



RANDOLPH - BROAD TRAFFIC CALMING PROJECT DECEMBER 2006

PREPARED BY:

MUNICIPAL TRANSPORTATION AGENCY
PLANNING DIVISION
TRAFFIC CALMING PROGRAM

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CHAPTER 1. EXECUTIVE SUMMARY

This document presents a summary of extensive community input, data collection and data analysis that have been compiled over the last year and a half. Drawing from these conclusions, it also presents detailed, preliminary recommendations for addressing traffic calming issues throughout the Randolph - Broad study area. It draws from numerous meetings with the community and key local stakeholders, including:

- Muni
- Department of Public Works (DPW)
- Fire Department
- Police Department
- Ocean View/Merced Heights/Ingleside Terrace - Neighbors In Action (OMI-NIA)

The Randolph/Broad Traffic Calming Project is the result of a traffic calming application from residents in the OMI neighborhood concerned with high vehicle speeds, exhibition driving and pedestrian safety. This project concentrates on the streets that the MUNI M-line uses in the Oceanview neighborhood, including Broad Street, Orizaba Avenue, Randolph Street and 19th Avenue. The project's goals are to increase pedestrian and bicycle safety, address speeding, and restrict exhibition driving, while minimizing any impact on MUNI service.

The process has included a number of neighborhood meetings to gather information about problem sites and to gather consensus about potential improvements.

The Project area is primarily a residential community with some light commercial activity. Additionally the community benefits from a public library, community center, and multiple congregations. The current striping conditions leave Randolph and Broad Street wide open. The cross-section of Randolph Street gets as wide as 56' from curb to curb with only a center line dividing the street into two 28' traffic lanes.

RECOMMENDED LOCATIONS

Based on the existing conditions data gathered in the Randolph Broad study area, the following are recommended locations for traffic calming measures, along with the factors influencing the selection of each location. In order for a street to qualify for a traffic calming recommendation, there must be a quantifiable traffic problem such as speeding, high traffic volumes, cut-through traffic, reported collisions, or a major pedestrian generator where access needs improvement. The locations that met these criteria correspond with the streets identified through neighborhood input as having the most critical traffic problems.

TABLE 1 RECOMMENDED LOCATIONS FOR TRAFFIC CALMING

Location	Limits	Factor
Randolph Street	Orizaba Ave. to 19 th Ave.	High Speeds, Pedestrian ROW, Pedestrian Safety, Exhibition Driving
Orizaba Ave	At Randolph Street and Farallones Street	Pedestrian ROW, Pedestrian Safety, Exhibition Driving, Limited Visibility
Broad Street	Orizaba Ave to San Jose Ave	High Speeds, Pedestrian ROW, Pedestrian Safety, Exhibition Driving
19 th Avenue	Randolph Street to Beverly Street	High Speeds, Pedestrian ROW, Pedestrian and Bicycle Safety, Exhibition Driving

TABLE 2 RECOMMENDED TRAFFIC CALMING MEASURES

Location	Traffic Calming Measure	Impacts and Issues
Broad Street at San Jose Avenue	Pedestrian Island	None
Broad Street	Reduce the number of through automobile lanes, Restriping	None
Randolph Street at Orizaba Avenue	Narrow intersection by extending sidewalks; move MUNI stops and install STOP Signs	Parking loss at bulb-out locations
Randolph Street at Bright St., Ramsell St., and 19 th Avenue	Sidewalk Bulbs	Parking loss at bulb-out locations
Randolph Street	Reduce the number of through automobile lanes, Re-striping	Reduced capacity on Broad Street
19 th Avenue	Bike Lanes and Bulbouts	None

CHAPTER 2. BACKGROUND AND COMMUNITY INPUT

MTA planning staff worked from fall of 2005 to winter of 2006 to develop a comprehensive traffic calming report for the Randolph - Broad neighborhood. During the course of this study, the team completed the following tasks:

- Collected detailed traffic speed and volume data throughout the study area
- Worked closely with the OMI-NIA
- Presented Project at three neighborhood community meetings
- Developed a project website

GOALS AND OBJECTIVES

As a result of all this data analysis and community input, the team was able to obtain consensus on a set of objectives and performance measures.

TABLE 3 PROJECT OBJECTIVES AND PERFORMANCE MEASURES

Objective	Performance Measurement	Measurement Tools
First Tier Objectives		
Accommodate Muni and emergency vehicles	Minimize vertical displacement devices. Ensure other devices accommodate vehicle size and turning requirements	Agreement by Muni and emergency services
Calm the neighborhood streets	Reduce the 85th percentile speeds to below 29 MPH	24 hour speed and volume count
Improve safety for all users of the neighborhood streets	Increase the comfort levels of pedestrians and cyclists	Neighborhood perception study
Second Tier Objectives		
Improve access for bikes, pedestrians, the disabled and transit users	Increase connections for cyclists and reduce barriers at crossing locations	Neighborhood perception study
Enhance the streetscape	Use trees and other urban design features in traffic calming devices	Neighborhood perception study

TABLE 4 APPROACH TO NEIGHBORHOOD CONSENSUS

Task	Goal	Results
Project Notification and Neighborhood Survey	Introduce project, collect survey data, invite to Community Meeting #1	Strong guidance on key streets to be addressed and key problems to be solved
Data collection	Collect initial round of data	Data corresponds with community survey
Community Meeting #1, September 29, 2005	Present primary data, introduce traffic calming concepts	Consensus achieved on priorities
Project Development	Review and interpret data	Develop Project Concept complete for presentation to community
Community Meeting #2, April 27 th , 2006	Present Project Concepts	Community agreed with much of the plan and made comments to improve it
Project Development	Refine final report	Changes made to some design aspects to fit community concerns
Community Meeting #3 August 31, 2006	Present final design and get input from community	Residents confirm recommendations and suggest minor refinements

CHAPTER 3. RECOMMENDED IMPLEMENTATION AND PHASING

There are three key issues that determine the best phasing strategy for implementing traffic calming on Orizaba Avenue and Randolph and Broad Streets:

- Recognizing that there is limited funding available, the most cost effective solutions should be implemented first, along with solutions for the most serious traffic safety problems.
- Recognizing that there is rarely universal support or understanding among residents for any traffic calming project, low-cost temporary installations may be preferable over the short term to test certain ideas.
- Finally, it is very important that traffic calming efforts on one street do not simply push the problem to another street.

To achieve these key points, the following phasing strategy is recommended:

PHASE 1

Phase 1 improvements seek to address the worst speeding and pedestrian safety problems in the neighborhood in the most affordable manner. Projects include:

- **Pedestrian Island at San Jose Avenue and Broad Street.** Install island to improve pedestrian crossings, also to serve as a gateway treatment and allow for planting opportunities.
- **Edge lines along Randolph Street, Broad Street and Orizaba Avenue.** Edge lines will narrow the lane widths and discourage vehicles from passing Muni LRVs.

PHASE 2

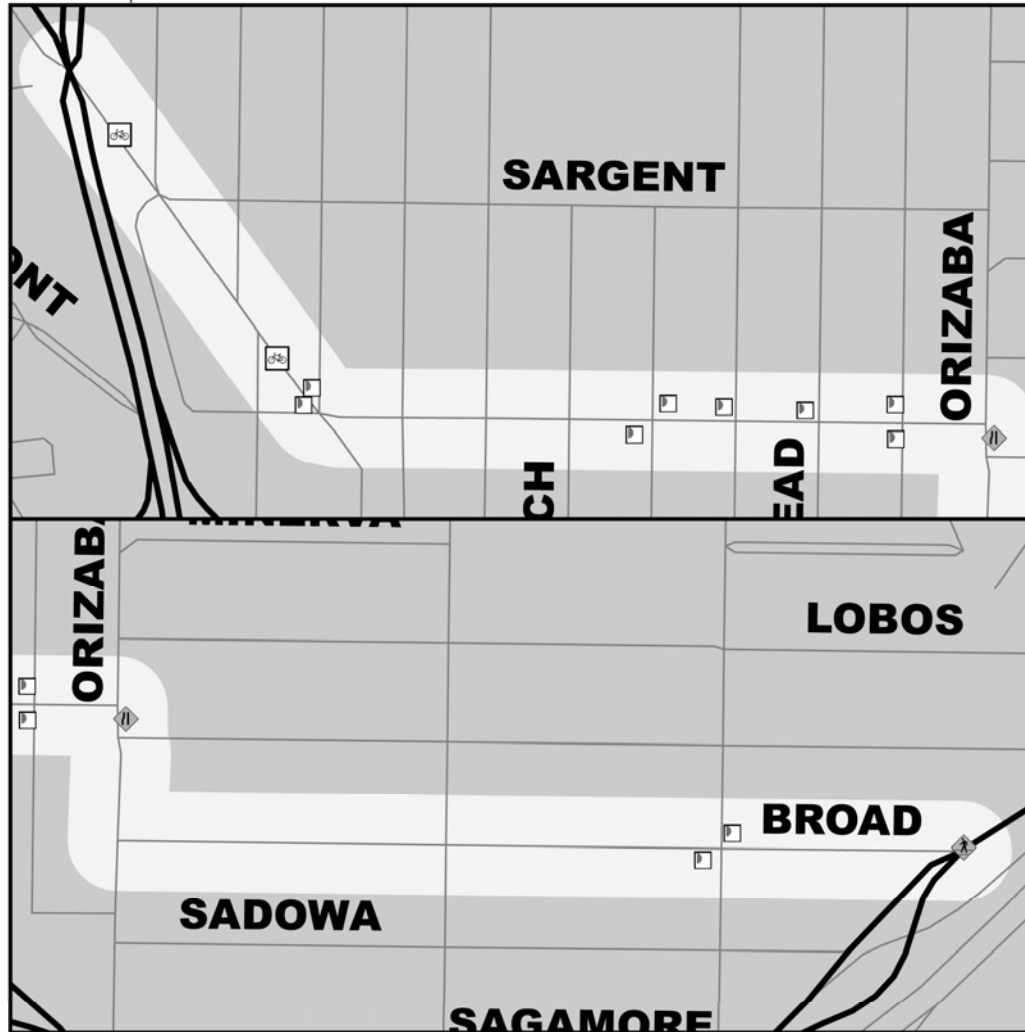
- **19th Avenue bike lanes.** Bike lanes will narrow the wide lanes like the edge lines while also giving a benefit to cyclists on Route 75 of the bike network.
- **Reconfigure Orizaba Avenue / Randolph Street intersection; Install Stop signs and move Muni stop to this location.** This stop consolidation will reduce Muni travel time and will be coordinated with the installation of STOP signs at this intersection to improve pedestrian safety. The channelization will reduce driver's ability to make high speed turns onto Orizaba Avenue and pedestrian crossing distances will be shortened.

PHASE 3

- **Bulb-outs at Randolph and Ramsell Streets, Randolph Street and 19th Avenue, and Randolph and Bright Streets.** Bulb-outs will shorten crossing distances for pedestrians and slow automobile turns. Space within the intersections would be reduced in area which should help discourage exhibition driving.

19th Avenue Bike Lanes are subject to additional environmental review and will not be pursued until the proper environmental clearances are secured. We should note that no parking or traffic lanes would be removed with these bike lanes.

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**Randolph
 Broad
 Traffic
 Calming
 Plan**



Legend

Traffic Calming Devices

Device Type

-  Bicycle Enhancements
-  Bulbs
-  Chicanes
-  Choker Island
-  Circle
-  Crosswalk Enhancements
-  Gateway Bulbs
-  Median Island
-  Neck Downs
-  Speed Cushion
-  Speed Hump



December 2006

FUNDING PLAN

Traffic Calming Program

Randolph/Broad Traffic Calming Plan

Table 5

Project	Phase	Measure	FY05-06 Const	FY06-07 Const	FY07-08 Const	FY08-09 Const	Cost	Prop K	Non Prop K
	1	Phase 1 Subtotal					\$ 78,000	\$ 78,000	\$ -
	2	Phase 2 Subtotal					\$ 232,500	\$ 202,500	\$ 30,000
	FF	Future Funding Phase (Funding not yet secured)					\$ 405,000	\$ -	\$ 405,000
Total							\$ 715,500	\$ 280,500	\$ 435,000

RECOMMENDED FUNDING PLAN

AVAILABLE FUNDING SOURCES

Sales Tax Funds (Proposition K)

Up to \$70 M over the next 30 years is allocated for traffic calming projects, under the Proposition K Expenditure Plan. This equates to roughly \$1.5 - \$2M per year for planning, outreach, design and construction of traffic calming projects for the entire City. **Prop K** funds were used to develop this project.

Safe Routes to School Grants (SR2S)

The Safe Routes to School (**SR2S**) Grant is a federal funding program intended to improve conditions for children in kindergarten through eighth grade, to safely walk and bicycle to school. Physical improvements must be located within a two-mile radius of a school. Applications that have the best chance of being selected for funding are those that are developed with community participation and incorporate key elements referred to as the five E's –education, encouragement, engineering, enforcement and evaluation. In the past, the MTA has been successful in securing SR2S grants for a number of elementary schools in the City including Fairmount, Flynn, Mann, Peabody, Marshall and Monroe Schools. Grants are on the order of \$200,000 to \$500,000.

Safe Routes to Transit Grants (SR2T)

The \$22.5 million Safe Routes to Transit (**SR2T**) Program received Bay Area voter approval in March 2004 through Regional Measure 2, the \$1 bridge toll increase for transit. Of the SR2T funds, \$20 million will be allocated on a competitive grant basis. To be eligible, projects must have a "bridge nexus," that is, reduce congestion on one or more state toll bridges by facilitating walking or bicycling to transit services or City CarShare pods. SR2T funds can be used for:

- Secure bicycle storage at transit stations/stops/pods
- Safety enhancements for ped/bike station access to transit stations/stops/pods
- Removal of ped/bike barriers near transit stations
- System-wide transit enhancements to accommodate bicyclists or pedestrians

Transportation Fund for Clean Air (TFCA) Grants

The Bay Area Air Quality Management District (BAAQMD) administers TFCA funds. Funds are generated from a \$4 surcharge on the vehicle registration fee. TFCA funds are distributed to public agencies to implement projects to reduce air pollution from motor vehicles in accordance with the requirements of State law and BAAQMD's *Bay Area 2000 Clean Air Plan (CA)* and the *2001 Ozone Attainment Plan*.

Eligible projects include:

- Arterial Management: Implementation and maintenance of local arterial traffic management, including, but not limited to, signal timing, transit signal preemption, bus stop relocation and "smart streets."
- Bicycle Projects: Implementation of bicycle facility improvement projects that are included in an adopted countywide bicycle plan or congestion management program.
- Smart Growth/Traffic Calming: The design and construction by local public agencies of physical improvements that support development projects that achieve motor vehicle emission reductions.

Projects are usually expected to be completed in 2 years. The minimum grant for a single project is on the order of \$10,000 and the maximum grant is \$1.5 million for public agencies. Each application will be screened for meeting the Air District's policies and the cost-effectiveness threshold. Only projects with a cost-effectiveness ratio of less than \$90,000 per ton of reduced emissions will be considered for funding. The MTA has secured TFCA funds for bicycle lane striping projects in the past.

Regional Bicycle and Pedestrian Program (RBPP) Grants **Transportation for Livable Communities (TLC) Grants**

MTC's **RBPP** funds transportation infrastructure improvements to pedestrian and bicycle facilities. The key objective of this program is to encourage convenient and safe pedestrian and bicycle trips to shift trips to non-motorized modes to improve air quality. Typical RBPP capital projects include new or improved pedestrian facilities at schools, transit stations, or regional activity centers; bicycle facilities will serve schools, transit stations or be included in the Regional Bicycle network.

Project activities eligible for **TLC Capital** funding include bicycle and pedestrian paths and bridges; on-street bike lanes; pedestrian plazas; pedestrian street crossings; streetscaping such as median landscaping, street trees, lighting, furniture; traffic calming design features such as pedestrian bulb-outs or transit bulbs; transit stop amenities; way-finding signage; and gateway features. While these discrete activities are eligible for funding, the TLC capital program is intended to fund projects that are well-designed, uses a variety of different design features, results in numerous community benefits, and is part of a community's broader revitalization and development efforts.

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The most recent funding cycle had a maximum grant award of \$3 M and a minimum of \$500,000 for TLC grants, and a total of \$2.748M for RBPP. RBPP awards will require 11.47% of the total project cost, while TLC funds do not require local match.

Other Funding Sources

- Coordination with DPW Paving Projects
- Private Development Transportation Impact Fees
- Assessment Districts (Mello Roos)

APPENDIX A

Traffic Calming Plan by Phase

APPENDIX B

Traffic Calming Plan Detail Drawings

APPENDIX C

Traffic Speed and Volume Data

APPENDIX D

Traffic Collision Data

APPENDIX E

Traffic Calming Toolbox of Measures

Speed Hump



What it is: Speed humps are asphalt mounds constructed on residential streets. They can be placed by itself or in a series depending on the length of the street. Speed humps are usually spaced at least 150 feet from an intersection and at least 300 feet apart. Speed humps are typically 12 feet long and 3.5 inches high. Their vertical deflection encourages motorists to reduce speed.

When they are used: The primary benefit of speed humps is speed control.

Advantages:

- Has been known to reduce vehicle speeds.
- Does not require parking removal.
- Can reduce vehicular volumes

Disadvantages:

- Slows emergency vehicles
- May increase noise near speed humps
- May divert traffic to parallel streets
- May impact people with disabilities
- May not be aesthetically pleasing

Special Considerations:

- Not used on arterials, multilane streets or streets with speed limits over 25 MPH
- Not used on grades greater than 8% or around curves
- Possible increase in traffic noise from braking and accelerating
- Design is modified if on a bus route to allow buses through without vertical deflection
- Highest noise may increase from buses and trucks

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- Speed humps may reduce emergency vehicle response times
- Speed humps require advance warning signs and object marker at hump
- Fronting property owner may object to placement. A speed hump will not be installed if more than one fronting property owner objects.

Cost: \$5,000-\$6,000 each

Sidewalk Bulb-out



What it is: Sidewalk bulb-outs narrow the street by extending the curbs toward the center of the roadway or by building detached raised islands to allow for drainage.

When they are used: Sidewalk bulb-outs are used to narrow the roadway and to create shorter pedestrian crossings. They also improve sight distance and influence driver behavior by changing the appearance of the street.

Advantages:

- Better pedestrian visibility
- Shorter pedestrian crossing
- Can decrease vehicle speeds
- Opportunity for landscaping

Disadvantages:

- Can require removal of parking
- Can create drainage issues
- Difficult for trucks to turn right

Special Considerations:

- Curb extensions can be installed at intersections
- Curb extensions should not extend into bicycle lanes, where present
- Curb extensions at transit stops enhance service
- No noise or emergency service impacts
- May require landscape maintenance to preserve sight distances

Cost: \$50,000-\$100,000 each.

Median Islands



Traffic Circle



Medians



Chicane



Choker

What it is: Median islands are raised islands in the center of streets that can be used to narrow lanes for speed control and/or be used for pedestrian refuges in the middle of the crosswalk. As a last resort, they can be used as diverters to create a barrier to prohibit turns into or from a side street. Median islands come in different shapes and forms, and include medians, chokers, chicanes, circles and diverters.

When they are used: Median islands are used on wide streets to lower travel speeds and/or used to provide a mid-point refuge area for crossing pedestrians.

Advantages:

- Can reduce vehicle speeds
- Can reduce pedestrian crossing
- Opportunity for landscaping
- Low impact on emergency vehicles
- Can reduce collision potential
- Can increase sight distance

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- Better side street access than others

Disadvantages:

- May require parking removal
- May affect certain movements such as driveway access, trucks and emergency vehicles
- May require additional right-of-way (chicane)
- Increased maintenance (chicane)
- May create drainage issues (chicane, choker)
- May be a hazard for bicyclists (choker)
- May divert traffic volumes (diverters)

Special Considerations:

- May impact emergency response times
- All forms of median islands may visually enhance the street through landscaping
- Any lane width reduction should result in at least 10 foot lanes.
- Lane narrowing design should accommodate bicyclist needs.
- Driveway access needs to be considered
- Speeds generally reduced when street cross-section is reduced significantly
- Emergency response agencies prefer medians and chokers over other median types
- Where right-of-way is limited, chicanes are not recommended
- When both approach volumes are moderate, chicanes better than chokers.
- Chicanes and chokers may increase conflicts with bicycles
- Chicanes and circles have the least noise impact
- Chicanes and circles can be installed in a series, alone or in combination with each other
- All medians require more signs and pavement markings (especially circles)
- Diverter islands shall be used only as a last resort, because of the spill-over potential
- Traffic circles are less effective at T-intersections and offset intersections

Costs:

- Chicane: \$20,000-\$40,000 each
- Choker: \$10,000 each
- Median/diverter: \$10,000-\$75,000 (depending on size)
- Traffic circle: \$25,000-\$35,000 each

APPENDIX F

Traffic Calming Plan Timeline and Process

Traffic Calming Request

- ✓ Resident submits a traffic calming application
- ✓ MTA evaluates whether traffic calming can address the problem(s)
- ✓ MTA accepts application as a project and informs applicant how the project ranks relative to other projects.
- ✓ Depending on how the project places in the ranking system, MTA submits request to fund planning stage of project
- ✓ MTA receives planning funds and starts the project

Planning Stage of Project (6 – 12 months for an area wide project)

- ✓ Initial Community Meeting
- ✓ Mail out survey of problems
- ✓ Community working group selected
- ✓ MTA staff works with working group to develop alternatives and phasing
- ✓ Community Meeting to present draft
- ✓ Refine draft
- ✓ Approve project at a community meeting, or if not, more community meetings, consensus building
- ✓ Public Hearing
- ✓ Approve project through Legislative Process – ISCOTT, MTAB, Environmental Review

Start Construction Stage, Phase 1 of Project (6 – 12 months)

- ✓ MTA submits request to fund construction of Phase 1 elements from the approved project
- ✓ MTA ballots households and holds a public hearing for the installation of each individual traffic calming device.
- ✓ MTA arranges for construction of approved devices
- ✓ MTA and the community monitor conditions for at least 3 months
- ✓ Mail out survey and feedback to determine implementation of Phase II elements

Start Subsequent Stages of Construction Phases

- ✓ MTA submits request to fund construction of Phase II (next phases)
- ✓ Same steps as Construction Stage, Phase 1

APPENDIX G

Meeting Notices/Postcards