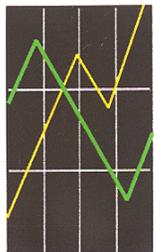


BIKE PATH FEASIBILITY AND PLANNING STUDY BURBANK-WESTERN CHANNEL



RYAN SNYDER ASSOCIATES LLC
IN ASSOCIATION WITH
KIMLEY HORN AND ASSOCIATES, INC.

OCTOBER 2005

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I: Introduction

This report documents a finding of feasibility to construct a Class I bike path along the Burbank-Western Channel from the Regional Intermodal Transportation Center to Victory Boulevard. This study follows other plans the City of Burbank has to expand its on-road and off-road bikeways. The City wishes to connect its bikeways to create a linked network.

The City wants to serve both recreational and commuting trips with this network. The Burbank-Western Channel could create a link to downtown and the Regional Intermodal Transportation Center. Eventually, it could become an integral piece of a bike path network that connects the Los Angeles River bike path to downtown Burbank, and to the new Burbank-Chandler bike path. This would create a continuous bike path from Warner Center to downtown Los Angeles, with Burbank situated at a critical juncture along the path. In the short run a bike path along the Burbank-Western Channel would expand recreational opportunities for people living along the path, and would provide a pleasant way to get to downtown Burbank without using their cars. It would also clean up the right-of-way and transform it to a landscaped parkway.

This study assesses the feasibility of constructing a Class I bike path along the Burbank-Western Channel from the Regional Intermodal Transportation Center to Victory Boulevard. The research included:

- A property search to determine ownership and leasing arrangements
- Discussions with the Los Angeles County Flood Control District to determine compatibility with flood control purposes and the process to obtain a permit
- Field visits to conduct an assessment of the width and appropriateness of using the right-of-way for a Class I bike path
- Identification of barriers and issues
- Identification of the best alignment
- Identification of potential access points
- Development of a plan of bike path elements
- Assessment of options to cross streets
- Identification of potential environmental issues
- Probable itemized costs

II: Property Research

Ownership and Lease Arrangements

The Los Angeles County Flood Control District owns most of the Burbank Western Channel right-of-way. The Flood Control District has permanent easements to use most of the rest of the channel right-of-way for “flood control purposes” and for “controlling flood waters.” These are in Parcels 4 and 96. These easements allow for construction of bike paths. Only one private lease arrangement exists along the right-of-way in Parcel 69. A private enterprise located at 132 West Verdugo Avenue has a lease that permits it to use land on the east side of the channel for parking. The parking extends up to the box channel edge and presents a strong barrier to constructing the bike path along the east side of the channel between Verdugo Avenue and the intersection of Providencia Avenue and Lake Street. The photo below illustrates this.



The City of Burbank has a landscaping and irrigation easement in Parcel 74 at the southeast corner of Olive Avenue and Flower Street.

Permitting

As prescribed in the federal Flood Control Act of 1944, the Los Angeles County Flood Control District permits recreational uses such as bike paths along its flood control channels. In order to obtain a permit to construct the bike path, the City would apply to the Los Angeles County Flood Control District. Design drawings should be sent to the Los Angeles County Flood Control District at 30 percent completion and 60 percent completion to ensure compatibility.

III: Field Research

Regional Intermodal Transportation Center to Olive Avenue

Photographs

The following photographs begin at the Transportation Center, look south onto the sidewalk that the bike path can follow, and then show where the bike path will continue to the channel, in that order.



Issues

The infrastructure is nearly in place already. The crossing of Flower Street will need to be very visible.

Olive Avenue to Verdugo Avenue

Photographs

The following photographs show the west side of the channel and are in order from north to south beginning at Olive Avenue and ending at Verdugo Avenue. They look southward.



The photograph below depicts a railroad bridge over the channel.



The following photographs show the east side of the channel and are in order from north to south beginning at Olive Avenue and ending at Verdugo Avenue. They look southward.



Issues

- An existing building on the west side at the far north end would present difficulties constructing a path there.
- South of the railroad bridge the right-of-way on the west side of the channel is adequately wide and is buildable.
- A parking lot on the east side just north of Verdugo Avenue has a concrete wall that would prevent constructing a bike path to standard width without moving the wall.
- Both sides would require grading.
- There is a tree on the west side of the channel just north of Verdugo Avenue would need to be built around or removed.

Verdugo Avenue to the Intersection of Providencia Avenue and Lake Street

Photographs

The following photographs show the west side of the channel and are in order from north to south beginning at Verdugo Avenue and ending at the intersection of Providencia Avenue and Lake Street. They look southward.



The following photographs show the east side of the channel and are in order from north to south beginning at Verdugo Avenue and ending at the intersection of Providencia Avenue and Lake Street. They look southward.



Issues

- An enterprise on the east side of the channel just south of Verdugo Avenue has a lease for parking. The parking would prevent a bike path from being constructed on the east side at this location.
- A significant amount of vegetation on the east side makes the west side more favorable.
- The right-of-way on the west side of the channel between Verdugo Avenue and the intersection of Providencia Avenue and Lake Street has no obstacles that would prevent construction of a bike path.
- The bike path along this stretch would require grading.

Intersection of Providencia Avenue and Lake Street to Alameda Boulevard

Photographs

The following photographs show the east side of the channel and are in order from north to south beginning at the intersection of Providencia Avenue and Lake Street and ending at Alameda Boulevard. They look southward.



The following photographs show the west side of the channel and are in order from north to south beginning at the intersection of Providencia Avenue and Lake Street and ending at Alameda Boulevard. They look southward.



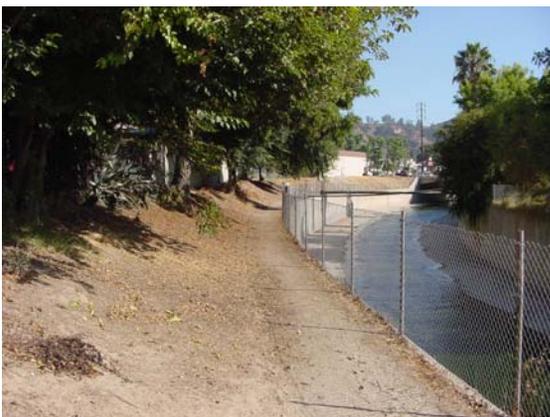
Issues

- Both sides of the channel along this stretch have a significant number of trees that would have to be removed.
- The east side of the channel has fewer trees that would need to be moved, and appears to be more buildable than the west side.
- Some houses are close to the channel and where the bike path would be.
- Design of the bike path would have to ramp over a gas line.
- Design of the bike path would have to go under a pedestrian bridge at Elmwood Avenue.

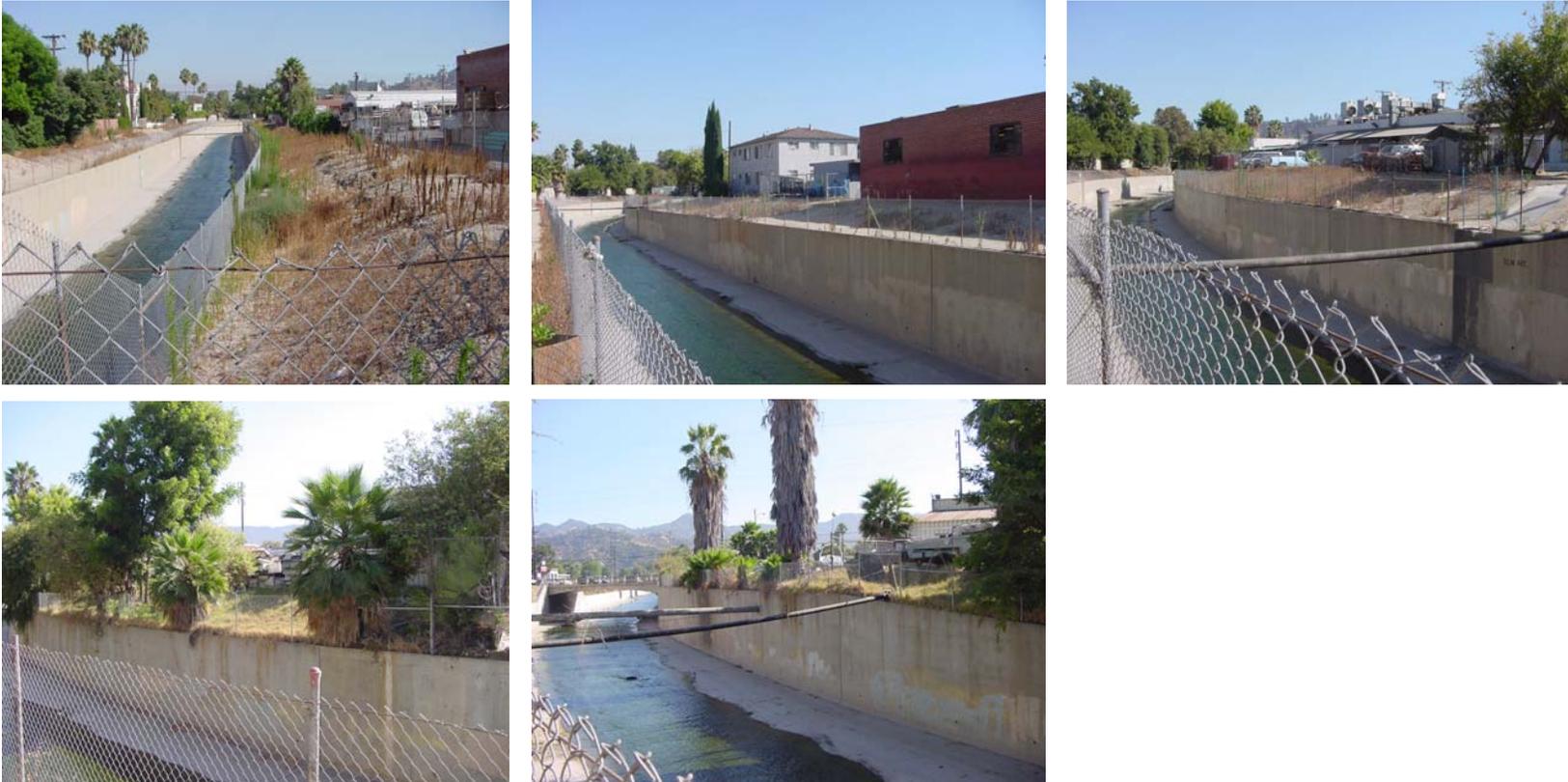
Alameda Boulevard to Victory Boulevard

Photographs

The following photographs show the east side of the channel and are in order from north to south beginning at the intersection of at Alameda Boulevard Victory Boulevard. They look southward.



The following photographs show the west side of the channel and are in order from north to south beginning at the intersection of Alameda Boulevard Victory Boulevard. They look southward.



Issues

- The east side of the channel has no obstructions that would prevent construction of a bike path.
- The west side of the channel has some vegetation that would have to be removed to construct a bike path.
- Some houses are close to the channel and where the bike path would be.
- Some grading would be necessary, especially just north of Victory Boulevard on the east side.

IV: Recommended Bike Path Plan

1. Recommended Alignment

As shown on the map below, the recommended alignment (shown in red) of the Burbank-Western Channel bike path is as follows in order from north to south.



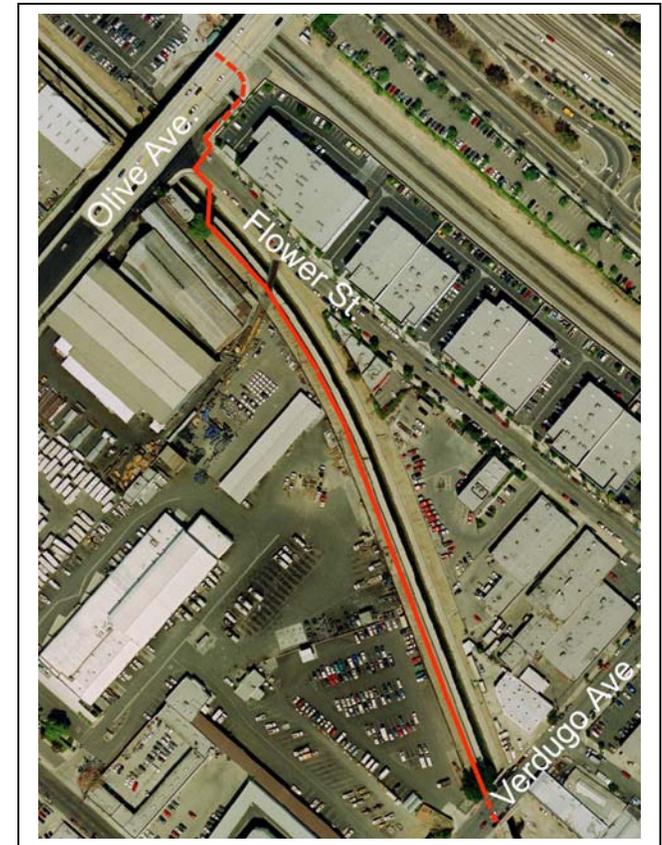
All photographs depict where the path will go in order from north to south along the right-of-way.

1.A. Regional Intermodal Transportation Center to Olive Avenue



- Place signs to direct users to the southwest corner of the Regional Intermodal Transportation Center (RITC).
- Use the existing sidewalk that meets bike path standards going south from the RITC.
- Widen the sidewalk to bike path standards under the pedestrian ramp to the Olive Avenue Bridge, and extend the curb to reduce the crossing of Flower Street.
- Cross Flower Street as described in IV.2.A.

1.B. Olive Avenue to Verdugo Avenue



- Begin the bike path at the southwest corner of Olive Avenue and Lake Street.
- Pave a path up to the abandoned railroad bridge over the channel along the east side of the channel.
- Refurbish the railroad bridge and pave the bike path over the bridge to the west side of the channel.
- Pave a path from the railroad bridge to Verdugo Avenue along the west side of the channel.
- Cross Verdugo Avenue as described in IV.2.B.

1.C. Verdugo Avenue to the Intersection of Providencia Avenue and Lake Street



- Resume the bike path along the west side of the channel on the south side of Verdugo Avenue.
- Pave a path along the west side of the channel from Verdugo Avenue to the intersection of Providencia Avenue and Lake Street.
- Cross the intersection of Providencia Avenue and Lake Street as described in IV.2.C.



1.D. Intersection of Providencia Avenue and Lake Street to Alameda Boulevard



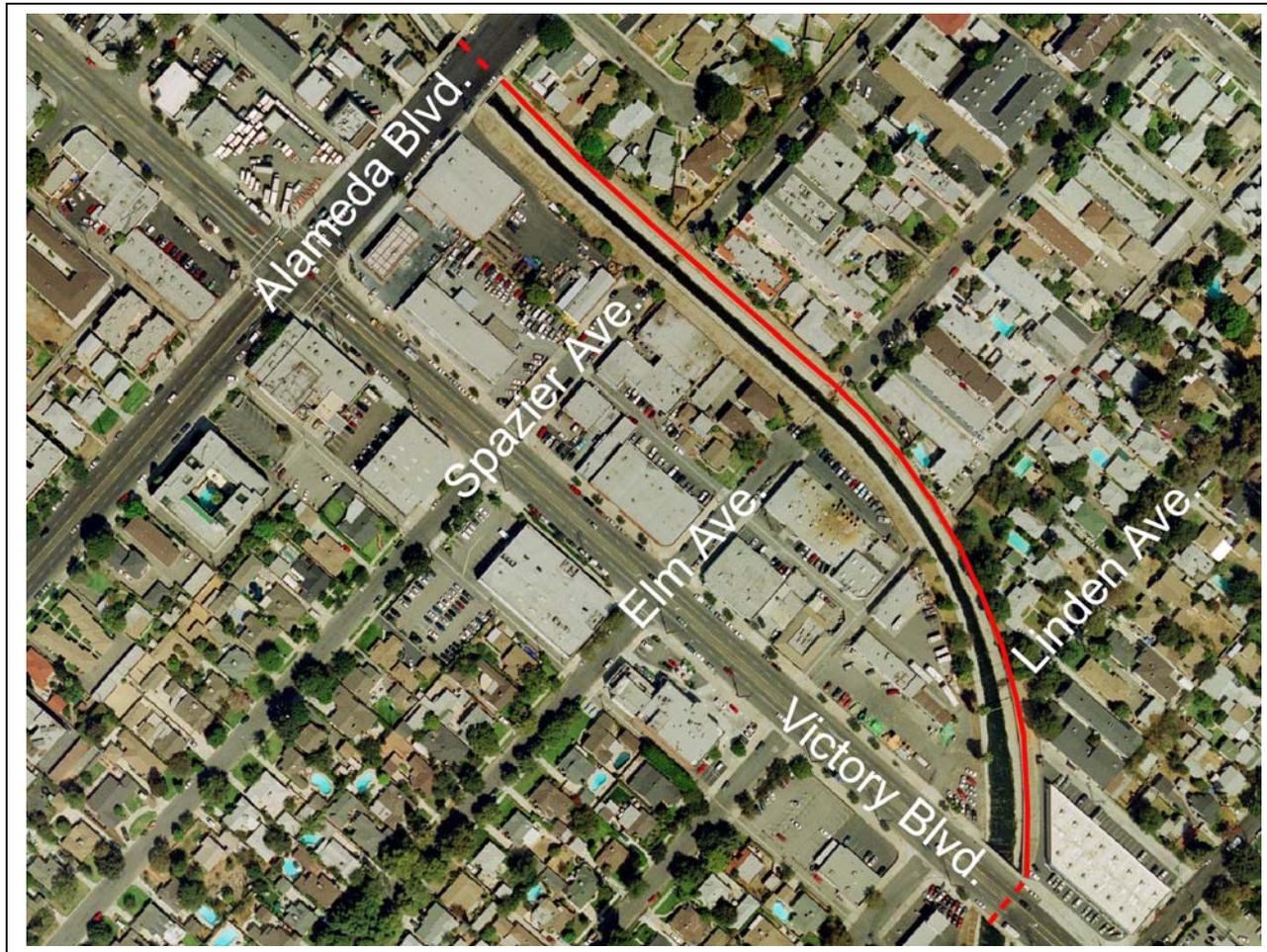
- Continue the path along the east side of the channel just south of the intersection of Providencia Avenue and Lake Street.
- Bridge over a gas line at Cedar Avenue while providing access panels. Maintain guardrail to prevent unwanted access.
- Construct an underpass under a pedestrian bridge at Elmwood Avenue. Pave a ramp to link with the bridge.
- Pave the bike path along the east side of the channel all the way to Alameda Boulevard.
- Cross Alameda Boulevard as described in IV.2.D.



1.E. Alameda Boulevard to Victory Boulevard



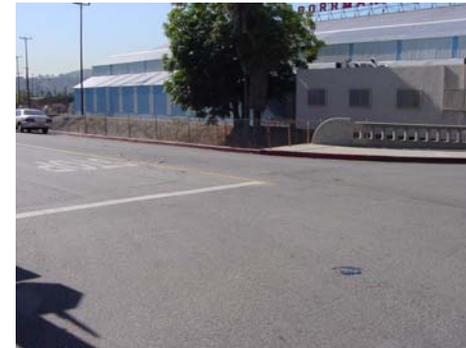
- Continue the path along the east side of the channel just south of the crossing of Alameda Boulevard.
- Pave the bike path the entire way along the east side of the channel to Victory Boulevard.
- Cross Victory Boulevard as described in IV.2.E or end the bike path at the north side of Victory Boulevard.



2. Intersection Crossings

2.A. Flower Street

- Place striping and bike path signs along the sidewalk going south from the RTIC and up to Flower Street.
- Widen the sidewalk along the south side of Olive Avenue to meet bike path standards.
- Extend the curb of Flower Street on both the east and west sides.
- Install new curb ramps on both sides to cross Flower Street.
- Paint zebra crosswalk over Flower Street just south of Olive Avenue.
- Place stops signs for bike path users at the crossing of Flower Street.
- Place bike crossing signs for motorists at the crossing of Flower Street.



2.B. Verdugo Avenue

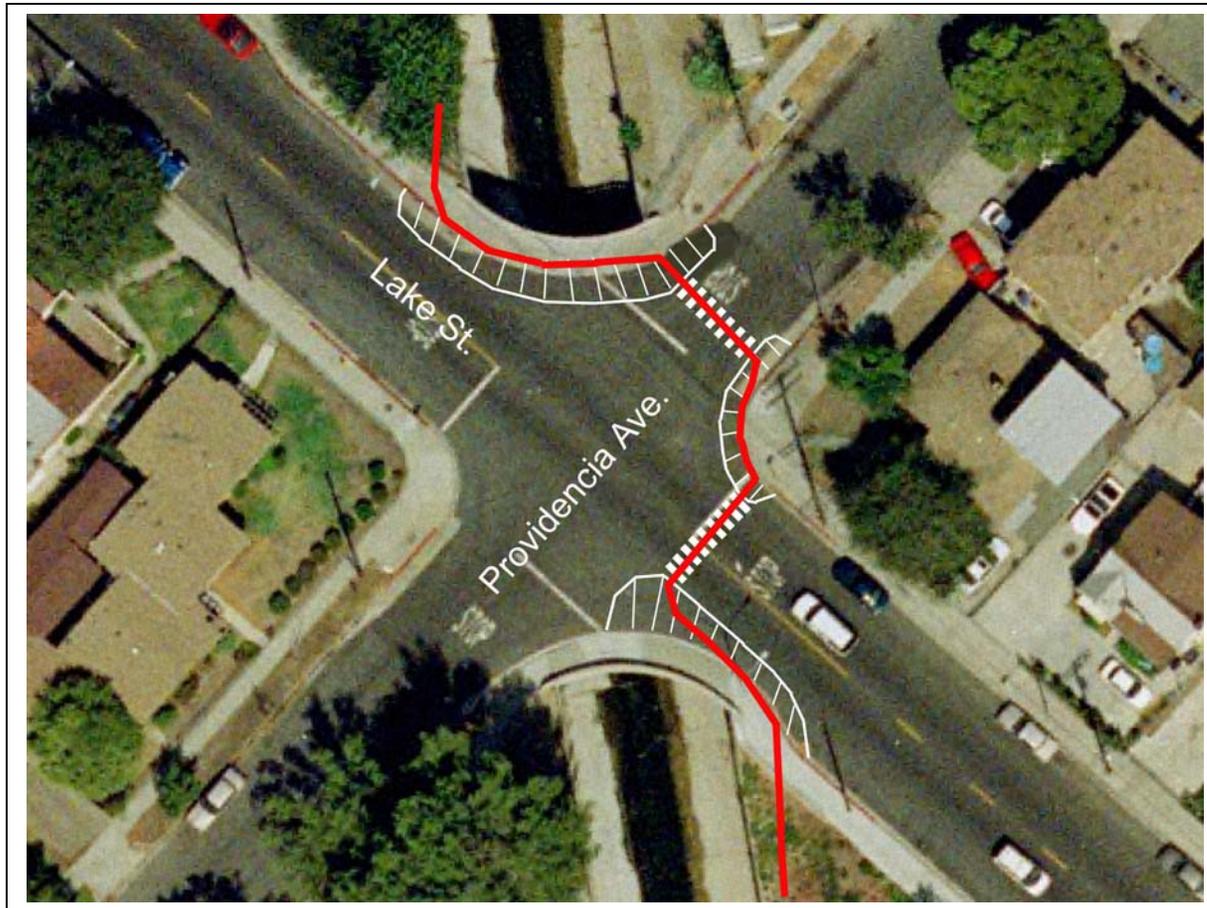
- Install stop signs for bike path users on both approaches of Verdugo Avenue.
- Install bike crossing signs along both approaches of Verdugo Avenue to alert motorists.
- Install new curb ramps for bike path users on both approaches of Verdugo Avenue.
- Paint zebra stripe crossing over Verdugo Avenue connecting the bike path on the west side of the channel.
- Consider installing a raised crosswalk over Verdugo Avenue, and/or in-pavement flashers.



2.C. Providencia Avenue and Lake Street



- Transition bike path users from the west side of the Burbank-Western Channel north of this intersection, to the east side south of this intersection.
- Widen sidewalk at the north corner of Providencia Avenue and Lake Street to meet bike path standards (3 meters) and extend this portion of the bike path to the northwest crosswalk of Lake Street.
- Stripe and sign bike path along this same stretch.
- Paint zebra stripe crossing of the northwest crossing of Providencia Avenue.
- Consider installing a raised crosswalk over the northwest crossing of Providencia Avenue, and/or in-pavement flashers.
- Paint zebra stripe crossing of the southeast crossing of Lake Street.
- Consider installing a raised crosswalk over the southeast crossing of Lake Street, and/or in-pavement flashers.
- Widen sidewalk at the south corner of Providencia Avenue and Lake Street and southerly along Lake Street to meet bike path standards (3 meters) and extend this portion of the bike path to a ramp on the east side of the channel.
- Place bike crossing signs along all four approaches on Providencia Avenue and Lake Street to alert motorists.



2.D. Alameda Boulevard

There are two options for the bike path to cross Alameda Boulevard.

Option 1: Create a grade-separated crossing under Alameda Boulevard. This option maximizes convenience and safety for users. This option would have to gain approval from the County Flood Control District. The underpass would need to be designed to address concerns of people using the path during the rain, as well as hydrology capacity issues.

- Ramp down to cross under Alameda Boulevard on both the north and south sides.
- Construct access ramps to Alameda Boulevard on both the north and south sides.



Option 2: Create a signalized at-grade crossing.

- Install stop signs on both the north and south approaches to Alameda Boulevard for the bike path users.
- Place user-activated push buttons to trigger traffic signals to cross Alameda Boulevard.
- Paint zebra stripe crossing of Alameda Boulevard.
- Place bike crossing signs along all both approaches of Alameda Boulevard to alert motorists.



2.E. Victory Boulevard

There are two options for the bike path to cross Victory Boulevard.

Option 1: Create a grade-separated crossing under Victory Boulevard. This option maximizes convenience and safety for users. This option also would link with a logical extension of the Burbank-Western Channel bike path further south to the Los Angeles River. This link would likely be constructed in the channel south of Victory Boulevard. This option would have to gain approval from the County Flood Control District. The underpass would need to be designed to address concerns of people using the path during the rain, as well as hydrology capacity issues.

- Ramp down to cross under Victory Boulevard on both the north and south sides.
- Construct access ramps to Victory Boulevard on both the north and south sides.



Option 2: Create a signalized at-grade crossing.

- Install stop signs on both the north and south approaches to Victory Boulevard for the bike path users.
- Place user-activated push buttons to trigger traffic signals to cross Victory Boulevard.
- Paint zebra stripe crossing of Victory Boulevard.
- Place bike crossing signs along all both approaches of Victory Boulevard to alert motorists.



The City also has the option to terminate the bike path at the north side of Victory Boulevard. Those wishing to cross Victory to continue east on Victory could cross at the nearby traffic signal of Allen Avenue.

3. Potential Access Points

Access to the bike path will be important. Access points should include signage to the bike path on nearby streets, and they should be identified on user maps.

All street crossings will automatically provide access to the bike path. These will include:

- Olive Avenue
- Verdugo Avenue
- Providencia Avenue and Lake Street
- Alameda Boulevard
- Victory Boulevard

A number of locations between these crossings offer potential access points as well. They are:

- Cedar Avenue - Cedar Avenue cul-de-sacs just east of the proposed bike path. A ramp could provide access.
- Elmwood Avenue – A pedestrian bridge provides access to neighborhoods on both sides of the Burbank-Western Channel. This would be an excellent access point. If only one access point is selected between the intersection of Providencia Avenue with Lake Street and Alameda Boulevard, this would be preferable to Cedar Avenue.



Elmwood Pedestrian Bridge

- Spazier Avenue – Spazier Avenue could provide access from the east side next to the path, or from both sides if a bridge similar to that at Elmwood Avenue were constructed.



Looking south to Spazier Avenue where it ends on the east side of the channel.



Looking west across the channel at Spazier Avenue.

- Elm Avenue – Elm Avenue could provide access either from the east side next to the path, or from both the east and west sides if a bridge similar to that at Elmwood Avenue were constructed. If only one access point between Alameda Boulevard and Victory Boulevard is selected, Elm Avenue is a preferable access point since it is halfway between these two boulevards.



Looking south to Elm Avenue where it ends on the east side of the channel.



Looking west across the channel at Elm Avenue.

- Linden Avenue – Linden Avenue could provide access from the east side next to the path.



Looking west from the cul-de-sac at the end of Linden Avenue.



Looking northwest from the cul-de-sac at the end of Linden Avenue.

4. Bike Path Components

4.A. Pavement

According to Caltrans standards, class I bike paths must contain at least 2.4 meters of pavement with at least 0.6 meters of graded area on both sides. The graded area on the sides may be paved or unpaved. Where the right-of-way permits, 3.6 meters of pavement is recommended. The City may wish to provide some additional unpaved graded area next to the path for joggers and other users who prefer softer surface. However, providing additional unpaved graded area will require more grading and retaining walls. It is recommended to provide at least 0.3 meters of permeable earthen surface between the bike path and the flood control channel to allow for rain to percolate into the soil and reduce the amount of water that runs off the bike path into the channel.

Asphalt is recommended as a smooth, uninterrupted surface that is good for users as well as economical. A yellow painted centerline is recommended to separate users traveling in opposite directions, improve sight distance and enhance nighttime visibility. A white edge stripe may also be used to enhance nighttime visibility.

4.B. Signage

The primary sign shall be the “bike path” sign.



It is recommended that the City also use stop signs at intersections, bike crossing warning signs along streets that cross the bike path, and signs leading users to the bike path. The City may wish to use directional signage informing users of destinations along the trail such as “Metrolink Station – 1 mile.”

4.C. Amenities

Amenities along bike paths enhance the experience of riding and make it possible for people to use the paths more. The following amenities will improve the Burbank-Western Channel bike path:

- Trash and recycling receptacles
- Drinking fountains
- Restrooms, or signs to nearby restrooms
- Rest areas
- Picnic tables
- Benches
- Bicycle parking
- Historical markers
- Call boxes



Compass Tree Park

The Compass Tree Park is a City park and lies right next to the bike path right-of-way just south of the intersection of Providencia Avenue and Lake Street. It would provide an excellent rest area for cyclists.

4.D. Fencing, Walls and Lighting

The existing fence on the channel side of the bike path will prevent users from falling into the channel. It is adequate to serve this purpose as it is.

Some of the residents whose homes abut the bike path may wish to have walls between their homes and the bike path to provide privacy and safety. There are four to five properties for which this may be an issue. The City can work with these property owners to see what type of treatment will best suit their needs. However, any walls or other treatment should not be constructed in a way to create a “tunnel” effect on users that places users in isolated areas that can become unsafe.

As an option, the City may wish to light the bike path for nighttime travel. This would be especially useful for commuters. It is recommended that low-level task lighting be used to light the bike path, but not produce glare into nearby homes.

4.E. Landscaping

Landscaping will add beauty and enhance the experience of using the bike path. It will also likely make the bike path more popular with neighbors. Where landscaping is provided, it should consist primarily of short plants that preserve visibility and thereby safety of users. The City can provide basic landscaping, or provide extensive landscaping to create a linear park. A higher level of landscaping would enhance the experience for the users as well as upgrade the adjacent neighborhoods. It would require more maintenance, however.

4.F. Grading

Some grading will be necessary to create a flat bike path. Most of the grading along this route is fairly minor. A few locations along the route, such as at the north end just south of Olive Avenue, and the south end just north of Victory Boulevard, will require more extensive grading. Much of the length of the route will also require short retaining walls to contain graded slope.

V. Potential Environmental Issues

As the bike path proposal moves forward it will have to clear some level of environmental review. At this time it does not appear that there will be any serious environmental impacts of the project, but that will be determined later upon closer examination. The potential issues include:

- Other community plans
- Transportation/trail user safety
- Lighting/visual quality
- Compatibility with nearby homes
- Hazardous materials along the right-of-way
- Pavement/runoff
- Hydrology issues with the channel

VI: Opinion of Probable Construction Costs

Kimley-Horn and Associates						Sheet 1 of 1
PRELIMINARY OPINION OF PROBABLE COST						
Burbank Western Channel Class I Bike Path						
Item Number	Item Description	Unit	Quantity	Unit Price	Amount	
DEMO						
1	CLEARING AND GRUBBING	LS	1	\$100,000	\$100,000	
2	EQUIPMENT RELOCATE	LS	1	\$50,000	\$50,000	
3	EQUIPMENT DEMO	LS	1	\$50,000	\$50,000	
GRADING AND DRAINAGE						
4	2' EXPOSED RETAINING WALL	LF	1200	\$180	\$216,000	
5	4' EXPOSED RETAINING WALL	LF	2000	\$330	\$660,000	
6	6' EXPOSED RETAINING WALL	LF	600	\$480	\$288,000	
7	BIKE PATH RAMPS/RETAINING WALLS AT STREET CROSSINGS	EA	3	\$100,000	\$300,000	
STRUCTURAL						
8	BIKE PATH RAMP CONNECTIONS TO EXISTING PED BRIDGE	LS	1	\$100,000	\$100,000	
9	BIKE PATH RAMP CONNECTIONS TO PROPOSED PED BRIDGE	LS	1	\$100,000	\$100,000	
10	FURNISH STRUCTURAL STEEL PED BRIDGE	LS	1	\$100,000	\$100,000	
11	ERECT STRUCTURAL STEEL PED BRIDGE PLUS FOUNDATION	LS	1	\$60,000	\$60,000	
12	STRUCTURAL CONCRETE (BRIDGE DECK)	CY	12	\$800	\$9,600	
13	TUBULAR HAND RAILING (BRIDGE)	LF	120	\$120	\$14,400	
UTILITIES						
14	BIKE PATH RAMP OVER UTILITY LINES (WATER/HP GAS)	EA	8	\$10,000	\$80,000	
15	BIKE PATH RAMP OVER CONCRETE DOWN DRAIN	EA	8	\$10,000	\$80,000	
16	PUBLIC WORKS GAGE FENCE	LF	3200	\$8	\$25,600	
PAVING						
17	ASPHALT CONCRETE PAVEMENT	TON	1770	\$70	\$123,900	
18	AGGREGATE BASE	CY	900	\$35	\$31,500	
19	ADDITIONAL BASE REMOVAL/GRADING	CY	900	\$10	\$9,000	
20	CONCRETE SIDEWALK	SF	1200	\$7	\$8,400	
21	CONCRETE CURB AND GUTTER	LF	300	\$22	\$6,600	
22	PEDESTRIAN RAMP	EA	7	\$2,500	\$17,500	
TRAFFIC						
23	ALAMEDA AVENUE IN ROAD FLASHER CROSSING	LS	1	\$50,000	\$50,000	
24	PROVIDENCIA AVENUE/LAKE STREET BULB OUT/CROSSING	EA	2	\$100,000	\$200,000	
25	SIGNING	LS	1	\$5,000	\$5,000	
26	STRIPING	LS	1	\$35,000	\$35,000	
LANDSCAPING						
27	LANDSCAPING (15%)	LS	1	\$408,075	\$408,075	
DESIGN FEE						
28	ENGINEERING DESIGN (10%)	LS	1	\$312,858	\$312,858	
CONTRACTOR						
29	OVERHEAD/PROFIT/INSURANCE (15%)	LS	1	\$469,286	\$469,286	
Length in Feet: 5,900						
SUBTOTAL					\$3,910,719	
Contingencies 20%					\$782,144	
TOTAL					\$4,692,863	
OPTIONAL ITEMS A						
30	BIKE PATH LIGHTING	LS	1	\$325,000	\$325,000	
31	VERDUGO AVENUE RAISED CROSSWALK	SF	500	\$7	\$3,500	
32	PROVIDENCIA AVENUE/LAKE STREET RAISED CROSSWALK	SF	1000	\$7	\$7,000	
33	VICTORY BOULEVARD IN ROAD FLASHER CROSSING	LS	1	\$50,000	\$50,000	
34	LANDSCAPING/DESIGN/OVERHEAD/PROFIT/INSURANCE(40%)	LS	1	\$1,242,400	\$1,242,400	
SUBTOTAL WITH OPTION A					\$4,348,400	
Contingencies 20%					\$869,680	
TOTAL WITH OPTION A					\$5,218,080	
OPTIONAL ITEMS B						
35	BIKE PATH LIGHTING	LS	1	\$325,000	\$325,000	
36	VERDUGO AVENUE IN ROAD FLASHER CROSSING	LS	1	\$50,000	\$50,000	
37	ALAMEDA AVENUE UNDER CROSSING IN WESTERN CHANNEL	LS	1	\$500,000	\$500,000	
38	VICTORY BOULEVARD UNDER CROSSING IN WESTERN CHANNEL	LS	1	\$500,000	\$500,000	
39	PROVIDENCIA AVENUE/LAKE STREET IN ROAD FLASHER CROSSING	LS	1	\$100,000	\$100,000	
40	LANDSCAPING/DESIGN/OVERHEAD/PROFIT/INSURANCE(40%)	LS	1	\$1,678,200	\$1,678,200	
SUBTOTAL WITH OPTION B					\$5,823,700	
Contingencies 20%					\$1,164,740	
TOTAL WITH OPTION B					\$6,988,440	
Made By:	Kevin R. Thomas					
Checked By:	Michael J. Piszker, P. E.					

Note:

1. Estimate does not constitute as an endorsement of proposed design.
2. Construction unit price numbers are from mid-year 2005.
3. Retaining wall unit price numbers include grading, steel, excavation, and backfill.
4. Landscaping unit price includes benches, drinking fountains, and bike parking.