

RESOLUTION NO. 2008-090

Adopted by the Sacramento City Council

February 12, 2008

APPROVE THE YEAR 2008 TRANSPORTATION PROGRAMMING GUIDE (TPG) PROJECT LIST DEVELOPMENT AND SCORING CRITERIA AND THE ADDITION OF A NEW PEDESTRIAN IMPROVEMENTS SECTION

BACKGROUND

- A. The Transportation Programming Guide process consists of several tasks including: developing project scoring criteria for each program area; scoring and ranking projects; and writing the final text of the document.
- B. On July 25, 2006, the City Council approved the Pedestrian Master Plan.
- C. The Speed Hump Program Guidelines were last amended and approved by the City Council on January 27, 2004.

BASED ON THE FACTS SET FORTH IN THE BACKGROUND, THE CITY COUNCIL RESOLVES AS FOLLOWS:

- Section 1. The 2008 Transportation Programming Guide (TPG) Project List Development and Scoring Criteria, shown in Exhibit A, for the following program areas are approved: Major Street Improvements, Street Maintenance, Street Reconstruction, Traffic Signals, Bicycle, Bridge Replacement/Rehabilitation, Streetscape Enhancement, and Speed Humps, and Train Horn Quiet Zones.
- Section 2. A new section of the Transportation Programming Guide; the Pedestrian Improvements Section, shown in Exhibit A, is approved.
- Section 3. The Speed Hump Program Guidelines are approved as shown in Exhibit B.

Table of Contents:

- Exhibit A: The 2008 Transportation Programming Guide project list development and project scoring criteria – 45 pages
- Exhibit B: Speed Hump Program Guidelines – 10 pages

Adopted by the City of Sacramento City Council on February 12, 2008 by the following vote:

Ayes: Councilmembers Cohn, Hammond, McCarty, Pannell, Sheedy, Tretheway, Waters, and Mayor Fargo.

Noes: None.

Abstain: None.

Absent: Councilmember Fong.



Mayor Heather Fargo

Attest:


Shirley Concolino, City Clerk

Major Street Improvements Section - Project Eligibility and Scoring Criteria

PROJECT LIST DEVELOPMENT

Eligibility Criteria

Projects on Major Streets are considered if they support the previously identified goals, and one or more of the following conditions exist:

<u>Roadway Widening:</u>	If the existing volume on a street exceeds 80% of the street's capacity (i.e., the Level of Service is below C), lanes are of substandard width, or widening is needed to serve anticipated development.
<u>Extensions/Connections:</u>	If extending a major street or connecting two major streets will close a gap, improve traffic circulation, or relieve congestion on other streets that have a service level below C (i.e., LOS D, E, or F).
<u>Grade Separations:</u>	If the existing service level is below C, or there are problems with conflicts between vehicular traffic and/or rail traffic.
<u>Interchange Construction:</u>	If an interchange is needed to serve development or to relieve congestion at a nearby interchange with an existing service level below C.
<u>Interchange Modification:</u>	If the existing service level at the over-crossing, at the ramp intersections, or on the ramps is below C, or if a partial interchange exists and the modification will upgrade it to a full interchange.

PROJECT RANKING PROCESS

Eligible projects are scored and ranked using nine criteria: Congestion, Public Safety, Economic Development, Infill Development, Cost (to the City), Deliverability/Readiness, Volume, Gap Closure, and Alternative Modes. If the roadway segment or intersection has not yet been built, then the criteria are applied to the facility that will receive the most benefit from the project. The maximum possible score is 100 points, which are assigned for the nine criteria as described below.

1. Public Safety (Max. Points: 20)

The accident rate of the project is compared to the highest accident rate of all the Major Street projects being evaluated. The accident rate used is the average rate for the three latest years for which accident data is available. Points are assigned as follows:

$$\frac{\text{3 Year Average Accident Rate}^1 \text{ of Project}}{\text{Highest Accident Rate of Projects Considered}} \times 20 = \underline{\hspace{2cm}}$$

2. Economic Development (Max. Points: 10)

- Is the project within the Economic Development Strategy?:
 - Does the project fall within one of the nineteen (19) Neighborhood Commercial Revitalization Areas?
 - Is the project located within one of the twenty-seven (27) Key Development Opportunity Areas or Sites?
 - Is the project located in either the Merged Downtown or SP/Richards Redevelopment Area?
- If Yes on any of the above (5 points) _____ Is the project located in a Business Improvement District (BID) or Property-Based Improvement District (PBID)?
_____ Yes (5 points) ___ No (0 points)

3. Congestion (Max. Points: 20)

Existing and future (Year 2025) congestion are determined for each project by calculating the volume to capacity ratio (V/C), which is the ratio of the average daily traffic (ADT) to the theoretical maximum ADT the facility can carry. The ratios are then compared to the highest V/C of all the Major Street projects being evaluated, as follows:

$$\frac{\text{Existing V/C of Project}}{\text{Highest Existing V/C of Projects Considered}} \times 12 = \underline{\hspace{2cm}}$$

$$\frac{\text{Year 2025 V/C of Project}}{\text{Highest Year 2025 V/C of Projects Considered}} \times 8 = \underline{\hspace{2cm}}$$

4. Infill Development (Max. Points: 15)

² The accident Rate is the annual number of accidents per 1 million vehicle miles. Accident Rate = Accidents x 10⁶ / (ADT x segment miles x 365)

Is the project in one of the Infill Areas as defined in the City of Sacramento Infill Strategy adopted on May 14, 2002. This document defines infill in four categories: (Maximum Points 10)

Target Residential Area _____ Yes (10 points) _____ No (0 points)
 Central City Area _____ Yes (10 points) _____ No (0 points)
 Neighborhood Commercial Revitalization Area _____ Yes (10 points) _____ No (0 points)
 Transit Station Area _____ Yes (10 points) _____ No (0 points)

Is the project in a City Redevelopment Area excluding the Merged Downtown or SP/Richards Area or in a Community Development Block Grant eligible area?

Yes (5 points) _____ No (0 points)

5. Cost..... (Max. Points: 5)

Points are assigned inversely proportionally to the cost of the project as follows:

$$\frac{\text{Lowest Cost Project}}{\text{Project Cost}} \times 5 = \underline{\hspace{2cm}}$$

6. Deliverability/Readiness(Max. Points 5)

Projects are scored based on whether critical milestones have been completed, as detailed below:

Has the Environmental Determination been approved?
 _____ Yes (3 points) _____ No (0 points)

Has a Project Study Report or a Feasibility Study been approved or completed with a result that the project is feasible?
 _____ Yes (3 points) _____ No (0 points)

7. Volume..... (Max. Points: 7)

Existing volumes on the candidate roadways are evaluated, with the higher volume streets receiving more points:

$$\frac{\text{Existing ADT of Project}}{\text{Highest Existing ADT of Projects Considered}} \times 7 = \underline{\hspace{2cm}}$$

8. Gap Closure.. (Max. Points: 8)

Freeway Interchanges

1 point given for each freeway interchange ramp added by project
Roadway Extension

5 points given to projects that either close a gap or connect missing links in a route

3 points given to projects that will close a bicycle facility gap

3 points given to projects that will reduce vehicle travel through a residential neighborhood

9. Bicycle, Pedestrian, and Transit..... (Max. Points: 10)

4 points given for streets identified as a designated Class 2 or 3 bikeway (existing or proposed) in the City/County Bikeway Master Plan

4 points given if the project is on a bus route

4 points given if the project adds sidewalk where there currently is none

6 points given if the project improves access to a LRT station or to a commuter rail station

Street Maintenance Section - Project Eligibility and Scoring Criteria

PROJECT LIST DEVELOPMENT

Pavement Management Application Update

The City performed an inventory of the entire road network, in segments of one hundred (100) foot increments, during the spring and summer of 1999 and again in 2002.

Thirteen different distress and roughness data were collected. Each distress was measured with three severity levels and five density levels. The roughness was collected using five levels.

Structural data was collected from record drawings, soil core samples and road condition observations. Traffic data were obtained from the city's Traffic Engineering Division. Other information included in the inventory was the age, location, and maintenance history of the roadway, council districts, curb shoulder and pavement types and street functional classifications.

Performance Indicators

All of this data was converted to three performance indicators that make up the street segment's overall condition number or Pavement Quality Index (PQI). These indicators are Ride Comfort Index (RCI), Surface Distress Index (SDI) and Structural Adequacy Index (SAI).

PROJECT RANKING PROCESS

The needs list is developed using the SuperPMA computer program. The analytical routines unique to the SuperPMA allow the City to better assess the whole street network objectively. They also allow the city to develop a rehabilitation program that maintains every street at the most cost-effective point.

Street Maintenance Services is continuing to develop a ten-year rehabilitation cycle that will include every street in the City of Sacramento. This cycle is important to provide a gauge to determine if funding is keeping up with or falling behind the goal of providing maintenance at the most cost-effective point.

Street Reconstruction Section - Project Eligibility and Scoring Criteria

PROJECT LIST DEVELOPMENT

Eligibility Criteria

Street segments with a PQI of 4 or below, and that have no other rehabilitation strategies available, may be deemed beyond rehabilitation and are considered for reconstruction.

PROJECT RANKING PROCESS

Street reconstruction projects are scored and ranked using four criteria: Cost Effectiveness, Alternate Modes, Economic Development, and Infill Development. The maximum possible score is 100 points. Criteria used to prioritize reconstruction projects are as follows:

1. **Cost Effectiveness** (Max. Points: 50)

The cost-effectiveness of the project is calculated by multiplying the average daily traffic (ADT) count of the segment by the length of the segment and dividing by the project cost. The cost-effectiveness scores are then compared to the highest cost-effectiveness of all the Street Reconstruction projects being evaluated, as follows:

$$\frac{\text{ADT} \times \text{Length}}{\text{City Cost}^*} = \text{Cost Effectiveness}$$

$$\frac{\text{Cost Effectiveness of Project}}{\text{Highest Cost Effectiveness of Projects Considered}} \times 50 \text{ points} = \underline{\hspace{2cm}}$$

2. **Bicycle, Pedestrian, and Transit** (Max. Points: 20)

10 points given for streets that have an existing or planned Class 2 or Class 3 bicycle facility

10 points given for streets on a RT bus route or Light Rail Route

3. **Economic Development** (Max. Points: 15)

- Is the project within the Economic Development Strategy?:
 - Does the project fall within one of the nineteen (19) Neighborhood Commercial Revitalization Areas?
 - Is the project located within one of the twenty-seven (27) Key Development Opportunity Areas or Sites?

Traffic Signals Section - Project Eligibility and Scoring Criteria

PROJECT LIST DEVELOPMENT

The City evaluates approximately 10-15 new intersections each year for traffic signals. Locations are solicited through traffic investigations, resident requests, development projects, Councilmember requests, etc. The City also reviews the top ten high collision intersections on an annual basis for potential measures, including a traffic signal, which may mitigate for collisions.

Eligibility Criteria

The Traffic Signal Program involves three phases. Project eligibility is determined during Phases I and II, as presented below:

Phase I - Investigation Review

In Phase I, the following data is collected for locations which have been suggested as candidates for a traffic signal:

Collisions:	A recent three-year compilation of reported collision history differentiating collision types and correctability is developed.
Traffic Volumes:	Twenty-four hour volume counts with an hourly listing of each approach direction are obtained for the combined minor street volumes, the combined major street approach volumes, and a total for the entire intersection.
Facilities/Activity Centers:	Information about nearby facilities and activity centers that serve the young, elderly, and/or persons with disabilities, including requests from persons with disabilities for accessible crossing improvements is collected at the location under study. These persons might not be adequately reflected in the pedestrian volume if the absence of a signal restrains their mobility.
Pedestrian/Bicycle:	Pedestrian and bicycle counts may be collected if a high number of pedestrians are anticipated to cross the intersection. Also, the width of the major street crossing is recorded.
Existing Controls:	The current type of control (i.e., two-way stop, an all-way stop, etc.) is recorded.
Speed:	The 85th percentile speed is collected for the major and minor streets.

The above data is collected and reviewed to determine whether measures exist, other than a traffic signal, which would mitigate for the concern. If measures are feasible, they are to be implemented and the location monitored for up to three years. The location is placed on the City's Traffic Signal Monitoring List. After the monitoring period, an evaluation of the effectiveness of the measures is conducted. If measures are found to be effective, the location is removed from the Traffic Signal Monitoring List and is no longer considered for the Traffic Signal Program unless conditions change. If measures are not effective, the location is to be evaluated for signal warrants as outlined in Phase II below. The City Traffic Engineer has the discretion to move forward with Phase II prior to the three year period as conditions warrant.

Phase II– Signal Warrant Review

If no feasible measure exists, or the City Traffic Engineer advances the project, the location is evaluated in Phase II. In Phase II, the information from Phase I and updated data is used to determine which locations meet one or more of the following eight Caltrans traffic signal warrants:

<u>Warrant-1</u> Eight-Hour Vehicular Volume	The Eight Hour Vehicular Volume signal warrant is intended for application where (A) a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal or (B) where the traffic volume on a major street is so heavy that the traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing a major street.
<u>Warrant-2</u> Four-Hour Vehicular Volume	The Four Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.
<u>Warrant-3</u> Peak Hour	The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor street traffic suffers undue delay when entering or crossing the major street.
<u>Warrant-4</u> Pedestrian Volume	The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.
<u>Warrant-5</u> School Crossing	The School Crossing signal warrant is intended for application where the fact that school children cross the major street is the principal reason to consider installing a traffic signal.
<u>Warrant-6</u> Crash Experience	The Crash Experience Signal warrant conditions are intended for application where the severity and frequency of crashers are the principal reasons to consider installing a traffic control signal.

Warrant-7
Coordinated Signal System

The Coordinated Signal System warrant is intended to provide traffic control signals at intersections where they would not otherwise be needed in order to maintain proper platooning of vehicles, thus providing progressive movement through the corridor

Warrant-8
Roadway Network

The Roadway Network warrant conditions are intended to provide a traffic control signal to encourage concentration and organization of traffic flow on a roadway network.

If the location meets traffic signal warrants, the location is evaluated to determine the preliminary feasibility of a traffic signal at this location. Some examples of infeasibility include impacts to hollow sidewalks, requires major roadway widening, insufficient right of way, etc. A roundabout evaluation is conducted concurrently to determine whether a roundabout can be installed at the location in lieu of a traffic signal. If found to be infeasible, the location is no longer considered in the Traffic Signal Program.

It should be noted that the satisfaction of a traffic signal warrant does not in itself require the installation of a traffic signal. Candidate locations will be reevaluated for signal warrants every three years, or when conditions warrant, and may be removed from the Traffic Signal Program list if the location no longer meet warrants.

PROJECT RANKING PROCESS

Phase III

Once a location is determined to be feasible, the following criteria are applied to rank the eligible locations. The maximum possible score is 100 points.

1. Collisions (Max. Points: 55)

The collision rate of the intersection is compared to the single highest collision rate of all the intersections being evaluated. The collision rate per million vehicle miles is calculated using the following equation:

$$\text{Collision Rate} = \frac{\text{Total weighted correctable collisions in a 3 year period} \times 1,000,000}{3 \times 365 \times \text{total volume of entering vehicles per day}}$$

Collisions used to calculate the collision rate are those that occurred within 100 feet of the intersection which are susceptible to correction by signalization. Correctable collision types are violations for traffic signals and signs, vehicle, pedestrian and bicycle right of way violations, etc.

The collision rate also factors in the severity of the collision by using an Equivalent Property Damage Only (EPDO) weighting. It attaches greater importance, or weight, to collisions resulting in an injury or fatality, and less importance to property damage only collisions. The weighting of collision types are as follows:

Type of Collision

Equivalent Weight

Fatal	9.5
Injury	3.5
Property Damage Only	1

Collision points are assigned as follows:

$$\frac{\text{3 Yr Average Correctable Collision Rate of Project}}{\text{Single Highest 3 Yr Average Correctable Collision Rate of Projects Considered}} \times 55 = \underline{\hspace{2cm}}$$

2. Pedestrians..... (Max. Points: 12)

(A) Pedestrian Crossing (Points: 10)

Points are assigned based on the average daily traffic (ADT) volumes of the major street and the crossing distance of the major street, as presented below:

MAJOR STREET WIDTH (FEET)

MAJOR STREET ADT	<40	41-50	51-60	61-70	71-80	>81
<4,000	0	1	2	3	4	5
4,001-7,000	1	2	3	4	5	6
7,001-14,000	2	3	4	5	6	7
14,001-21,000	3	4	5	6	7	8
21,001-27,000	4	5	6	7	8	9
>27,001	5	6	7	8	9	10

(B) Activity Centers (Points: 2)

One point is assigned for each of the following activity centers which generate pedestrian traffic. The activity center must be located within 300 feet of the candidate traffic signal location. The maximum number of points is two points. Examples include:

- Schools
- Parks
- Libraries
- Employment Centers
- Stadiums
- Arenas
- Senior Centers
- Commercial Centers

- Light Rail Lines
- Hospitals
- High Density Residential

3. Bicycle Master Plan..... (Max. Points: 5)

5 points are given if a street is identified in the City/County Bikeway Master Plan.

4. Average Daily Traffic (ADT) Volumes (Max. Points: 10)

Points are assigned based on a comparison of the average daily traffic (ADT) volumes on the intersecting streets, as presented below:

MINOR STREET ADT

MAIN STREET ADT	<1,000	1,001-2,000	2,001-3,000	3,001 - 4,000	4,001-5,000	>5,000
<4,000	0	1	2	3	4	5
4,001-7,000	1	2	3	4	5	6
7,001-14,000	2	3	4	5	6	7
14,001-21,000	3	4	5	6	7	8
21,001-27,000	4	5	6	7	8	9
>27,000	5	6	7	8	9	10

5. Peak Hour Traffic Volumes..... (Max. Points: 10)

Points are assigned based on a comparison of side street traffic volume to main street traffic volume during the peak hour, as presented below:

MINOR STREET PEAK HOUR VOLUME

MAJOR STREET PEAK HOUR VOLUME	<100	101-200	201-300	301-400	>400
<400	0	0	1	2	3
400-600	0	1	2	3	4
601-800	1	2	3	4	5
801-1,000	2	3	4	5	6
1,001-1,200	3	4	5	6	7

1,201-1,400	4	5	6	7	8
1,401-1,600	5	6	7	8	9
>1,601	6	7	8	9	10

6. Speed (Max. Points: 5)

Points are assigned in this category to account for the difficulty that motorists, bicyclists, and pedestrians may have judging gaps in traffic on high-speed streets. More points are assigned for the higher-speed streets, as presented below: 85th Percentile Posted Speed (mph)

Points

50+	5
40-49	4
35-39	3
30-34	2
25-29	1
<25	0

Zero points are assigned if the intersection has an all way stop.

7. Special Conditions (Max. Points: 3)

Points are assigned based on special or unique conditions related to the benefits or drawbacks of signaling a particular intersection. Some considerations include distance to a heavy rail crossing, proximity to fire stations, beneficial coordination with adjacent signals, restricted sight distance, etc. The number of points is determined by the City Traffic Engineer.

Bicycle Section - Project Eligibility and Scoring Criteria

PROJECT LIST DEVELOPMENT

The 2010 Bikeway Master Plan was used to develop an initial list of projects, which was then reviewed by the Transportation Programming Guide Community Advisory Committee and City staff. Projects were solicited from the Bicycle Advisory Committee, the Community Advisory Committee, and through the TPG public outreach.

PROJECT RANKING PROCESS: FOR ON-STREET AND OFF-STREET

The Bicycle Advisory Committee, with input by the Community Advisory Committee, developed the scoring and ranking criteria. There are eight scoring criteria categories for evaluating bikeway projects:

- Links to Activity Centers and Infill Areas (employment/residential/recreation)
- Barrier Elimination (reduction in cycling distance)
- Traffic Characteristics (volume/speed/lane width)
- Right-of-Way/Cost (ownership and land use)
- Linkage to Transportation System (i.e., bus, LRT, train etc.)
- Travel Continuity (stops per mile)
- Geographic Distribution (spacing between bikeways)
- Recreation Potential (proximity to parks/open space)

Eligible projects are scored and ranked using the eight criteria outlined below. The maximum score is 100 points.

1. Linkage to Activity Centers and Infill Areas (Max. Points: 20)

- Points are assigned for projects that are adjacent to, or provide access to, activity centers:

<u>Activity Center</u>	<u>Points</u>	
Public Colleges/Universities	20	per facility
Schools/Parks/Libraries/Community Centers	10	per facility
Commercial Centers	5	per center
Employment Centers	5	per 100 employees
High Density Residential	5	per site

- 5 points are assigned if the project is located in one of the following “infill” areas as defined by the City of Sacramento Infill Strategy adopted on May 14, 2002:
 - *Target Residential Areas*
 - *Central City Areas*
 - *Commercial Corridors*
 - *Transit Areas*

- Note: Commercial Centers** = Commercial sites containing a minimum of 40,000 square feet
- Employment Centers** = Non-residential sites containing a minimum of 100 employees
- High Density Residential** = A common project site containing 20 dwelling units per acre and a minimum of 100 dwelling units

2. Barrier Elimination (Max. Points: 15)

Points are assigned based on the reduced distance the cyclists would travel with the project in place.

<u>Distance (miles)</u>	<u>Points</u>
Less than 0.25	0
0.25 - 0.5	2
.6 - 1.0	4
1.1 - 1.5	6
1.6 - 2.0	10
More than 2.0	15

3. Traffic Characteristics (Max. Points: 15)

Bike Trails (Off-Street Bikeways)

Trails are separated from motorized traffic; therefore, they receive full 15 points.

Bike Lanes/Routes (On-Street Bikeways)

Points for Traffic Characteristics were given on the basis of whether the proposed project is a Class 2 or Class 3 facility using the point system below. Projects on major streets were classified as Class 2 facilities for scoring purposes only. The feasibility of each Class 2 facility has not been evaluated and will be determined in the scoping/funding process.

Points are assigned based on existing curb lane width, average daily traffic (ADT) volume, and posted speed limit.

(A) Class 2

1)	Volume:	<u>ADT</u>	<u>Points</u>
		>40,000	5
		30,001 – 40,000	4
		20,001 – 30,000	3
		10,001 – 20,000	2
		3,000 – 10,000	1
		<3,000	0 (Class 3 Recommended)
2)	Speed:	<u>Speed</u>	<u>Points</u>
		≥50	5
		45	4

40	3
35	2
30	1
<30	0

- 3) High existing usage: Five points are assigned if bicycle counts on the candidate bikeway segment indicate 25 or more bikes per hour.

(B) Class 3

1)	Volume:	<u>ADT</u>	<u>Points</u>
		>20,000	0
		10,001-20,000	1
		5,001-10,000	2
		3,001-5,000	3
		1,001-3,000	4
		<1,000	5

2)	Speed:	<u>Speed</u>	<u>Points</u>
		>35	0
		35	1
		30	2
		25	3
		20	4
		≤15	5

- 3) High existing usage: Five points are assigned if bicycle counts on the candidate bikeway segment indicate 25 or more bikes per hour.

4. Right-of-Way/Cost..... (Max. Points: 15)

<u>Land Ownership Factors</u>		<u>Land Modification Factors</u>	
City Owned	7	Unused/Vacant Land	8
Public (non-City)	4	Relocatable Use	4
Private	0	Non-Relocatable	0

5. Linkage to Transportation System (Max. Points: 10)

- (A) Links to other bikeways.....Max. Points: 5

One point is assigned for each existing or planned bikeway to which the candidate bikeway will connect.

- (B) Links to other modesMax. Points: 5

Five points are assigned for a connection with another transportation mode that accommodates bicycles by carrying them or providing secure parking. Other modes include light rail stations, buses with bike racks, AMTRAK station, Sacramento International Airport, and park and ride lots.

6. Travel Continuity (Max. Points: 10)

Points are assigned based on the number of stops per mile along the route.

<u>Stops Per Miles</u>	<u>Points</u>
0	10
1-4	7
5-9	5
>10	0

7. Geographic Distribution (Max. Points: 5)

Points are assigned based on the candidate bikeway's distance from the nearest parallel existing route at the closest point:

<u>Distance (miles)</u>	<u>Points</u>
0 - .5	1
.6 - 1.0	2
1.1 - 1.5	3
1.6 - 2.0	4
>2.0	5

8. Recreational Potential..... (Max. Points: 10)

	<u>Points</u>	
	<u>Yes</u>	<u>No</u>
(A) Does the bikeway have scenic views?	2	0
(B) Does the bikeway have shaded portions?	2	0
(C) Does the bikeway have low slopes?	2	0
(D) Is the bikeway greater than two miles long?	2	0
(E) Is there existing street lighting?	2	0

PROJECT RANKING PROCESS FOR BICYCLE AND PEDESTRIAN BRIDGES

B1. Population..... (Max. Points: 20)

Points are assigned based on population density within 2 miles:

One point for every multiple of 750 persons per square mile.

(population density of 750 = 1 point, density of 1500 = 2 points...density equal to or greater than 15,000 = 20 points)

One point for every multiple of 1000 jobs per square mile.
 (job density of 1000 = 1 point, density of 2000 = 2 points...density of 5,000 or greater =5 points)

B2. Link to Activity Centers and Infill Areas (Max. Points: 20)

- Activity Center Points
 - Public Colleges/Universities 20 per facility
 - Schools/Parks/Libraries/Community Centers 5 per facility
 - Commercial Center 5 per facility

- 5 points are assigned if the project is located in one of the following “infill” areas as defined by the City of Sacramento Infill Strategy adopted on May 14, 2002:
 - *Target Residential Areas*
 - *Central City Areas*
 - Commercial Corridors
 - Transit Areas

Note: Commercial Centers = Commercial sites containing a minimum of 40,000 square feet

B3. Barrier Elimination (Max. Points: 40)

Points are assigned based on the reduced distance the pedestrian or bicyclist cyclists would travel with the project in place.

<u>Distance (miles)</u>	<u>Points</u>
Less than 0.25	0
0.25 - 0.5	5
.5 - 1.0	10
1 - 2	20
2 - 3	30
Greater than 3	40

B4. Type of Crossing (Max. Points: 5)

Bridges that cross waterways, freeways and mainline railways receive 5 points.
 Bridges that cross expressways with ADT's >20,000 receive 3 points.
 Bridges over streets with ADT's less than 20,000 and greater than 10,000 receive 2 points.

B5. Right-of-Way/Cost (Max. Points: 5)

<u>Land Ownership Factors</u>		<u>Land Modification Factors</u>	
City Owned	3	Unused/Vacant Land	2
Public (non-City)	2	Relocatable Use	1
Private	0	Non-Relocatable	0

B6. Linkage to Transportation System (Max. Points: 5)

Does it have existing bikeways
or walkways on both ends leading to it 5 points

or
Will it require bikeway or walkway
construction greater than 1000 feet at one end 3 points

or
Will require bikeway or walkway
construction greater than 2000 feet at both ends 1 point

B7. Travel Continuity (Max. Points: 5)

Points are assigned based on the number of interruptions per mile along the route.

<u>Design speed on bridges</u>	<u>Points</u>
>10 mph	5
5-10 mph	3
<5mph	0

Bridges Section - Project Eligibility and Scoring Criteria

PROJECT LIST DEVELOPMENT

Eligibility Criteria

The Sufficiency Rating assigned by Caltrans is a numeric value that indicates the sufficiency of a bridge to remain in service. Sufficiency Ratings range from zero to 100, with zero representing an entirely insufficient or deficient bridge, and 100 representing an entirely sufficient bridge. Structures that are assigned a Sufficiency Rating of 80 or less are considered eligible for replacement or rehabilitation.

Project Identification

Caltrans inspects and assigns Sufficiency Ratings to all structures in the City's inventory which carry vehicular traffic or cross a route carrying vehicular traffic and are a minimum of 20 feet in length. Sufficiency Ratings are established by using federal bridge inspection and appraisal guidelines, and represent a weighted analysis of a bridges structural adequacy and safety, serviceability and functional obsolescence, and essentialness for public use. In addition to the sufficiency rating, Caltrans assigns a status flag indicating whether a bridge is Structurally Deficient (SD) or Functionally Obsolete (FO) The SD/FO status of a bridge is determined through the results of the structural inspections and appraisals performed by Caltrans in accordance with item 9 of the Federal - Aid Policy Guide for Title 23, CFR 650.

Candidate bridge replacement and rehabilitation projects are identified by reviewing the Sufficiency Ratings and the SD/FO Status Flags assigned to the structures by Caltrans. City bridges that are not inspected by Caltrans are reviewed periodically and, if known deficiencies exist, are added to the candidate list. All of the bridges in the Year 2005 Transportation Programming Guide are inspected by Caltrans.

PROJECT RANKING PROCESS

Eligible projects are ranked in order of priority based on a deficiency rating system. The higher the total deficiency points assigned to a candidate project, the higher the project is ranked on the list. The ranking consists of assigning deficiency points to each of three major categories. The three categories and their weighting with respect to a maximum deficiency point total of 100 are listed below:

1. Structural Deficiency (Max. Points: 50)

Points = 50 (If the Sufficiency Rating ≤ 50 and the structure is flagged as Structurally Deficient (SD) or Functionally Obsolete (FO).

Points = 25 (If the Sufficiency Rating ≤ 80 and the structure is flagged as Structurally Deficient (SD) or Functionally Obsolete (FO).

Bridges rated Structurally Deficient (SD) or Functionally Obsolete (FO) with a Sufficiency Rating (SR) ≤ 50 are eligible candidates for replacement under the State of California, Highway Bridge Replacement and Rehabilitation Program (HBRRP). Bridges rated Structurally Deficient (SD) or Functionally Obsolete (FO) with a Sufficiency Rating (SR) ≤ 80 are eligible for rehabilitation under this program.

2. Service Deficiency..... (Max. Points: 20)

The service deficiency of a bridge is determined by comparing the type of facilities it provides to those which are desired. The three types of facilities considered are vehicular, bicycle, and pedestrian. The cumulative score in the service deficiency category has a range from 0 to 20, with 20 reflecting a high degree of deficiency.

Vehicular Facilities

(Max. Points: 10)

Points = 10 (If $V/C > 0.8$ (below Level of Service C))

Points = 0 (If $V/C \leq 0.8$ (Level of Service C or better))

Service deficiencies in the vehicular facilities of a structure are determined by evaluating the volume to capacity ratio (V/C) of the roadway segment between the two intersections nearest to the structure.

Bicycle Facilities

(Max. Points: 10)

Points = 10 (If Class II Bike routes² have a gap across or are detoured around the bridge)

A gap across the structure exists when bike lanes on either the structure and its approaches are absent for an existing Class II Bike route. A gap also exists if the travel lane closest to the curb is less than 15 feet for bridges that are not included in the 2010 Bikeway Master Plan (BMP).

Pedestrian Facilities

(Max. Points: 10)

Points = 10 (If there are sidewalk gaps across the bridge)

A gap across the structure exists if sidewalks are absent from the structure or its approaches in either direction of travel.

3 A Class II Bike route is an on-street route with striped bike lanes.

3. Functional Deficiency (Max. Points: 30)

The functional deficiency of a bridge is determined by evaluating the adequacy of its facilities. The factors used to determine and rate functional deficiency are summarized below.

Accident Rate (Max. Points: 10)

The accident rate of the bridge is compared to the highest accident rate of all the bridges being evaluated. The accident rate used is the average rate for the three latest years for which accident data is available. Points are assigned as follows:

$$\frac{\text{3 Year Average Accident Rate}^3 \text{ of Project}}{\text{Highest Accident Rate of Projects Considered}} \times 10 = \underline{\hspace{2cm}}$$

Deck Geometry (Max. Points: 10)

The deck geometry adequacy is evaluated based on the geometric features of a structure with respect to minimum vehicle lane width, bike lane width, sidewalk width, and horizontal and vertical clearances⁴. Deficiency points are assigned to a structure that does not meet certain minimum criteria, as follows:

- 1 point per foot short for each vehicle lane width less than 11 feet
- 2 points per foot short for each bike lane less than 5 feet
- 2 points per foot short for each sidewalk width less than 4 feet
- 1 point per foot short of horizontal clearance less than 3 feet
- 1 point per inch short of overhead clearance less than 14 feet

Deficiency points are totaled for each structure and normalized, as follows:

$$\text{Points} = (\text{point total of project/highest point total of all candidate projects}) \times 10$$

Waterway Adequacy (Max. Points: 10)

Points = 10 (If bridge has a score ≤ 3 for Caltrans Item 71)

Points = 0 (If bridge has a score > 3 for Caltrans Item 71)

The Waterway Adequacy (Caltrans Item 71) is based on the frequency of floodwater overtopping the structure and approaches, and the significance of the resulting traffic delays. The Waterway Adequacy appraisal rating is reported on a scale of 0 (bridge closed) to 9 (superior to present desirable criteria). The City's rating system assigns waterway adequacy points to only those structures with a code of 3 (requiring high priority of corrective action) or less.

4 The accident Rate is the annual number of accidents per 1 million vehicle miles. Accident Rate = Accidents x 10⁶ / (ADT x segment miles x 365)

5 Horizontal clearance is measured from the edge of the travel lane to the nearest obstruction, such as an abutment, column, or bridge rail.

Streetscape Enhancement Section - Project Eligibility and Scoring Criteria

PROJECT LIST DEVELOPMENT

COMMERCIAL CORRIDOR PROGRAM

The eligible commercial corridors are those identified in the Economic Development Strategy Framework, approved by the City Council in April 2000. The following corridors, within the identified boundaries, are eligible for the Streetscape Enhancement Commercial Corridor program:

1. **12th Street (UPRR to I Street)**
2. **16th Street (Elvas to Broadway)**
3. **65th Street**
4. **Broadway West (Miller Park to Alhambra)**
5. **Broadway East (Alhambra to Stockton Boulevard)**
6. **Del Paso Boulevard (Acoma to Marysville Boulevard)**
7. **Florin Road (Franklin Boulevard to 24th Street)**
8. **Folsom Boulevard West (Alhambra to UPRR Overcrossing)**
9. **Folsom Boulevard East (UPRR Overcrossing to Watt Avenue)**
10. **Franklin Boulevard (Sutterville to Fruitridge)**
11. **Freeport Boulevard (2nd Avenue to City Limits, excluding William Land Park)**
12. **Fruitridge Road (65th Street to Power Inn Road)**
13. **Mack Road (Center Parkway to Highway 99)**
14. **Marysville Boulevard (Roanoake Avenue to Arcade Creek)**
15. **Midtown BDA (16th to 29th Street, J to L Streets)**
16. **Northgate Boulevard (Garden Highway to I-80)**
17. **R Street Corridor (3rd Street to 17th Street)**
18. **Richards Boulevard (12th Street to Jibboom)**
19. **Stockton Boulevard (X Street to Riza)**

Eligible Enhancements

The following improvements may be considered under the Commercial Corridors Program:

- In-fill street lighting to satisfy design guideline practices (lighting above the design guideline practices is to be paid for by property owners)
- New landscaped medians
- Landscaping existing medians
- New curbside planter strips
- Landscaping existing planter strips
- Irrigation for landscaping
- Sidewalks where missing or lacking adequate width
- Bicycle lane striping and signage where consistent with Bicycle Master Plan (on-street bicycle funding will be primary funding source)
- Stamped crosswalks or other types of crosswalk delineation
- Pedestrian bulbs
- Signage/banners
- Trash receptacles/enclosures

OTHER CORRIDOR PROGRAM

The corridors eligible for streetscape enhancement under the Other Corridors program include all the streets that are not identified in the Economic Development Strategy Framework. Landscaped medians and curbside planter strips are included on streets that have cross sections consistent with the City of Sacramento's adopted Street Standards.

Eligible Enhancements

The following improvements may be considered under the Other Corridors Program:

- In-fill street lighting to satisfy design guideline practices (lighting above the design guideline practices is to be paid for by property owners)
- New landscaped medians
- Landscaping existing medians
- New curbside planter strips
- Landscaping existing curbside planter strips
- Irrigation for landscaping
- Sidewalks where missing or lacking adequate width
- Bicycle lane striping and signage where consistent with Bicycle Master Plan (on-street bicycle funding will be primary funding source)
- Stamped crosswalks or other types of crosswalk delineation
- Pedestrian bulbs
- Signage/banners
- Trash receptacles/enclosures

PROJECT RANKING PROCESS

1. Project Readiness (scoring is not cumulative) (Max. Points: 20)

Scoring based on current project phase at time all projects are scored and ranked. Points given for highest project phase, phases are not cumulative. Master Plans and Urban Design Plans are complete when they have been accepted by City Council.

<u>Project phase</u>	<u>Assigned points</u>
Construction documents complete	20
Construction documents in progress	17
Master Plan complete	14
Master Plan in progress	11
Urban Design Plan complete	8
Urban Design Plan in progress	5

2. Traffic volume. (Max. Points: 10)

Many of the older commercial corridors were designed to move traffic volumes, without consideration for aesthetics or pedestrian comfort. Streetscape enhancements will provide traffic calming benefits, improve the pedestrian experience, and bring more foot traffic to local businesses. Scoring is based on average daily traffic (ADT) measured for the length of the corridor. Streets with the highest traffic volumes receive the highest points.

<u>Average Daily Traffic (vehicles/day)</u>	<u>Assigned points</u>
40,000+	10
35,000+	9
<u>Average Daily Traffic (vehicles/day)</u>	<u>Assigned points</u>
30,000+	7
25,000+	6
20,000+	4
15,000+	3
10,000+	1

3. Economic Development (Max. Points: 15)

- Is the project within the Economic Development Strategy?:
 - Does the project fall within one of the nineteen (19) Neighborhood Commercial Revitalization Areas?
 - Is the project located within one of the twenty-seven (27) Key Development Opportunity Areas or Sites?
 - Is the project located in either the Merged Downtown or SP/Richards Redevelopment Area?
- If Yes on any of the above (5 points) _____ Is the project located in a Business Improvement District (BID) or Property-Based Improvement District (PBID)?

_____ Yes (5 points) ___ No (0 points)

4. Infill Development (Max. Points: 15)

Is the project in one of the Infill Areas as defined in the City of Sacramento Infill Strategy adopted on May 14, 2002?:

- Target Residential
- Central City Area
- Transit Station Area

If Yes on any of the above (10 points) _____

Note: Neighborhood Commercial Corridors Infill Areas are not included in this criterion since this section includes only projects that are on these corridors.

Is the project in a City Redevelopment Area excluding the Merged Downtown or SP/Richards Area or in a Community Development Block Grant eligible area?
 Yes (5 points) _____ No (0 points)

5. Current Appearance (Max. Points: 10)

Priority is given to streets that have existing medians or planter areas that need to be landscaped and irrigated over those that do not have existing medians or planter areas. More enhancements can be achieved with a lower investment on those streets that need only landscaping and irrigation. Scoring is based on the predominant condition observed for the length of the corridor.

<u>Current condition</u>	<u>Assigned points</u>
Existing median or curbside planter – not landscaped	10
Existing median or curbside planter – landscaping in poor condition	7
No existing median or curbside planter or concrete median	3

6. Linkage to Activity Centers.....(Max. Points: 15)

Points are assigned for projects that are adjacent to, or provide access to, activity centers:

<u>Activity Center</u>	<u>Points</u>
Public Colleges/Universities	8 per facility
Schools/Parks/Libraries/Community Centers	4 per facility
Commercial Centers	4 per center
Employment Centers	4 per 100 employees
High Density Residential	4 per site

7. Bicycle, Pedestrian, and Transit (Max. Points: 15)

5 points given if there has been a collision involving a pedestrian during the previous three years along the street segment being evaluated

5 points given for streets identified as a designated Class 2 or 3 bikeway (existing or proposed) in the City/County Bikeway Master Plan

5 points given if the project is on a bus route

5 points given if the project is within ½ mile of a LRT or other commuter rail station platform

Pedestrian Improvements Section - Project Eligibility and Scoring Criteria

PROJECT LIST DEVELOPMENT

Candidate project locations for the pedestrian improvement program are determined by looking at the highest ranking locations identified in the adopted Pedestrian Master Plan and by soliciting requests through public outreach. Project locations then undergo the following three-step evaluation process:

- Preliminary analysis - Analysis of the general project location identification using maps and aerial photographs.
- On-site investigation -Assessment and documentation of existing conditions. Areas that need new, replacement or upgraded infrastructure are identified, which is the starting point for a project definition
- Fatal flaw analysis - Once and initial project is identified, a number of basic feasibility questions are answered to determine if the project has a fatal flaw. Once past the fatal flaw analysis, the project is ready to be scored and ranked.

PROJECT RANKING PROCESS

The following criteria are being proposed to score and rank pedestrian improvement projects.

Overview:

Safety oriented criteria

<u>Points</u>	<u>Description</u>
15	Barrier Elimination
15	Infrastructure Completeness (new)
10	Car/Pedestrian Collisions
10	Speed
10	Volume

Project setting criteria

<u>Points</u>	<u>Description</u>
5	Transit Access
5	Economic Development
5	Infill Development
5	Adjoining Property (new)
10	Land Use (new)
10	Activity Centers

Total

100

**1. Barrier Elimination (Max. Points: 15)
(combinable)**

Project's ability to remove obstacles for safe travel or to introduce a shorter travel distance.

- 15 points – fills an unpaved gap between two existing sidewalks on a thru street
- 10 points – creates a new pedestrian way replacing an out of direction path greater than ¼ mile.
- 10 points – removes physical barriers (fixed objects with <36" clear path)
- 10 points – increases an existing sidewalk width to 4 foot minimum clear path.
- 10 points – fixes all non-compliant features (ramps, driveways, slopes)
- 5 points – fixes one or more non-compliant ramps or driveways, but not all.
- 5 points – introduces new street crossing improvements
- 5 points – introduces a new pedestrian way that connects a dead end street to other streets.

**2. Infrastructure Completeness (Max. Points: 15)
(combinable)**

Project's ability to improve existing conditions to bring into compliance with the assigned category of Basic, Upgrade or Premium.

All Projects:

- 10 points – no sidewalk
- 5 points – existing sidewalk width less than 4 feet.
- 5 points – no street lights
- 5 points – no curb and gutter
- 5 points – unmarked crosswalk

Additional points generally for Upgrade and Premium Projects:

- 5 points – existing sidewalk width less than 6 feet.
- 7 points – no planting strip
- 3 points – no trees in planting strip
- 5 points – low level lighting (infrequent spacing)
- 5 points – no pedestrian island, bulb-out, or raised crosswalk
- 5 points – no traffic signal enhancements at signals (countdown, detection)

Additional points for Premium Projects only:

- 5 points – existing sidewalk width less than 8 feet.
- 3 points – no street furniture (benches, way-finding signage, trash containers)
- 2 points – no public art, places for public events and gatherings

**3. Pedestrian Involved Collisions (Max. Points: 10)
(combinable)**

Reported collision between car and pedestrian that occurred during the previous three years.

- 0 points – zero to one collision
- 5 points – two collisions
- 2 points – per each additional collision

4. Speed (Max. Points: 10)

Posted speed limit at the project location. Intersection projects shall use the highest posted speed limit of the streets.

- 10 points – streets with posted speed of 45 mph or higher
- 8 points – streets with posted speed of 40 mph
- 6 points – streets with posted speed of 35 mph
- 4 points – streets with posted speed of 30 mph
- 2 points – streets where vehicles are allowed
- 0 points – streets where no motorized vehicles are allowed.

5. Volume (Max. Points: 10)

Average Daily Traffic (ADT) at the project location.

- 10 points – ADT > 20,000
- 8 points – ADT between 10,001 and 20,000
- 5 points – ADT between 4,001 and 10,000
- 0 points – ADT between 1 and 4,000

**6. Transit Access (Max. Points: 5)
(combinable)**

Project enables direct access to transit.

- 5 points – Within ½ mile of a LRT or other commuter rail station platform
- 4 points – Connected to a designated Transit Bus Stop
- 3 points – Within 600 feet of a street with a Transit Bus Stop
- 0 points – No known transit at project location

**7. Economic Development (Max. Points: 5)
(combinable)**

Project falls within the Economic Development Strategy

Does the project fall within one of the nineteen (19) Neighborhood Commercial Revitalization Areas?

Is the project located within one of the twenty-seven (27) Key Development Opportunity Areas or Sites?

Is the project located in either the Merged Downtown or SP/Richards Redevelopment Area?

If Yes on any of the above (3 points) _____

Is the project located in a Business Improvement District (BID) or Property-Based Improvement District (PBID)?

___ Yes (3 points) _____ No (0 points)

**8. Infill Development (Max. Points: 5)
(combinable)**

Project falls within the Infill Development Areas

Is the project in one of the Infill Areas as defined in the City of Sacramento Infill Strategy adopted on May 14, 2002?

This document defines infill in four categories:

Target Residential Area _____ Yes (3 points) _____ No (0 points)

Central City Area _____ Yes (3 points) _____ No (0 points)

Neighborhood Commercial Revitalization Area _____ Yes (3 points)
_____ No (0 points)

Transit Station Area _____ Yes (3 points) _____ No (0 points)

9. Adjoining Property (Max. Points: 5)

Based on the orientation of the development at the back of sidewalk, or where the sidewalk would be in conditions where the sidewalk is not present.

5 points – building with entrance at public sidewalk

3 points – building, set back from sidewalk but connected with walkways

1 points – building, blank – no entry at public sidewalk

0 points – existing landscaping or open space

10. Land Use (Max. Points: 10)

Points are assigned to a project based on the predominant adjacent General Plan land use designations.

10 points – high density residential, commercial, mixed use and office designations

5 points – medium and low density residential uses

1 points – industrial uses

0 points – passive open space and agricultural uses

**11. Activity Centers (Max. Points: 10)
(combinable)**

Points are assigned to activity centers when a project is within a 600 foot radius to the parcel boundary of the activity center.

10 points – Schools, Colleges and Universities with enrollment greater than 400 students

8 points – Schools, Colleges and Universities with enrollments less than 400 students

6 points – Libraries, Parks, Senior Citizen Facilities, Community Centers

4 points – Shopping areas, Employment centers

2 points – Extra points for K-8 Schools

Speed Hump Section Project Eligibility and Criteria Changes

PROJECT LIST DEVELOPMENT

Eligibility Criteria

A street qualifies for the installation of Residential, Parks and Schools, or Bypass speed humps when the following minimum criteria are met.

Residential

- The segment is a minimum of 750 feet in length between traffic controls, four-way intersections, and/or curves with less than a 250-foot radius.
- The street is comprised of contiguous segments with no stop controls and all side streets entering the segments are stopped. The total length of the contiguous segments must be at least 750' in length.
- The speed limit is 30 mph or less.
- Street frontage is at least 75% residential.
- The street is not part of the Regional Transit bus network.¹
- The street is not identified as an emergency response route by the Fire Department.¹
- The 85th percentile speed must be a minimum of 5 mph over the speed limit.
- Two-thirds majority of residents that vote are in favor of the installation of speed humps.² A minimum 25% return rate is required.
- On streets segments with curves, speed humps will only be placed in curves with a radius greater than 650'.
- Street segments requesting additional speed humps must meet the above criteria and the existing speed humps must be at least 500 feet apart.

Parks and Schools

- The segment is a minimum of 500 feet in length between traffic controls, four-way intersections, and/or curves with less than a 250-foot radius.
- The speed limit is 30 mph or less or 35 mph when considering the placement of tables.
- Street frontage is adjacent to a school³ or park.
- The street is not part of the Regional Transit bus network.¹
- The street is not identified as an emergency response route by the Fire Department.¹

1 Speed humps will not be approved on Regional Transit bus routes and emergency response routes, although speed humps and/or speed tables may be approved on these streets by RT and the Fire Department.

2 One vote per household is allowed; voter(s) must reside at the household (whether they are owners or tenants), as they are the primary users of the street being considered for speed humps.

- The 85th percentile speed must be a minimum of 5 mph over the speed limit.
- Two-thirds majority of residents that vote are in favor of the installation of speed humps.⁴ A minimum 25% return rate is required.
- On streets segments with curves, speed humps will only be placed in curves with a radius greater than 650’.
- Street segments requesting additional speed humps must meet the above criteria and the existing speed humps must be at least 500 feet apart.

Bypass

- The segment is a minimum of 500 feet in length between traffic controls, four-way intersections, and/or curves with less than a 250-foot radius.
- The speed limit is 30 mph or less.
- Street frontage is at least 75% residential.
- The street is not part of the Regional Transit bus network.¹
- The street is not identified as an emergency response route by the Fire Department.¹
- Average daily traffic (ADT) is at least 500 vehicles.
- The street(s) serve to bypass⁵ major streets with a four-way stop, a signalized intersection, or another street with speed humps.
- Two-thirds majority of residents that vote are in favor of the installation of speed humps.² A minimum 25% return rate is required.
- On streets segments with curves, speed humps will only be placed in curves with a radius greater than 650’.
- Street segments requesting additional speed humps must meet the above criteria and the existing speed humps must be at least 500 feet apart.

PROJECT RANKING PROCESS

NO CHANGES

Streets which meet the minimum criteria, as specified previously, are scored and ranked using the following criteria:

Residential

-
- 3 Preschool, day care school, elementary, middle or high school.
 - 4 One vote per household is allowed; voter(s) must reside at the household (whether they be owner or tenants), as they are the primary users of the street being considered for speed humps. If the balloting of residents on the Parks and Schools streets does not demonstrate a two-thirds majority favoring the installation of speed humps, the City Council member representing the district in which the street is located may override the ballot results.
 - 5 To be considered a “bypass” location, the ADT must be at least 50% higher than the volume that would be expected using the following trip generation rates: 10/trips/day/single family residential (SFR) unit, 6 trips/day/multi family residential (MFR) unit. Land uses that do not front the bypass location, itself, but which could reasonably be expected to use the bypass street(s) should be considered when determining the expected volume.

1. **Volume** **(Max. Points: No Limit)**
Points = Average Daily Traffic Volume / 50
2. **Frontage** **(Max. Points: No Limit)**
Points = (# of residential units fronting the street) + (apartment frontage / 25 feet)
3. **Speed** **(Max. Points: No Limit)**
Points = 5 points for every mile per hour that the 85th percentile speed of traffic exceeds the speed limit.

Parks and Schools

1. **Volume** **(Max. Points: No Limit)**
Points = Average Daily Traffic Volume / 50
2. **Frontage** **(Max. Points: No Limit)**
Points = (# of residential units fronting the street) + (lineal feet of apartment frontage / 25 feet) + (lineal feet of school frontage / 25 feet) + (lineal feet of park frontage / 25 feet) + (lineal feet of playground frontage / 25 feet)
3. **Speed** **(Max. Points: No Limit)**
Points = 5 points for every mile per hour that the 85th percentile speed of traffic exceeds the speed limit.

Bypass

1. **Volume** **(Max. Points: No Limit)**
Points = Average Daily Traffic Volume / 50
2. **Frontage** **(Max. Points: No Limit)**
Points = (# of residential units fronting the street) + (apartment frontage / 25 feet)
3. **Bypass Volume** **(Max. Points: No Limit)**
Points = Daily Bypass Volume / 10

TPG Train Norn Quiet Zone Section - Project Eligibility and Criteria Changes

PROJECT LIST DEVELOPMENT

NO CHANGES

Eligibility Criteria

Crossings that are subject to the applicability of the Train Horn Rule are the only crossings that are considered for the Train Horn Quiet Zones. Railroad spurs are not included in the list of crossings. The Train Horn Rule does not apply to railroads exclusively operating freight trains on tracks which are not part of the general railroad system; passenger railroads that operate only on tracks which are not part of the general railroad system of transportation and which operate at a maximum speed of 15 mph; and rapid transit operations within an urban area that are not connected to the general railroad system of transportation.

PROJECT RANKING PROCESS

NO CHANGES

Train Horn Quiet Zones are ranked using one criteria: **Person Sounding (PS)**.

The PS is an objective criterion to measure the relative impact on the affected population. The PS is calculated for each crossing by multiplying the Number of Trains by Persons. There is no maximum score.

Number of Trains: The daily number of trains that crosses over a specific crossing.

Persons: Number of people who lives within 1.5 miles from specific crossing.

Speed Hump Program Guidelines**Introduction**

The City of Sacramento has had a speed hump program since 1980. Over the years, several revisions have been made to the program including street length criteria, a change from undulations to speed humps, a program name change, the addition of a minimum speed requirement and the installation of speed lumps on emergency response and bus routes. For simplicity of these guidelines, the term “speed hump” will refer not only to the traditional speed humps, but also the split hump design called “speed lumps” and speed tables. Designs for speed humps, speed lumps and speed tables are included in these guidelines.

Definitions

Speed Bump – Single asphalt bump covering approximately one foot and approximately 5 inches in height. Found in shopping centers and parking lots. Not installed on public streets.

Speed Hump – Single asphalt hump, parabolic in shape, covering 12 feet of street with a height between 3 ¼ and 3 ¾ inches. Installed on streets in Sacramento since 1996. Not installed on emergency response or bus routes.

Speed Lump – Asphalt mounds, parabolic in shape, covering 12 feet of street with a height between 3 ¼ and 3 ¾ inches. The center mound or lump, has a width of 5 ½ feet to accommodate the wheelbase of fire trucks and buses. The lumps adjacent to the center lump vary in width to accommodate the street width. Depending on the street width, a 5 ½ foot lump may be placed in each travel lane. First testing of speed lumps in Sacramento was done in February 2000. Speed lumps have been approved by the Fire Department for use on emergency response routes and by Sacramento Regional Transit for use on bus routes.

Speed Table – An elongated hump, incorporating a 10-foot flat surface in the middle and covering a total of 22 feet of street, with a height between 3 ¼ and 3 ¾ inches. Speed tables have been installed on streets in Sacramento as part of the Neighborhood Traffic Management Program (NTMP). With the 2008 Transportation Programming Guide, they are being added to the Speed Hump Program for use on minor collector roadways with park or school frontage and posted speeds of 35 mph. Speed tables have been approved by the Fire Department for use on emergency response routes and by Sacramento Regional Transit for use on bus routes on a case by case basis.

Speed Survey – A survey of traffic speeds and volume conducted by the use of a magnetic sensor(s) or air pressure hose(s) to determine the percentage of traffic exceeding the speed limit. The speed survey shall be 24-hours in length.

Undulations – A pair of adjacent speed humps placed on the street. Undulations were installed on Sacramento streets prior to 1995.

85th Percentile Speed – Otherwise known as the critical speed, is the speed at or below which 85% of the traffic is moving. The 85th percentile speed is used as one of the criteria to determine if a street qualifies for speed humps.

Program Categories

The City of Sacramento has three types of speed hump categories: Residential, Parks and Schools, and Bypass. The objectives, qualifying criteria, and priority ranking system for each of these categories are presented in subsequent sections of this report. Also in this report are construction specifications, locations selection guidelines, signs and markings, relocation and removal requirements, other funding, Regional Transit, Fire Department emergency response routes, and public notification. Between 1980 and 1995, the city installed undulations (2 humps) for traffic calming. Since 1995, the city has installed speed humps (one hump) because it was determined that one hump was just as effective at slowing traffic as two humps, less costly and easier to find spacing for installation on streets.

Program Objectives

Speed humps serve to reduce vehicular speeds as well as to reduce cut-through traffic on local residential streets. Both of these effects are realized when speed humps are installed on a street, regardless of the type of program for which a street qualifies. The principle purpose of each of the three programs is as follows: The Residential Speed Hump list and the Parks and Schools list serve to reduce vehicular speeds on streets with residential frontage or park and/or school frontage; and the Bypass Speed Humps list serves primarily to reduce inappropriate traffic volumes on certain streets.

Other, less costly, forms of traffic control (e.g., stop signs) should be considered the primary means of discouraging speeding and/or bypass traffic. Stop signs are less costly to install and can be installed immediately at locations which qualify. When these forms of traffic control are inappropriate, the location may be studied further to determine whether or not it qualifies for speed humps. The application of speed humps is limited to streets where geometric configuration or design fails to passively deter many drivers from exceeding the speed limit or from using streets as bypass routes. The proper application of speed humps enhances public safety.

Qualifying Criteria

In order for a residential street to be studied for speed humps, a petition from ten residents from the affected street must first be submitted.

A street segment qualifies for the installation of speed humps when the results of an investigation demonstrate that the criteria presented on page three of this document are met for the respective types of programs. Once a street has qualified, it will be assigned points and ranked with other qualifying streets based on the ranking system shown on page four of this document.

Qualifying Criteria by Category

Residential

The segment must be 750 feet in length between traffic controls, four way intersections, and/or curves with less than a 250-foot radius.

The street is comprised of contiguous segments with no stop controls and all side streets entering the segments are stopped. The total length of the contiguous segments must be at least 750' in length.

Posted speed limit must be 30 mph or less.

Street frontage of subject street segment must be at least 75% residential.

Street will not be considered for speed humps, but will be considered for speed lumps if it is a part of the Regional Transit bus network, or identified as an emergency response route by the Fire Department.

A minimum of 25% of ballots mailed shall be returned and a two-thirds majority of residents that vote are in favor of the installation of speed humps. **

A speed survey shall indicate that the 85th percentile speed is at five or more miles per hour over the speed limit.

Parks & Schools

The segment must be 500 feet in length between traffic controls, four-way intersections, and/or curves with less than a 250-foot radius.

Posted speed limit must be 30 mph or less or 35 mph when considering the placement of speed tables.

Street segment must be adjacent to a school * or park.

Street will not be considered for speed humps, but will be considered for speed lumps if it is a part of the Regional Transit bus network, or identified as an emergency response route by the Fire Department.

A minimum of 25% of ballots mailed shall be returned and a two-thirds majority of residents that vote are in favor of the installation of speed humps. **+

A speed survey shall indicate that the 85th percentile speed is at five or more miles per hour over the speed limit.

Bypass

The segment must be 500 feet in length between traffic controls, four way intersections, and/or curves with less than a 250-foot radius.

Posted speed limit must be 30 mph or less.

Street frontage of subject street segment must be at least 75% residential.

Street will not be considered for speed humps, but will be considered for speed lumps if it is a part of the Regional Transit bus network, or identified as an emergency response route by the Fire Department.

A minimum of 25% of ballots mailed shall be returned and a two-thirds majority of residents that vote are in favor of the installation of speed humps. **

Minimum average daily traffic (ADT) must be 500 vehicles per day.

The street(s) must serve to bypass *** major streets with a four-way stop, a signalized intersection, or another street with speed humps.

- * Preschool, Day care school, elementary, middle, or high school.
- ** One vote per household is allowed; voter(s) must reside at the household (whether they are owners or tenants), as they are the primary users of the street being considered for speed humps.
- + If the survey of residents on a parks and schools street does not demonstrate a two-third majority favoring the installation of speed humps, the City Council member representing the district in which the street is located may override the survey.
- *** To be considered a "bypass" location, the ADT must be at least 50% higher than the volume that would be expected using the following trip generation rates: 10-trips/day/single family residential (SFR) unit, 6-trips/day/multi family residential (MFR) unit. Land uses which do not front the bypass location itself, but which could reasonably be expected to use the bypass street(s) should be considered when determining the expected volume.

When Voting Requirement Not Met

If a street fails to receive the necessary two-thirds majority approval, the street may not

be considered again for speed humps/lumps for five (5) years.

Priority Ranking System

The following point allocation method will be used in order to rank streets qualifying for the speed hump categories:

Residential

One point for every 50 vehicles traveling the street in a 24-hour study period.

One point for each residential unit fronting the street, plus one point for each 25 feet of apartment frontage.

Five points for every 85th percentile speed of traffic exceeding the speed limit.

Parks & Schools

One point for every 50 vehicles traveling the street in a 24-hour study period.

One point for each residential unit fronting the street, plus one point for each 25 feet of school, park, playground, or apartment frontage.

Five points for every 85th percentile speed of traffic exceeding the speed limit.

Bypass

One point for every 50 vehicles traveling the street in a 24-hour study period.

One point for each residential unit fronting the street, plus one point for each 25 feet of apartment frontage.

One point for every 10 vehicles that are considered "bypass traffic."

Construction Specifications (Single Hump)

Upon installation of the single humps, the asphalt concrete speed hump will have a width of 12 feet, a minimum height of three and one-quarters inches and a maximum height of three and three-quarters inches (3 ¼" to 3 ¾"), and a vertical curvature of 72 feet (Refer to Pages 10 - 12). The speed hump will extend from lip of gutter to lip of gutter. There will be a two-foot (2') horizontal taper originating at the crest of the speed hump and converging at the lip of curb. Asphalt concrete shall be mixed and placed in accordance with Section 22 of the City of Sacramento Standard Specifications. (Refer to Page 10 for the proposed speed hump cross section).

Construction Specifications (Speed Lumps)

Upon installation of speed lumps, the asphalt concrete speed lumps will have a width of 12 feet, a minimum height of three and one-quarter inches and a maximum height of three and three-quarters inches (3 ¼" to 3 ¾"), and a vertical curvature of 72 feet (refer to Figure 2). The center lump (or lumps if the design requires one lump in each travel lane) will be five and one-half (5 ½') feet across. There will be a gap between lumps of one-foot (1') to accommodate the wheelbase of fire trucks and buses. The outside speed lumps will extend from the center lump to the lip of gutter. There will be a two-foot (2') horizontal taper originating at the crest of the speed lump and converging at the lip of curb. Asphalt concrete shall be mixed and placed in accordance with Section 22 of the

City of Sacramento Standard Specifications. (Refer to Page 11 for a drawing of the proposed speed lump cross section for a typical residential street of 33 feet or less in width).

Construction Specifications (Speed Tables)

Upon installation of speed tables, the asphalt concrete speed tables will have a width of 22 feet, made up of a 6' long vertical curvature of 72 feet reaching a minimum height of three and one-quarter inches and a maximum height of three and three-quarters inches (3 ¼" to 3 ¾") on each end of a 10' long flat surface (Refer to Page 12). There will be a two-foot (2') horizontal taper originating at the crest of the speed table and converging at the lip of curb. Asphalt concrete shall be mixed and placed in accordance with Section 22 of the City of Sacramento Standard Specifications. (Refer to Page 12 for the proposed speed hump cross section).

Location Selection Guidelines

In selecting precise locations for the speed hump installation, the following guidelines shall be adhered to:

- Speed humps shall not be located over manholes, water valves, or street monumentation, or whenever possible, within twenty-five feet of fire hydrants, as they prevent/impede access to these facilities.
- Speed humps should be located five to ten feet away from driveways, whenever possible, to minimize their effect on driveway access.
- Speed humps should be located on or near property lines, whenever possible, to minimize the impact on (access to) individual properties.
- Speed humps should be located near streetlights, whenever possible, in order to enhance their visibility at night.
- Speed humps should be located a minimum distance of 200 feet from corners, whenever possible, and should never be located within a corner radius.
- No speed humps shall be located on any horizontal curve(s) with less than a 650' radius.
- Speed humps shall be spaced at a minimum interval of 250 feet and a maximum interval of 600 feet. Speed humps will be placed no closer than 200 feet from traffic control devices or four-way intersections.
- Where possible, at least two speed humps will be placed on a residential or parks and schools street or qualifying contiguous segments, as two humps are the minimum for effective speed control. When speed humps are to be installed at a

Bypass location, one hump may be placed if the street segment or one of the streets in a series of street segments is less than 600 feet in length. The maximum number of speed humps is dictated by street length and spacing requirements.

- To deter driver from driving around speed humps where no vertical curb exists, a two-inch (2") pipe shall be set in the sidewalk, centered on the speed hump in each approach direction. The pipes shall be placed at a maximum of six inches (6") from the back of curb and shall allow a minimum of 48" of clear sidewalk width to allow for wheelchair access. (Refer to Pages 10 -12).

Signs and markings

All signs and markings required with the speed humps shall be part of the contract bid package, unless these items are to be installed by City crews.

There are two types of advanced warning devices used to alert motorists of upcoming speed humps: street signs and pavement markings. The signing includes a 30-inch sign stating "SPEED HUMP" in four-inch (4") letters and a second line with an advisory speed of 15 MPH. Above this text is a pictorial of a speed hump. (Refer to Pages 10 and 11). Signage for a speed table includes a 30-inch sign stating "SPEED TABLE" in four-inch (4") letters and a second line with an advisory speed of 20 MPH. Above this text is a pictorial of a speed table. (Refer to Page 12).

Pavement markings for speed humps and speed tables shall include twelve-inch (12") wide stripes, forming a chevron, extending six feet (6') from the approach edge of the speed hump to the apex of the speed hump and centered in each travel lane. Sixty feet (60') of centerline shall be striped across the hump, extending thirty feet (30") from the apex of the speed hump in both directions. Speed tables shall be striped with seventy feet (70') of centerline, extending thirty-five feet (35') from the apex of the speed table in both directions. Pavement markings for speed lumps shall include diamond striping on the center lump(s) and chevron markings on the side lumps. A reflective pavement marker will indicate the middle of the center lump(s) to assist RT and fire truck drivers to center their vehicle over the lump. (Refer to Pages 10 -12).

Additional Speed Humps

Adding additional speed humps on a street may be considered when all of the criteria listed below are met.

1. For Residential and Parks and Schools Locations: Where speed humps are ineffective in reducing speeds of vehicles based on speed survey conducted for 24-hour period. The 85th percentile speed must be 5 mph or greater than the posted or prima facie speed on the street segment.

For Bypass Locations: Where speed humps are ineffective in reducing the volume of vehicles, based on an average daily traffic (ADT) count. Traffic volumes must

be reduced by less than 10% from the street's ADT count prior to the installation of speed humps in order to be considered ineffective.

2. Existing speed humps must be at least five hundred feet (500') apart.
3. There is a petition with ten signatures requesting additional humps. One resident signature per household having driveway access onto the street in question is allowed; a resident may be either an owner or tenant.
4. If all criteria are met, the segment will be ranked on the speed hump list. The segment will be balloted prior to installation. A minimum of 25% of ballots mailed shall be returned and a two-thirds majority of residents that vote are in favor of the installation of speed humps. **

Relocation of Speed Humps

Changing the location of speed humps on a street may be considered when all of the criteria listed below are met.

1. Speed humps were placed in a location conflicting with the adopted guidelines, and another location exists which does not conflict with the adopted guidelines.
2. There is a petition with a two-thirds majority of the street's residents in favor of the speed hump relocation. One resident signature per household having driveway access onto the street in question is allowed; a resident may be either an owner or tenant.
3. A community meeting should be held, with the support of the district's City Council member, to discuss the advantages of speed humps. If the decision is made to relocate existing speed humps, a Council report and resolution must be drafted. When approved by the City Council, the relocation procedures may be initiated. Relocation of speed humps which may have been installed for less than two years will only be considered if the City is compensated by those requesting speed hump relocation for the full cost of relocating the speed humps, including design, construction, inspection, and administration.

Removal of Speed Humps

Removing speed humps from a street may be considered when all of the criteria listed below are met:

1. For Residential and Parks and Schools Locations: Speed humps are ineffective in reducing speeds of vehicles based on speed survey conducted for a 24-hour period. The 85th percentile and average speeds must each be

less than 2 mph lower than those speeds demonstrated prior to the installation of speed humps in order to be considered effective.

For Bypass Locations: Speed humps are ineffective in reducing the volume of vehicles, based on an average daily traffic (ADT) count. Traffic volumes must be reduced by less than 10% from the street's ADT count prior to the installation of speed humps in order to be considered ineffective.

2. Speed humps were placed in a location conflicting with the adopted guidelines, and no other location exists which does not conflict with the adopted guidelines.
3. There is a petition with a two-thirds majority of street's residents' signatures in favor of the speed hump removal. One resident signature per household having driveway access onto the street in question is allowed; a resident may be either an owner or tenant.
4. A community meeting should be held, with the support of the district's City Council Member, to discuss the advantages of speed humps. If the decision is made to remove existing speed humps, a Council report and resolution must be drafted. When approved by the City Council, the removal procedures may be initiated. Removal of speed humps which have been installed for less than two years will only be considered if the City is compensated by those requesting speed humps removal for the full cost of the original installation, including design, construction, inspection, and administration. This would not apply if a street became a Regional Transit bus route.

Other Funding

A street segment which qualifies for any one of the speed hump categories may be funded by an individual or a group of individuals. The individual or group of individuals must enter into a memorandum of understanding (MOU) with the City of Sacramento, wherein they agree to pay for all costs associated with the installation of speed humps on their street (construction, inspection, administration, etc). Once a MOU is executed, the location to receive speed humps shall be included in the next City CIP speed hump project. Private payment for speed humps does not relieve a location from the requirement of a two-thirds majority of residents favoring the installation of speed humps, or from any other criterion set forth in these guidelines.

Regional Transit

Regional Transit (RT) adopted a policy on bus routing with regard to speed humps in 1982. This policy authorizes RT staff to modify bus routes so they do not utilize streets

with existing or future speed humps, and to coordinate future placement of such devices. The Department of Transportation policy is to provide RT with the locations of future speed humps so that problems, which this might create, can be avoided. Speed humps will not be placed on streets where RT bus service exists. However, RT has approved speed lumps for placement on bus routes.

Fire Department Emergency Response Routes

The City of Sacramento Fire Department has expressed concerns regarding speed humps, and desires that they not be placed on streets, which they identify as emergency response routes. The Department of Transportation's policy is to provide the Fire Department with the locations of future speed humps so that they can identify emergency response routes. Speed humps will not be placed on streets, which the Fire Department identifies as emergency response routes. However, the Fire Department has approved speed lumps for emergency response routes on a case-by-case basis.

At the request of the Fire Department Public Information Officer, the Department of Transportation will consider including the conversion of existing speed humps to speed lumps in the annual Speed Hump Project installation. Residents will be notified prior to the conversion.

Public Notification

Public notifications, which are used for balloting and to inform residents of purposed speed humps and to have them vote, may be distributed by the following method:

Ballots may be mailed out to residents of affected streets.

Note: Ballots with a response requested should be sent far enough in advance to reach the public two and one half (2 ½) weeks prior to the response deadlines.

Street Participation in the Neighborhood Traffic Management Program (NTMP)

The NTMP reviews all streets within a neighborhood for possible traffic calming measures. In doing so, streets are evaluated for speed humps. If the traffic calming plan approved by balloted residents and City Council does not include speed humps on a street, that street is ineligible to be considered for further traffic calming measures such as speed humps for a minimum of one-year after the NTMP project has been closed.

Revised June 1 2007