# Roseville Public Works, Environment and Transportation Commission
# Meeting Agenda

Tuesday, October 25, 2011, at 6:30 p.m.
City Council Chambers, 2660 Civic Center Drive
Roseville, Minnesota 55113

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| 6:30 p.m. | **1.** | **Introductions/Roll Call** |
| 6:35 p.m. | **2.** | **Public Comments** |
| 6:40 p.m. | **3.** | **Approval of September 27, 2011 Meeting Minutes** |
| 6:45 p.m. | **4.** | **Communication Items** |
| 7:00 p.m. | **5.** | **Neighborhood Traffic Management Policy** |
| 7:30 p.m. | **6.** | **Organized Trash Collection Discussion** |
| 8:45 p.m. | **7.** | **Possible Items for Next Meeting – November 22, 2011** |
| 8:50 p.m. | **8.** | **Adjourn** |

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# Roseville Public Works, Environment and Transportation Commission

## Agenda Item

**Date:** October 25, 2011 **Item No:** 3

**Item Description:** Approval of the Public Works Commission Minutes September 27, 2011

Attached are the minutes from the September 27, 2011, meeting.

**Recommended Action:**

Motion approving the minutes of September 27, 2011, subject to any necessary corrections or revision.

**Move:** _____

**Second:** _____

**Ayes:** _____

**Nays:** _____

# Roseville Public Works, Environment and Transportation Commission Meeting Minutes

Tuesday, September 27, 2011, at 6:30 p.m.
City Council Chambers, 2660 Civic Center Drive
Roseville, Minnesota 55113



**1. Introduction / Call Roll**

Chair Jim DeBenedet called the meeting to order at approximately 6:30 p.m.

**Members Present:** Chair Jim DeBenedet; and Members Jan Vanderwall; Dwayne Stenlund; Joan Felice; and Steve Gjerdingen

**Staff Present:** Public Works Director Duane Schwartz and City Engineer Debra Bloom

**Others Present:** None.

**2. Public Comments**

No one appeared to speak at this time.

**3. Approval of July 26, 2011 Meeting Minutes**

Member Vanderwall moved, Member Stenlund seconded, approval of the July 26, 2011 meeting as amended.

**Corrections:**
**Spelling of Member Stenlund's name**

**Ayes: 5**
**Nays: 0**
**Motion carried.**

**4. Communication Items**

Public Works Director Duane Schwartz noted that updates on various construction projects were included in tonight's meeting packet or available on-line at the City's website at www.cityofroseville.com/projects, and as detailed in the staff report dated September 27, 2011.

Specific discussion included the status of the Dale Street and Rice Street Projects; the anticipated start of the NE Suburban Pathway Project (Fairway Avenue) with

completion yet this year of physical construction and roadwork, and recognition of the challenges of this project in retrofitting a pathway in an already developed area rather than with new construction areas.

Additional discussion included recent newspaper articles about "Safe Routes to School;" grants being researched by School District No. 623 for such routes, with County Road B-2 seeming to be the most likely with five (5) schools within that corridor; and ongoing parental concerns with children walking in the public, even to bus stops. Options for safe walking for children was discussed, including parents forming "pools" to supervise children when walking to the bus or to school; and having facilities available that allow walkers to feel safer.

Member Stenlund noted that MnDOT had completed the ADA project along Snelling Avenue, expressing his pride in the work done by the contractor, and sought feedback related to the project.

Further discussion included re-installing the crosswalk at the intersection of County Road C-2 and Lydia, even though it had been removed due to a pedestrian death on that north crosswalk about ten (10) years ago, and its removal in an attempt to encourage people to cross on the south side rather than the north; with Mr. Schwartz expressing surprise that it had been installed in that same location again, since the problems remained with right turns off Snelling Avenue.

Member Stenlund opined that at least on Lydia Avenue, there was a refuge on the median for those unable to get across on one signal.

Ms. Bloom noted that one of the City's concerns was maintenance and snow removal, with the resulting relocation of some pedestals to facilitate a sidewalk and maintenance of one, but remaining ADA compliant.

Member Stenlund mentioned one concern with the Dale Street Project and bituminous failure on the south side of County Road C; with Ms. Bloom reviewing that failure and its cause with the two (2) rain events exceeding erosion controls in place.

Ms. Bloom noted that final project completion would include a 7' boulevard with storm water features and trees to provide a better walking experience.

<u>Budget process update</u>
Mr. Schwartz provided the latest update on the 2012 budget, with the City Council adopting the Preliminary, not-to-exceed Levy at 4%; and moving forward with the Phase I Implementation of the Parks Master Plan, as well as approving one city-wide Fire Station on the City Hall campus.

Ms. Bloom noted that one portion of the $2 million identified in the Parks Master Plan included as a high priority was the Corner of County Road B-2.

At the request of Member Felice regarding Fire Department/Emergency response times, Mr. Schwartz advised that the department's average response time was 3.3 minutes, which was significantly better than when three were three (3) stations, basically due to the current business model of 24/7 on-call staffing.

Roseville Citizens League (RCL) Organized Collection Meeting Comments
Chair DeBenedet noted that he and Member Stenlund had attended the RCL forum on organized collection, opining that it was a good forum, very informative and well-organized, with both sides well represented, and approximately fifty (50) members of the public attending. Chair DeBenedet opined that the various presenters addressed their cases well; and the moderator ran the meeting well; further opining that it had been an educational experience for all parties. Chair DeBenedet confirmed that there was no conclusion reached, which had not been the point of the meeting anyway, but to provide the various considerations.

Member Stenlund expressed his interest in the kinds of questions asked and various views expressed and the tremendous range of opinions, from one extreme to another whether for or against; but concurred that it had been extremely well-run with everyone remaining respectful of each other's opinions.

Discussion included interesting comments related to differentials of rates by contractors for long-term versus new customers, with long-term customers often paying a higher rate, while new customers were quoted lower rates; fairness to all haulers in subdividing the community, with the frequency found that bidding eventually ended up down to one contractor, sometimes based on merging of independent contractors, or their no longer working in that specific geographical area.

Member Felice reiterated a comment she'd previously highlighted that provided evidence that the least expensive individual hauler was less than the most expensive city hauler; and the factors expressed by residents for refuse hauling with their top choice being the price, and the second being the service. Member Felice opined that this was why those communities having implemented organized hauling ended up with their residents liking the service they were receiving with organized collection.

Member Vanderwall, from another perspective, noted that you expect service when you personally purchase something, and your experience with that service determined how long you had the service. However, in this situation, Member Vanderwall noted that this would be a service a resident already had, and the options were being taken away, and the only thing that appeared the most important was getting it to the curb, and then forgetting about it. However, Member Vanderwall noted that residents needed to care about how their refuse was collected, and where it ended up; opining that this would be a result of a city setting some standards.

While there had yet to be an official City study, Mr. Schwartz asked Commissioners what future information needs they anticipated needing from staff.

Chair DeBenedet noted that this could be further discussed under Item #7 on tonight's agenda.

Ms. Bloom noted that the software tool to work with the City's Pavement Condition Index (PCI) software from the Local Road Research Board she was working with should be available for the Commission to view at their October 2011 meeting, clarifying that this would be a viewing of the tool, not a report, since that data was still in process, but the tool would provide the science behind the documentation and provide industry standards to address truck weight and loading on local streets, not just as it related to garbage trucks.

**5. Draft of Neighborhood Traffic Management Policy**

Ms. Bloom noted that the Commission had reviewed the City of Blaine's Neighborhood Traffic Management Policy at its June meeting; and staff had been directed to draft a similar policy (Attachment A), specific to Roseville, using the Blaine format. Ms. Bloom noted that the first draft had been provided to Commissioners in the agenda packet for discussion and feedback.

Ms. Bloom advised that Member Gjerdingen had provided written comments from his initial review, and she brought those specific items to the attention of the entire Commission for their feedback. Some of those items included: referencing comments related to traffic volumes increasing in Roseville to determine roof or a qualifier, such as the Comprehensive Plan's Transportation Section map by 2030 and projected changes on State Aid routes; how to and a purpose for checking high volume roads, when nothing is based in fact or a percentage of annual increase and what communication was being attempted; perception that traffic is increasing overall, whether on neighborhood streets or larger streets throughout the community and region; and how the Implementation Portion of the document would validate the policy with actual data.

<u>General Comments</u>

- Add a "Definition" section
- Ensure consistency in terms and definitions throughout the document

<u>Section 1.0 Introduction</u>

- First sentence: consider changing "issues," to "concerns," related to traffic values
- 3rd Paragraph, first sentence: consider changing "residents" to "constituents"
- 2nd sentence: strike "in residential areas" to clarify local streets – redefine
- Behaviors based on perceptions of "a local street" (e.g. Long Lake Road)
- Rationale for concentrating on residential streets, not business streets

- Addressing business and institutional uses as part of the community's quality of life
- Consideration of impacts to other areas when rerouting traffic from another area to address a specific problem so as not to have unintended consequences in that other area
- Balancing more pedestrian/bicycle traffic in some business areas as appropriate
- Consider adding an additional bullet point addressing technology available now and in the future (e.g. BMP's, engineering practices and standards); and advantages of that ever-increasing technology as it relates to traffic management; and whether more attention should be given to "solutions," rather than intimidating people with "technology"
- Determining who is the audience for the Traffic Management Plan (TMP) and who is the customer, taking into consideration business and residents, property owners and/or renters, and clarifying "citizens," rather than "residents" and/or "businesses" as well as the TMP being developed for affected Roseville residents rather than commuter traffic through Roseville

Section 1.1 Purpose

Suggested language revisions for consideration included:

- 4th line: Change to "violation of traffic laws," not "local traffic"

Section 2.0 Policies

- Second bullet point: define "local streets" as they relate to a livable community after business owners go home

In an effort to proceed with review of the draft in a timelier manner, Chair DeBenedet suggested individual Members provide staff with their comments for their consideration and those items to incorporate into the next draft to come before the Commission.

Overall, Member Stenlund spoke in support of the draft, that it was similar to the Blaine model and laid the groundwork, and choices for people to see the process for their complaints or concerns.

Member Felice spoke in support of the draft, opining that it made the process clear for people.

Overall, Member Gjerdingen spoke in support of the draft.

Section 3.0 Traffic Management Background

Member Vanderwall, from a broad overview, opined that reading through this section, the initial bulleted portion should include bicycles in addition to pedestrian strategies, and should be incorporated consistently throughout the document for pedestrian-friendly, as well as bicycle-friendly.

Member Stenlund noted the multiple negatives in the last sentence of the third paragraph needing revision; and need to reconstruct the sentence related to traffic engineering principles.

Ms. Bloom advised that staff had attempted to include that language; however, it was difficult finding other policies focusing on pedestrians and bicycles and providing equal footing for both.

Section 4.0 Procedure Summary
Discussion included resolutions contemplated in identifying project requests and groups affected based on a percentage of signatures on an application; with "Project Neighborhood" and "Affected Neighborhood" definitions added.

Table 1, Ranking of Traffic Management Requests (page 5)
Discussion included density comparisons for ranking purposes; revisions specific to Roseville in this section to emphasize pathways and schools; considering gaps in pathways in the ranking criteria; and future ability to refine the policy once put into practical use.

Step 4, Develop/Evaluate Traffic Management Strategies (pages 6 - 9)
Discussion included any additional strategies to add to the toolbox: lane re-striping or "pavement marking" allowing for more flexibility; and other areas of the policy – yet to be developed and presented – that will address examples.

Step 6, Traffic Management Strategy Approval (page 9)
Member Stenlund noted the need to add "vegetation" and its role for traffic calming (e.g. vertical element)

Step 7, Implement Temporary Strategy and Monitor (page 9)
Discussion included adding disclaimer language for temporary strategies only where reasonable or practical; whether it is the intention of the PWET Commission to include pathways as a traffic management strategy, and whether a "complete street" included pedestrian facilities off or on road, and whether the City's roads were wide enough for pavement marking to facilitate them on road.

It was the consensus of members that pathways be included as a traffic management tool; with Ms. Bloom advising that in Table 2, if they were added as a tool, case studies needed to be provided showing what each of those tools encompassed; and how to prioritize City resources as applications came forward.

Member Stenlund opined that such studies were part of other documents, and he didn't consider them to be part of this policy; opining that bicycles and pedestrians, if part of a roadscape, may also need to slow down. Member Stenlund opined that it was imperative that cars, trucks, bicycles, and pedestrians could be integrated to maintain the quality of life aspects, perhaps necessitating a volume reduction with fewer cars.

Mr. Schwartz noted that trails and/or sidewalks would not be appropriate for certain volume streets.

It was the consensus of members that often this policy would be used to address existing streets of approximately sixty (60) years of age as opposed to new construction where tools and devices could be readily incorporated.

Ms. Bloom advised that she would strengthen references for bicycles and pedestrians throughout the draft policy.

At the request of Member Gjerdingen to limit the policy to arterial streets, Ms. Bloom responded that it was the intent of this document for those road already completed over the last 30-50 years, which applied to most Roseville streets, and not to those on a list for future complete reconstruction. Ms. Bloom advised that traffic control management was part of any reconstruction project discussion for collector streets: how to address customer needs and who will be impacted. To be consistent with the proposed policy, Ms. Bloom advised that the City Council had suggested temporary measures be considered initially to ensure that a safety hazard was not created for the traveling public.

Ms. Schwartz noted that collector streets would need to be addressed on a case by case basis.

Overall, members expressed their approval of how the policy was developing; and suggested cartoons, illustrations or examples for the public's benefit in the final document.

Ms. Bloom advised that it was staff's intent to add illustrations to the next draft to come before the PWET Commission; and hoped to have the next iteration to the Commission within the next two (2) weeks, as a strikeout version to incorporate those items from tonight's discussion; and asked that upon receipt, individual members provide additional feedback to staff prior to the October PWET Commission meeting. Ms. Bloom advised that, if conflicting comments were received by staff from individual members, she would highlight those in the next draft for further discussion.

**Recess**

Chair DeBenedet recessed the meeting at approximately 8:04 p.m. and reconvened at approximately 8:07 p.m.

**6. Asset Management for Public Utilities**

Chair DeBenedet advised that he had asked Mr. Schwartz to add this to tonight's agenda for PWET Commission discussion, and in conjunction with his Masters Degree thesis for "maintenance and management of utility infrastructure." Chair DeBenedet provided excerpts of his report to members related to asset management in general; and how the Public Works Department could make use of

asset management, and how staff felt, as well as where their revaluation was at of various asset management systems. Chair DeBenedet clarified that asset management was not specific to software, but could also be a historical program available in your mind, on paper, or in electronic format; as well as what was being done to maintain that infrastructure. Chair DeBenedet opined that the City of Roseville's infrastructure system had reached the size and degree that a more formal tracking or journaling method was needed.

Member Vanderwall noted that additional information and links had been provided in the staff report for those members seeking additional information.

Chair DeBenedet noted that the intent of asset management in sustaining infrastructure was to provide an adequate level of service to customers at the most reasonable cost. Chair DeBenedet questioned the status of staff's analysis; and any existing asset management tools used by the City.

Mr. Schwartz advised that the City currently used the Pavement Management Program (PMP), an asset management tool from IKON as a vendor for that software program; a sign inventory program; maintenance history data; and other manual tracking systems.

Chair DeBenedet noted that the reason this became more of a priority and received the City Council's interest was due to the Capital Improvement Program (CIP) Task Force when the number of significant liabilities became evident with facilities and their useful life. While not necessarily in agreement with the Task Force's report on the fixed life estimates on various systems, Chair DeBenedet noted that it became more of an issue the older a system got, and that more maintenance was then required to maintain the same level of service, which in turn cost more. With most Roseville infrastructure systems constructed in the late 1950's and early 1960's, and newer construction technologies now available, Chair DeBenedet noted potential long-term cost savings and efficiencies.

Mr. Schwartz advised that the key point in having an asset management system was to track data for prioritizing decisions based on historical data, replacing the oldest first. Mr. Schwartz advised that, while this had first been identified as a Public Works Department-specific goal, the City Council expressed their preference that all City assets be incorporated into such an asset management system; buildings, park assets, infrastructure, etc. In researching such a program, Mr. Schwartz advised that it was included in the Department's 2012 budget request, while not yet finalized; however, he advised that there seemed to be support from the majority of the City Council for such a management tool; and remained on the Public Works Department and City Manager goal lists; and from that perspective, remained on everyone's work plan.

Mr. Schwartz advised that the City's GIS lead on staff met with 8-10 software vendors for online or on-site demonstrations of their asset management programs;

and that had been narrowed down to 3-5 who's preliminary implementation costs would be affordable for a city the size of Roseville and would be able to be implemented at current staffing levels. With the City's current GIS system, it could be used to query basic data, but in terms of generating work orders and attaching it to asset management, and long-term funding plans, using five (5) core questions for asset management. Mr. Schwartz advised that determining other users in the metropolitan area who shared similar issues, or could perhaps be approached for a joint venture, similar to the current IT and Telephone JPA's was another important consideration to further reduce costs.

Discussion included whether energy savings for a specific building was built into such a management program, with Mr. Schwartz advising that this would be more of an operational type of software, with this one specific to management based on information tied to particular assets; difficulty in addressing underground assets versus those that can be seen; advantages of sewer lining technologies and their projected life of sixty (60) years versus installing a new line; and reviewing underground systems as a whole for comparison purpose and philosophical considerations.

Additional discussion included costs for staffing to input data and facilitate reports; training included in a software program; and significant dollars for proposed rate increases for utility customers to facilitate CIP needs for the City's infrastructure over the next 20-30 years.

Mr. Schwartz noted that the City currently performs approximately three (3) miles of sanitary sewer line replacement and/or lining annually, as well as approximately one (1) mile of water lines; in addition to addressing emergency breaks or other problems from the aging infrastructure. However, Mr. Schwartz noted that those CIP costs are not currently fully funded at current utility rates, with deficit spending from reserves, but not sustainable for the long-term. Mr. Schwartz advised that the current 2011 funding level for CIP is $860,000; but funding at a $3 million level was needed to accomplish CIP costs over that 20-30 year cycle.

Chair DeBenedet opined that implementing an asset management system was the smart way to select projects for this $3 million annual expenditure, with that system including funding for the software itself, adequate staffing allocations, and training.

Mr. Schwartz noted that the City's paper record system had worked so far; including tracking repairs and maintenance; however, he opined that it was becoming more difficult and that it was imperative the funding level get to a level to ensure replacement of critical assets over the next 20-30 years to provide more predictable tracking tools and life cycle cost calculations than the current paper system.

Member Vanderwall clarified that the intent was for a comprehensive and standard asset management system and cost-sharing of such a system across the board for all City assets, above and below ground.

Mr. Schwartz concurred, noting that with the Parks Master Plan Phase I Implementation being initiatives, the timing was right to build a history for those assets and their replacement, including their initial cost, maintenance and other items right from the start; with many management programs having a very broad perspective that included rolling stock (vehicles and equipment), facilities, infrastructure, park assets, trees, signs, etc.; most of which were GIS-based and allowing for easy and understandable presentations graphically from the data.

Further discussion included asset management service providers who manage assets for a fee and in varying degrees versus in-house management by City staff; pros and cons of having information available in-house or off-site, including control of that information based on local access policies outside the building versus web-based; availability of the data by maintenance personnel in the field via internet connectivity; and initial cost of the software programs at approximately $60,000.00 for installation; with additional ongoing costs for vendor support for the software.

Chair DeBenedet opined that the initial cost seemed minimal when compared with the ability to manage $3 million in CIP expenditures per year over the next 20-30 years.

At the request of Chair DeBenedet, Mr. Schwartz opined that it would be challenging, without supplementing additional staffing, for the City's existing in-house staff to adequately handle additional responsibilities that would be required with the asset management software, especially initial input of the data; and recommending that more than one staff person be trained.

Chair DeBenedet noted that the Public Works Department's 2008 Strategic Plan had identified the need for an additional engineer on staff; with this year identified as the year to implement that additional staffing; however, he noted that that original intent had been revised through the contract with the City of Maplewood for sharing one of their engineers part-time.

Mr. Schwartz advised that, if the City Council fully implemented and funded its CIP proposal, it would be imperative to fill that position in order to implement and develop those projects.

Chair DeBenedet advised that his intent in exposing the PWET Commissioners to this issue was to encourage its support and recommendation to the City Council to make sure the City took seriously implementation of an asset management program and to provide consistent in-house staffing to establish background and historical information as a base line and for moving forward. Chair DeBenedet

suggested that the PWET Commission make a formal recommendation to the City Council that this funding remain in the 2012 budget to ensure that the CIP program be managed in the most cost-effective way for its taxpayers.

Additional discussion included current procedures, dictated by available resources, for replacing and/or repairing infrastructure, replacing vehicles, or other asset controls; and recent changes in liability for the City based on information from its insurance carrier, related to sewer backups and how and when such infrastructure systems are put on a higher level of maintenance, clearly indicating that the City was aware of a problem with one of its assets and its inherent liability, indicating that it needed to get into the CIP replacement cycle to limit the City's liability.

Mr. Schwartz noted that it was important to balance whether funds were best spent to pay damages to homeowners in such situations or on getting its infrastructure up to an appropriate level to avoid those unexpected and expensive situations. Mr. Schwartz advised that it was important to get a rating system in place for the remainder of the City's infrastructure and assets, similar to that found so effective with the PMP and management of roadways throughout the City at certain conditions and standards. Mr. Schwartz advised that, currently if a water main segment had experienced three (3) breaks within the last 10-15 years, it was added to the replacement list; and noted that storm sewers became obvious through visible sink hold; and sanitary sewers based on televising and evaluation those systems internally.

At the request of Member Gjerdingen, Mr. Schwartz clarified that approximately ½ of the $60,000.00 cost for the software was for its initial purchase, while the other ½ was for implementation, which included training.

Further discussion included backup staff versus one staff person for training purpose in case of staff turnover; other cities who have purchased asset management software and their experiences (e.g. Minnetonka, Eagan, Edina); and consultants who are willing to make a presentation to the PWET Commission, usually for a fee.

Chair DeBenedet asked what the PWET Commission could do to assist and support the Public Works Department in getting this program funded in 2012.

Mr. Schwartz advised that, as part of the upcoming utility rate and public hearing, staff anticipated referencing meeting minutes of the PWET Commission regarding their recommendations related to the rate structure, and the CIP; and would include any discussion and/or recommendation of the Commission related to implementation of an asset management plan to ensure those resources are spent in the most cost-effective manner available.

Chair DeBenedet turned the gavel over to Vice Chair Vanderwall.

Member DeBenedet moved, Member Felice seconded, approval of a recommendation of support from the Public Works, Environment, and Transportation Commission to the City Manager and City Council of the Public Works Department's efforts to implement an Asset Management Program in 2012 with software training and allocation; and including internal documentation of necessary staff support.

**Ayes: 5**
**Nays: 0**
**Motion carried.**

Vice Chair Vanderwall returned the gavel to Chair DeBenedet.

**7. Possible Items for Next Meeting – October 25, 2011**

- Traffic Management Plan – continued discussion with revisions
- Organized Trash Collection – continued study for another two (2) months; then recommendation to the City Council, suggesting that the December meeting, possibly rescheduled to December 20, 2011 to facilitate the holiday schedules for staff and Commissioners, should be kept to a single-topic meeting. Staff was directed to put this item on the October meeting agenda for the Commission to make a decision on how to proceed.

**8. Adjourn**

Member Vanderwall moved, Member Felice seconded, adjournment of the meeting at approximately 8:56 p.m.

**Ayes: 5**
**Nays: 0**
**Motion carried.**

# Roseville Public Works, Environment and Transportation Commission

## Agenda Item

**Date:** October 25, 2011 **Item No:** 4

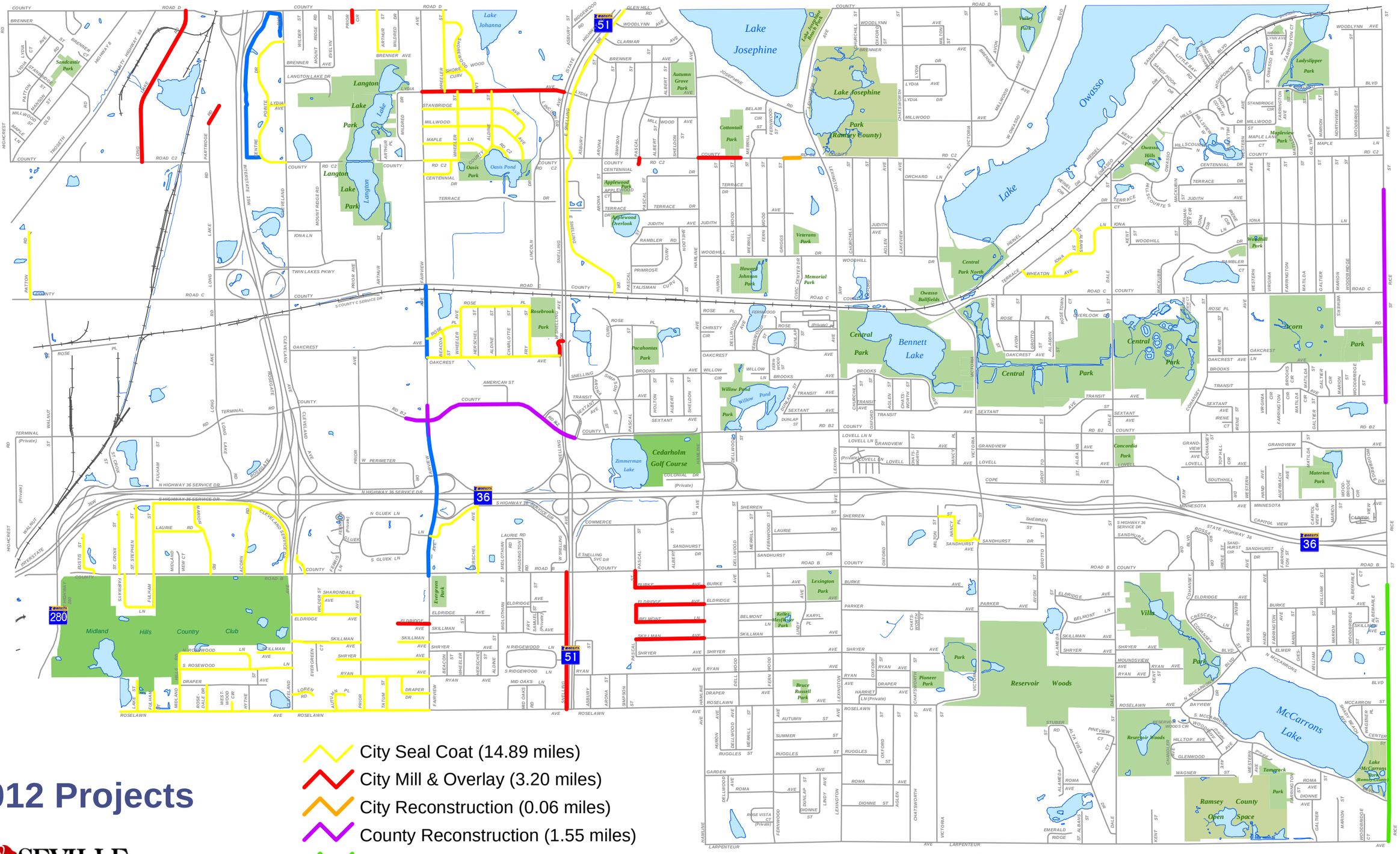
**Item Description:** Communication Items

- Projects update-
  - Check for City Construction project updates at: www.cityofroseville.com/projects
  - 2011 PMP- The Contractor has completed this project.
  - Rosewood Neighborhood Drainage Improvements: The Contractor has completed this project.
  - Applewood Pointe-The Contractor placed the final lift of asphalt and is working on punchlist items.
  - Rice Street Project: For the most part the project has reached substantial completion. All intersections are fully operational. Transit shelters are being installed by others.
  - Fairview Pathway (NE Suburban Campus Connector)- the Contractor has completed the preliminary grading on the segment south of Roselawn and will be paving the week of the 24th. The segment north of Roselawn will have the curb installed the week of the 24th, with the pathway base being prepared, anticipated paving the week of the 31st.
  - Drainage Improvements- Staff is working on identifying segments to include in a 2012 drainage improvement project.
  - Josephine Woods – Work started the week of October 10th, the contractor is working on site grading with underground utilities to follow.

- Budget process update
- 2011 Street Improvements Map
- Other

**Recommended Action:**
None

**Attachments:**
A. 2012 Street Improvements Map




# 2012 Projects

- City Seal Coat (14.89 miles)
- City Mill & Overlay (3.20 miles)
- City Reconstruction (0.06 miles)
- County Reconstruction (1.55 miles)
- County Mill & Overlay (0.93 miles)
- City Pathway

ROSEVILLE

Prepared by:
Engineering Department
October 19, 2011

Data Sources and Contacts:
* Ramsey County GIS Base Map (8/01/11)
* City of Roseville Engineering Department
For further information regarding the contents of this map contact:
City of Roseville, Engineering Department,
2660 Civic Center Drive, Roseville MN



0 500 1000 1500 2000 Feet

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mapdoc: 2012Projects.mxd
map: 2012Projects.pdf

# Roseville Public Works, Environment and Transportation Commission

## Agenda Item

**Date:** October 25, 2011 **Item No:** 5

**Item Description:** Neighborhood Traffic Management Policy

**Background:**
The Commission reviewed the draft Neighborhood Traffic Management Program at the September meeting. Staff has made a number of changes based on feedback received. We have attached a revised draft of the main body of the policy for further discussion and refinement. Staff did not receive any comments prior to finalizing the packet, so no changes were made to the attached documents.

Staff will lead a discussion on areas we feel are in need of additional input. We have attached Blaine's example strategy detail sheets to review for the Roseville plan. The next draft will include a definition section in the appendix of this report.

A couple of items that we would like to focus on for the commission discussion:

- Definition of Benefitted Area vs. project neighborhood vs. affected neighborhood.
- What role would the Commission like to play in the TMP process?
- Discussion of strategies.
- Process for removal of "permanent" strategies.

**Recommended Action:**
Discussion and feedback

**Attachments:**

A. Draft Neighborhood Traffic Management Policy
B. Commissioner DeBenedet's Comments from September
C. Commissioner Gjerdigen's Comments from September

# Roseville Neighborhood Traffic Management Program

## 1.0 Introduction

Concerns about~~Increasing~~ traffic volumes and higher speeds have become important issues throughout the metro area and are having an increasing impact on local streets in the City of Roseville. The City of Roseville is continually striving to strengthen and protect its neighborhoods by improving the quality of life ~~in residential areas~~. A goal of the Roseville ~~Transportation Plan~~Comprehensive Plan is for the transportation system to address community issues and concerns while maintaining and enhancing neighborhoods, providing connectivity, and the sense of community cohesion.

Discussion with traffic engineers in cities with established traffic management programs provided insight into the need for a formal process. An established traffic management process:

- Allows the city to better respond to residents and businesses,
- Provides the opportunity for better understanding of the issues, and
- Allows consistent application across the community.

Therefore, for ~~residents~~ citizens to obtain consideration for any given traffic control measures on either street or larger neighborhood area they are required to follow a process. The process will ensure that neighborhoods with demonstrated traffic issues and community support for traffic management have equal access to the neighborhood traffic process. The Neighborhood Traffic Management Program depends upon citizen involvement and may vary from year to year based upon citizen participation and available funding.

### 1.1 Purpose

This document was developed to guide city staff and inform ~~residents~~citizens about the processes and procedures for implementing traffic management strategies on local streets to address traffic concerns such as excessive volumes and vehicle speeds, high volumes of non-local through traffic, ~~and~~ vehicle crashes in neighborhoods, and promote safe walking and bicycling. The document includes a summary of the City of Roseville's Policies for the Traffic Management Program, background on the history of traffic management, the City of Roseville's process for implementing strategies, and a toolbox of common traffic management measures.

PWETC discussion:

Add?: (unwanted aggressive road behavior, conflicts between motorized and non-motorized users, SG)

Add?: violations of traffic laws- JD,

## 2.0 Policies

The following policies are established as part of the Neighborhood Traffic Management Program for neighborhood streets:

- Compatibility with transportation goals in ~~City of~~ Roseville's ~~Transportation Plan~~Comprehensive Plan, Chapter 5, Transportation.

- Implementation limited to local streets. A local street is a street under the jurisdiction of the City of Roseville. ~~(no arterials or collectors) as identified in the Roseville Transportation Plan.~~
- Implementation of strategies will be funded by a combination of city funds and neighborhood participation.
- Trucks are allowed on all City streets unless otherwise posted (by State law trucks must be allowed on all Municipal State~~-~~ Aid~~ed~~ road~~way~~s.)
- The program intends to take a system-wide approach when addressing a neighborhood traffic problem. For each project, city staff will determine a logical project boundary that will be necessary for the approval process and will help address the issue of displacement/diversion to other local streets.
- Implementation strategies will be limited to those local streets where the 85% speed exceeds 5 mph above the posted speed limit or where other traffic impacts affecting the livability of the neighborhood exists.
- Implementation of traffic management strategies will be in accordance with the procedures set forth in this document, and in keeping with sound engineering practices, as well as be within the city's available financial and staff resources.
- Implementation of any devices will be consistent with the guidelines in the Minnesota Manual on Uniform Traffic Control Devices.
- Implementation of strategies shall be consistent with recommended strategies included in the Mn/DOT Safety Handbook- JD
- Initial deployments are considered temporary for study purposes and subject to an interim review by City staff prior to permanent installation.

# 3.0 Traffic Management Background

The United States has used street closures and traffic diverters dating back to the late 1940s and early 1950s, but it was not until the 1970s that Seattle, Washington completed area-wide demonstrations of traffic management strategies. Since then, traffic management has been continually studied and implemented throughout the United States. Strategies include street closures, traffic diverters, speed humps/bumps, signing, increased enforcement and many others, but they all are implemented to accomplish one of the following:

- Modify driver behavior (reduce speed)
- Modify traffic characteristics (reduce volume)
- Improve safety for~~(~~ pedestrian and bicyclists~~)~~

Traffic management can be simplified as a ~~two~~ three step process: (1) identify the nature and extent of traffic-related problems on a given street or area ~~and~~ (2) select and implement the proper strategy for reducing the identified problem and (3) evaluate effectiveness, accept, modify or revert- JD. The traffic management strategies discussed in this document are solutions to a narrowly defined set of problems and are not universally applicable or effective at solving all problems. ~~The wrong~~A traffic management strategy used in the wrong application will not improve conditions - it will only increase City costs and may even make conditions worse.

Since not all strategies are appropriate for every problem the City has developed a process to identify the appropriate solutions. The process includes identifying the problem, evaluating potential strategies, and implementing appropriate measures while including public participation and governmental approval. This process is summarized in Section 4.

The process and strategies included in this document are intended to be used on local streets ~~classified as local residential streets~~ to reduce speeds and volumes. (Streets within the City of Roseville are classified based on definitions from the Metropolitan Council defined in Appendix C ~~of the Roseville Transportation Plan~~. The current Road Classification Map, Figure ~~4.10~~5.5 from the Roseville ~~Transportation Plan~~Comprehensive Plan, identifies street classifications within the City of Roseville~~ see Appendix D~~.) By definition arterials and collector roadways are intended to have higher speeds and accommodate higher volumes; therefore it would be against the function of arterials or collectors to implement traffic management strategies. These roadways are intended to operate efficiently with ~~high~~ larger volumes and higher speed. When arterials and collectors are operating efficiently they provide the necessary mobility for the traveling public reducing the diversion of traffic ~~and prevent the need to divert~~ to the local street network.

# 4.0 Procedure Summary

A flow chart, *Exhibit 1*, provides a summary of the procedures for implementing a traffic management strategy on a local street. The process includes the following steps:

**Step 1 • ~~Identify Candidate Streets/Neighborhoods~~Study Request (Application)**
First ~~residents~~citizens must identify candidate streets for traffic management improvement and submit a written request to the City Engineering Department. Any requests for project proposals require a written application with ~~50~~51% of the project neighborhood signing the application. *Appendix A* provides a sample request form.

**Step 2 • Preliminary ~~Screening~~ Review and Evaluation**
The City Engineering Department will review requests and determine whether they can be handled as part of the normal traffic engineering process or police enforcement function of the City or if they qualify for consideration under the Neighborhood Traffic Management Program.

**Step 3 - Data Collection and Traffic Study**
If it is determined that the request falls under the Neighborhood Traffic Management Program the City will undertake an engineering study of the street(s) or neighborhood including gathering relevant data of the ~~proposed~~ affected streets.

**Step 4 - Develop/Evaluate Traffic Management Strategies**
Based on the traffic study and input from other departments, the City Engineering Department will make a preliminary determination of the need for traffic management measures and make recommendations as to which measures would be appropriate.

**Step 5 - Conduct Neighborhood Meeting and Survey**
A neighborhood meeting will be held, or a summary letter will be sent, to present the conclusions of the traffic study and discuss appropriate next steps in the process. At this time a survey will be sent out to determine neighborhood support for the recommended traffic management strategy and to receive input from affected ~~residents~~citizens.

**Step 6 - Traffic Management Strategy Recommendation and Approval**
The recommended strategy will not be implemented without the support of 65% of the ~~project neighborhood~~benefited area and ~~50~~51% of the affected neighborhood. In addition to neighborhood approval, the City Council must also approve the implementation of the traffic management strategy.

**Step 7 - Implement Temporary ~~Measures~~ Strategy and Monitor**
If a strategy is ~~measures are~~ approved it may be possible to implement first a temporary ~~measure~~strategy. If a temporary measure is used, it will be monitored for a minimum of 3 months to determine its effectiveness.

**Step 8 - ~~Approve Permanent Measures~~Strategy Evaluation**
Results from the monitoring of the temporary measure will be used to determine if the strategy will ~~receive~~ be recommended for final approval from the City Council. If the temporary measure is not effective the Engineering Department will revisit the analysis and development of strategies (Steps 3 and 4) or choose to not continue the process.

**Step 9 ~~–~~ City Council Action**
Based on the strategy evaluation and survey, City staff members will provide a recommendation to the City Council regarding the proposed traffic management strategy.

**Step 10 – Design, Final Assessment Roll and Construction**
If the project is approved, City staff prepares and recommends the final project as required under authority granted by Minnesota Statute Chapter 429.

**Step 11 - Monitoring**
Once a traffic management strategy has been implemented the City will continue to conduct periodic monitoring of the site to collect data for future implementation of strategies and to document the effectiveness of existing measures. This program and the associated Toolbox may be amended at any time by the City Council.

***Appeals*** - Decisions of staff can be appealed to the City Council. The appeals process will follow established City procedures.

***Removal*** - Existing traffic management measures and/or measures installed under the Program may be requested to be removed. The request for removal of a project will be processed generally using the same procedures as outline in this program requiring written request and appropriate neighborhood approval.

# 5.0 Procedural Details

## Step 1 - ~~Identify Candidate Streets/Neighborhoods~~Study Request (Application)

~~Residents~~Citizens may identify candidate streets or areas for traffic improvements. Some request may be handled by phone or verbally from ~~residents~~citizens to City Staff, which could result in increased police enforcement or placement of the City's speed display equipment. Any requests for permanent traffic management strategies require a written application with 50% of the ~~project neighborhood~~benefited area signing the application. *Appendix A* provides a sample petition and request letter.

Application of these strategies on ~~collector or~~ arterial streets is excluded and not included in this process.

## Step 2 -Preliminary ~~Screening~~ Review and Evaluation

The City Engineer will review requests to determine whether or not they should be handled as part of normal traffic engineering procedures or police enforcement of the City, or if they qualify for consideration under the Neighborhood Traffic Management Program. Some requests may be able to be handled within the current Capital Improvement Program such as planned

infrastructure improvements or reconstructions. In addition, common requests for increased traffic enforcement, and placement of the variable speed display equipment are commonly handled by ~~requests to~~ the City Traffic Safety Committee.

Review of requests will consist of comparing the identified street characteristics with the following initial criteria:

- The street in question must be classified as a ~~Local~~ local street in the City of Roseville ~~Transportation Plan~~Comprehensive Plan (see Figure 4.10 from Roseville Transportation Plan in Appendix D).
- The requests must be related to speeding, excessive traffic volumes, crashes, cut-through traffic, truck traffic, non-motorized transportation safety or other related impacts on a local street.

If it is determined that the request falls under the function of this plan, then Step 3 will be initiated. If not, the request shall be followed up as appropriate by the City Engineer as part of the Departments normal function, including coordination with Police, Fire, and Public Works Departments as needed.

## Step 3 - Data Collection and Traffic Study

If it is determined that the request falls under the guidelines of the management program, the City Engineer will conduct an engineering study of the street(s) or neighborhood. The study will include the following actions:

### Define ~~Project~~ Benefited Area ~~-~~/ Impacted Area

The definition of the ~~project~~ benefited area and impacted areas sets up the project boundaries and will be used to determine neighborhood support during the petition process and for the assessment process if a strategy is implemented.

### Data Collection

Traffic data collection will include (as appropriate based on identified problem) one or more of the following:

- Traffic volume counts (24 hour counts in 15 minute increments, truck volume counts)
- Non motorized transportation counts
- Speed surveys
- Cut-through traffic estimates
- Crash information (three years minimum- 5 years recommended- JD)
- Roadway Geometry (sight distance, lane configuration, etc.)
- Land Use Mix (density of residential and presence of sidewalks, pedestrian generators such as schools, parks, bus routes, unique features)

### Evaluation of Traffic Data

From the data collected the traffic problems associated with the neighborhood street can be documented. The documentation will be valuable in the development of possible traffic management strategies.

From the data collected the City will also be able to rank the potential projects for further study. *Table 1* provides the ranking criteria. This ranking will be beneficial if the number of request submitted is beyond the fiscal and staffing ability of the city. By ranking requests based on the criteria set forth in *Table 1*, the city can prioritize the projects to focus funding accordingly.

| **TABLE 1**<br>Ranking of Traffic Management Requests | |
|---|---|

| | |
|---|---|
| Pathway adjacent to ~~project area~~Benefited Area (0 to 100 points) | None +100<br>All of 1 side +50<br>All of 2 sides +0 |
| Public school yard, parks, playground development adjacent to benefited area (0 to 200 points) | None +0<br>All of 1 side +100<br>All of 2 sides +200 |
| Residential development adjacent to benefited area (0 to100 points) | None +0<br>All of 1 side +50<br>All of 2 sides +100 |
| Number of reported correctable crashes based on up to ~~last~~ 5 years of available data (0 to 200 points) | 20 per crash; maximum of 200 points |
| Average residential density adjacent to ~~project area~~Benefited Area (0 to 50 points) | 0 dwelling units per 100 lin. ft. = 0 points<br>5+ dwellings units per adjacent 100 lin. ft. = 50 points |
| 85th Percentile speeds 5 mph over posted speed limit (0 to 200 points) | Yes - +200<br>No - +0 |
| Average Daily Traffic Volumes - ADT (0 to 200 points): | ADT divided by 10; maximum 200 points<br>For intersection, street segments or multiple streets, use higher volume street |
| Percent of potential assessment properties supporting project by petition (180 to 300 points) | 3 points per percent; maximum 300 points |

1

## Step 4 - Develop/Evaluate Traffic Management Strategies

Using the data collected during the development of the traffic study and applying recognized traffic engineering standards, the City Engineering Department will recommend the use of one or more neighborhood traffic management strategies. A "toolbox" of strategies is included in *Section 6.0* of this plan. While it is not inclusive of all strategies, it provides a summary of the most applied and successful measures as documented in the research summarized in *Appendix B.* The toolbox includes a brief description of the strategy, its effects on volume, speed, noise, and safety, a discussion of its advantages and disadvantages and design considerations. The following strategies are included in the toolbox:

**Traffic Control Devices**

- Vehicle Restrictions
- Turn Restrictions
- One-Way Streets
- Watch for Children Signs
- Stop Sign Implementation
- All-Way Stop Sign Implementation
- Parking Restrictions
- Pavement Markings/ Crosswalk Striping
- Speed limits

**Enforcement**

- Increased Enforcement
- Variable Speed Display Board

**Roadway Adjustments**

- Narrowing Lanes
- Chokers
- Mid-Block Narrowing
- Chicane
- Sidewalks

**Vertical Elements**

- Speed Tables
- Raised Crosswalk
- Median Barrier
- Traffic Circle
- Street Closure
- Full/ Diagonal Diverter
- Partial Diverter

### Effectiveness of Strategies

As stated earlier, traffic management strategies are not universally applicable or effective at solving all problems. The Institute of Transportation Engineers has collected data on the effectiveness of traffic management strategies implemented throughout the United States. *Table 2* provides a summary of this data and can be useful in the selection of appropriate traffic management strategy to implement. Along with the information provided in Table 2 on effectiveness, the following are some other effectiveness considerations:

- Traffic control devices, by themselves, are almost never effective at reducing traffic volumes or vehicle speeds.
- Enforcement can be effective if applied regularly and over an extended period of time.
- In most cases, enforcement will result in local ~~residents~~citizens being ticketed.
- Roadway adjustments (narrowing) have proven to be moderately effective but at high implementation costs.
- Vertical elements (primarily speed humps/bumps) have proven to be moderately effective but neighborhood acceptance has been mixed.
- The combination of enforcement plus other strategies has proven to be the most effective approach.

| **TABLE 2**<br>Effectiveness Management of Strategies | **Volume Reduction** | **Speed Reduction** | **Safety Improvement** | **Increase in Air / Noise Pollution** | **Emergency Access Issues** | **Access Restriction** | **Increased Maintenance Efforts** | **Cost** |
|---|---|---|---|---|---|---|---|---|
| **Traffic Control Devices** | | | | | | | | |
| Vehicle Restriction | Poss | Poss | Poss | No | Poss | Yes | No | Low |
| Turn Restrictions | Yes | Poss | Poss | No | No | Yes | No | Low |
| One-Way Streets | Poss | No | Poss | No | Poss | No | Poss | Low |
| Watch for Children Signs | No | No | No | No | No | No | No | Low |
| Stop Sign Implementation | No | No | No | Yes | Yes | No | No | Low |
| All-Way Stop Implementation | No | No | Poss | Yes | No | No | No | Low |
| Parking Restrictions | No | No | Poss | No | No | No | No | Low |
| Pavement Markings/ Crosswalk Striping | No | No | No | No | No | No | No | Low |
| Speed limits | No | No | No | No | No | No | No | Low |
| ~~Painted Crosswalks~~ | ~~No~~ | ~~No~~ | ~~No~~ | ~~No~~ | ~~No~~ | ~~No~~ | ~~No~~ | ~~Low~~ |
| **Enforcement** | | | | | | | | |
| Increased Enforcement ~~/ Speed Watches~~ | No | Yes | Poss | No | No | No | No | Mid |
| Variable Speed Display Board | No | Yes | Poss | No | No | No | No | Low |
| **Roadway Adjustments** | | | | | | | | |
| Narrowing lanes | No | Poss | Poss | No | No | No | No | Mid |
| Chokers | No | Poss | Yes | No | Poss | No | No | High |
| Mid-Block Narrowing | No | Poss | Poss | No | No | No | No | Mid |
| Chicane | Poss | Poss | No | No | No | No | Yes | High |
| Sidewalks | No | No | Poss | No | No | No | Poss | Mid |
| **Vertical Elements** | | | | | | | | |
| Speed Bumps/Humps/Table | Poss | Yes | Poss | Poss | Poss | No | Poss | Mid |
| Raised Crosswalk | Poss | Yes | Poss | Poss | Poss | No | Poss | Mid |
| Median Barrier | Yes | Poss | Poss | No | Yes | Yes | Poss | High |
| Traffic Circle | No | Poss | Poss | No | Poss | No | Yes | High |
| Street Closure | Yes | Poss | Poss | No | Yes | Yes | Poss | High |
| Full/ Diagonal Diverter | Poss | Poss | Poss | No | Yes | Yes | Poss | High |
| Partial Diverter | Poss | Poss | Poss | No | No | Yes | Poss | High |

## Cost Estimate and Funding

For the purpose of discussions with affected ~~residents~~citizens, a cost estimate will be developed for the recommended strategy. It is the policy of the City of Roseville that the following cost sharing will occur with an approved traffic management strategy:

- City of Roseville will pay the cost of administrative work, traffic study and data collection
- City of Roseville pays 25% of the construction and installation costs of major strategies while the neighborhood affected will pay 75% of the cost (minor items such as installation of a limited number of signs or painting of crosswalks and other pavement markings would be assumed completely by the City) Construction cost includes direct engineering, legal and project administration. -JD

Costs associated with implementing traffic management strategies vary significantly from just over $250 for installing a speed limit sign to $10,000 or more for a landscaped median construction. *Table 3* provides a summary of typical implementation costs for traffic management strategies.

**TABLE 3**
Typical Implementation Costs

| Type of Implementation | Unit | Unit Cost |
|---|---|---|
| Warning Signs | Per sign | $250 |
| Pavement Markings<br>- Roadway Striping<br>- Crosswalk Striping | <br>Per linear foot<br>Per crosswalk | <br>$1~~.00~~<br>$150 |
| Textured Pavement | Per crosswalk | $1,500 |
| Street Lighting | Per fixture | $7,500 |
| Raised Crosswalk | Per crosswalk | $4,000 |
| Speed Table | Per table | $5,000 |
| Mid-Block Choker | Per choker | $5,000 |
| Intersection Choker | Per approach | $5,000 |
| Mid-Block Speed Table | Per table | $7,500 |
| Intersection Speed Table | Per intersection | $25,000 |
| Traffic Circle | Per intersection | $15,000 |
| Center Island | Per approach | $15,000 |
| Half Closures | Per intersection | $40k to $60k |
| Full Closures | Per intersection | $120,000 |
| Sidewalk (6 ft concrete) | Per Foot | |
| Trail (8 ft Bituminous) | Per Foot | |

Source: City of Minneapolis & ITE, Traffic Calming - State of the Practice

PWETC discussion- this table is here to provide a baseline for costs that would be transferred to property owners. SG suggested adding maintenance costs to the table.

While the city will cost share only the implementation costs, the consideration of future maintenance costs are also a factor for determining the most appropriate strategy. While the implementation of a traffic sign may appear to be the least expensive option at only $250, the additional per year cost of annual maintenance needs to be considered. A comparison of the annual costs for the most common strategies for speed reduction, increased enforcement and speed humps, is included in *Table 4.*

**TABLE 4**
Comparison of Annual Costs

| Measure | Initial Cost | Annual Cost | Annual Revenues |
|---|---|---|---|
| Photo-radar (ownership option) | $85,000 | $145,000 | $40,000 |
| Photo-radar (lease option) | | $214,000 | $40,000 |
| Targeted Police Enforcement | $70,000 | $194,000 | $40,000 |
| Speed Humps | $300,000 | $30,000 | $0 |

Source: ITE, Traffic Calming - State of Practice

## Step 5 - Conduct Neighborhood Meeting and Petition

After the completion of the traffic study and the development and evaluation of potential strategies, the city will either hold a Neighborhood Meeting or distribute a letter to inform the community on the process and results of the traffic study and provide information on the recommended strategies. Based on the engineering study and input from ~~residents~~citizens, the city will make a preliminary determination and recommendation for the need of traffic management strategies.

## Step 6 - Traffic Management Strategy Recommendation and Approval

Once the traffic study results, management strategies, and cost estimates have been provided to affected neighborhood ~~residents~~citizens, a survey/petition will be circulated to ascertain whether or not the neighborhood approves of the recommended strategy and are willing to cover the potential costs of implementation. The recommended strategy will not be implemented without the support of 65% of the ~~project neighborhood~~benefited area and ~~50~~51% of any affected neighborhood.

Once approval is obtained from the neighborhood the strategy will be presented to the City Council for approval.

## Step 7 - Implement Temporary Strategy and Monitor

In most cases, the strategy will be implemented with temporary materials and remain in place for approximately three to six months depending on the type of improvement. The strategy will be evaluated to determine if it addresses the identified problems and is consistent with the Neighborhood Traffic Management Plan goals. During the test period ~~residents~~citizens may provide comments to the City Engineering Department regarding the improvement. At any time during this test phase appeals of the decision for installing the strategy can be submitted and forwarded to appropriate staff.

If it is determined that it is not practical to install a temporary strategy, this step can be eliminated.

## Step 8 - ~~Approve Permanent Strategy~~Strategy Evaluation

If it is determined that the temporary strategy does not achieve the intended goals of reducing speeds, cut through traffic or other identified problems, the City Engineering Department will review other potential measures and recommend the elimination of all strategies or test the installation of a different strategy.

Effective temporary strategies will be brought to the city council for approval for the installation of a permanent form of the approved traffic management strategy.

## Step 9 -– City Council Action

Based on the strategy evaluation and survey, City staff members prepare a feasibility report and recommendations for the City Council. The report outlines the process followed, includes the project findings, states the reasons for the recommendations and includes a preliminary assessment roll. The feasibility report and preliminary assessment roll will be presented for a recommendation by the PWETC before final action by the City Council. If the feasibility report is adopted and the preliminary assessment roll is approved by the City Council, the project is ordered. If the feasibility report and preliminary assessment roll are not adopted by the Council, the plans and specifications will not be ordered and the project will be terminated. The project will thereafter be removed from the list and the Benefited Area is not allowed to reapply for a same or similar study for five years.

## Step 10 – Design, Final Assessment Roll and Construction

Final design and construction supervision are administered by the City and are generally completed within 12 months after final approval and assessment by the City Council. City staff prepares and recommends the final assessment roll as required under authority granted by Minnesota Statute Chapter 429.

## Step 11 - Monitoring and Future Actions

The City will conduct periodic monitoring of the fully installed traffic management strategy to determine if the project continues to provide effective improvement to the neighborhood. The monitoring will be conducted at the discretion of the City based on available funding, staffing levels, and resident comments.

If monitoring shows that the implemented strategy fails to achieve the intended goals it may be removed.

### Legal Considerations

From the local government perspective, the legal issues surrounding traffic management strategies fall into three categories: statutory authority, constitutionality, and tort liability. First, the local government must have legal authority to implement traffic management strategies on a given roadway (statutory authority). Second, the local government must respect the constitutional rights of affected landowners and travelers on the roadways (constitutionality). And finally, the local government must take steps to minimize the risk to travelers from the installation of traffic management strategies (tort liability). Through documentation of the entire process, including the collection and evaluation of traffic data, the decision process, and

interaction with the public, the Roseville Traffic Management Program can minimize potential legal difficulties.

# 6.0 Toolbox of Neighborhood Traffic Management Strategies

The following Toolbox provides information on a variety of traffic management strategies. Each strategy includes information on its purpose, its effectiveness for solving different types of traffic problems, and a summary of advantages and disadvantages for implementation. To make the toolbox understandable and usable it has been organized into types of strategy as follows:

**Traffic Control Devices -** the use of common traffic control devices, such as signing and pavement markings, to solve neighborhood traffic problems. Included in this category are:

- Vehicle restrictions
- Turn restrictions
- One-Way streets
- Watch for Children Signs
- Stop Sign Implementation
- All-Way Stop Sign Implementation
- Parking Restrictions
- Pavement Markings/ Crosswalk striping
- Speed Limits

**Enforcement** - there are two options for using enforcement as a traffic management strategy: increase police enforcement and the use of Variable Speed Display Boards

**Roadway Adjustments** - there are multiple strategies for traffic management that change the appearance of the roadway including:

- Narrowing of lanes
- Chokers
- Mid-Block Narrowing
- Chicane
- Sidewalks

**Vertical Elements -** introducing vertical elements to the roadway, either as obstacles for vehicles to drive over or around, are common traffic management strategies. These include:

- Speed Tables
- Raised Crosswalks
- Median Barrier
- Traffic Circles
- Street Closure
- Full/ Diagonal Diverter
- Partial Diverter

Definitions

City Traffic Safety Committee

Citizens

Benefited area

Affected Neighborhood

Municipal State Aid Roads

Local Streets

Capitol Improvement Plan

Impacted area

# Vehicle Restriction

**Purpose**

Truck route ordinances, or weight restrictions are place on streets and roadways for various reasons. Some of these reasons include noise, excessive traffic volumes, speeds, and safety concerns. (Does not refer to normal use of spring time load restriction for pavement preservation purposes.)


Source: FHWA Manual on Uniform Traffic Control Devices

| | |
|---|---|
| **Effects** | |
| *Volumes* | Heavy vehicle volumes may be reduced |
| *Speed* | No effect |
| *Traffic Noise* | Noise may be reduced |
| *Traffic Safety* | Little or no effect |
| **Advantages** | • Possible reduction in noise and volumes<br>• Restrictions viewed in a positive manner by the neighborhoods<br>• Preservation of structural integrity and life of a street |
| **Disadvantages** | • Traffic usually is shifted to a different street<br>• Businesses that generate the heavier traffic can complain of hardships and inconveniences<br>• Other heavy vehicles that serve the neighborhood may be restricted (school buses, garbage trucks, delivery vehicles, etc.) |
| **Problem Target** | • Cut-through traffic<br>• High volumes<br>• High collision rates |
| **Design** | • Legality of the truck route – can not be used on state aided county and city roadways. |

# Turn Restrictions

## Purpose

Can be used in neighborhoods where “cut through” traffic has been documented to be unusually high. Traffic control technique involving the use of regulatory signing which prohibits certain traffic movements generally where an arterial and local street meet. Involve the use of standard “No Right Turn” or “No Left Turn” sign with or without rush hours limitations.


Source: FHWA Manual on Uniform Traffic Control Devices

| | |
|---|---|
| **Effects** | |
| *Volumes* | Where turning movements onto local residential streets are reduced, volumes on those streets are lessened. |
| *Speed* | To the extent that traffic cutting through is diverted, speeds on the local residential street may be reduced. |
| *Traffic Noise and Air* | Noise may be reduced, but transferred to other streets |
| *Traffic Safety* | May improve on the restricted volume street if compliance is high, but effects on alternative routes need to be evaluated. |
| **Advantages** | • Low installation cost<br>• Possible reduction in crashes |
| **Disadvantages** | • If turn prohibition sign is installed without a reasonable alternative violations are likely.<br>• Complaints may rise on diversion routes.<br>• Turn prohibition signs have a very low level of effectiveness unless coordinated levels of enforcement are high. |
| **Problems Targeted** | • Cut through traffic |
| **Design** | • Turn restriction signs should be used on the periphery of neighborhoods rather than within them.<br>• Most effective when used during rush hour when “cut through” traffic is a problem<br>• Consideration should be given to install physical barriers to aid in the enforcement of turn restriction signs |

# One-Way Streets

## Purpose

Conversion of two-way streets to one-way operation for purposes of residential street traffic control take three forms:

CASE #1 - Divergent and convergent one-way residential streets to reduce direct through routes impacting the neighborhood.

CASE #2 - Alternating one-way streets throughout a portion of a grid system to gain safety advantages of one-way operations.

CASE #3 - Creating a one-way couplet by paring a residential street with a nearby thru street to create a corridor for thru traffic


R6-1


R6-2

Source: FHWA Manual on Uniform Traffic Control Devices

## Effects

| | |
|---|---|
| *Volumes* | Case #1 – reduces traffic volumes where thru traffic is a problem<br>Case #2 – no significant effect on traffic volumes<br>Case #3 – increases volumes on one street and reduces volumes on adjacent streets |
| *Speed* | May increase speeds due to improved motorist comfort levels. |
| *Traffic Noise and Air* | Minimal effect except in Case #1 which creates longer, circuitous routes for local traffic. |
| *Traffic Safety* | One-way streets result in fewer potential conflicting movements, improving safety. |

| | |
|---|---|
| **Advantages** | • Possible increased parking<br>• Inexpensive to implement<br>• May reduce traffic volumes<br>• May increase roadway capacity |
| **Disadvantages** | • May be considered inconvenient for residents<br>• Possible increase in speeds<br>• May increase volumes on other streets |
| **Problems Targeted** | • High traffic volumes<br>• High crashes due to conflicting movements |
| **Design** | • One way streets can be used in combinations that force turns every few blocks to minimize speeding or cut-through problems |

# Watch for Children Signing

**Purpose**

A variety of signs exist to try and warn of the presence of children, “Watch for Children,” “Slow, Children at Play,” etc. The request for these signs generally stems from parents’ concern for their children’s safety in the streets near their home. Unfortunately, the request for this type of signage is based on a widespread but false belief that traffic signs provide protection.


| | |
|---|---|
| **Effects** | |
| *Volumes* | No Effect |
| *Speed* | No Effect |
| *Traffic Noise and Air* | No Effect |
| *Traffic Safety* | No Effect |
| **Advantages** | • Low initial cost for one installation. Installation plus an annual maintenance cost may become significant if installed at a large number of locations. |
| **Disadvantages** | • Signs of this type might indicate that the street is an acceptable place to play |
| **Problems Targeted** | • Not effective for any of the common traffic issues |
| **Design** | • The Watch for Children warning signs are not standard signs included in the Minnesota Manual on Uniform Traffic Control Devices because of their lack of effectiveness in slowing traffic or increasing safety of neighborhood streets. |

# Stop Sign Implementation

**Purpose**
Regulatory sign that is used to assign right-of way at an intersection. Only recommended for installation if specific guidelines are met in accordance with the Minnesota Manual on Uniform Traffic Control Devices (MnMUTCD). Stop signs should not be used for speed control or volume reduction and should not be installed on the major street unless justified by an engineering report.


R1-1

Source: FHWA Manual on Uniform Traffic Control Devices

| | |
|---|---|
| **Effects** | |
| *Volumes* | Little or no effect |
| *Speed* | Little or no reduction in speed, speed possibly increases due to drivers speeding up to make up for time lost at the stop sign |
| *Traffic Noise and Air* | Noise is increased near the intersection due to the increase activity of acceleration. Air quality worsens due to deceleration, idling and acceleration |
| *Traffic Safety* | Possible increase in crashes, possibly due to the stop signs being unexpected or deemed unnecessary, therefore encouraging rolling stops or by instilling a false sense of security in crossing motorists and pedestrians. |
| **Advantages** | • Inexpensive installation costs (do require continual maintenance costs)<br>• Defines driver's right-of-way<br>• Increase opportunity for pedestrians to cross the roadway<br>• May discourage cut-through traffic |
| **Disadvantages** | • Can cause negative traffic safety impacts if sign is not warranted<br>• May result in mid-block speeding<br>• Increasing levels of intersection control are associated with increased frequency of crashes.<br>• Difficult to enforce full stop control compliance<br>• Could result in increase in speeds between the signs as drivers try to make up for lost time |
| **Problems Targeted** | • At intersections where right-of-way is confusing |
| **Design** | • Guidelines need to be met as established in the Minnesota Manual on Uniform Traffic Control Devices<br>• In most cases the street carrying the lowest volumes should be stopped to minimize the number of vehicles stopping |

# All-Way Stop Sign Implementation

## Purpose

The All-Way STOP condition is primarily intended to address either a higher than expected intersection crash frequency or to be an interim measure at locations that have demonstrated a need for a traffic signal installation, but where the signal cannot be installed in a reasonable period of time. It is a common belief that installing STOP signs on all approaches of an intersection will result in fewer crashes. Research indicates that average crash frequency at All-Way STOP controlled intersection is 50% higher than thru/STOP intersections. Also, there is no evident to suggest that STOP signs decrease travel speeds.


R1-1

Source: FHWA Manual on Uniform Traffic Control Devic

| | |
|---|---|
| **Effects** | |
| *Volumes* | Little or no effect. |
| *Speed* | Little or no reduction in speed, mid-block speed possibly increase |
| *Traffic Noise and Air* | Little or no effect. |
| *Traffic Safety* | In most cases, the installation of an All-Way STOP will increase the frequency of crashes. Only in those rare cases where the number of crashes with the Thru/STOP control is unusually high, is the forecast of safety improvement probable. |
| **Advantages** | • Inexpensive installation costs (do require continual maintenance costs)<br>• Defines driver's right-of-way<br>• Increase opportunity for pedestrians to cross the roadway<br>• May discourage cut-through traffic |
| **Disadvantages** | • Can cause negative traffic safety impacts if sign is not warranted<br>• May result in mid-block speeding<br>• Increasing levels of intersection control are associated with increased frequency of crashes.<br>• Difficult to enforce full stop control compliance<br>• Could result in increase in speeds between the signs as drivers try to make up for lost time |
| **Problems Targeted** | • Unusual conditions at intersection including crash frequency, turning patterns, delay and pedestrian conflicts. |
| **Design** | • Traffic volumes and crash frequency thresholds need to be met as established in the Minnesota Manual on Uniform Traffic Control Devices.<br>•The most effective deployment of the All-Way STOP condition is at intersections where the volume of traffic on the major and minor roads is approximately equa. |

# Parking Restrictions

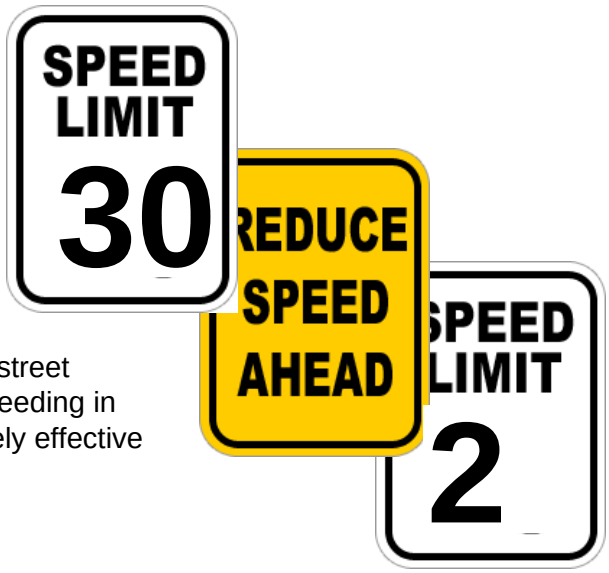
## Purpose

Parking restrictions can assist in improving residential street safety in two ways:
1) Clearance No Parking Zones to improve sight lines at intersections and crosswalks
2) Extended No Parking Zones to improve visibility of and for pedestrians along the length of the block.


Source: FHWA Manual on Uniform Traffic Control Devices

| | |
|---|---|
| **Effects** | |
| *Volumes* | Little or no effect |
| *Speed* | Minimal changes unless there are extended No Parking Zones that can create the potential for increased speeds |
| *Traffic Noise and Air* | Little or no effect |
| *Traffic Safety* | Increasing sight line distances reduce right angle conflict between vehicles at intersections, alleys and driveways |
| **Advantages** | • Can reduce some types of accidents (late evening hit and run parked vehicle accidents and crashes related to parking maneuvers)<br>• |
| **Disadvantages** | • In area where on-street parking is at capacity and there is no alternative off-street parking additional restriction to parking can be controversial to residents<br>• |
| **Problems Targeted** | • Non-Residential parking intrusion |
| **Design** | • Should review the impacts of parking on surrounding streets |

# Speed Limits




**Purpose**

Speed limits are determined by the Minnesota Department of Transportation (consistent with State Statutes) based on an analysis of the actual speed profile of the road. The basic premise of Minnesota's law is that the majority of motorists will pick a safe and reasonable speed given the horizontal and vertical design of the street, locations of driveways, sidewalks, obstructions, and the use of the street by pedestrians. Lowering the speed limit to address speeding in a neighborhood has never proven to be even moderately effective without also including very high levels of enforcement.

| | |
|---|---|
| **Effects** | |
| *Volumes* | Little or no effect |
| *Speed* | Drivers generally ignore posted speed limits and travel at speeds which the drivers consider reasonable |
| *Traffic Noise and Air* | Little or no effect. |
| *Traffic Safety* | Effects of speed limit changes on traffic safety on local residential streets have not been reported. Research suggests that crash frequencies on urban roadways are unrelated to vehicle speeds. |
| **Advantages** | • Research indicates that when speed limits are set at or near the 85$^{th}$ percentile speed, roadway crash frequencies are at a minimum. |
| **Disadvantages** | • Speed limits on urban roadways are either set by Statute or by MnDOT.<br>• Research suggests that crash frequencies on urban roadways are unrelated to vehicle speeds. |
| **Problems Targeted** | • High speeds through residential neighborhood |
| **Design** | • |

# Painted Crosswalks

**Purpose**
Provide a designated, marked location for pedestrians to cross residential street and make drivers more aware of potential pedestrian conflicts.


| | |
|---|---|
| **Effects** | |
| *Volumes* | No effect |
| *Speed* | No effect |
| *Traffic Noise and Air* | No effect |
| *Traffic Safety* | Research has shown that marked crosswalks at uncontrolled intersection are unrelated to pedestrian safety. |
| **Advantages** | • Reasonably effective at identifying locations with potential pedestrian conflicts.<br>• Helps to concentrate pedestrian activities at specific intersection and on specific legs of intersections. |
| **Disadvantages** | • At uncontrolled intersections, appears to create a false sense of security in pedestrians – the 8" white line with stop the oncoming 4,000 pound vehicle.<br>• Costly to maintain<br>• Not required to establish legal cross-walk locations. |
| **Problems Targeted** | • Concentrating pedestrian crossing activities, particularly when combined with other strategies such as advanced warning signs, systems of sidewalks, enforcement, etc. |
| **Design** | • Marking cross walks is not necessary to establish legal crossing locations and is unrelated to pedestrian safety.<br>•Marked crosswalks may be part of a program to designate walking routes and concentrate pedestrian crossings when combined with other strategies. |

# Increased Enforcement / Speed Watches

**Purpose**
The effective use of public safety/police personnel to encourage reduced speeds in residential areas. Enforcement usually involves the use of radar to identify speeders and ticket violators.

Speed Watches rely on neighborhood participation to create awareness and, in turn, help control speeds in neighborhoods.

| | |
|---|---|
| **Effects** | |
| *Volumes* | Little or no effect |
| *Speed* | Speed reduction as long as enforcement is maintained (the "halo" effect of infrequent enforcement is as little as 1 mile or 4 hours). |
| *Traffic Noise and Air* | Little or no effect. |
| *Traffic Safety* | May reduce overall crashes if speeds are actually reduced. |
| **Advantages** | • Easy to implement<br>• Effective with repetitive enforcement on a non-routine basis.<br>• Speed Watch programs have been perceived positively by neighborhood, even in areas where significant speed reductions were not measured. These types of programs may make neighborhoods find that they do not actually have a speeding problem. |
| **Disadvantages** | • Not self-enforcing; temporary measure, dependent on resources<br>•Expensive and not always desirable to use police for traffic enforcement due to budget and manpower constraints |
| **Problems Targeted** | • Speeding<br>• Moving vehicle violations<br>• Running stop signs |
| **Design** | • The locations of implementation should be clearly identified to minimize the time spent enforcing and maximize the resultant speed reduction.<br>• Actual speed surveys should be used to narrow problem to specific time (day of the week, time of day) and location. |

# Variable Speed Display Board

**Purpose**

A portable speed display board wired to a radar provides passing motorists their travel speed along with the speed limit. The display can help raise driver awareness, encourage compliance, and direct driver's attention to the posted speed limit. The purpose is to remind drivers that they are speeding to help encourage compliance.


| | |
|---|---|
| **Effects** | |
| *Volumes* | Little or no effect |
| *Speed* | Lower observed speeds when device is present |
| *Traffic Noise and Air* | Little or no effect |
| *Traffic Safety* | There is the potential for sudden braking by some motorists |
| **Advantages** | • Portable Display board can be used in various locations enabling residents to borrow and place on their street<br>• Low cost ($2,000 to $11,500 per unit)<br>• Can be used to target timing and location of police enforcement (if data shows excessive speeds at a certain time) |
| **Disadvantages** | • Possible concerns with causing conflict between citizens involved (vigilantism)<br>• May only provide short term effectiveness<br>• Possible vandalism or could encourage aggressive drivers to see how fast they can go<br>• Needs power to function<br>• Requires personnel to move and place unit |
| **Problem Targeted** | • Any location where speeding is a problem or where drivers need to be educated about traffic issues in the area. |
| **Design** | • Variety of types of variable speed display boards available – some include traffic county abilities. |

# Narrowing Lanes

**Purpose**

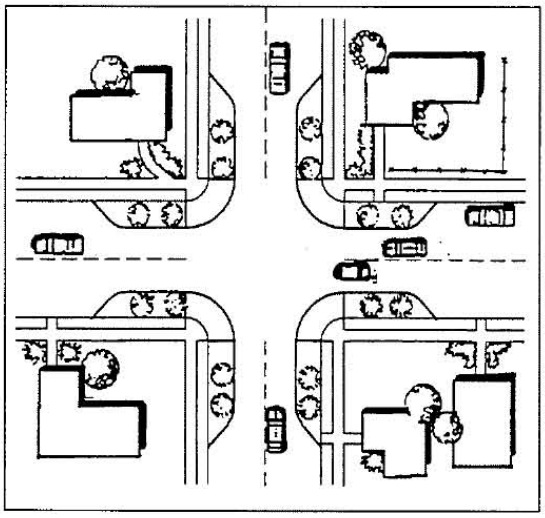
The reduction of the typical pavement width along a roadway. The narrowing can be achieved physically by removing part of the pavement surface or by simply using pavement markings to indicate narrow travel lanes.

| | |
|---|---|
| **Effects** | |
| *Volumes* | Little or no effect |
| *Speed* | Possible reduction in speed |
| *Traffic Noise and Air* | Little or no effect |
| *Traffic Safety* | Potential for improved pedestrian safety due to shorter street crossing times, but at the same time bicycle safety may be compromised by physically removing part of the pavement surface. |
| **Advantages** | • Use of pavement markings to narrow street is relatively inexpensive ($0.20 per lineal foot).<br>• Narrowing of street may provide opportunity for street beautification programs |
| **Disadvantages** | • May require the prohibition of on-street parking causing hardship or inconvenience for residents<br>• May result in shifting volumes to adjacent streets if number of lanes is reduced |
| **Problems Targeted** | • Wide residential streets where speed reduction is desired<br>• Excess street volume on multilane streets |
| **Design** | • Must not create significant impact due to loss of parking |

# Chokers at Intersections

**Purpose**

Narrowing of the street at an intersection to constrain the width of the traveled way. They provide shorter pedestrian crossing distances and provide protection to the beginning of a parking lane. The driver also senses the roadway narrowing when approaching one of these measures, which can result in speed reduction and a reminder that the driver is entering a residential area.



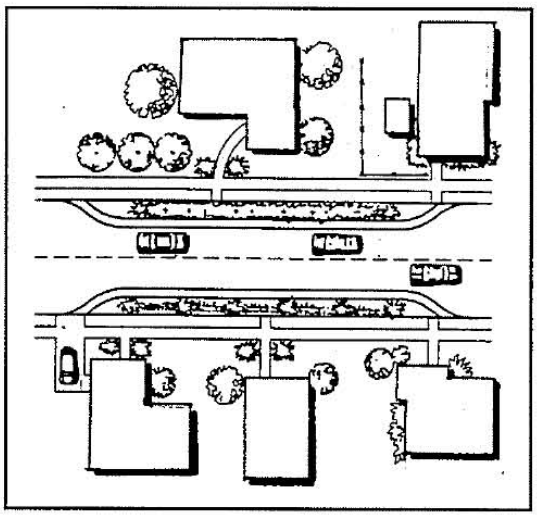
Source: Institute of Transportation Engineers
*Traffic Calming: State of Practice*

| | |
|---|---|
| **Effects** | |
| *Volumes* | Little or no effect |
| *Speed* | Minimal changes |
| *Traffic Noise and Air* | Little or no effect. |
| *Traffic Safety* | Potential for improved pedestrian safety due to shorter street crossing times, but at the same time bicycle safety may be compromised by physically removing part of the pavement surface. |
| **Advantages** | • Good for pedestrians due to shorter crossing distance<br>• Provides space for landscaping and neighborhood "gateway"<br>• Should not affect emergency response time<br>• Minimal inconvenience to drivers |
| **Disadvantages** | • May require the prohibition of on-street parking causing hardship or inconvenience for residents<br>• May cause bicyclists to travel in same traffic lane as vehicles<br>• May require redesign of drainage system |
| **Problems Targeted** | • Mid-block locations with speeding and/or cut-through traffic |
| **Design** | • There must be adequate turning radius for emergency vehicle access especially on narrow streets |

# Mid-Block Narrowing

**Purpose**

Segment(s) of roadway narrowing where curbs are extended toward the center of the roadway on one or both sides of the street to constrain the width of the traveled way. They provide shorter pedestrian crossing distances and provide protection to the beginning of a parking lane. The driver also senses the roadway narrowing when approaching one of these measures, which can result in speed reduction.



Source: Institute of Transportation Engineers
*Traffic Calming: State of Practice*

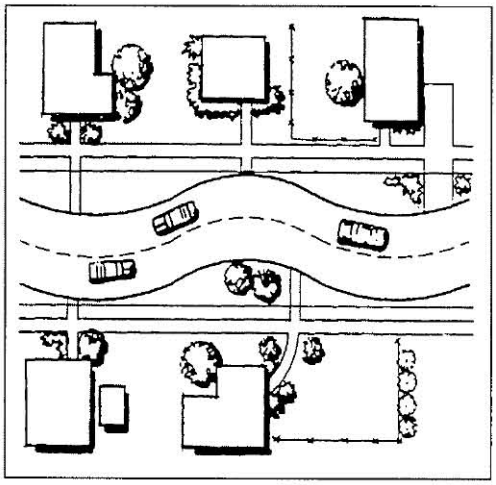
| | |
|---|---|
| **Effects** | |
| *Volumes* | Little or no effect |
| *Speed* | Minimal changes |
| *Traffic Noise and Air* | Little or no effect. |
| *Traffic Safety* | Potential for improved pedestrian safety due to shorter street crossing times, but at the same time bicycle safety may be compromised by physically removing part of the pavement surface. |
| **Advantages** | • Good for pedestrians due to shorter crossing distance<br>• Provides space for landscaping<br>• Does not affect emergency response time<br>• Minimal inconvenience to drivers |
| **Disadvantages** | • May require the prohibition of on-street parking causing hardship or inconvenience for residents<br>• May create drainage issues where curb and gutter exist<br>• May create diversion for bicyclists |
| **Problems Targeted** | • Mid-block locations with speeding and/or cut-through traffic |
| **Design** | • Must not significantly impede emergency vehicle access |

# Chicane

## Purpose

Curvilinear reconstruction involving the introduction of curvatures on previously straight alignment. Curvilinear reconstruction can be accomplished in two different ways:

1. Reconstruct the street with a curved centerline alignment and a uniform roadway width
2. Introduce chokers or other types of barriers on alternate sides of the street to create a serpentine travel path.



Source: Institute of Transportation Engineers *Traffic Calming: State of Practice*

| | |
|---|---|
| **Effects** | |
| *Volumes* | Possible reduction in volumes |
| *Speed* | Possible reduction in speeds |
| *Traffic Noise and Air* | Little to no effect |
| *Traffic Safety* | Little or no effect |
| **Advantages** | • Possible reduction in volumes and speed<br>• No restriction in access to residents<br>• Can be landscaped enhanced<br>• Less disruptive for emergency vehicles than speed humps |
| **Disadvantages** | • Curbside parking must be prohibited in some locations<br>• Winter maintenance problems<br>• Possible impacts to drainage<br>• High cost of reconstruction |
| **Problems Targeted** | • Excessive speeds |
| **Design** | • Not appropriate for narrow streets (22 feet is appropriate width) |

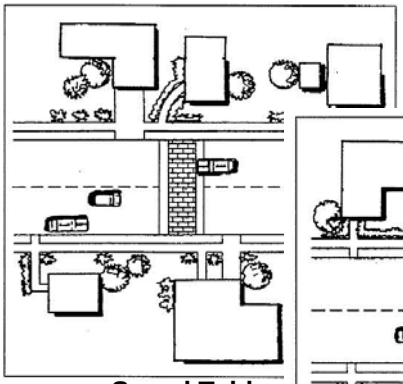
# Sidewalks

**Purpose**
Sidewalks are intended to provide pedestrians with a safe walking location when traffic volumes or vehicle speeds make walking on the street potentially dangerous.

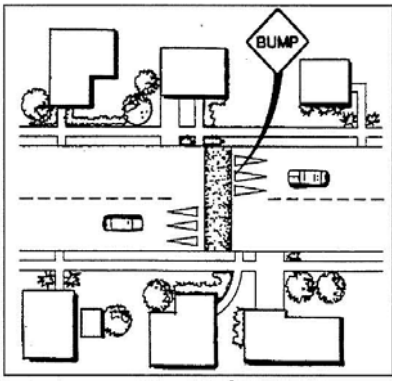
| | |
|---|---|
| **Effects** | |
| *Volumes* | No Effect. |
| *Speed* | No Effect. |
| *Traffic Noise and Air* | No Effect. |
| *Traffic Safety* | Possible decrease in pedestrian crashes. |
| **Advantages** | • Positively separates pedestrians and vehicles.<br>• Very effective at reducing pedestrian/vehicle conflicts.<br>• |
| **Disadvantages** | • Moderately costly to implement.<br>• Requires systematic deployment to achieve high levels of effectiveness.<br>•Increased maintenance efforts.<br>• Mixed neighborhood acceptance. |
| **Problems Targeted** | • High levels of pedestrian activity, especially at/near pedestrian generators (schools, parks, retail areas, etc) |
| **Design** | • Should be installed along all arterials and collectors (because of the traffic volumes and speed) and along residential streets based on providing connections to areas with high levels of pedestrian activity. |

# Speed Bumps/Humps/Tables

**Purpose**
A physical feature (usually made of asphalt or rubber mounds) that are designed to rise above the roadway surface and extend across the roadway perpendicular to the traffic flow. Typically used to reduce vehicle speeds.



**Speed Table**



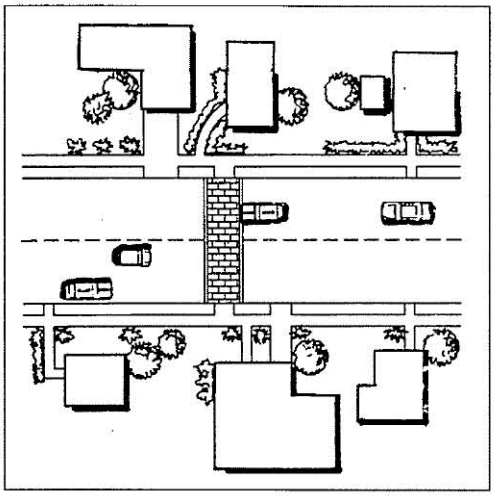

**Speed Bump**

Source: Institute of Transportation Engineers *Traffic Calming: State of Practice*

| | |
|---|---|
| **Effects** | |
| *Volumes* | May reduce traffic volumes |
| *Speed* | Effective in slowing vehicles traveling at typical residential speeds to approximately 5 to 15 mph depending on type installed at the device – may reduce overall speeds by 5 to 7 mph. |
| *Traffic Noise and Air* | May have an increase of noise at the bumps/humps |
| *Traffic Safety* | Traffic safety has not been found to be compromised with these devices. Traffic safety benefits can be gained if speeding is involved. |
| **Advantages** | • Reduces speeds<br>• Usually reduces traffic volumes<br>• Does not require parking removal or interfere with bicycle/pedestrian traffic |
| **Disadvantages** | • Can potentially increase noise<br>• Can cause traffic to shift to parallel residential or collector streets<br>• May decrease emergency vehicles response times |
| **Problems Targeted** | • Excessive speed<br>• High volumes |
| **Design** | • Speed humps are only effective for 250 feet on either side of the hump. Thus, a neighborhood considering speed hump installation would require two to three installations. |

# Raised Crosswalk

**Purpose**
A raised crosswalk is a speed table designed as a pedestrian crossing, usually at mid-block to provide additional warning of a pedestrian crossing



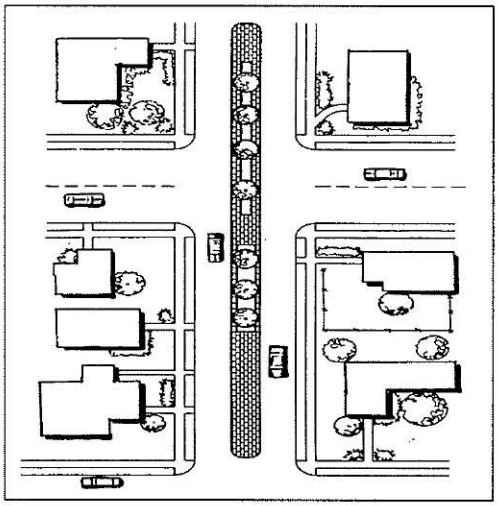
Source: Institute of Transportation Engineers *Traffic Calming: State of Practice*

| | |
|---|---|
| **Effects** | |
| *Volumes* | Possible reduction in traffic volumes |
| *Speed* | Decrease in speed at crosswalk |
| *Traffic Noise and Air* | Possible increase in traffic noise |
| *Traffic Safety* | May increase awareness of pedestrians |
| **Advantages** | • Speed control at pedestrian crossing<br>• Increases pedestrian visibility and awareness to driver<br>• May reduce traffic volumes |
| **Disadvantages** | • Possible increase in noise<br>• Possible diversion of traffic to other streets<br>• May impact drainage |
| **Problems Targeted** | • High mid-block pedestrian crossing and excessive vehicle speeds |
| **Design** | • Should be placed in mid-block<br>• Not appropriate for grades greater than 5 percent<br>• Most common height is between 3 and 4 inches and typically have ramps 6 feet long |

# Median Barrier

**Purpose**

A physical means for preventing left turning traffic on a major street from accessing a local street and through traffic from continuing on that local street. Alternate routes fro diverted traffic should be analyzed with regard to traffic carrying capacity and desirability.



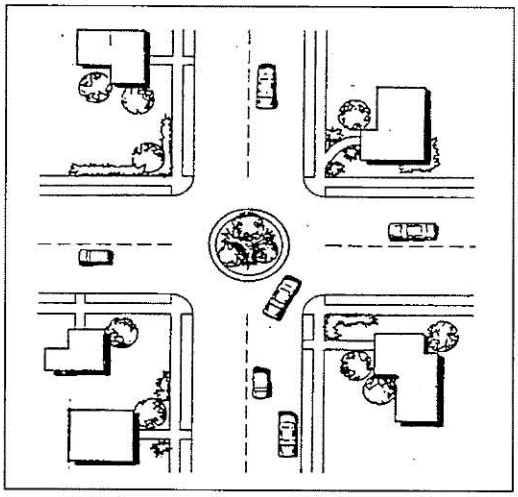
Source: Institute of Transportation Engineers
*Traffic Calming: State of Practice*

| | |
|---|---|
| **Effects** | |
| *Volumes* | Vary depending on proportion of traffic that is prohibited by the median barrier |
| *Speed* | Small reduction possible |
| *Traffic Noise and Air* | Little or no effect |
| *Traffic Safety* | May provide some safety benefits for pedestrians as a safety island for crossing the major street |
| **Advantages** | • Assists in pedestrian crossing<br>• Prevents vehicles from passing vehicles that are turning right<br>• May improve safety through access limitations<br>• Visually enhances the street |
| **Disadvantages** | • Diversion of traffic to other locations possible<br>• Disrupts continuity of local street system<br>• Maintenance of island required<br>• Reduction in access for residents |
| **Problems Targeted** | • Cut through traffic<br>• Vehicle conflicts |
| **Design** | • Must meet drainage requirements<br>• Must not significantly impede emergency vehicle access |

# Traffic Circle

## Purpose

A traffic circle is a raised geometric control island, frequently circular, in the center of an intersection of local streets. Typically, traffic circles would be about 20 feet in diameter. Traffic traveling through the intersection must avoid the island affecting the path and speed of the traffic.

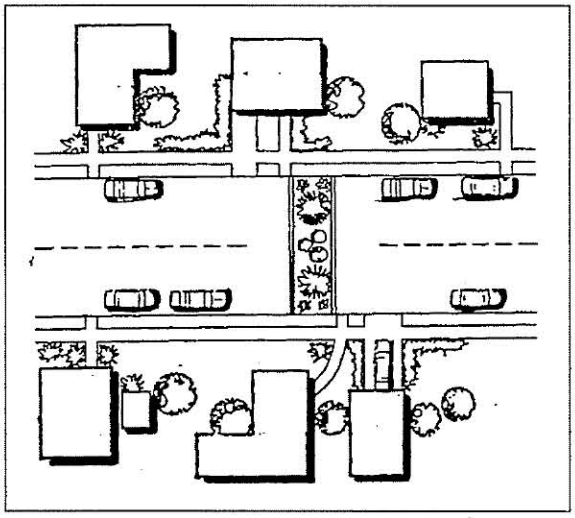


Source: Institute of Transportation Engineers *Traffic Calming: State of Practice*

| | |
|---|---|
| **Effects** | |
| *Volumes* | Little or no effect |
| *Speed* | May reduce speed at intersection |
| *Traffic Noise and Air* | Little or no effect |
| *Traffic Safety* | May decreases vehicle conflicts at intersection |
| **Advantages** | • Reduces speed at intersection approach<br>• Reduces vehicle conflicts at intersection<br>• Provides equal access to intersection for all drivers<br>• Does not restrict access to residents<br>• Can be landscaped |
| **Disadvantages** | • Some parking restrictions required<br>• Local experience has found these devices to be ineffective<br>• Can restrict access for trucks, buses and may increase emergency vehicle response time<br>• Winter Maintenance |
| **Problems Targeted** | • Excessive speeds<br>• Crash history at intersection |
| **Design** | • A minimum of 30 feet of curbside parking must be prohibited at each corner of the intersection |

# Street Closure

**Purpose**
A street closure, for the purpose of this tool box, is defined as closing a street either at one end or the other, or at a mid block location to eliminate unwanted through traffic.

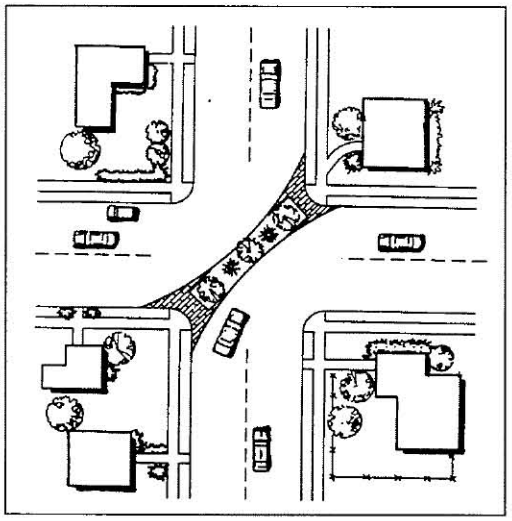


Source: Institute of Transportation Engineers *Traffic Calming: State of Practice*

| | |
|---|---|
| **Effects** | |
| *Volumes* | Reduces through traffic volumes |
| *Speed* | May reduce speed |
| *Traffic Noise and Air* | Little to no effect |
| *Traffic Safety* | May improve safety of street |
| **Advantages** | • Eliminates through traffic<br>• Possibly reduces speed of remaining vehicles<br>• Can maintain pedestrian and bike access |
| **Disadvantages** | • Increases emergency vehicle response times<br>• May cause inconvenience for some residents<br>• May divert traffic to other streets<br>• May require additional right-of-way acquisition<br>• Winter maintenance |
| **Problems Targeted** | • Cut through traffic volumes |
| **Design** | • There needs to be a minimum of 120 foot right-of-way to accommodate the minimum turning radius of 40 feet. |

# Full / Diagonal Diverter

**Purpose**
A full diverter, sometimes called a diagonal diverter, is a raised barrier place diagonally across an intersection that physically divides the intersection and forces al traffic to make a sharp turn.

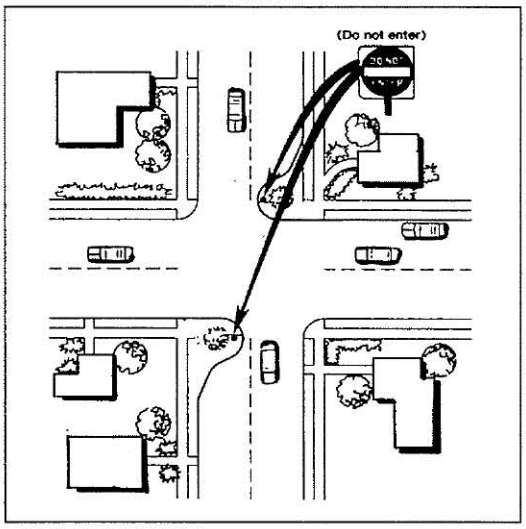


Source: Institute of Transportation Engineers *Traffic Calming: State of Practice*

| | |
|---|---|
| **Effects** | |
| *Volumes* | May decrease traffic volumes |
| *Speed* | May reduce speed |
| *Traffic Noise and Air* | Little or no effect |
| *Traffic Safety* | Possible improvement |
| **Advantages** | • Reduces traffic volumes<br>• Restricts vehicle access while maintaining bicycle and pedestrian access |
| **Disadvantages** | • Prohibits or limits access and movement<br>• Restricts access for emergency vehicles<br>• May impact drainage<br>• May impact parking |
| **Problems Targeted** | • Cut through traffic<br>• Speed – forces driver to slow to make the turn |
| **Design** | • The curvature of the diverter is dependent on the intersection roadway widths.<br>• Special care needs to be taken with drainage design.<br>• The intent is to divert traffic to arterial and collector streets.<br>• Needs to be good visibility approaching the diverter for drivers to react and navigate the turn safely |

# Partial Diverter

**Purpose**
A partial-diverter is the narrowing of a two way street in order to eliminate one direction of travel. The concept can only be used at an intersection and attempts to reroute traffic attempting to use the protected street onto other roadways.




Source: Institute of Transportation Engineers *Traffic Calming: State of Practice*

| | |
|---|---|
| **Effects** | |
| *Volumes* | Reduces traffic volumes in the eliminated direction |
| *Speed* | Possible speed reduction |
| *Traffic Noise and Air* | Little or no effect |
| *Traffic Safety* | Improved pedestrian crossing |
| **Advantages** | • Allows for movement of emergency vehicles<br>• Reduces traffic volumes<br>• Allows two-way traffic on the remainder of the street<br>• Shorter pedestrian crossing at intersection |
| **Disadvantages** | • Parking may be impacted and reduced<br>• Interrupts street network connectivity<br>• Emergency vehicles do have to drive around partial closure with care |
| **Problems Targeted** | • Excessive volumes on residential street |
| **Design** | • Care has to be given in the design to not hinder unnecessarily emergency vehicles due to poor design |

DEFINITIONS - APPENDIX X

# Roseville Neighborhood Traffic Management Program

## 1.0 Introduction

CONCERNS ABOUT
~~Increasing~~ traffic volumes and higher speeds have become important issues throughout the metro area and are having an increasing impact on residential streets in the City of Roseville. The City of Roseville is continually striving to strengthen and protect its neighborhoods by improving the quality of life in residential areas. A goal of the Roseville Transportation Plan is for the transportation system to address community issues and concerns while maintaining and enhancing neighborhoods, providing connectivity, and the sense of community cohesion.

Discussion with traffic engineers in cities with established traffic management programs provided insight into the need for a formal process. An established traffic management process:

- Allows the city to better respond to residents,
- Provides the opportunity for better understanding of the issues, and
- Allows consistent application across the community.

Therefore, for residents to obtain consideration for any given traffic control measures on either street or larger neighborhood area they are required to follow a process. The process will ensure that neighborhoods with demonstrated traffic issues and community support for traffic management have equal access to the neighborhood traffic process. The Neighborhood Traffic Management Program depends upon citizen involvement and may vary from year to year based upon citizen participation and available funding.

### 1.1 Purpose

VIOLATION OF TRAFFIC LAWS.

This document was developed to guide city staff and inform residents about the processes and procedures for implementing traffic management strategies on local residential streets to address traffic concerns such as excessive volumes and vehicle speeds, high volumes of non-local through traffic, and vehicle crashes in neighborhoods. The document includes a summary of the City of Roseville's Policies for the Traffic Management Program, background on the history of traffic management, the City of Roseville's process for implementing strategies, and a toolbox of common traffic management measures.

## 2.0 Policies

The following policies are established as part of the Neighborhood Traffic Management Program for neighborhood streets:

- Compatibility with transportation goals in City of Roseville Transportation Plan.
- Implementation limited to local streets (no arterials or collectors) as identified in the Roseville Transportation Plan.
- Implementation of strategies will be funded by a combination of city funds and neighborhood participation.
- Trucks are allowed on all City streets unless otherwise posted (by State law trucks must be allowed on all State-Aided roadways.)
- The program intends to take a system-wide approach when addressing a neighborhood traffic problem. For each project, city staff will determine a logical project boundary that

will be necessary for the approval process and will help address the issue of displacement/diversion to other local streets.

- Implementation strategies will be limited to those local streets where the 85% speed exceeds 5 mph above the posted speed limit or where other traffic impacts affecting the livability of the neighborhood exists
- Implementation of traffic management strategies will be in accordance with the procedures set forth in this document, and in keeping with sound engineering practices, as well as be within the city's available financial and staff resources.
- Implementation of any devices will be consistent with the guidelines in the Minnesota Manual on Uniform Traffic Control Devices.
- Initial deployments are considered temporary for study purposes and subject to an interim review by City staff prior to permanent installation.

# 3.0 Traffic Management Background

The United States has used street closures and traffic diverters dating back to the late 1940s and early 1950s, but it was not until the 1970s that Seattle, Washington completed area-wide demonstrations of traffic management strategies. Since then, traffic management has been continually studied and implemented throughout the United States. Strategies include street closures, traffic diverters, speed humps/bumps, signing, increased enforcement and many others, but they all are implemented to accomplish one of the following:

- Modify driver behavior (reduce speed)
- Modify traffic characteristics (reduce volume)
- Improve safety (pedestrian and bicyclists)

Traffic management can be simplified as a two step process: (1) identify the nature and extent of traffic-related problems on a given street or area and (2) select and implement the proper strategy for reducing the identified problem. The traffic management strategies discussed in this document are solutions to a narrowly defined set of problems and are not universally applicable or effective at solving all problems. The wrong traffic management strategy used in the wrong application will not improve conditions - it will only increase City costs and may even make conditions worse.

Since not all strategies are appropriate for every problem, the City has developed a process to identify the appropriate solutions. The process includes identifying the problem, evaluating potential strategies, and implementing appropriate measures while including public participation and governmental approva1. This process is summarized in Section 4.

The process and strategies included in this document are intended to be used on streets classified as local residential streets to reduce speeds and volumes. (Streets within the City of Roseville are classified based on definitions from the Metropolitan Council defined in Appendix C of the Roseville Transportation Plan. The current Road Classification Map, Figure 4.10 from the Roseville Transportation Plan, identifies street classifications within the City of Roseville – see Appendix D.) By definition, arterials and collector roadways are intended to have higher speeds and accommodate higher volumes; therefore it would be against the function of arterials or collectors to implement traffic management strategies. These roadways are intended to operate efficiently with high volumes and speed. When arterials and collectors are operating

efficiently they provide the necessary mobility for the traveling public and prevent the need to divert to the residential street network.

# 4.0 Procedure Summary

A flow chart, *Exhibit 1*, provides a summary of the procedures for implementing a traffic management strategy on a residential street. The process includes the following steps:

**Step 1 • Identify Candidate Streets/Neighborhoods**
First residents must identify candidate streets for traffic improvement and submit a written request to the City Engineering Department. Any requests for project proposals require a written application with 50% of project neighborhood signing the application. *Appendix A* provides a sample request form.

**Step 2 • Preliminary Screening and Evaluation**
The City Engineering Department will review requests and determine whether they can be handled as part of the normal traffic engineering process or police enforcement function of the City or if they qualify for consideration under the Neighborhood Traffic Management Program.

**Step 3 - Data Collection and Traffic Study**
If it is determined that the request falls under the Neighborhood Traffic Management Program the City will undertake an engineering study of the street(s) or neighborhood including gathering relevant data of the proposed street.

**Step 4 - Develop/Evaluate Traffic Management Strategies**
Based on the traffic study and input from other departments, the City Engineering Department will make a preliminary determination of the need for traffic management measures and make recommendations as to which measures would be appropriate.

**Step 5 - Conduct Neighborhood Meeting and Survey**
A neighborhood meeting will be held, or a summary letter will be sent, to present the conclusions of the traffic study and discuss appropriate next steps in the process. At this time a survey will be sent out to determine neighborhood support for the recommended traffic management strategy and to receive input from affected residents.

**Step 6 - Traffic Management Strategy Recommendation and Approval**
The recommended strategy will not be implemented without the support of 65% of the project neighborhood and 50% of the affected neighborhood. In addition to neighborhood approval, the City Council must also approve the implementation of the traffic management strategy.

**Step 7 - Implement Temporary Measures and Monitor**
If measures are approved it may be possible to implement first a temporary measure. If a temporary measure is used, it will be monitored for a minimum of 3 months to determine its effectiveness.

**Step 8 - Approve Permanent Measures**
Results from the monitoring of the temporary measure will determine if the strategy will receive final approval from the City Council. If the temporary measure is not effective the Engineering Department will revisit the analysis and development of strategies (Steps 3 and 4) or choose to not continue the process.

**Step 9 - Monitoring**
Once a traffic management strategy has been implemented the City will continue to conduct periodic monitoring of the site to collect data for future implementation of strategies and to document the effectiveness of existing measures. This program and the associated Toolbox may be amended at any time by the City Council.

***Appeals*** - Decisions of staff can be appealed to the City Council. The appeals process will follow established City procedures.

***Removal*** - Existing traffic management measures and/or measures installed under the Program may be requested to be removed. The request for removal of a project will be processed generally using the same procedures as outline in this program requiring written request and appropriate neighborhood approval.

# 5.0 Procedural Details

## Step 1 - Identify Candidate Streets/Neighborhoods

Residents may identify candidate streets or areas for traffic improvements. Some request may be handled by phone or verbally from residents to City Staff, which could result in increased police enforcement or placement of the City's speed display equipment. Any requests for permanent traffic management strategies require a written application with 50% of the project neighborhood signing the application. *Appendix A* provides a sample petition and request letter.

Application of these strategies on collector or arterial streets is excluded and not included in this process.

## Step 2 -Preliminary Screening and Evaluation

The City Engineer will review requests to determine whether or not they should be handled as part of normal traffic engineering procedures or police enforcement of the City, or if they qualify for consideration under the Neighborhood Traffic Management Program. Some requests may be able to be handled within the current Capital Improvement Program such as planned infrastructure improvements or reconstructions. In addition, common requests for increased traffic enforcement, and placement of the variable speed display equipment are commonly handled by requests to the City Traffic Safety Committee.

Review of requests will consist of comparing the identified street characteristics with the following initial criteria:

- The street in question must be classified as a Local (residential) street in the City of Roseville Transportation Plan (see Figure 4.10 from Roseville Transportation Plan in Appendix D).
- The requests must be related to speeding, excessive traffic volumes, crashes, cut-through traffic, truck traffic, non-motorized transportation safety or other related impacts on a residential street.

If it is determined that the request falls under the function of this plan, then Step 3 will be initiated. If not, the request shall be followed up as appropriate by the City Engineer as part of the Departments normal function, including coordination with Police, Fire, and Public Works Departments as needed.

## Step 3 - Data Collection and Traffic Study

If it is determined that the request falls under the guidelines of the management program, the City Engineer will conduct an engineering study of the street(s) or neighborhood. The study will include the following actions:

## Define Project Area / Impacted Area

The definition of the project area and impacted areas sets up the project boundaries and will be used to determine neighborhood support during the petition process and for the assessment process if a strategy is implemented.

## Data Collection

Traffic data collection will include (as appropriate based on identified problem) one or more of the following:

- Traffic volume counts (24 hour counts in 15 minute increments, truck volume counts)
- Non motorized transportation counts
- Speed surveys
- Cut-through traffic estimates
- Crash information (~~three years recommended~~) 3YRS MIN – 5YR RECOMMENDED
- Roadway Geometry (sight distance, lane configuration, etc.)
- Land Use Mix (density of residential and presence of sidewalks, pedestrian generators such as schools, parks, bus routes, unique features)

## Evaluation of Traffic Data

From the data collected the traffic problems associated with the neighborhood street can be documented. The documentation will be valuable in the development of possible traffic management strategies.

From the data collected the City will also be able to rank the potential projects for further study. *Table 1* provides the ranking criteria. This ranking will be beneficial if the number of request submitted is beyond the fiscal and staffing ability of the city. By ranking requests based on the criteria set forth in *Table 1*, the city can prioritize the projects to focus funding accordingly.

| **TABLE 1**<br>Ranking of Traffic Management Requests | |
|---|---|
| 85th Percentile speeds 5 mph over posted speed limit 85TH PERCENTILE AT ONLY POSTED | Yes - +200<br>No - +0 YES +100 |
| Public school yard, parks, playground development adjacent to benefited area (0 to 200 points) | None +0<br>All of 1 side +100<br>All of 2 sides +200 ? |
| Residential development adjacent to benefited area (0 to100 points) | None +0<br>All of 1 side +50<br>All of 2 sides +100 |
| Number of reported correctable crashes based on last 5 years of available data (0 to 200 points) | 20 per crash; maximum of 200 points<br>WHAT IF YOU ONLY GOT 3 on 4 YRS |
| Pathway adjacent to project area (0 to 100 points) | None +100<br>All of 1 side +50<br>All of 2 sides +0 |
| Percent of potential assessment properties supporting project by petition (180 to 300 points) | 3 points per percent; maximum 300 points |
| Average residential density adjacent to project area (0 to50 points) | 0 dwelling units per 100 lin. ft. = 0 points<br>5+ dwellings units per adjacent 100 lin. ft. = 50 points |

CHANGE TO % OF FRONTAGE

## Step 4 - Develop/Evaluate Traffic Management Strategies

Using the data collected during the development of the traffic study and applying recognized traffic engineering standards, the City Engineering Department will recommend the use of one or more neighborhood traffic management strategies. A "toolbox" of strategies is included in *Section 6.0* of this plan. While it is not inclusive of all strategies, it provides a summary of the most applied and successful measures as documented in the research summarized in *Appendix B*. The toolbox includes a brief description of the strategy, its effects on volume, speed, noise, and safety, a discussion of its advantages and disadvantages and design considerations. The following strategies are included in the toolbox:

| **Traffic Control Devices** | **Roadway Adjustments** |
|---|---|
| - Vehicle Restrictions | - Narrowing Lanes |
| - Turn Restrictions | -Chokers |
| - One-Way Streets | - Mid-Block Narrowing |
| - Watch Children Signs | - Chicane |
| - Stop Sign Implementation | **Vertical Elements** |
| - All-Way Stop Sign Implementation | - Speed/Tables |
| - Parking Restrictions | - Raised Crosswalk |
| - Pavement Markings | - Median Barrier |
| - Speed limits | - Traffic Circle |
| **Enforcement** | - Street Closure |
| - Increased Enforcement | - Full / Diagonal Diverter |
| - Variable Speed Display Board | - Partial Diverter |

### Effectiveness of Strategies

As stated earlier, traffic management strategies are not universally applicable or effective at solving all problems. The Institute of Transportation Engineers has collected data on the effectiveness of traffic management strategies implemented throughout the United States. *Table 2* provides a summary of this data and can be useful in the selection of appropriate traffic management strategy to implement. Along with the information provided in Table 2 on effectiveness, the following are some other effectiveness considerations:

- Traffic control devices, by themselves, are almost never effective at reducing traffic volumes or vehicle speeds.
- Enforcement can be effective if applied regularly and over an extended period of time.
- In most cases, enforcement will result in local residents being ticketed.
- Roadway adjustments (narrowing) have proven to be moderately effective but at high implementation costs.
- Vertical elements (primarily speed humps/bumps) have proven to be moderately effective but neighborhood acceptance has been mixed.
- The combination of enforcement plus other strategies has proven to be the most effective approach.

| **TABLE 2**<br>Effectiveness Management of Strategies | **Volume Reduction** | **Speed Reduction** | **Safety Improvement** | **Increase in Air / Noise Pollution** | **Emergency Access Issues** | **Access Restriction** | **Increased Maintenance Efforts** | **Cost** |
|---|---|---|---|---|---|---|---|---|
| **Traffic Control Devices** | | | | | | | | |
| Vehicle Restriction | Poss | Poss | Poss | No | Poss | Yes | No | Low |
| Turn Restrictions | Yes | Poss | Poss | No | No | Yes | No | Low |
| One-Way Streets | Poss | No | Poss | No | Poss | No | Poss | Low |
| Watch Children Signs | No | No | No | No | No | No | No | Low |
| Stop Sign Implementation | No | No | No | Yes | Yes | No | No | Low |
| All-Way Stop | No | No | Poss | Yes | No | No | No | Low |
| Parking Restrictions | No | No | Poss | No | No | No | No | Low |
| Speed limits | No | No | No | No | No | No | No | Low |
| Painted Crosswalks | No | No | No | No | No | No | No | Low |
| **Enforcement** | | | | | | | | |
| Increased Enforcement / Speed Watches | No | Yes | Poss | No | No | No | No | Mid |
| Variable Speed Display Board | No | Yes | Poss | No | No | No | No | Low |
| **Roadway Adjustments** | | | | | | | | |
| Narrowing lanes | No | Poss | Poss | No | No | No | No | Mid |
| Chokers | No | Poss | Yes | No | Poss | No | No | High |
| Mid-Block Narrowing | No | Poss | Poss | No | No | No | No | Mid |
| Chicane | Poss | Poss | No | No | No | No | Yes | High |
| Sidewalks | No | No | Poss | No | No | No | Poss | Mid |
| **Vertical Elements** | | | | | | | | |
| Speed Bumps/Humps/Table | Poss | Yes | Poss | Poss | Poss | No | Poss | Mid |
| Raised Crosswalk | Poss | Yes | Poss | Poss | Poss | No | Poss | Mid |
| Median Barrier | Yes | Poss | Poss | No | Yes | Yes | Poss | High |
| Traffic Circle | No | Poss | Poss | No | Poss | No | Yes | High |
| Street Closure | Yes | Poss | Poss | No | Yes | Yes | Poss | High |
| Full Diverter | Poss | Poss | Poss | No | Yes | Yes | Poss | High |
| Partial Diverter | Poss | Poss | Poss | No | No | Yes | Poss | High |

## Cost Estimate and Funding

For the purpose of discussions with affected residents, a cost estimate will be developed for the recommended strategy. It is the policy of the City of Roseville that the following cost sharing will occur with an approved traffic management strategy:

- City of Roseville will pay the cost of administrative work, traffic study and data collection
- City of Roseville pays 25% of the construction and installation costs of major strategies while the neighborhood affected will pay 75% of the cost (minor items such as installation of a limited number of signs or painting of crosswalks and other pavement markings would be assumed completely by the City) CONSTRUCTION COST INCLUDES DIRECT CWA, MOBZN + PROJECT ADMIN.

Costs associated with implementing traffic management strategies vary significantly from just over $250 for installing a speed limit sign to $10,000 or more for a landscaped median construction. *Table 3* provides a summary of typical implementation costs for traffic management strategies.

**TABLE 3**
Typical Implementation Costs

| Type of Implementation | Unit | Unit Cost |
|---|---|---|
| Warning Signs | Per sign | $250 |
| Pavement Markings | | |
| - Roadway Striping | Per linear foot | $1.00 |
| - Crosswalk Striping | Per crosswalk | $150 |
| Textured Pavement | Per crosswalk | $1,500 |
| Street Lighting | Per fixture | $7,500 |
| Raised Crosswalk | Per crosswalk | $4,000 |
| Speed Table | Per table | $5,000 |
| Mid-Block Choker | Per choker | $5,000 |
| Intersection Choker | Per approach | $5,000 |
| Mid-Bock Speed Table | Per table | $7,500 |
| Intersection Speed Table | Per intersection | $25,000 |
| Traffic Circle | Per intersection | $15,000 |
| Center Island | Per approach | $15,000 |
| Half Closures | Per intersection | $40k to $60k |
| Full Closures | Per intersection | $120,000 |

Source: City of Minneapolis & ITE, Traffic Calming - State of the Practice

While the city will cost share only the implementation costs, the consideration of future maintenance costs are also a factor for determining the most appropriate strategy. While the implementation of a traffic sign may appear to be the least expensive option at only $250, the additional per year cost of annual maintenance needs to be considered. A comparison of the annual costs for the most common strategies for speed reduction, increased enforcement and speed humps, is included in *Table 4.*

**TABLE 4**
Comparison of Annual Costs

| Measure | Initial Cost | Annual Cost | Annual Revenues |
|---|---|---|---|
| Photo-radar (ownership option) | $85,000 | $145,000 | $40,000 |
| Photo-radar (lease option) | | $214,000 | $40,000 |
| Targeted Police Enforcement | $70,000 | $194,000 | $40,000 |
| Speed Humps | $300,000 | $30,000 | $0 |

Source: ITE, Traffic Calming - State of Practice

## Step 5 - Conduct Neighborhood Meeting and Petition

After the completion of the traffic study and the development and evaluation of potential strategies, the city will either hold a Neighborhood Meeting or distribute a letter to inform the community on the process and results of the traffic study and provide information on the recommended strategies. Based on the engineering study and input from residents, the city will make a preliminary determination and recommendation for the need of traffic management strategies.

## Step 6 - Traffic Management Strategy Approval

Once the traffic study results, management strategies, and cost estimates have been provided to affected neighborhood residents, a survey/petition will be circulated to ascertain whether or not the neighborhood approves of the recommended strategy and are willing to cover the potential costs of implementation. The recommended strategy will not be implemented without the support of 65% of the project neighborhood and 50% of any affected neighborhood.

Once approval is obtained from the neighborhood the strategy will be presented to the City Council for approval.

## Step 7 - Implement Temporary Strategy and Monitor

In most cases, the strategy will be implemented with temporary materials and remain in place for approximately three to six months depending on the type of improvement. The strategy will be evaluated to determine if it addresses the identified problems and is consistent with the Neighborhood Traffic Management Plan goals. During the test period residents may provide comments to the City Engineering Department regarding the improvement. At any time during this test phase appeals of the decision for installing the strategy can be submitted and forwarded to appropriate staff.

## Step 8 - Approve Permanent Strategy

If it is determined that the temporary strategy does not achieve the intended goals of reducing speeds, cut through traffic or other identified problems, the City Engineering Department will review other potential measures and recommend the elimination of all strategies or test the installation of a different strategy.

Effective temporary strategies will be brought to the council for approval for the installation of a permanent form of the approved traffic management strategy.

## Step 9 - Monitoring and Future Actions

The City will conduct periodic monitoring of the fully installed traffic management strategy to determine if the project continues to provide effective improvement to the neighborhood. The monitoring will be conducted at the discretion of the City based on available funding, staffing levels, and resident comments.

If monitoring shows that the implemented strategy fails to achieve the intended goals it may be removed.

### Legal Considerations

From the local government perspective, the legal issues surrounding traffic management strategies fall into three categories: statutory authority, constitutionality, and tort liability. First, the local government must have legal authority to implement traffic management strategies on a given roadway (statutory authority). Second, the local government must respect the constitutional rights of affected landowners and travelers on the roadways (constitutionality). And finally, the local government must take steps to minimize the risk to travelers from the installation of traffic management strategies (tort liability). Through documentation of the entire process, including the collection and evaluation of traffic data, the decision process, and interaction with the public, the Roseville Traffic Management Program can minimize potential legal difficulties.

# 6.0 Toolbox of Neighborhood Traffic Management Strategies

The following Toolbox provides information on a variety of traffic management strategies. Each strategy includes information on its purpose, its effectiveness for solving different types of traffic problems, and a summary of advantages and disadvantages for implementation. To make the toolbox understandable and usable it has been organized into types of strategy as follows:

**Traffic Control Devices** - the use of common traffic control devices, such as signing and pavement markings, to solve neighborhood traffic problems. Included in this category are:

- Vehicle restrictions
- Turn restrictions
- One-Way streets
- Watch for Children Signs
- Stop Sign Implementation
- All-Way Stop Sign Implementation
- Parking Restrictions
- Pavement Markings
- Speed Limits

**Enforcement** - there are two options for using enforcement as a traffic management strategy: increase police enforcement, the use of Variable Speed Display Boards

**Roadway Adjustments** - there are multiple strategies for traffic management that change the appearance of the roadway including:

- Narrowing of lanes
- Chokers
- Mid-Block Narrowing
- Chicane

**Vertical Elements** - introducing vertical elements to the roadway, either as obstacles for vehicles to drive over or around, are common traffic management strategies. These include:

- Speed/Tables
- Raised Crosswalks
- Median Barrier
- Traffic Circles
- Street Closer
- Full / Diagonal Diverter
- Partial Diverter

9/26/11

Traffic Management Policy

Steve Gjerdingen Comments:

Page 1 – 1.0

- Paragraph 1: **We need to reference** the comment about traffic volumes increasing in Roseville. I heard comments about America's vehicle mileage being down for once in many years. **We need severity defined.** Paragraph 1:
- Paragraph 1: "The City of Roseville is continually striving to strengthen and protect its neighborhoods by improving the quality of life in residential areas, but not ~~at the cost of deteriorating~~ business, institutional, park land, and other areas of the city." NO CHANGE
- Paragraph 2: "Allows the city to better respond to residents and businesses"
- Paragraph 3: "Therefore, for citizens to obtain"

Page 1 – 1.1

- "Traffic management strategies on local streets" – eliminate word residents
- Excessive volumes and vehicle speeds, **unwanted aggressive road behavior, conflicts between motorized and non-motorized users** PWETC DISCUSSION

Page 1 – 2.0

- Implementation limited to local streets (no arterials). I want a definition of "collectors" before I agree to use it here. Don't refer to the Roseville Transportation Plan. Put it in the document. I don't have time to read the plan and neither will people reading this policy. At the very least, put in a brief summary. PLAN WILL BE IN APPENDIX
- Add the following policy: The program intends to address longstanding issues. The program is not intended to be used as a tool to address issues before they occur. A longstanding issue is an issue that can reasonably argued to have been a problem for at least three months.
  Ex: Fairview Fields parking concerns along Skillman and Prior. Hiatus on neighborhood request to give it a 1 season trial first under the new configuration before modifying street characteristics. NO CHANGE

Page 2

- Top sentence "and will help address the issue of displacement/diversion to other streets" eliminate the word local. It's a problem if traffic gets diverted anywhere if the street it's diverted to is already at capacity (ex: Fairview ave between Lydia and Cty D) or could cause other issues on the neighboring street (safety issues) NO CHANGE
- Section 3.0 , paragraph 4 " classified as local streets" – eliminate residential.
- Section 3.0, paragraph 4 "eliminate any mentioning of collectors. →

Page 3 –

- Before step 1, eliminate word "residential", replace with "local"
- Step 6: include the PWET Commission as part of the approval process (insert before council) DISCUSS
- Step 6: include public hearing as part of approval process (before city council) covered in step 5 & 429
- Step 9: City Council or PWET Commission – NO CHANGE
-

Page 4

- Step 1:
  Replace residents with "citizens" throughout the entire paragraph. Eliminate word "collector"
- Step 2: Define who the City Traffic Safety Committee is and what the process is if a neighborhood wants to veto this committee. ADDED TO DEFINITIONS
- Step 2:
  Criteria 1: Eliminate "residential" requirement under classification.
- Step 2:
  Criteria 2: Make sure this list matches the list earlier in the document under 1.1 Purpose.

Page 5

- Under data collections include "aggressive driver behavior instances" over course of 1 hour. I assume physical observation will already be needed to collect some of these pieces of information, so this would be easy to add to the list as well. ALL DATA IS REMOTE - NO CHANGE
- In Table 1: let's examine the last item and see what Roseville's densities are in comparison, and maybe consider using zoning instead of density counts (ex: low density residential). Let's consider adding a 100 pt calculation for areas that have medium or high density housing adjacent to the street, as defined by Roseville's zoning code. PWETC DISCUSSION
-

Page 6

- Under Step 4 toolbox include:
  - lane restriping → SAME AS NARROWING
  - sidewalk construction → ALREADY THERE
- Under Step 4 toolbox modify:
  - "Street Closure" to "Street Closure but include pathway connection"
  - Create another item called "Street Closure with no pathway connection"

  } NO CHANGE
- Under Effectiveness of strategies:
  - Modify first point to say "almost never effective at reducing traffic volumes or vehicle speeds but improve safety conditions at intersections. NO CHANGE

- Change point 3 to say "local users" being ticketed, not "local residents"

Add these same things on Page 11

Page 7

Page 8

- Under Cost Estimate and Funding divide into Installation costs and Long Term Maintenance costs. Under Long Term Maintenance costs include the following bullet point:
  - For Street Closures with pathways, all residential dwellings immediately adjacent to the pathway are responsible for plowing pathway connection during snowfall conditions. Add this to city nuisance code. NO CHANGE
- Add sidewalk construction cost estimate for 1 city block (1/8 mile)

Page 9

- In Step 5, 6, and 7, change "residents" to "citizens"

Page 10

- Replace "residents" with "citizens" under step 9

Page 11

- Add "watch for pedestrians" signs (like the one on Dale Street up at the top of the hill by the reservoir) NO CHANGE
- Add elements that I mentioned earlier on my comments for Page 6

# Roseville Public Works, Environment and Transportation Commission

## Agenda Item

**Date:** October 25, 2011 **Item No:** 6

**Item Description:** Organized Trash Collection

**Background:**
The Commission requested a discussion with various stakeholders and community organizations that have indicated positions on this issue at the October meeting. The Waste Haulers have been invited to attend as well as the Roseville Citizens League who held the recent forum and the League of Women Voters. We also plan to have a demonstration of a software program (Heavy Vehicles Impact Tool) developed to estimate the damage caused by heavy trucks on pavements. We anticipate short presentations and discussion as follows:

- Road Impact tool demonstration- 10 minutes
- League of Women Voters position - 5-10 minutes
- RCL position 5-10 minutes
- Waste Haulers position 5-10 minutes
- Public Comments
- Commission discussion

**Recommended Action:**

Discuss recommendation on this topic.

**Attachments:**
A.
B.
C.

# Roseville Public Works, Environment and Transportation Commission

## Agenda Item

**Date:** October 25, 2011 **Item No:** 7

**Item Description:** Look Ahead Agenda Items/ Next Meeting November 22, 2011

**Suggested Items:**

- Utility Undergrounding Draft Policy
- Ramsey County Solid Waste Policy
-

**Recommended Action:**

Set preliminary agenda items for the November 22, 2011 Public Works, Environment & Transportation Commission meeting.