gutter)	2,050	LF	\$50	\$102,500	
Minor Concrete (Median)	4,750	SF	\$50	\$237,500	
Minor Concrete (A2-6 Curb)	2,000	LF	\$25	\$50,000	
Pedestrian Railing (Overcrossing Bridge)	1	LS	\$200,000	\$200,000	
Soil Nail Wall	2,700	SF	\$150	\$405,000	
Retaining Wall	7,000	SF	\$200	\$1,400,000	
Ramp Metering	1	LS	\$360,000	\$360,000	
Lighting	1	LS	\$70,000	\$70,000	
Traffic Control Systems	1	LS	\$1,350,000	\$1,350,000	
Traffic Management Plan	1	LS	\$500,000	\$500,000	
Water Pollution Control and Treatment BMPs	1	LS	\$449,000	\$449,000	
Permanent Traffic Striping & Signing	1	LS	\$90,000	\$90,000	
Temporary Pavement Delineation	1	LS	\$67,500	\$67,500	
Environmetal Mitigation	1	LS	\$100,000	\$100,000	
Misc. Minor Items (20%)	1	LS	\$3,200,000	\$3,200,000	
Mobilization (10%)	1	LS	\$1,600,000	\$1,600,000	
Contingency (25%)	1	LS	\$3,990,000	\$3,990,000	
TOTAL CONSTRUCTION				\$24,900,000	\$26,570,000
RIGHT OF WAY:	QUANTITY	UNIT	UNIT COST	TOTAL	
Acquisition	28000	SF	50	1,400,000	
Title/Escrow/Legal Fees	1	LS	60,000	60,000	
RIGHT OF WAY SUBTOTAL				1,460,000	1,560,000
UTILITY RELOCATION	QUANTITY	UNIT	UNIT COST	TOTAL	
Utility Relocation (est)	1	LS	1,000,000	1,000,000	1,070,000
ENGINEERING SUPPORT					
Engineering Studies (3%)				\$750,000	\$810,000
Environmental Studies (3%)				\$750,000	\$810,000
Design Engineering (14%)				\$3,490,000	\$3,730,000
Construction Staking (1.5%)				\$380,000	\$410,000
Construction Support (2%)				\$500,000	\$540,000
Construction Management (13%)				\$3,240,000	\$3,460,000
GRAND TOTAL				\$35,010,000	\$38,960,000

(1) Cost in 2015 dollars

(2) Escalated rate is 3.3% based on the average rate of 2016 and 2017 from Highway & Street Construction Cost Index by ISH Global Insight.