Roseville Public Works, Environment and Transportation Commission
Meeting Agenda

Tuesday, June 28, 2011, at 6:30 p.m.
City Council Chambers, 2660 Civic Center Drive
Roseville, Minnesota 55113

6:30 p.m.	**1.**	**Introductions/Roll Call**
6:35 p.m.	**2.**	**Public Comments**
6:40 p.m.	**3.**	**Approval of May 24, 2011 Meeting Minutes**
6:45 p.m.	**4.**	**Communication Items**
7:00 p.m.	**5.**	**Review of Joint Council/Commission Meeting Discussion**
7:10 p.m.	**6.**	**Traffic Management Policy**
8:10 p.m.	**7.**	**Utility Capital Improvement Program**
8:30 p.m.	**8.**	**Possible Items for Next Meeting – July 26, 2011**
8:40 p.m.	**9.**	**Adjourn**

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Roseville Public Works, Environment and Transportation Commission

Agenda Item

Date: June 28, 2011 **Item No:** 3

Item Description: Approval of the Public Works Commission Minutes May 24, 2011

Attached are the minutes from the May 24, 2011, meeting.

Recommended Action:

Motion approving the minutes of May 24, 2011, subject to any necessary corrections or revision.

Move: _____

Second: _____

Ayes: _____

Nays: _____

Roseville Public Works, Environment and Transportation Commission Meeting Minutes

Tuesday, May 24, 2011, at 6:30 p.m.
City Council Chambers, 2660 Civic Center Drive
Roseville, Minnesota 55113

1. Introduction / Call Roll

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

Members Present: Chair Jim DeBenedet; and Members Steve Gjerdingen; Jan Vanderwall; and Joan Felice; with Member Duane Stenlund arriving at approximately 7:03 p.m.

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

Others Present: None.

2. Public Comments

No one appeared to speak at this time.

3. Approval of April 26, 2011Meeting Minutes

Member Vanderwall moved, Member Gjerdingen seconded, approval of the April 26, 2011 meeting as presented.

Ayes: 4
Nays: 0
Motion carried.

4. Communication Items

City Engineer Bloom noted that communication item descriptions and project updates had been included in the agenda packet, to avoid taking up additional meeting time.

Chair DeBenedet noted, and staff confirmed, that links included in the staff memorandum as part of tonight's agenda would provide more detailed information on each project as well.

Miscellaneous discussion among staff and commissioners included how and when striping was determined to facilitate efficient and safe pedestrian and bicycle movements for a particular roadway (e.g. County Road C-2 between Hamline and Snelling Avenues; Lydia Avenue and County Road C-2) as well as from neighborhood input, road crowns, existing stripes, lane widths, and whether parking lanes are available;

Budget Update

Public Works Director Schultz provided a budget update based on the most recent City Council discussions, with information from the citizen survey included for applicable programs/services; with the City Council scheduled to receive a report from the City Council's CIP subcommittee on June 13, 2011; followed by the City Council providing direction to staff to develop the City Manager-recommended budget and not-to-exceed levy prior to September.

Further discussion on various public improvement projects programmed for 2012 included staff identifying those that included MSA funding, as well as those proposed for 2013 and 2014, noting that this budget cycle (2012/2013) was the first in which a biennial budget was being developed; potential impacts on City and area projects if the State of MN failed to come to a budget agreement before a state government shut-down, with staff anticipating that the Fairview pathway project funds would be impacted, with plan reviews by state staff not considered essential services, and staff's attempt to get the plans approved before any state shut-down may occur; with local and area City Managers closely following potential risks and impacts of the state budget impasse.

Staff anticipated the only other project that may be impacted would be MnDOT testing as the Rice Street project proceeded; however, Ms. Bloom noted that since that project was already in process, it may be considered as an essential service. Ms. Bloom noted that several years ago in a similar situation with the state budget, they did shut down the Snelling Avenue improvement project. Mr. Schwartz advised that staff would keep the PWET Commission updated as the process moved forward.

Organized Collection Update

Chair DeBenedet provided an update to Members on the status of the Roseville Citizen's League's (RCL) consideration of a fall informational meeting; with his perception being that there was not strong support for organized collection on the part of the City Council; and suggested that the PWET Commission "wait and see" as events unfolded in the City of Maplewood as they pursue organized collection, rather than to waste additional Commission time with an informational forum at this time. Chair DeBenedet suggested that Members work with staff to determine potential impacts on local streets from garbage trucks, similar to that conducted by the City of Maplewood.

Ms. Bloom advised that the study referenced by Chair DeBenedet was a research proposal / study being performed by Mankato State University, in developing a calculator tool to determine roadway life expectancies based on wear and tear; and noted that she was part of that research group. Ms. Bloom anticipated study beta tested results available in late June of 2011 for fall of 2011 publication.

Discussion included how the streets would be tested based on data entered based on street routes; types of soils; types of construction material (concrete or bituminous); impact of fully-loaded commercial traffic and any reduction in street wear and tear; type of and transparency of this program and the goals of the research in using tried and true design and engineering standards for bituminous industry standards, without additional field work required; and anticipated enhanced Excel spreadsheets; and similar to a previous research study several years ago done by counties for wind farm construction and the numerous overweight trucks on gravel roads to determine impacts for policy development.

Ms. Bloom offered to link PWET Commissioners into the study to see the end products for comparison purposes.

Chair DeBenedet noted a similar program developed between MnDOT and the logging industry in northern MN with spring hauling and load limits. Chair DeBenedet noted an assumption had been made that garbage trucks have significant impact on local streets; and opined that the data from this research project should clarify that assumption.

Other

Mr. Schwartz advised that the prior evening, he and Mr. Randy Neprash had presented the proposed Coal Tar Ordinance to the City Council, with Mr. Neprash providing a brief explanation and the ordinance's intent. Mr. Schwartz advised that the City Council seemed very appreciative, had no recommended revisions and were ready to take action at last night's meeting; however, staff had intended the presentation for information purposes only, and the ordinance had not yet been formatted and received final review by the City Attorney, so it was proposed for action at their June 13, 2011 meeting.

5. Erosion Control Ordinance Updates

Ms. Bloom thanked members for their comments to-date on revisions to the erosion control ordinance and revised fee schedule; and presented the latest draft, seeking further member feedback, as well as removing those areas that were redundant. Ms. Bloom noted that related to previous PWET Commission preference for a larger all-encompassing storm water/pollution management ordinance, and in consideration of recent audit findings, the City Attorney recommended moving forward with this Erosion Control Permitting Ordinance; and that the one umbrella chapter (No. 803) be continued on the 2011 Work Plan, incorporating a drainage plan to incorporate various issues.

Ms. Bloom reviewed individual Commissioner comments that had been incorporated and how to interpret the relined version based on that feedback; and noted that the fees would be included with other City fines and fees that were reviewed annually for any amendments based on actual costs and staff time.

Ms. Bloom noted that this was the first step, followed by the Storm water Drainage Ordinance in the near future, with an Illicit Discharge Ordinance and other related ordinances to follow. Ms. Bloom further noted that non-compliance, implementation and maintenance issues would be addressed upon receipt of best management practices (BMP) information pending from the Ramsey Conservation District.

Member Stenlund arrived at this time, approximately 7:03 p.m.

Discussion included identifying and differentiating construction versus post construction control provisions in place for failure to comply and their consistency and/or overlap with other sections and areas of administrative enforcement; whether those costs could be assessed if reimbursement was not received; and ability to enforce action if failure to do corrective work.

Ms. Bloom advised that the sections mentioned would be further reviewed by staff and a clean copy would be presented to the City Attorney for review and comment. Members expressed their interest in receiving a clean copy of the document when available.

Member Vanderwall moved, Member Gjerdingen seconded, recommendation to the City Council of the Erosion Control Ordinance as presented; pending final review by staff and the City Attorney.

Ayes: 5
Nays: 0
Motion carried.

6. Discussion of Joint City Council / PWET Commission Meeting Topics

Mr. Schwartz led Members in a review of topics discussed in 2010, and potential 2011 topics for discussion with the City Council at the annual joint meeting with the PWET Commission, scheduled for Monday, June 13, 2011; as detailed in the staff report dated May 24, 2011. Mr. Schwartz noted that, in addition to those items, the PWET Commission's review and recommendation of a Neighborhood Traffic Management Policy would be a large undertaking over the next few months.

Member Felice noted she had a scheduling conflict and would be unavailable to attend the joint meeting.

Chair DeBenedet and Commissioners were in agreement with those topics suggested by Mr. Schwartz as a good outline.

Discussion included recent City Council approval of a Joint Powers Agreement (JPA) between the Cities of Roseville and Maplewood for engineering staff that would address staffing needs identified in the Public Works Strategic Plan and anticipated infrastructure improvements and reconstruction; implementing an improved asset management program similar to the PMP and other areas thoughtfully managed with in-house personnel; areas addressed by the City Council on their recently-adopted 2011/2012 Work Plan; inclusion in the Public Works Preliminary Budget request for an asset management software program and staffing to input and disseminate data into plain and understandable language; and noting that reserve funds have not kept pace with returns on streets, necessitating a review of the existing Assessment Policy and identifying other funding sources.

Member Vanderwall requested discussion with the City Council on their individual and corporate interest in the PWET Commission pursuing organized garbage collection; whether to continue gathering information that may lead the City in a different direction than current collection is done; and whether the City Council was committed to those results and what was best for the City or retaining the status quo based on a vocal minority in the community. Member Vanderwall noted that he had worked on the original Solid Waste Commission established by the City Council in the 1970's, when recycling was initiated, and opined that the remainder of the recommendations for organized collection had yet to be pursued.

Chair DeBenedet concurred, noting that the PWET Commission had reviewed the situation for the last two (2) years, and wanted to know if it was still a valid pursuit, or if it should be tabled.

Member Felice concurred that the current City Council should be consulted about their interest in continuing toward a PWET Commission recommendation. Member Felice expressed her interest in coordinating efforts for issues and further discussion on impacts to parks and transportation and related to a tree census and their implications for pedestrian and biking to area parks.

Chair DeBenedet opined that this would be a good opportunity to hold that discussion as well, given the leaning toward going to the public with a bond referendum for park improvements, when the pathway system never seemed to move ahead effectively.

Member Vanderwall noted that he attended the Parks Master Plan meeting on pathways and its related Master Plan, noting that pathways had also received the highest public support in the recently-conducted random survey, not just in parks, but pathways to parks or around the City. Member Vanderwall opined that the

Parks and Public Works Department needed to work cooperatively in coordinating efforts.

Further discussion included the staff-level coordination between the Parks and Recreation Department and the Public Works Department.

Ms. Bloom advised that she would be attending a Parks subcommittee meeting in June, and noted how instrumental Park and Recreation Director Lonnie Brokke, and Jeff Evenson had been in developing the Pathway Master Plan, a city-wide effort, not just that of the Public Works Department. Ms. Bloom noted the intent of the Parks Master Plan Implementation group in having her attend their meeting was to serve to coordinate with the PWET Commission and Ramsey County's "Active Living" efforts. Ms. Bloom noted that things were moving farther ahead in coordinating regional pathway systems and connection due to more effective advocacy by Ramsey County. Ms. Bloom advised that her emphasis to the Implementation group would be that the Pathway Master Plan was a city-wide Roseville effort and everyone should work together on it; however, she noted that funding was a huge challenge.

Further discussion included value added considerations for increasing property taxes for amenities such as pathways; proactive communication between the PWET and Parks & Recreation Commissions related to trees, drainage and soil erosion; and how to address funding for maintenance and the need to develop a process or multi-year schedule for pathway maintenance.

Members concurred on the advantages of considering a joint meeting of the PWET and Parks & Recreation Commissions.

Member Stenlund requested a discussion during the joint meeting alerting the City Council to recent presentations at the PWET Commission about trees used for storm water treatment and complete streets, and other applicable learning presentations held at PWET Commission meetings, perhaps by providing the City Council with a brief recap of educational and guest speakers. Member Stenlund reiterated his personal request for the PWET Commission to have an opportunity to review proposed developments, providing value to the City Council and engineering staff to incorporate storm water and bike transit. Member Stenlund also noted the great benefit for field trips for the PWET Commission, such as the one done to review unsafe intersections.

Mr. Schwartz advised that staff would review past agendas and minutes to make sure those accomplishments were highlighted for the City Council.

Member Stenlund expressed his interest in doing additional field trips, such as a review of bike trails, erosion controls related to illicit discharge; and mentioned the benefits to the PWET Commission in viewing the geothermal fields and being able to inspect the vacuum street sweeper.

Member Stenlund suggested that the City Council also be made aware of the PWET Commission's appreciation of Roseville staff who have taken their time to share their time and expertise with the Commission as well as the community at large. Member Stenlund further suggested that the City Council and PWET Commission have a dialogue on the PWET Commission's future role. Member Stenlund recommended that the City Council be made aware of the erosion of some of the City's parks, such as the Frisbee Golf Course; and how to integrate community projects and pathways. Member Stenlund suggested that the City Council alert the PWET Commission of any "hot topics" of which they were aware in the near future that may come under the Commission's review for recommendation.

At the suggestion of Member Gjerdingen in further consideration of how utility undergrounding could be addressed with street reconstruction in the future, Mr. Schwartz advised that there had been consideration of developing a policy for utility undergrounding; however, staff had been unable to allot time to move that forward at this time, opining that the Traffic Management Policy was a higher priority given several current and pending situations.

Related to that Traffic Management Policy, Ms. Bloom noted receipt by the City Council at their last meeting of a petition to close a street; the pending request for speed calming methods on Dale Street; and the need for a consistent policy to address various situations, as well as assigning associated costs as applicable. Ms. Bloom noted that the traffic counts on Josephine Road had just been completed earlier that evening.

Mr. Schwartz advised that the PWET Commission comments had been incorporated into the Tree Preservation Ordinance, presented to the City Council at their meeting last night, and returned to staff for further review following City Council comment at that meeting.

Chair DeBenedet asked that Mr. Schwartz prepare an outline of the items discussed for the joint meeting and circulate it to individual Commissioners prior to the meeting.

Member Vanderwall suggested that, given the multitude of topics, time be reserved for due diligence and sufficient discussion time at the joint meeting.

Chair DeBenedet noted the need to keep the review and report of past initiatives and recommendations as brief as possible to allow for that discussion time, and to avoid losing the interest of Council members and any questions they may have.

Member Vanderwall suggested that the majority of the information be provided in writing, with verbal highlighting of those items of focus.

Chair DeBenedet opined that the timeliest discussion should be the organized trash collection issue.

Member Vanderwall opined that the City Council not be given conclusions, since there are many different opinions within the community and the City Council was not privy to the background research and information compiled by the PWET Commission's due diligence to-date.

7. Traffic Management Policy

Chair DeBenedet noted the sample Policies provided by staff as part of the agenda from the cities of Blaine, MN, Evanston, IL, and Des Plaines, IL.

Member Felice noted another policy from the City of Kent, WA that she had liked, specifically their rating chart assigning points for various components.

While noting that such a ranking process would create more work for staff, Member Vanderwall noted that such a rating chart would provide a good way to evaluate a project and get direct participation from a wider group of stakeholders, as well as creating more support.

Member Vanderwall noted staff's previous comment on three requests for such an evaluation already pending; and questioned whether part of the question for Public Works was whether that was part of the value for consideration in a ranking process.

Mr. Schwartz noted the increasing number of requests being fielded for additional enforcement, traffic calming measures, and other traffic management concerns.

Ms. Bloom opined that, if a policy was in place, the City would field even more requests, since the typical staff response for those requests now is that there are insufficient funds to implement such measures unless a street reconstruction was being done.

Discussion ensued on how and when the point system would be used; whether extra points would be applied if construction was planned or in progress; whether traffic calming measures are a good investment and safe, or whether they are bicycle-friendly and would not force them into traffic; benefits of vertical elements and their effectiveness in slowing traffic; snow plowing and maintenance issues; advantages of signage; advantages and disadvantages of things to consider during the analysis process, as facilitated by diagrams of actual use; and how ranking would be influenced by the origination of the request.

Further discussion included rationale for developing such a policy and the perceptions of how involved government should be or not be; other needs that would serve the public good but can't be accomplished due to a lack of funding and how such a policy ranked in the overall priority scheme; residential versus

commercial road functions and issues; challenges of 'chokers;" differentiations in commercial areas with truck traffic; and philosophical considerations and opinions.

Ms. Bloom opined that roadway classification is a major component and the foundation of this discussion.

Additional discussion was related to safety priorities and consideration of different policies/priorities for areas near school yards, playgrounds, school routes, and other areas where children were present in groups; the most effective traffic calming procedure being police enforcement; and cost factoring as part of the ranking analysis that included maintenance.

Based on available data, Ms. Bloom advised the highest vehicle/pedestrian traffic collision areas were at Lydia and Snelling Avenues and Highway 280 at Broadway Avenue. Ms. Bloom offered to further research pedestrian and bicycle accidents as part of this continuing discussion, using staff's existing mapping tool for data over the last ten (10) years.

Member Vanderwall noted that the majority of the City's arterial streets were not controlled by the City of Roseville, voiding any potential regulation pattern.

Given the lack of control of many arterial streets throughout the City, Ms. Bloom advised that the PWET Commission be aware that this policy was for "neighborhood" traffic management.

Ms. Bloom noted that there were two (2) different issues: Complete Streets and Traffic Management, and opined that neither were mutually exclusive, but neither were they the same. Ms. Bloom advised that the reality is that some Complete Street concepts were contrary to a traffic management plan addressing safety concerns. Ms. Bloom advised that the Pathway Master Plan says that when there were less than 1,000 vehicles on a particular roadway, it was a "share the road" situation; and questioned how the two concepts could be coordinated.

Chair DeBenedet asked that staff research and provide other official City policies, including the Comprehensive Plan and Non-Motorized Pathway Plan areas that addressed traffic that could facilitate this discussion at next month's meeting. Chair DeBenedet asked Commissioners to read through the model policies provided by staff and come prepared for further discussion. Chair DeBenedet opined that the City of Blaine's policy seemed to be a good starting point to initiate those more detailed discussions.

Member Vanderwall opined that the Blaine policy was excellent, based on traffic pattern considerations and impacts of a three (3) month test pattern.

Chair DeBenedet suggested individual members do their own research prior to the next meeting, for other suburbs, such as the City of Bloomington, MN, as suggested; and to come to the next meeting with specific recommendations on the most favorable components to consider for a Roseville Policy.

Mr. Schwartz noted the need to talk about the process as well; how to review it; whether to use Blaine as a template or another policy; how to obtain public feedback and the timing and type of meetings for receipt of public comment.

Chair DeBenedet concurred, noting the amount of due diligence that would be required by the Commission in preparing and recommending this policy; and how to avoid getting drawn into specific issues when attempting to develop an overall policy.

Ms. Bloom concurred, noting that, while staff was a strong advocate for public participation, they were attempting to look at this policy holistically, not with passion for specific neighborhoods or concerns. Ms. Bloom noted that the public needed something to react to and on which to provide comment to avoid difficulties.

Member Stenlund suggested consideration be given to two (2) separate rating/point systems: one for new construction and one for existing situations, with two (2) separate scales to determine benefit/cost and incorporating ratings for retrofits or new designs.

Mr. Schwartz noted that the Comprehensive Plan and the Imagine Roseville 2025 processes both included considerations for livable neighborhoods and safety issues.

Ms. Bloom noted that, as the outer suburbs continued to grow, the traffic situation for Roseville would only continue to grow; and with that increased traffic, consideration would need to be given for building capacity as well as maintaining capacity, with traffic pushing into neighborhoods.

Mr. Schwartz concurred, noting that staff had just received word from the Metropolitan Council that the City's Comprehensive Plan may need amendment based on the Met Council's most recent system statement related to transportation, and managing versus expansion, and related impacts to neighborhoods.

Further discussion on model policies included layout of information and how effective each component was in the overall picture; and the credibility of the conclusions.

Ms. Bloom advised that a well-respected international traffic consultant had developed the City of Blaine's Traffic Management Plan, with an emphasis to Complete Streets and traffic calming.

8. Storm Water Ordinances

As noted in the staff report, Mr. Schwartz advised that the City of Maplewood had performed a comprehensive rewrite of their storm water ordinances last year, including a specific environmental section that incorporated all of their regulatory goals related to the City's storm water management plan, and currently addressing areas of the City of Roseville's health, safety and welfare section of City Code, Section 400. Mr. Schwartz noted that air pollution and noise were also contained in that environmental chapter of code. Mr. Schwartz opined that, at this time, this would be a very large undertaking for Roseville.

Chair DeBenedet noted his initial rationale for combining all storm water-related items into one section made some sense in an effort to tie definitions together, and providing consistency among permitting and enforcement actions. However, he recognized the limited staff resources available at this time to accomplish such an undertaking.

Staff noted other departments with sections of code applicable to their specific areas but also addressing environmental issues; and difficulties in interpreting and/or enforcing comprehensive ordinances, and those areas under the purview of the Planning Commission and portions needing detached for their review.

Ms. Bloom noted that in utilizing City of Maplewood engineering staff, and the process of reviewing and possibly revising regulations in 2012, the comprehensive rewrite may be addressed as part of the comprehensive surface water management plan and in concert with the three (3) watershed districts for the City of Roseville.

Further discussion included rewrite of the City's MS4 Permit in 2013 and how that fit into the overall picture; state and federal requirements; and how waiting for those particulars may address timing of this ordinance rewrite.

9. Possible Items for Next Meeting – June 28, 2011

Items for the next meeting included: the traffic management study; review of the joint City Council/PWET Commission meeting; Assessment Policy depending on the feedback from the City Council; and the future role of the Planning Commission as a sounding board for the Public Works Department and how to serve as a bridge with and between other advisory commissions, including any areas of overlap.

10. Adjournment

Member Vanderwall moved, Member Felice seconded, adjournment of the meeting at approximately 8:25 p.m.

Ayes: 5
Nays: 0
Motion carried.

Roseville Public Works, Environment and Transportation Commission

Agenda Item

Date: June 28, 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 is nearly complete with the utility work.on Dale Street between County Road C and South Owasso Blvd. Grading will begin next week with curb and gutter to follow. Paving has been completed on some segments of the mill and overlay streets. Weekly updates are available at www.cityofroseville.com\DaleStreet & www.cityofroseville.com\streetmaintenance.
  - Rosewood Neighborhood Drainage Improvements: The Contractor will be working on final restoration in the next two weeks.
  - Applewood Pointe- The watermain is nearly complete. The sanitary sewer has been completed. Storm sewer and grading will commence when the weather cooperates.
  - William Street Pond: the Contractor will be moving the excavated material in the next week or so.
  - Rice Street Project: The Contractor has completed our watermain construction. Currently installing sidewalk, bridgework, and ramp work. The bridge should be open by the end of July barring a state shutdown.
  - Sanitary Sewer Lining- this project is complete.

- Budget process update
- Potential State Government shutdown impacts
- Other

Recommended Action:
None

Attachments:
A. 2011 Pavement Management Project Newsletter
B.

2011 Pavement Management Project

Volume 3 June 9, 2011

Project Update
North Valley, the City's Contractor, has the provided the following updated schedule for this project:

Week of June 6th:
Paving of the following street segments:
- Oakcrest Avenue (Cleveland Ave to Prior Ave)
- Elmer Street (William St to Woodbridge St)

Curb and gutter replacement on the following street segments:
- Cohansey Blvd (Crescent Lane to Irene Street)
- Fisk Street (County Road C to Oakcrest Ave)
- Hythe Street (Draper Street to Roselawn Ave)
- Rose Place (Fisk Street to Avon Street)

Aladdin Street storm sewer construction is underway.

Week of June 13th:
Paving of the following street segments:
- Parker Avenue (Lexington Ave to Victoria Street)
- Garden Avenue (Hamline Ave to Lexington Ave)

Pavement reclamation of the following street segments:
- Cohansey Blvd (Crescent Lane to Irene Street)
- Fisk Street (County Road C to Oakcrest)
- Hythe Street (Draper Street to Roselawn Ave)
- Rose Place (Fisk Street to Avon Street)
- Aladdin Street (Rose Place to cul-de-sac)
- Evergreen Court (Skillman Ave to cul-de-sac)

Please be aware that schedules are weather dependent, rain can cause delays. Check the website for the most current information.

All work should be completed by August 2011. Mill and Overlay projects typically take between 3 to 5 weeks to complete.

Don't see your street?
If your street is not on the list above, you are receiving this newsletter because this project will impact how you access your neighborhood.

Milling of existing pavement on Centre Pointe Dr.

Private Systems behind curb
Curbs designated for repair are marked or will be marked in the near future with white paint. Sprinkler systems and invisible fences near curb repairs will be affected. We recommend that you mark the location of underground wires or sprinklers immediately. Removal and reinstallation of these items is the responsibility of the property owner. Please remove these items from the city right- of- way before work is scheduled to occur on your street. If these items are not removed, the contractor will damage them when they start construction. The City will not pay to repair or replace these systems.

Please contact Dean Findell, Project Coordinator, if you have questions.

Project Contacts:
Dean Findell, Project Coordinator
(651) 792-7046
dean.findell@ci.roseville.mn.us

Deb Bloom, City Engineer
(651) 792-7042
deb.bloom@ci.roseville.mn.us

Access
Contractors are required to keep the roads passable and provide driveway access whenever possible. The construction project will be staged so that residents and emergency vehicles will be able to drive on the streets at all times. If you have special access needs, please let us know.

Safety
Residents should use caution at all times while driving through the construction zone and be alert for moving equipment, holes, trenches and other hazards in the work zone.

Your assistance in maintaining a safe work area is important. The noise and dust created by construction traffic make it difficult for workers to watch onlookers. Heavy equipment operators must concentrate on the job at hand and may not notice children playing near or behind equipment.

Please remind children to stay clear of the construction area and equipment both during working and non-working hours.

Contact Us!
If you have any questions, concerns, or comments please call us at 651-792-7003 between 8 am and 4:30 pm.

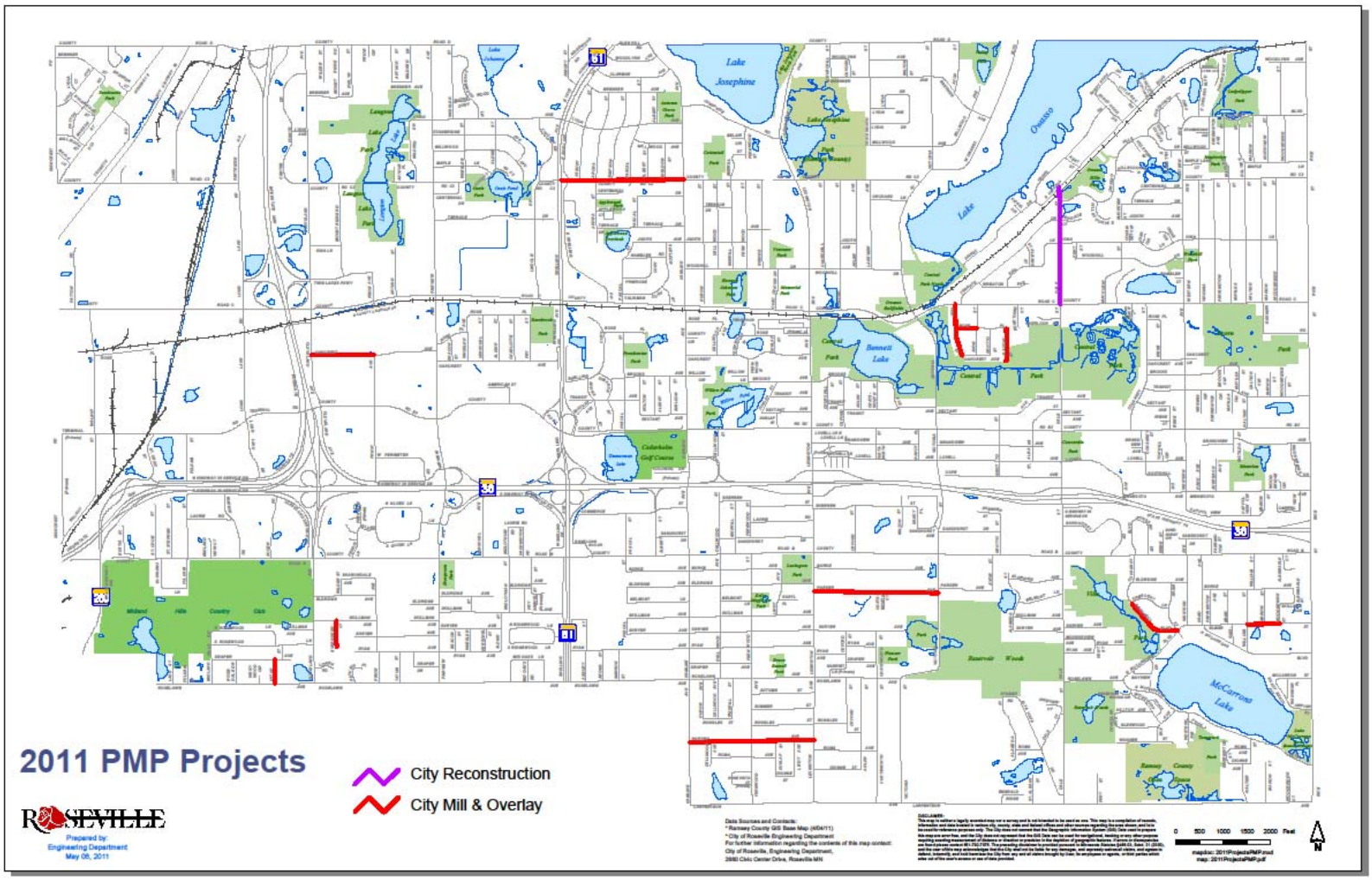
Throughout the project, we will keep you informed through monthly direct mailings and weekly updates on the project website.

If you would prefer not to receive a paper copy of these newsletters, please let us know.

Notify Me list
To be notified of website updates sign up for the Street Maintenance "Notify Me" List at:
http://www.ci.roseville.mn.us/list.aspx
Signing up for this list does not automatically remove you from our newsletter mailing list.

After Hours
If an issue arises outside of regular business hours, contact the City's 24-hour non-emergency number at 651-767-0640.

ALWAYS CALL 911 FOR EMERGENCIES.



Check for construction updates at: www.cityofroseville.com/2011StreetMaintenance

Roseville Public Works, Environment and Transportation Commission

Agenda Item

Date: June 28, 2011 **Item No:** 5

Item Description: Discussion of Joint Council/Commission Meeting

Background:
The PWET Commission met with the City Council on June 13, 2011 for your annual discussion with council members. Attached are the minutes from that meeting and the council packet information from the meeting. You may want to debrief for the benefit of those that were not able to be there as well as discuss any particular points that are of interest or require additional future discussion.

Recommended Action:

Discuss joint meeting.

Attachments:
A. 2011 Council Action
B. June 13, 2011 City Council Minutes
C.

REQUEST FOR COUNCIL ACTION

Date: 06/13/11
Item No.: 10.a

Department Approval

Acting City Manager Approval

Item Description: Joint Meeting with Public Works, Environment and Transportation Commission

BACKGROUND

The Public Works, Environment, and Transportation Commission have provided the following topic areas for discussion at the June 13, 2011 Council meeting. They look forward to the opportunity to meet with the City Council.

1. **Review of Past Year**
   a. Intersection Improvement Recommendations
   b. Erosion Control Ordinance Update
   c. Annual Storm Water Report/ Public Meeting
   d. Annual Recycling Report
   e. Organized Solid Waste Collection Discussions
   f. Coal Tar Sealant Ban Ordinance Development
   g. Forestry Ordinance Update
   h. Trees and Storm Water Benefits
   i. Review and Comment of Josephine Woods Plat and Public Improvements

2. **2011-12 PWETC Topics for Discussion with the Council**
   a. Capital Improvement Plan/Infrastructure Funding Review/Assessment Policy Review/ Asset Management
   b. Public Works Engineering Staffing as it Relates to Infrastructure Needs
   c. Neighborhood traffic Management Policy
   d. Coordination of Pathway Planning/Implementation with Park and Rec. Commission
   e. Community Volunteer Projects ie. Boy scouts etc.
   f. Undergrounding Overhead Electric on Ph II Rice Street

25 g. Conservation Water Rate Effectiveness Review

Prepared by: Duane Schwartz, Public Works Director

tachment B) entitled, "An Ordinance Amending Selected Text of Title 10, 'Zoning Code," including Amendments in Section 1004.08B (LDR-1 District Dimensional Standards); Section 1004.09B (LDR-2 District Dimensional Standards); Section 1006.04C (O/BP District Dimensional Standards); and Section 1006.05C (I District Dimensional Standards) of the City Code."

Roll Call
Ayes: Johnson; Pust; Willmus; McGehee; and Roe.
Nays: None.

10. Presentations

a. Joint Meeting with the Public Works, Environment and Transportation Commission

Chair James DeBenedet; and Commissioners Dwayne Stenlund and Steve Gjerdingen. Chair DeBenedet advised that Members Joan Felice and Jan Vanderwall were unable to attend tonight.

Chair DeBenedet reviewed the past year's accomplishments and work-to-date, as detailed on the agenda included in the RCA dated June 13, 2011.

Related to Organized Solid Waste Collection Discussions (Item 1.e), Chair DeBenedet advised that the PWET Commission was proceeding deliberately to determine if refuse hauler trucks are having a major impact on city roadways; and noted that the research was continuing.

Chair DeBenedet expressed the Commission's appreciation to the City Council for their support and in their adoption of the Coal Tar Sealant Ban Ordinance and Forestry Ordinance Update earlier tonight, helping to validate the work of the PWET Commission, its research and recommendations.

Member Stenlund expressed his appreciation for the Commission's rewarding and informative field trip when reviewing intersections in the community to gain that personal perspective.

Discussion among Commissioners and Councilmembers included various Erosion Control Update Ordinance, Illicit Discharge based on the MPCA Audit of the City's MS4 Ordinance and recommended permits; and development of further policies based on goals of the Comprehensive Plan for storm water management and tree preservation.

Member Stenlund noted that the PWET Commission was still educating themselves about the Complete Streets concept; minimum impact design standards for stormwater collection by trees through a livable root system; and referenced a very informative presentation by Randy Neprash with Bonestroo on international

opportunities for urban tree growth and growth along roadways, specifically those being done in Stockholm, Sweden based on their similar cold climates to that of MN.

Chair DeBenedet noted that another benefit of that research was having a better understanding that trees planted in boulevards reach a limited maturity as the soil around their root area is compacted and dry and does not provide a supportive environment for their longer maturity and survival. Chair DeBenedet advised that, in initial PWET Commission discussions, they were considering offering a tool kit for developers as an alternative that may help and provide guidance fro the City in some manner as areas of the community are redeveloped, such as Twin Lakes that had used some more innovative stormwater drainage practices based on prompting from the PWET Commission.

Councilmember McGehee questioned large parking lots with high curbs around islands draining into the parking lot rather than through the island. Councilmember McGehee also questioned the depth of free soil for tree roots in standard parking lots to facilitate their growth.

Member Stenlund advised that there was as much need for tree growth below ground as above ground, and when you restrict that root growth, you restrict the tree's longevity considerably. Member Stenlund noted that the proposal of the Stockholm and Helsinki studies was to create a structural roadway that allowed tree roots to expand underground through interaction between water and trees, while still providing roadways that served the various transit modes sufficiently. Member Stenlund advised that the roots usually end up between the bituminous and soil, seeking water and air; with most tree roots located in the top twelve inches, thus creating heaves in roadways and sidewalks. Member Stenlund advised that the original Stockholm study was initiated through the discovery of tree roots finding space to grow under old bunkers in Germany.

Mayor Roe suggested that the additional root strength may help trees survive storms as well.

Councilmember Pust clarified that it was recommended to have as much space for a tree below ground as above ground.

Member Stenlund responded affirmatively, noting that the biomass underground should support a fifty year old tree; but from an engineering perspective, the road and sidewalk amenities needed to also provide structural pavement for vehicle needs and safety concerns.

Member Gjerdingen advised that it was good to educate the Commission and residents on how close trees should be planted in boulevards in order to allow suffi-

cient root space; noting that the Commission saw some great examples on structural soils during the Neprash presentation.

Member Stenlund opined that expense was relative for some of the new technologies for storm water management, since ponds and other storm water management options cost money to construct, maintain and reconstruct as well.

Member Stenlund noted the advantages in the PWET Commission being able to provide input for new developments, such as the Josephine Woods plat, and opportunities to blend homes into existing topography in order to save trees rather than replace them.

Chair DeBenedet reviewed potential 2011/12 PWET Commission Topics and a proposed work plan; and reviewed the status of the various items as detailed in the RCA. Chair DeBenedet noted the PWET Commission's interest in meeting jointly with the City's Parks and Recreation Commission in reviewing pathway planning/implementation, incorporating the *Imagine Roseville 2025* and Comprehensive Plan update, and discussing them from a Public Works and Parks perspective.

Councilmember Willmus noted the need to incorporate the Parks and Recreation Master Plan process.

Member Gjerdingen noted the need to review the Parks and Recreation constellations and how to tie them together with the Pathway Master Plan.

Chair DeBenedet noted the Commission's interest in pursuing community volunteers to implement projects or initiatives; with Member Stenlund suggesting lakeshore stabilization projects as an example and one with which he was familiar based on past Eagle Scout projects. Chair DeBenedet concurred, noting that many low impact storm water and erosion control projects needed people, not heavy equipment.

Related to the PWET Commission's conservation review of stormwater management practices, Mayor Roe asked that, as part of that study, the Commission consider ways to incent certain types of approaches in the overall regulating scheme, such as demonstration ideas needing to be evolved.

Councilmember McGehee expressed her favorable impression with the Josephine Woods development project, and complimented the Commission if they had any input in that project. Councilmember McGehee expressed her interest in a presentation at the City Council level on the Helsinki and Stockholm tree options.

Councilmember Johnson expressed his appreciation of the Commission's discussion on asset management; and tied that into the current work of the CIP Task Force and budget concerns, specifically the funding deficit over the next 10 - 2 0

years. Councilmember Johnson noted that a lot had to do with the City Council's strategy from a business standpoint in managing that deficit. Councilmember Johnson advised that input from the Commission on items such as whether the current practice for paving streets needed to be continued, or if dropping down a level or deferring that reconstruction was financially advantageous or would have a downside and the current schedule continued. Councilmember Johnson requested that type of study by the Commission to help the City Council get a better handle on practical cuts or overall, long-term cost savings by more frequent reconstruction and/or maintenance; or where assets were maximized out. In dealing with the CIP assets, Councilmember Johnson advised that there was nothing on their list that didn't somehow involve the PWET Commission; and welcomed input from and a close working relationship with the Commission to maximize the CIP Plan and make a bold effort to get that back on track.

Mayor Roe spoke in support of the track being undertaken by the Commission on asset management techniques and from a CIP perspective, how to manage streets and other City infrastructure; in addition to review of the current Assessment Policy.

Councilmember Willmus echoed comments of his colleagues; and supported the work that the Commission was undertaking for organized solid waste collection and determining the real impacts, and other studies that will provide guidance to the City. Councilmember Willmus advised that he looked forward to hearing the PWET Commission discussion and their future recommendations.

Councilmember Pust opined that any members of the public listening to this discussion, would be impressed with the level of review performed by the PWET Commission, and asked the Chair for their meeting schedule for public information.

Chair DeBenedet noted that the PWET Commission met the fourth Tuesday of each month in the City Hall Council chambers at 6:30 p.m.

Mayor Roe noted tonight's discussion as an example of the rationale for and value of volunteer advisory commissions to assist the City Council; and expressed his personal appreciation for their time and input. Mayor Roe reiterated that those items listed by the PWET Commission as topics for their 2011/2012 work plan were right on track and in line with the City Council's own work plan and areas of concern.

At the request of Member Stenlund on anything else on the City Council's radar that the PWET Commission should be aware of, Mayor Roe opined that the Neighborhood Traffic Management Policy review was a very high priority.

Councilmember Johnson asked that, in their study of traffic management options, the PWET Commission also consider crosswalks, especially those on larger roads with multiple lanes and right-turning traffic, and visual/safety concerns.

Member Stenlund noted, from his experience, the difficulty in solving those concerns, when dealing with fractured communities and landscapes and the blurring of community lines; while attempting to maintain traffic flow and keep pedestrians safe. Member Stenlund noted the need for safe oasis for everyone to get across, since not everyone can cross a wide street with multiple lanes in one signal light change, and the need to accommodate those pedestrians.

Mayor Roe concurred, noting that drivers were not necessarily doing what they needed to do to ensure pedestrian safety, especially before turning right; and the need to be conscious of how you were driving and the reason for rules of the road for vehicles, pedestrians, and bicycles.

Further discussion on neighborhood traffic management included options, such as speed humps and pedestrian crosswalks; traffic speed through residential neighborhoods; pros and cons of closures of neighborhood roads to eliminate cut-through traffic.

Councilmember Willmus opined that everyone needed to be cognizant as a first-ring suburb in the number of vehicles, pedestrians and bicycles now and in the future; not to restrict them but to move them more efficiently and safely.

Mayor Roe opined that the policy discussion needed to identify consistent criteria, when it was appropriate to close a road as a solution; and what conditions or standards were applied consistently for those types of decisions, not just responding to passionate citizen input, but based on best practices. Mayor Roe looked to the PWET Commission to point the City and City Council in the right direction.

11. Public Hearings

a. Conduct a Public Hearing for a Variance to the Noise Ordinance to Extend Construction Activity Hours at the Rosedale Square Shopping Center

Permit Coordinator Don Munson briefly summarized the request as detailed in the RCA dated June 13, 2011. Mr. Munson advised that mailed notices of tonight's Public Hearing were provided to properties within 500' of the site; but to-date, staff had received no phone calls. Mr. Munson advised that representatives from Welsh Companies, the applicant, and Minnesota Roadways, the contractor, were in the audience and available for questions as applicable.

Mayor Roe opened the Public Hearing at 7:29 p.m. for the purpose of hearing public comment on the request for a variance to the City's Noise Ordinance to extend construction activity hours at Rosedale Square Shopping Center, 1601 –

Roseville Public Works, Environment and Transportation Commission

Agenda Item

Date: June 28, 2011 **Item No:** 6

Item Description: Neighborhood Traffic Management Policy Discussion (continuation from May)

Background:
The City Council and staff has received requests for various traffic calming measures over the years including speed bumps, speed humps, narrowing of streets, additional trees, closures, and striping to name a few. We currently have open consideration of speed tables on Dale Street, study of connecting a cul de sac to a neighborhood, and a petition to study closing of a street on one end to eliminate cut through traffic. Some cities around the country have neighborhood traffic management policies that outline a process for these types of requests to be considered. These policies also detail when various measures would be considered, installed, and how they might be funded. Staff feels a similar policy should be developed for Roseville to guide the consideration of these requests. We have found some policies on city websites around the country and are including three for discussion purposes.

The Commission briefly discussed this item at the May meeting and requested a more thorough review of the Blaine policy at the June meeting. Staff would like feedback on the components that would be desirable in a Roseville policy so a draft policy can be written. Staff will comment on the components we view as necessary at the meeting.

Recommended Action:
Discuss the desirable components of a neighborhood traffic management policy and provide staff feedback for development of a draft policy.

Attachments:
A. City of Blaine Policy
B. Evanston Illinois Policy
C. City of Des Plaines Illinois Policy

Neighborhood Traffic Management Program

City of Blaine, Minnesota

June 2005

Prepared by:

CH2MHILL

Blaine Neighborhood Traffic Management Program

1.0 Introduction

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 Blaine. The City of Blaine is continually striving to strengthen and protect its neighborhoods by improving the quality of life in residential areas. A goal of the Blaine 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

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 Blaine's Policies for the Traffic Management Program, background on the history of traffic management, the City of Blaine'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 Blaine Transportation Plan.
- Implementation limited to local streets (no arterials or collectors) as identified in the Blaine 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.
- 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 experimental 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 approval. 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 Blaine are classified based on definitions from the Metropolitan Council defined in Appendix C of the Blaine Transportation Plan. The current Road Classification Map, Figure 4.10 from the Blaine Transportation Plan, identifies street classifications within the City of Blaine – 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 25% 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 Petition

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 petition 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 Approval

The recommended strategy will not be implemented without the support of 65% of the project neighborhood and 50% of any 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 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 be made permanent by 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.

City of Blaine
Traffic Management Process

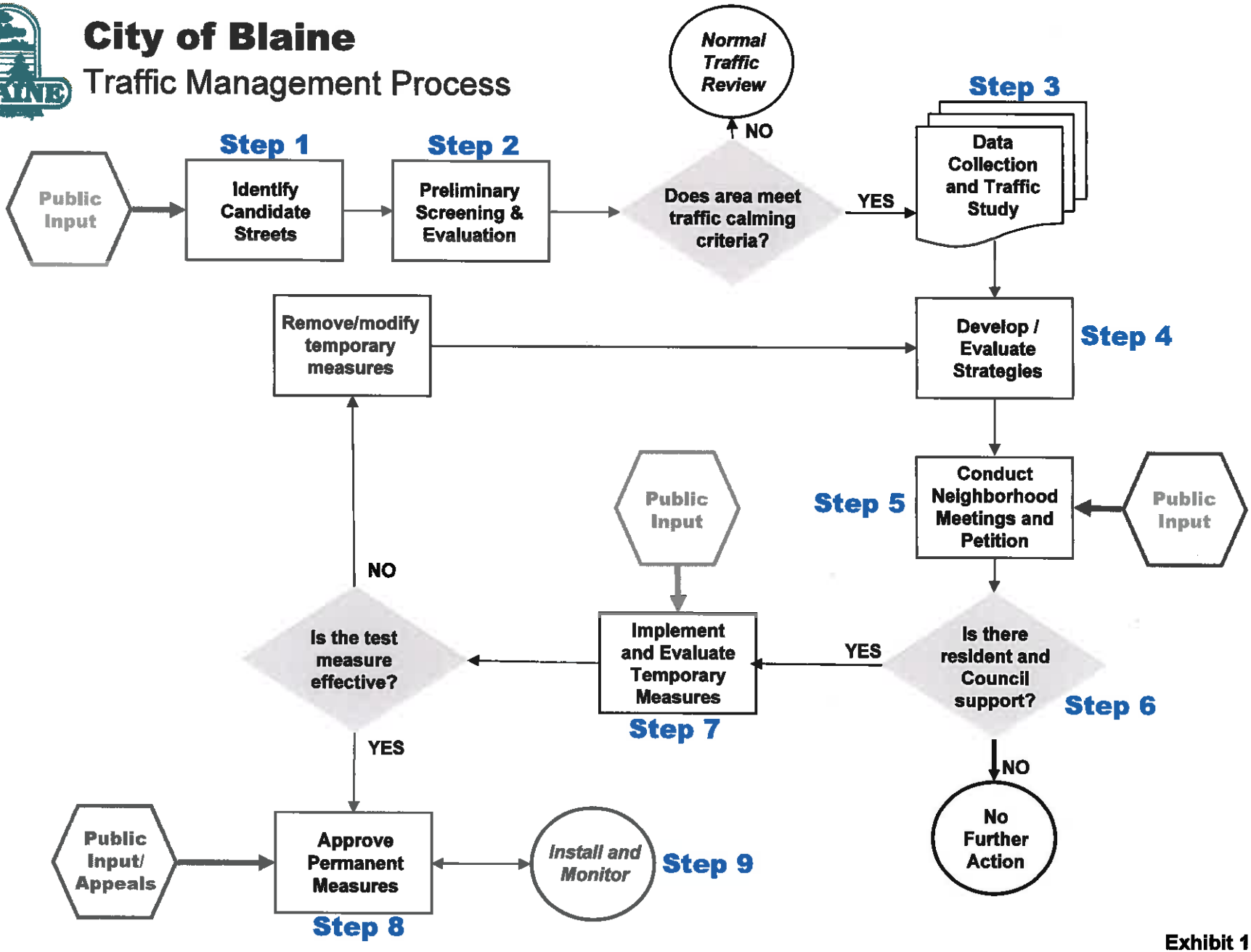


Exhibit 1
Neighborhood Traffic Management Process Flow Chart

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 trailer. Any requests for permanent traffic management strategies require a written application with 25% of the project neighborhood signing the application. ***Appendix A*** provides a sample petition and request letter.

It should be noted that it is the policy of the City that only residential streets are to be considered for implementation of traffic management strategies set forth in this document. 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 Traffic 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 traffic engineering procedures such as planned infrastructure improvements or reconstructions. In addition, common requests for increased traffic enforcement, participation in a neighborhood speed watch program, and placement of the variable speed display trailer are commonly handled by the Police Department and will be forwarded to the appropriate staff.

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 Blaine Transportation Plan (see Figure 4.10 from Blaine Transportation Plan in Appendix D).
- The requests must be related to speeding, excessive traffic volumes, crashes, cut-through traffic, truck traffic 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 Traffic 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 Traffic 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)
- Pedestrian counts
- Radar or machine-based speed surveys (85th percentile, median, average, 10 mile per hour pace)
- Cut-through traffic estimates (based on license plate surveys, or other video techniques)
- Crash information (three years 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 Ranking of Traffic Management Requests	
85th Percentile speeds 5 mph over posted speed limit	Yes – continue No – no traffic management strategy implemented
Public school yard, playlot, playground development adjacent to benefited area (0 to 200 points)	None +0 All of 1 side +100 All of 2 sides +200
Residential development adjacent to benefited area (0 to 100 points)	None +0 All of 1 side +50 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
Sidewalk adjacent to project area (0 to 100 points)	None +100 All of 1 side +50 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 to 50 points)	0 dwelling units per 100 lin. ft. = 0 points 5+ dwellings units per adjacent 100 lin. ft. = 50 points

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 Humps/Bumps/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 Effectiveness of Management Strategies	Volume Reductions	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 Blaine that the following cost sharing will occur with an approved traffic management strategy:

- City of Blaine will pay the cost of administrative work, traffic study and data collection
- City of Blaine 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)

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 Humps	Per hump	$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 $100 per year 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 wither 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 Blaine 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 Humps/Bumps/Tables
- Raised Crosswalks
- Median Barrier
- Traffic Circles
- Street Closer
- Full / Diagonal Diverter
- Partial Diverter

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 • Restrictions viewed in a positive manner by the neighborhoods • Preservation of structural integrity and life of a street
Disadvantages	• Traffic usually is shifted to a different street • Businesses that generate the heavier traffic can complain of hardships and inconveniences • Other heavy vehicles that serve the neighborhood may be restricted (school buses, garbage trucks, delivery vehicles, etc.)
Problem Target	• Cut-through traffic • High volumes • 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.

R3-1

R3-2

R3-3

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 • Possible reduction in crashes
Disadvantages	• If turn prohibition sign is installed without a reasonable alternative violations are likely. • Complaints may rise on diversion routes. • 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. • Most effective when used during rush hour when "cut through" traffic is a problem • 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 Case #2 – no significant effect on traffic volumes 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 • Inexpensive to implement • May reduce traffic volumes • May increase roadway capacity
Disadvantages	• May be considered inconvenient for residents • Possible increase in speeds • May increase volumes on other streets
Problems Targeted	• High traffic volumes • 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) • Defines driver's right-of-way • Increase opportunity for pedestrians to cross the roadway • May discourage cut-through traffic
Disadvantages	• Can cause negative traffic safety impacts if sign is not warranted • May result in mid-block speeding • Increasing levels of intersection control are associated with increased frequency of crashes. • Difficult to enforce full stop control compliance • 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 • 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) • Defines driver's right-of-way • Increase opportunity for pedestrians to cross the roadway • May discourage cut-through traffic
Disadvantages	• Can cause negative traffic safety impacts if sign is not warranted • May result in mid-block speeding • Increasing levels of intersection control are associated with increased frequency of crashes. • Difficult to enforce full stop control compliance • 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. •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.

R7-1

R7-2

R7-2a

R7-3

R7-4

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) •
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 •
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 85th percentile speed, roadway crash frequencies are at a minimum.
Disadvantages	• Speed limits on urban roadways are either set by Statute or by MnDOT. • 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. • 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. • Costly to maintain • 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. •Marked crosswalks may be part of a program to designate walking routes and concentrate pedestrian crossings when combined with other strategies.

Enforcement

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 • Effective with repetitive enforcement on a non-routine basis. • 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 •Expensive and not always desirable to use police for traffic enforcement due to budget and manpower constraints
Problems Targeted	• Speeding • Moving vehicle violations • Running stop signs
Design	• The locations of implementation should be clearly identified to minimize the time spent enforcing and maximize the resultant speed reduction. • 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 • Low cost ($2,000 to $11,500 per unit) • 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) • May only provide short term effectiveness • Possible vandalism or could encourage aggressive drivers to see how fast they can go • Needs power to function • 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

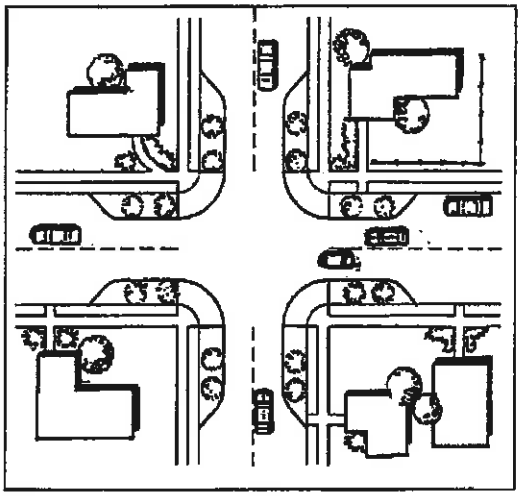
The reduction of the typical pavement width along a roadway. The narrowing can be achieved physically by removing part of the pavement surface or by simply using pavement markings to indicate narrow travel lanes.

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). • 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 • May result in shifting volumes to adjacent streets if number of lanes is reduced
Problems Targeted	• Wide residential streets where speed reduction is desired • 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.

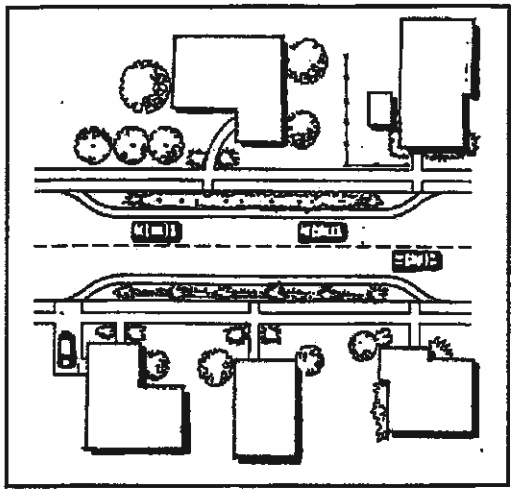


Source: Institute of Transportation Engineers
Traffic Calming: State of Practice

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 • Provides space for landscaping and neighborhood "gateway" • Should not affect emergency response time • Minimal inconvenience to drivers
Disadvantages	• May require the prohibition of on-street parking causing hardship or inconvenience for residents • May cause bicyclists to travel in same traffic lane as vehicles • 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

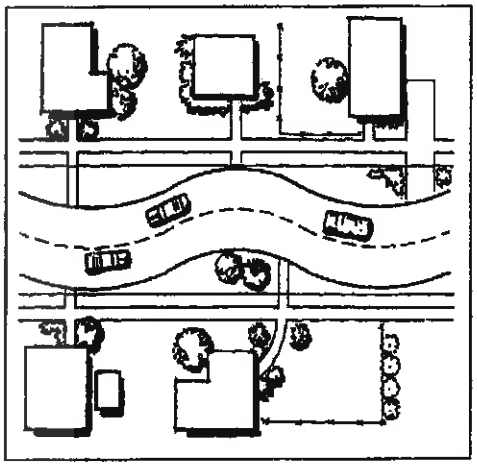
Effects	
Volumes	Little or no effect
Speed	Minimal changes
Traffic Noise and Air	Little or no effect.
Traffic Safety	Potential for improved pedestrian safety due to shorter street crossing times, but at the same time bicycle safety may be compromised by physically removing part of the pavement surface.
Advantages	• Good for pedestrians due to shorter crossing distance • Provides space for landscaping • Does not affect emergency response time • Minimal inconvenience to drivers
Disadvantages	• May require the prohibition of on-street parking causing hardship or inconvenience for residents • May create drainage issues where curb and gutter exist • 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 • No restriction in access to residents • Can be landscaped enhanced • Less disruptive for emergency vehicles than speed humps
Disadvantages	• Curbside parking must be prohibited in some locations • Winter maintenance problems • Possible impacts to drainage • High cost of reconstruction
Problems Targeted	• Excessive speeds
Design	• Not appropriate for narrow streets (22 feet is appropriate width)

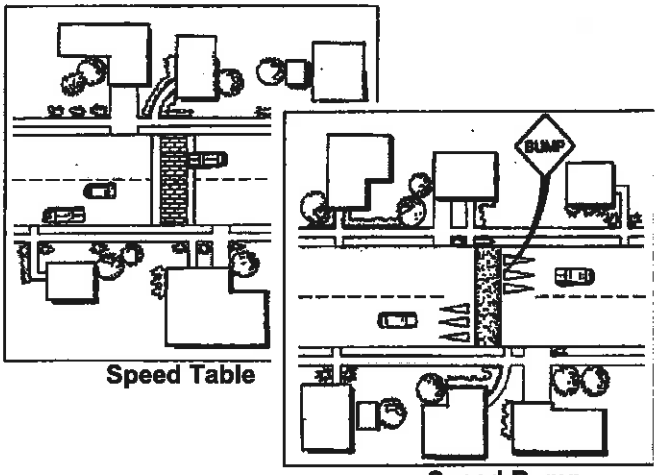
Sidewalks

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. • Very effective at reducing pedestrian/vehicle conflicts. •
Disadvantages	• Moderately costly to implement. • Requires systematic deployment to achieve high levels of effectiveness. •Increased maintenance efforts. • 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

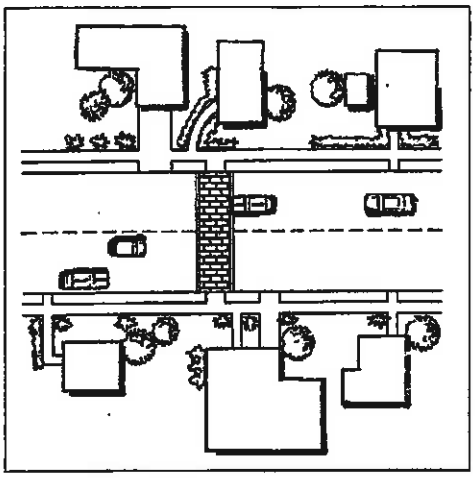
Speed Bump

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 • Usually reduces traffic volumes • Does not require parking removal or interfere with bicycle/pedestrian traffic
Disadvantages	• Can potentially increase noise • Can cause traffic to shift to parallel residential or collector streets • May decrease emergency vehicles response times
Problems Targeted	• Excessive speed • 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



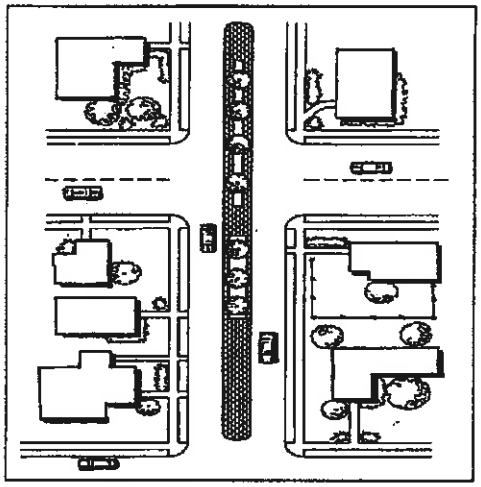
Source: Institute of Transportation Engineers *Traffic Calming: State of Practice*

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 • Increases pedestrian visibility and awareness to driver • May reduce traffic volumes
Disadvantages	• Possible increase in noise • Possible diversion of traffic to other streets • May impact drainage
Problems Targeted	• High mid-block pedestrian crossing and excessive vehicle speeds
Design	• Should be placed in mid-block • Not appropriate for grades greater than 5 percent • 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.



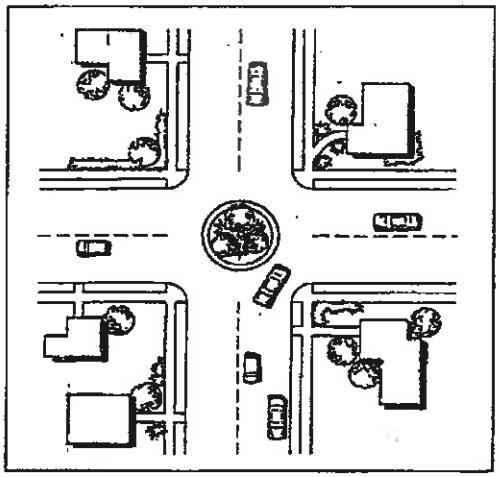
Source: Institute of Transportation Engineers
Traffic Calming: State of Practice

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 • Prevents vehicles from passing vehicles that are turning right • May improve safety through access limitations • Visually enhances the street
Disadvantages	• Diversion of traffic to other locations possible • Disrupts continuity of local street system • Maintenance of island required • Reduction in access for residents
Problems Targeted	• Cut through traffic • Vehicle conflicts
Design	• Must meet drainage requirements • 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.

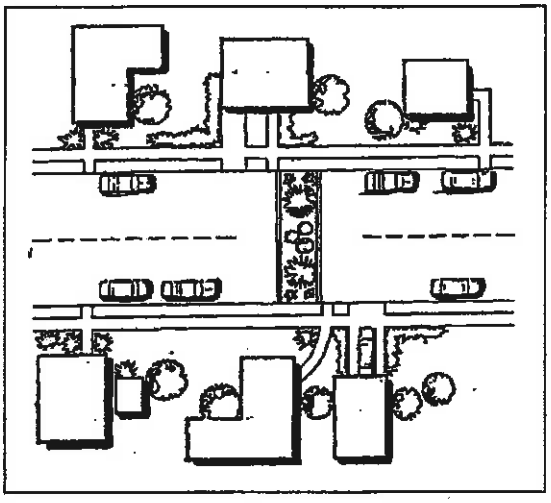


Source: Institute of Transportation Engineers *Traffic Calming: State of Practice*

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 • Reduces vehicle conflicts at intersection • Provides equal access to intersection for all drivers • Does not restrict access to residents • Can be landscaped
Disadvantages	• Some parking restrictions required • Local experience has found these devices to be ineffective • Can restrict access for trucks, buses and may increase emergency vehicle response time • Winter Maintenance
Problems Targeted	• Excessive speeds • 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.

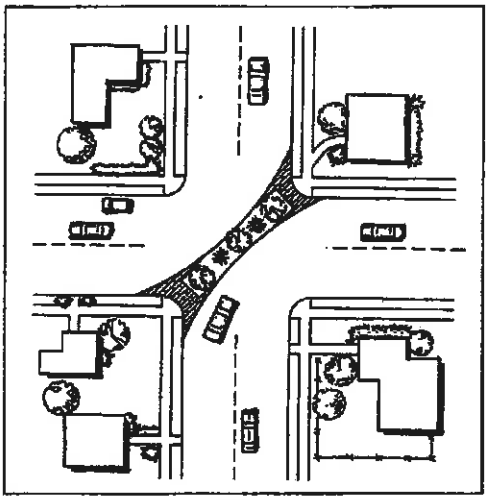


Source: Institute of Transportation Engineers *Traffic Calming: State of Practice*

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 • Possibly reduces speed of remaining vehicles • Can maintain pedestrian and bike access
Disadvantages	• Increases emergency vehicle response times • May cause inconvenience for some residents • May divert traffic to other streets • May require additional right-of-way acquisition • 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.

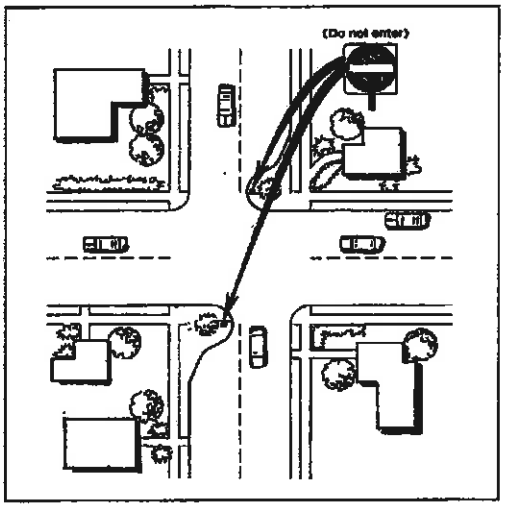


Source: Institute of Transportation Engineers *Traffic Calming: State of Practice*

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 • Restricts vehicle access while maintaining bicycle and pedestrian access
Disadvantages	• Prohibits or limits access and movement • Restricts access for emergency vehicles • May impact drainage • May impact parking
Problems Targeted	• Cut through traffic • Speed – forces driver to slow to make the turn
Design	• The curvature of the diverter is dependent on the intersection roadway widths. • Special care needs to be taken with drainage design. • The intent is to divert traffic to arterial and collector streets. • 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 • Reduces traffic volumes • Allows two-way traffic on the remainder of the street • Shorter pedestrian crossing at intersection
Disadvantages	• Parking may be impacted and reduced • Interrupts street network connectivity • 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

Appendix A

Petition

Petition for Traffic Management Strategy Implementation

The undersigned resident of properties bordering on: _____

Between the intersections of: _____ and _____

Brief Description of Traffic Related Problem: _____

_____

_____

Hereby request assistance with traffic related problems.

Signatories should understand that the City of Blaine has determined that affected residents shall bear 75% of the cost of installing traffic management strategies.

NAME (Signature)	Address (Include Apartment #)	Comments

Petition submitted by:

Name_____ _____Address_____Phone_____

Appendix B

Resources on Traffic Calming

Traffic Calming State of the Practice, Institute of Transportation Engineers

Investigating the Effectiveness of Traffic Calming Strategies on Driver Behavior, Traffic Flow and Speed, Report 2002-02, Minnesota Local Road Research Board

Effective Traffic Calming Applications and Implementation, Report 1999-01, Minnesota Local Road Research Board

Neighborhood Traffic Control, North Central Section Institute of Transportation Engineers, December 1994

Minnesota Traffic Calming, MnDOT Local Road Research Board: www.mn-traffic-calming.org

Minnesota Department of Transportation/Speed Limits: www.dot.state.mn.us/speed/index.html

Appendix C

Glossary of Key Terms

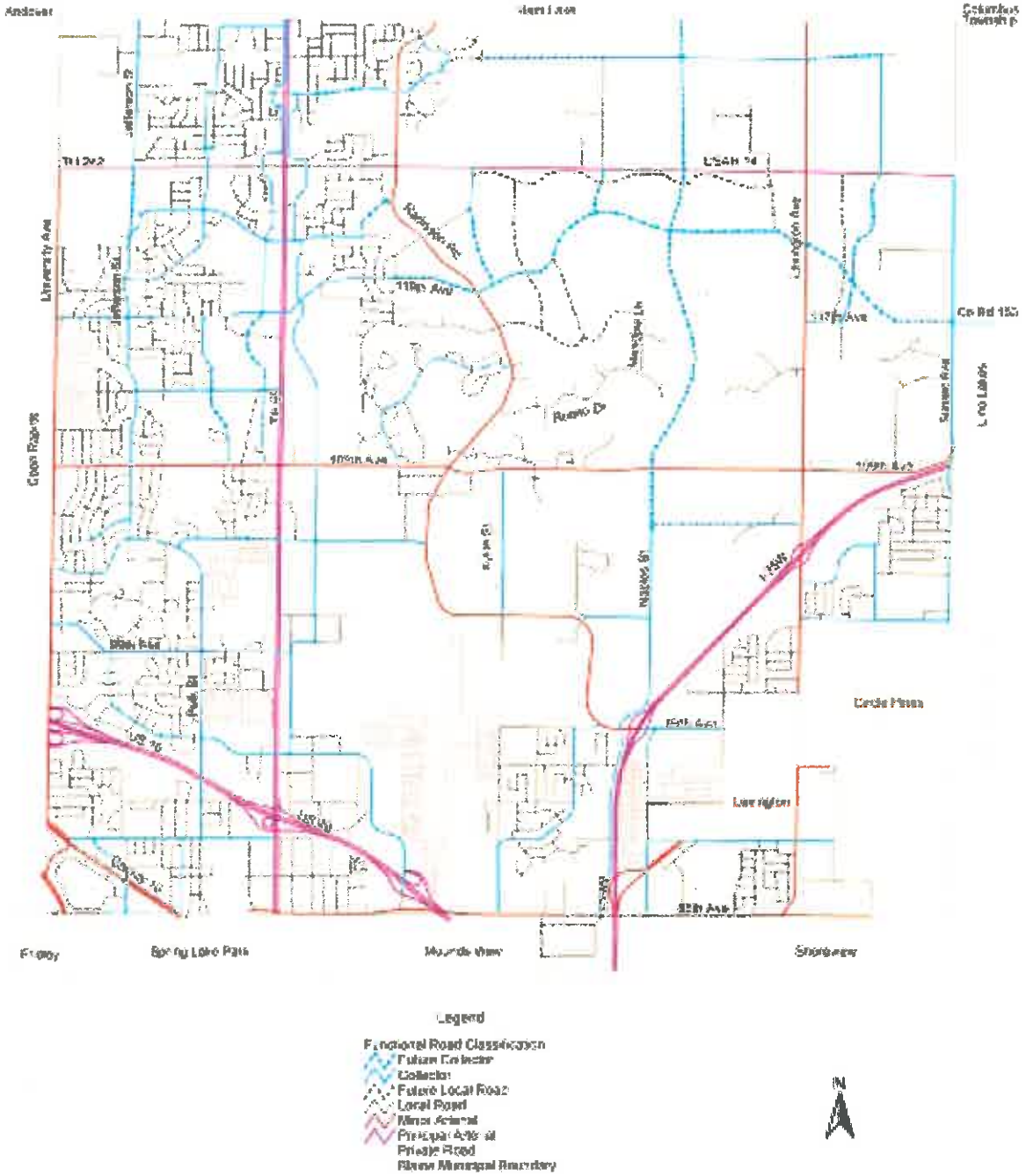
85th Percentile	The speed at or below which 85 percent of vehicles surveyed travel. The measurement is one criteria used to set the speed limit on roadways.
10 mile per hour pace	Speed range representing the speeds of the largest percentage of vehicles in a speed survey.
Access	The ability to enter and/or exit a property, street or neighborhood.
Affected Neighborhood	Properties expected to receive the majority of the impacts from an implemented traffic management strategy.
Arterial	Roadway with emphasis on mobility over land access and connects cities with adjacent communities and the metropolitan highway system.
Capacity	The maximum number of vehicles that can use a given section of roadway during a given period of time.
Collector Street	A roadway that connects neighborhoods. Collector streets are shown on the current Road Classification map (Figure 4.10 Appendix D) in the Blaine Transportation Plan.
Correctable Crashes	Types of crashes which engineers are able to reduce through signal improvements, intersection geometry changes, traffic control devices, and access management techniques.
Cut-Through Traffic	Traffic using local streets to travel between neighborhoods instead of collector street.
Diversion	Traffic volumes that are moved from one street to another.
Impacted Area	Area that will receive the majority of the impacts from an implemented traffic management strategy including diversion of traffic volumes.
Local Street	A roadway that connects blocks within neighborhoods.
Transportation Plan	Plan adopted by the City of Blaine and used for planning of transportation infrastructure. www.ci.blaine.mn.us/_InsideCityHall/_PublicServices/_Engineering/_BlaineTransportationPlan/_BlaineTransportationPlan_Home.htm
Speed Survey	A survey of vehicles performed with radar to determine the speed at which they are traveling. The 85th percentile is determined by a speed survey.
State Aid Road	A designated roadway (City or County) which receives state funds for maintenance and construction. Additional rules and standard apply to these roadways.

Appendix D

Figure 4.10 - Recommended Roadway System

City of Blaine Transportation Plan

Figure 4.10
Recommended Roadway System



PARSONS

Blaine Transportation Plan

CITY OF EVANSTON, ILLINOIS
NEIGHBORHOOD TRAFFIC MANAGEMENT POLICY

Introduction

There is increasing interest across the country in developing strategies to reduce the speed and amount of traffic in residential neighborhoods. Many traffic engineers are shifting their focus from evaluating such items as whether or not stop signs are appropriate at individual intersections to more comprehensive efforts to determine effective approaches to neighborhood traffic control. The new programs involve much more interaction with residents than the old ways. Modern neighborhood traffic management, called *traffic calming* in many communities, is more about using traffic control to address quality of life issues than it is about comparing traffic volumes to national standards developed decades ago. This is not to suggest that the engineering aspects of traffic control should be ignored; on the contrary - the measurement of speeds, traffic volumes, and accident rates are essential in helping determine which strategies work and can be applied at similar locations.

The purpose of this document is to describe a process which will:

1. Determine the extent of existing traffic problems in a neighborhood
2. Describe the range of alternatives available to reduce those problems
3. Help residents determine which of those alternatives they would like to have in their neighborhood
4. Help City Council determine the order in which alternatives are funded and installed by developing a priority ranking system to be used when the estimated cost of projects exceeds the approved funding level.

Background

Ask anyone who lives in Evanston what they believe is the worst traffic problem on their street and you will find speeding at the top of most lists. Does this desire to control vehicle speeds address only a perceived problem or is there a measurable benefit to reducing speeds? To answer this important question, the risk of pedestrian fatality was examined for various speeds. Most people would predict that the risk of fatality increases with speed. It does, but the level of increased risk as speeds increase may be underestimated by many people. It is reported that the likelihood of a pedestrian being killed when struck by a vehicle traveling 15 mph is about 3.5%. This increases to 37% at 31 mph and about 83% when the vehicle is traveling 44 mph. Obviously, there is a real benefit to reduced vehicle speeds when these sobering numbers are reviewed. In addition to reducing the risk of injury when an accident occurs, there are other benefits to reducing speeds. The chances of avoiding an accident increase for two primary reasons: (1) the driver's field of view widens as speeds go down, making it more likely that activity on or near the pavement will be seen, and (2) stopping distances are greatly reduced at slower speeds, making accident avoidance easier if someone or something is in the roadway.

Cut-through traffic on local streets is another problem many Evanston residents place near the top of the list of problems they would like to address. Our City is built on a grid system which provides many parallel routes to the arterial and collector streets which are designated to handle the through traffic. This provision of local street alternatives which are several blocks long and are the same length as parallel segments of the major street system leads to cut-through traffic as motorists seek to save a few minutes (or seconds) per trip. The grid system was popular 150 years ago when the street pattern was laid out, but it is very unlikely that it would be used if Evanston were being designed today. Instead, you would probably see more curved streets and "no outlet" sections which prevent through traffic. Trying to retrofit the modern design elements on an old grid street system poses quite a challenge for us today. There are some ways to address this which will be discussed later in this report.

To help guide us through a process to reduce speeds and cut-through traffic, some basic principles have been adopted. These will help as we work through the process of developing techniques for controlling traffic in neighborhoods.

Guiding Principles

A. Traffic operations and traffic safety are important and should be addressed to enhance the quality of life, the "livability" of the neighborhoods. Perceptions of traffic problems and measurable traffic characteristics are both important and should be considered as solutions are developed.

B. The City will continue to support street classifications which give different weights to the streets which form the roadway system (arterial, collector, and local) and recognizes that not all traffic control measures are appropriate for each type of street. These street classifications are found in the City's Comprehensive General Plan.

C. Adequate emergency and service access (for the City, as well as other agencies) is essential and must be maintained.

D. The process for each neighborhood should include all who have a stake in how the street system operates (residents, businesses, schools, park users, etc.).

E. The agreed-upon system of prioritization should be followed when projects compete for limited funding.

F. Where possible, trials of the proposed changes should be undertaken prior to final approval of the funding, especially in the more costly projects.

G. The traffic control measure(s) selected should not move traffic to other streets.

The Process for Developing a Plan

Each neighborhood will follow a similar process to develop a traffic management plan.

However, it is not suggested that each plan be similar because the neighborhood residents will determine which options best fit their problems and what level of inconvenience they will be willing to experience to address the conditions in their neighborhood. A combination of public meetings and postcard surveys has been adopted as the best way to gauge neighborhood interest.

Initial Neighborhood Meeting

The first meeting is used to determine which problems the residents would like to address and to present a list of options which have been approved for consideration. This meeting includes the ward alderman, residents, and City staff, and it sets the stage for the process and allows for open discussion of the various alternatives which are available. It also provides a time to discuss reasonable expectations. For example, if an area includes a school or business, it is unreasonable to expect that all non-residential traffic will be eliminated. There still may be ways to control or organize that traffic, but elimination of the non-residential traffic is not possible.

Collection of Data

After the first meeting, it will be necessary to collect some traffic data, such as speed, volume, and accident history. These items can be used later to make "before-and-after" comparisons to help determine the level of improvement of the various alternatives.

Second Neighborhood Meeting

This meeting is needed to discuss the proposed neighborhood traffic management plan. It is envisioned that this plan would be developed by a core group of residents (who attended the first meeting and volunteered to spend some time to examine the alternatives) with the assistance of City staff. It is possible that the plan could be developed at the first meeting, but in neighborhoods where many options are available, it is unlikely that this can be done.

Postcard Survey

Our experience has been that many people are unable to attend (or do not attend) evening meetings, but are still interested in changes to traffic flow in their neighborhood. For this reason, a postcard survey which presents any proposed changes provides an opportunity for all neighborhood residents to express their views. The results of the survey will be used by the ward alderman to determine if there is sufficient interest to proceed with any changes.

Implementation of the Plan on a Trial Basis

If there is sufficient interest in proceeding with the plan, it has been approved that it be implemented on a trial basis whenever possible. Council approval of the trial is needed prior to implementation. This will be necessary because most plans will include the expenditure of funds and/or ordinance changes. The trial period can

vary in length, but a minimum of three months is suggested for any change and it may be beneficial to leave some trials in place for a year.

Evaluation of the Trial/Second Postcard Survey

Two components make up the evaluation of the trial. First, the "after" portion of the data collection will be completed and compared with the "before" data to determine any measurable changes. Also, a second postcard survey will be completed to determine if the residents perceive the changes as beneficial. This will allow them to express their opinions on whether or not they would like to see the changes made permanent. The ward alderman will be able to use this input to determine if another meeting should be held before the final recommendation is made to Council. Some communities use a specific percentage of residents in the area in favor (60% to 70% is reported), but no specific cut-off is suggested at this time.

Approval of Implementation

If there is a desire to make the changes permanent, the necessary documentation (reports, ordinances, etc.) will be prepared for Council approval. Bids for the final implementation will be solicited for the larger jobs and the smaller ones will simply be approved at this time.

Allowable Traffic Control Measures

There is a wide range of alternatives which are available to control traffic speeds and reduce volumes. The following is a list of measures which are currently approved for use in developing neighborhood traffic management plans. Each of these is discussed in the appendix.

Changes to traffic control:

- Turn restrictions (Full-time or peak-hour)
- One-way streets - traditional one-way pairs
- One-way streets - non-traditional one-way patterns ("mazes")
- Additional signs - stops signs, speed limits
- Additional markings - edgelines delineating the parking lane(s)
- Parking modifications - adding parking; relocating parking to create a chicane effect

Physical changes to streets:

- Traffic circles constructed at intersections within existing curblines
- Midblock islands (similar to circles, except these are not used at existing intersections)
- Street narrowings
- Cul-de-sacs
- Diagonal diverters
- Partial intersection closures
- Speed humps
- Speed bumps (to be used only in alleys)

Speed monitoring options:

- Traditional Police enforcement
- Mobile radar speed display (speed trailer or speed monitor)
- Neighborhood speed watch

Other options:

- Education - newspapers, flyers, drivers ed classes, banners
- Arterial improvement

Traffic Control Measures Not Recommended At This Time

Some measures are not recommended due to potential problems or lack of experience with them. Speed bumps are not recommended for any street, but Council has approved their use in alleys. It is suggested that they be funded through this program, rather than have the residents pay for them.

Another item not recommended for use in Evanston is the type of pavement narrowing that causes both directions of travel to share the same pavement. These are called chokers in some communities. There may be a liability problem with these, because they create a head-on condition.

Rumble strips are low bumps placed on the pavement to create a vibration for the drivers traveling too fast. These are not recommended in Evanston due to the fact that they also cause noise for nearby residents and may prove to be a nuisance. They are probably less of a problem where homes are set back a considerable distance from the street.

Internal Staff Review

A staff team with representatives from Police, Fire, Water and Sewer, Engineering, Traffic Engineering, and Streets and Sanitation will review all neighborhood traffic management plans. This is necessary to ensure that all services can continue to be provided and that emergency response times remain at an acceptable level.

Funding and Budget

City Council has approved funds each year since the program began in 1997. The City's Capital Improvement Program (funded by general obligation bonds) has been used to fund the various elements of this program. These funds have been used for cul-de-sacs, two mobile trunk-mounted radar displays, a speed trailer, trial traffic circles, permanent traffic circles, one-way streets (sign change-over and signal modifications), arterial traffic signal timing optimization, traffic counters, a radar gun, signage, other expenses (meeting rooms, film, etc.), alley speed bumps, speed humps, and other traffic control measures.

Conclusion

This document describes the approved method for developing traffic control plans for neighborhoods. It is geared toward using a similar procedure for each neighborhood, but relies heavily on the residents of each area to provide input in deciding what measures are appropriate for the streets in their neighborhood. It encourages us to look at

neighborhoods as a whole, rather than examining a request for a specific intersection. This minimizes the chance that traffic problems will be pushed to a nearby street.

This policy was approved by unanimous vote of the Evanston City Council on June 9, 1997. It was modified to include the use of speed humps on April 24, 2000, and the speed hump policy was approved on June 11, 2001 also by unanimous vote.

APPENDIX

ALLOWABLE TRAFFIC CONTROL MEASURES

ALLOWABLE TRAFFIC CONTROL MEASURES

This section describes the various traffic control measures which form the menu from which the final recommendations for each neighborhood are to be selected. Many of these are items which are in place in Evanston and have proven to be effective measures to control a specific problem or condition. Some are new to Evanston, but are in use in other communities and are effective in addressing their traffic issues. They are divided into subsections and follow the order listed in the text of this report. Not all measures are appropriate in all situations and most are acceptable for use only on local streets. Also, they each have different impacts and different levels of inconvenience on the neighborhoods.

Changes to Traffic Control

Turn Restrictions

This measure involves restricting turning movements into or out of neighborhood streets, primarily at intersections with major streets. This is in use at several locations in Evanston and has been shown to be effective in reducing cut-through traffic, especially traffic desiring to avoid traffic signals. While most of our restrictions are in effect 24 hours/day, it is possible to have peak-hour restrictions as well. These require an ordinance and are relatively inexpensive to install. However, regular Police enforcement is necessary to maintain the effectiveness of these restrictions.

Traditional One-way Streets

One-way streets have been used in Evanston for many years to organize and control the flow of traffic in neighborhoods. The common application is the one-way pair (two parallel streets with each carrying traffic in only one direction), but sometimes a single street is designated one-way. Many people believe these are safer in neighborhoods because the traffic only comes from one direction and there are fewer conflicts for pedestrians, cyclists, and vehicles. The reduced conflict tends to increase speeds, so there is a trade-off. One-way streets are also used when both sides of the street are needed to satisfy the neighborhood parking demand, but the street width is insufficient to handle traffic in both directions. One-way streets are relatively self-enforcing, but sometimes it is necessary to provide Police enforcement to ensure compliance. These can be relatively inexpensive to install, but do incur significant cost if modifications must be made to traffic signals to accommodate the new traffic patterns.

Non-traditional One-way Streets

Non-traditional one-way streets involve designating a traffic flow pattern which is intended to make it more difficult for vehicles to travel through a neighborhood. Sometimes this is called a "maze" approach, because the one-way pattern leads people in directions they did not intend to go. This is in use on Harvard Terrace

(which is one-way west from Barton to Asbury and one-way east from Barton to Ridge) and has been shown to be very effective in reducing speed and volume of traffic. It is, however, inconvenient for the residents, because the same access restrictions apply to them as well as to those trying to cut through the area. Another impact is the difficulty in giving directions for deliveries or even for visitors, since there is no direct access from either Ridge or Asbury to Harvard Terrace.

Additional Signs

Placing additional signs, such as stop signs or speed limit signs, has been a fairly common traffic control measure in Evanston. It has been relatively successful at some locations, but ineffective at others. Additional signing will continue to be necessary to control traffic in Evanston, but the proposed policy encourages us to look at neighborhoods as a whole, rather than to continue to respond to individual requests for four-way stops at isolated intersections.

Additional markings

We use white edgelines to mark the parking lanes on some major streets to discourage motorists from using the curb lane for passing on the right. This has been successful and it may be beneficial to try this on local streets. The purpose would be different, however, in that the lines would be used to try to narrow the street visually. The same pavement width would obviously still be available, but the lines would make the street appear narrower and drivers have been shown to reduce speeds when this occurs. This technique has not been used in Evanston, and it should be done on a trial basis before recommending its use throughout the City. This would allow us to see if speeds are actually reduced.

Parking modifications

Adding parking where it is currently prohibited is used in some communities as a traffic calming measure because this creates "side friction" for passing traffic and results in reduced speeds. It has limited application in Evanston because our need for parking has resulted in spaces being added at just about every location possible. However, we have tried relocating the parking from one side of the street to the other to force traffic to drive around parked cars, creating a chicane effect. This was done on Colfax and Lincoln between Ridge and Sherman. It is inexpensive and self-enforcing, but can only be used on fairly narrow streets with one-sided parking.

Physical Changes to Streets

Traffic Circles

Traffic circles are islands which are constructed in the middle of intersections, but without any street widening or changes to the curb radius. They are designed to be both physical obstructions and visual obstructions. They force traffic to alter the straight-line path being followed, which results in a speed reduction without the need for any Police enforcement. Also, they break up the look of the long "straight-

away" which is very common in our street system. These devices are used in many communities throughout the country and are gaining popularity in our area. About 20 permanent circles have been installed in Evanston.

Midblock Islands

Midblock islands are similar to traffic circles, but are used on long sections where there are no intersecting streets. They cost the same as a circle, but do impact the neighborhood more. This is because they generally require the removal of parking spaces to accommodate the shift in the travel lane. This could be a problem in some areas.

Street narrowings

This technique is used in some communities as a traffic calming strategy. It involves moving the curb toward the center of the street creating a "neck-down" which slows traffic. This technique does not narrow the street so much that it forces two-way traffic to use the same lane, which is believed to be a hazard for traffic and a liability problem for the City. It requires the removal of parking spaces and is a relatively expensive measure due to the need to reconstruct the curb and possibly adjust the storm drainage system to accommodate the new street configuration.

Cul-de-sacs

Cul-de-sacs are street closures which eliminate access between connecting streets. They have been used in Evanston to separate business traffic from residential traffic and are being considered as traffic control measures. They are very expensive, but do provide the highest degree of access restriction. They are very effective in eliminating through traffic in the block of the closure, but generally result in diverting traffic to other streets. They have a significant impact on service delivery, such as snow plowing and street-cleaning. Also, emergency vehicle access is certainly an issue and must be addressed on a case-by-case basis. They are self-enforcing.

Diagonal Diverters

Diagonal diverters are partial intersection closures which are in the form of a diagonal barrier extending from one corner of an intersection to another (northeast to southwest, for example). They eliminate through traffic in the directions affected by the barrier and the concept is similar to the "maze" approach in the non-traditional one-way street patterns. They are self-enforcing and the cost would be somewhere between traffic circles and cul-de-sacs, probably starting in the $15,000 to $20,000 range.

Partial Intersection Closures

Another traffic calming device is the type of intersection closure which restricts access by providing only enough room for exiting traffic from a local street to a more major street. It is formed by physically blocking the "entry lane" to the local street and supplementing it with enforceable "DO NOT ENTER" signage, while allowing

the exit lane to remain unimpeded.

Speed Humps

Speed humps differ from speed bumps in that they are from three to four inches high at the highest point and are much longer than bumps. We currently use 12 foot long humps. They can be driven over at about 15 miles per hour without the jolt that bumps give. At higher speeds they are very uncomfortable and may cause the vehicle to bottom out. The design of Evanston's humps follows the recommended guidelines published by the Institute of Transportation Engineers.

Speed Bumps

Speed bumps are not recommended for use on any streets, but City Council has approved their use in alleys. Two-thirds of the residents along the alley must support the bumps. These devices are considered in the category of neighborhood traffic control and are included in this program at no charge to the residents along the alley.

Speed Monitoring Options

Traditional Police Enforcement

Police enforcement is an essential part of any traffic control plan and it is recommended that it be continued. It can be used to enforce new traffic control regulations and to monitor existing regulations. It must be recognized that it is impossible to have officers monitor each posted speed zone every day, so other techniques for speed monitoring are necessary and are discussed in the next section.

Speed Monitor

This is a trailer-mounted unit that has radar and a speed display. It shows the speed of the vehicle to the driver (SPEED LIMIT XX - YOUR SPEED IS XX MPH) and has been shown to reduce speeds, even if no police are in view. These units be used on any type of street.

Neighborhood Speed Watch

This technique involves measuring the speed of traffic on neighborhood streets and recording the license plates of speeding vehicles. Plate numbers are turned over to the Police and the owners are written letters advising them to be more careful and respect traffic laws. The speed measuring is done by using radar units borrowed from the Traffic Bureau of the Police Department. It is relatively inexpensive, but does involve time to obtain registration information and produce the letters. Also, the residents involved in data collection must be trained to use the equipment so that accurate results are obtained. The Traffic Engineering Division also has a program similar to this, but it does not involve citizens. In this program, license plates of violators of various types of regulations are recorded (if time allows during

intersection counts and observations) and letters are sent to offenders.

Other Options

Education

This technique can involve a range of activities from newspaper articles to flyers delivered to houses or flyers handed to motorists at specific locations. The Traffic Engineer or Public Works Director talks to many of the driver education classes at the high school and addresses neighborhood traffic problems during his presentations. Education could also include signing, such as advance warning signs for new devices. Some communities use additional signs such as "Neighborhood Speed Watch in Effect", but this is sometimes viewed as excess signage or deemed unsightly.

Arterial Improvement

One of the main reasons people divert from the major arterials is that they save time by cutting through local streets. Some amount of cut-through traffic can be tolerated on most local streets, especially if motorists travel at reasonable speeds and observe other traffic laws. However, when they travel too fast or run stop signs or disobey other traffic control devices, they endanger the local residents. One way to minimize the cut-through volume without taking specific measures in the neighborhood is to review the arterial street system to ensure that it is working as efficiently as possible. This means that traffic signal timing and phasing (left-turns arrows, etc.), lane use (left-turn lanes, right-turn lanes), and signal progression (the time relationship between adjacent signals) need to be reviewed regularly and adjustments must be made so that the traffic control matches the current traffic flow. Sometimes, minor widening is necessary to increase the capacity of intersections. These matters can be quite controversial as we struggle with balancing the need to move traffic through the City with the protection of the neighborhoods through which this traffic must pass. The cost of arterial improvement varies from several thousand dollars to perform the analysis and adjustment of traffic signal timing for a series of arterial signals to much more expensive projects, if intersection widening is needed. Obviously, we try to concentrate on those projects which can be accomplished with minimum expense. However, we do need to examine the feasibility of the more major projects.

For more information on Traffic Calming and the Neighborhood Traffic Management Program in the City of Evanston, contact the Senior Traffic Engineer, Rajeev Dahal, at (847) 866-2922 (VOICE) or (847) 448-8118 (FAX) or rdahal@cityofevanston.org.

Speed Hump Policy

Speed Humps will be installed only on local residential streets. Speed Humps will be 3 inches to 3 1/2 inches in height and 12 feet long. The Institute of Transportation Engineers "Guidelines for the Design and Application of Speed Humps" will be the primary guideline for the proper installation of speed humps.

Advance Speed Control Humps sign with appropriate advisory speed signs will be installed for streets or areas that have speed humps. White pavement markings will be installed on speed humps for better visibility.

Speed Humps will not be installed on the following streets:

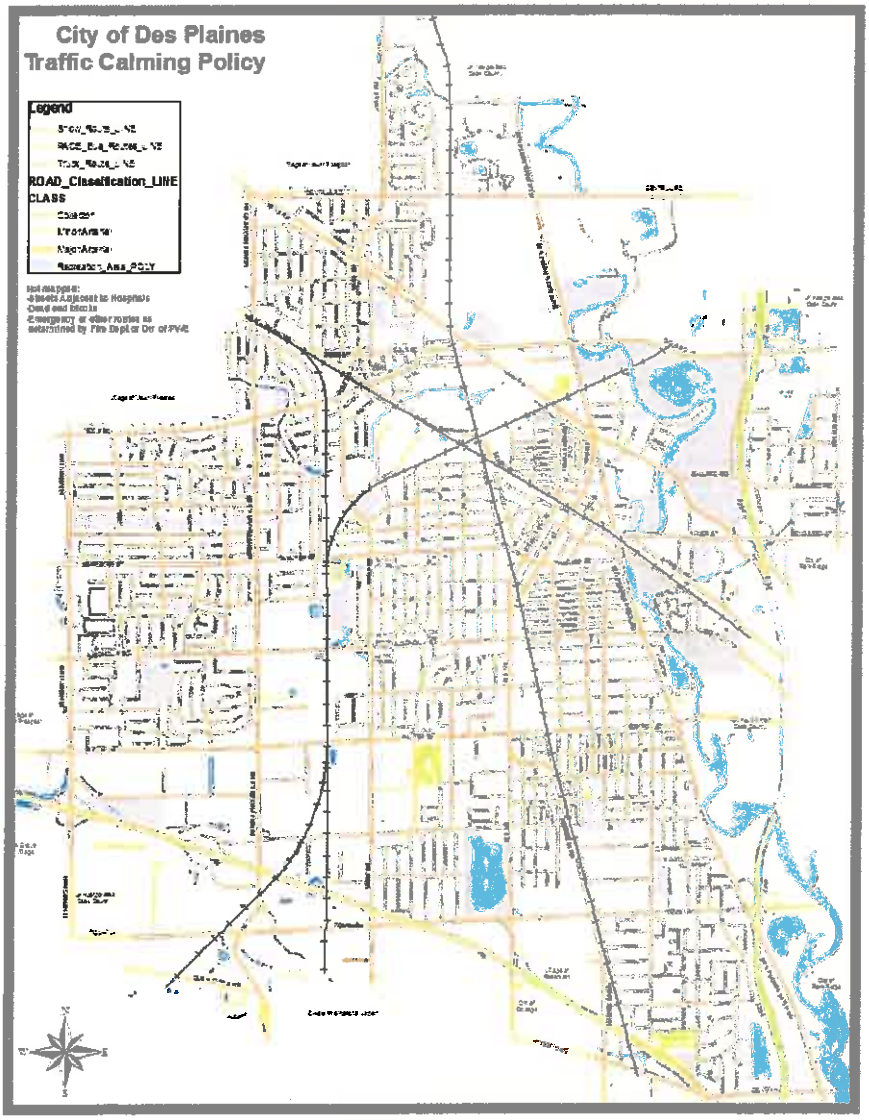
Arterial streets (Ridge, Asbury, Central, Dempster, etc.),
Collector streets (Central Park, McDaniel, Noyes from Greenbay to Sheridan, Custer from Main to Howard, Lake from Sherman to Dodge, etc.),
Distributor streets (downtown streets like Benson, Davis, Maple, etc.),
Truck routes (Greenleaf from Hinman to Hartrey, Hartrey from Dempster to Oakton, etc.),
Streets adjacent to Hospitals (Girard north of Central, Austin east of Ridge, etc.),
CTA/PACE Bus Routes (Grant east of Crawford, etc.),
Snow Routes,
Emergency Response Routes as designated by the Fire Department,
Dead-end blocks of local residential streets,
Streets deemed inappropriate for speed humps as determined by the Director of Public Works based on the recommendation of the Traffic Engineer.

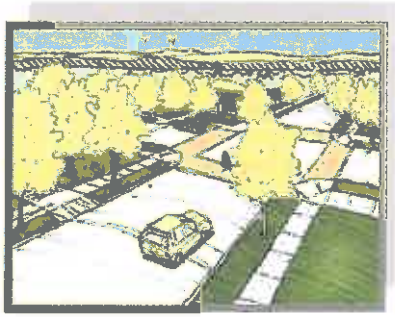
Residents can request speed humps either through a neighborhood meeting where the Ward Alderman and/or Traffic Engineering Staff are present or through a petition to the Division of Transportation. A postcard survey of all residents who will be directly impacted by the installation of the speed humps will be required. Of those that respond, a majority in favor of installing will be required for further consideration. The local ward Alderman will make the final decision on whether to proceed based on the results of the survey. All speed humps will be permanent - no trial speed humps will be considered.

Speed humps will be installed on the basis of the date of request and will follow in chronological order until funds are no longer available to do so. Streets/areas that do not get humps installed in that calendar year due to lack of funds will be installed the next calendar year.

(Updated June 12, 2005)

City of Des Plaines
Neighborhood Traffic Management Policy





Paul Tuttle-Moore Iacofano Goltsman, Inc.

Created: November 2009

Last Updated:

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City of Des Plaines
Neighborhood Traffic Management Policy

TABLE OF CONTENTS

City of Des Plaines
Neighborhood Traffic Management Policy

INTRODUCTION

There is increasing interest across the country in developing new strategies to reduce the speed and amount of traffic in residential neighborhoods. Measurement of speeds, traffic volumes, and crash rates are essential in helping determine which strategies work and can be applied at similar locations.

The purpose of this document is to describe a process that will:

1. Determine the extent of existing traffic problems in a neighborhood.
2. Describe the range of alternatives available to reduce those problems.
3. Utilize local input in assessing the determination of traffic calming alternatives.
4. Determine if the traffic calming measure is appropriate based on sound engineering criteria.
5. Develop a priority ranking system for the City Council to use when the estimated cost of projects exceeds the approved funding level.

GUIDING PRINCIPLES

The following basic principles are to be used as a foundation as we work through the process of managing traffic in neighborhoods.

A. Traffic operations and safety are important and should be addressed in order to enhance the quality of our neighborhoods. Both the perception of and the measurable characteristics of traffic problems should be considered.

B. Adequate emergency and public service access is essential and must be maintained. Therefore, traffic calming measures may be limited to certain streets.

C. Local residents, businesses, schools and park users should have input into how the street operates, although the final decision is made through the use of sound engineering judgment.

D. Prioritization will be established when projects compete for limited funding and staff resources.

E. The traffic control measure(s) selected should not move traffic to adversely affect other streets.

F. Proposed changes must be fair and consistent throughout the City.

G. Based on engineering criteria set forth in this document, the City will make the final determination of the location and type of traffic calming device to be installed.

TRAFFIC CALMING OBJECTIVES

Traffic calming is the combination of mainly physical and educational measures used to alter driver behavior in order to reduce the negative effects of motor vehicle use and thereby improve conditions for non-motorized street users.

The general objectives of traffic calming measures are to improve the quality of life in neighborhoods and promote alternative modes of transportation by:

1. Slowing traffic
2. Reducing cut-through traffic
3. Increasing safety for:
    a. Pedestrians
    b. Bicycles
    c. Vehicles
4. Enhancing the aesthetics of neighborhood streets when possible (e.g. landscaping at curb extensions or traffic circles) and at the least not detracting from the aesthetics of the neighborhood

ALLOWABLE TRAFFIC CALMING MEASURES

There is a range of tools available to control traffic speeds and reduce volumes, each with its associated costs, benefits, and rules for proper application. The following is a list of measures that may be considered in the development of neighborhood traffic management plans. Each of these measures is discussed in Appendix A.

Speed monitoring options:

Traditional Police enforcement
Mobile radar speed display
"Keep Kids Alive, Drive 25" campaign

Changes to traffic control:

Turn restrictions (Full-time or peak-hour)
Additional signs - stops signs, speed limits (subject to Federal MUTCD warrants)
Additional markings - edgelines delineating the parking lane(s)
Parking modifications - adding parking; relocating parking to create a chicane effect
One-way streets - traditional one-way pairs, non-traditional one-way patterns ("mazes")

Physical changes to streets:

Curb extensions and street narrowings
Traffic circles constructed at intersections within existing curblines
Mid-block islands
Speed humps/tables
Speed bumps (to be used only in alleys)
Diagonal diverters
Partial intersection closures
Cul-de-sacs

Other options:

Education – newspapers, flyers, driver's education classes, banners, city electronic message boards
Arterial improvements (most arterials are under IDOT jurisdiction)

SPEED HUMP EXCLUSIONS:

All traffic management measures have rules regarding their appropriate application. However, speed humps are unique in that they create a vertical deflection in the roadway surface. Due to their greater adverse impacts upon critical City services, there are certain locations where speed humps will not be considered. The following is a list of these locations, based upon extensive national experience and best practices. A map of the excluded streets is included in Appendix B.

- Arterial streets
- Collector streets
- Truck routes
- Streets adjacent to Hospitals
- CTA/PACE Bus Routes
- Snow Routes
- Dead end blocks of local residential streets
- Emergency Response Routes as designated by the Fire Department
- Streets deemed inappropriate for speed humps as determined by the Staff Traffic Advisory Committee (STAC), based upon other factors not considered above.

CRITERIA

In order to provide an objective means for justifying the expense, resources and various trade-offs associated with implementing traffic calming measures, the following criteria are to be used, singularly and in combination, to determine whether there is an objective problem worthy of further study:

1. 85th Percentile speeds more than 7 mph over the posted speed limit
2. A greater than average crash experience in a pattern that is related to unreasonable volumes or speeds
3. Cut-through traffic in excess of 50 percent of the average daily traffic on the street during peak hours
4. Other facts and circumstances that, in the judgment of the Staff Traffic Advisory Committee, establish the existence of a problem which warrants consideration by the Committee, despite the failure to satisfy the criteria listed in 1, 2 or 3 of this section.

FUNDING

When routine maintenance on streets is deferred, the deterioration of the street accelerates, resulting in the need for a premature and very expensive full reconstruction of the street. Therefore, the first priority of the City's capital improvement program is to maintain the condition of the existing streets.

There is often insufficient funding to keep up with this primary task of maintenance. As such there will necessarily be a limited amount of City funding available for projects to modify the streets for traffic management purposes. In order to ensure the commitment of residents to the various traffic management projects and to stretch the limited City funds as far as possible, the City is adopting a cost-sharing approach for all traffic calming projects.

Project Cost Share

Project Phase	City Share	Resident Share
Traffic Study of Neighborhood	100%	---
Basic Measures (e.g. signage, striping, education)[1]	100%	---
Engineering Design and Management of Physical Measures[2]	100%	---
Construction of Physical Measures[3]	---	100%
Future Maintenance of the Installed Physical Measures	100%	---

[1] "Basic Measures" include *changes to traffic control, speed monitoring* and other less expensive measures outlined in the "Allowable Traffic Calming Measures" section above.

[2] "Physical Measures" include the *physical changes* outlined in the "Allowable Traffic Calming Measures" section above.

[3] The City will manage the construction and advance the money to complete the project. The subject residences will then reimburse the City through the creation of a Special Service Area (SSA) as detailed in Step 4 of the "Process" section.

Approximate Cost For Initial Construction of Traffic Calming Measures

Traffic Calming Measure	Estimated Cost[1]
Curb extension and street narrowing	$9,000 - $15,000
Traffic circle constructed at intersection within existing curblines	$5,000 - $20,000
Mid-block island	$8,000 - $15,000
Speed hump/table	$2,500/$5,000
Speed bump (to be used only in alleys)	$500
Diagonal diverter	$40,000
Partial intersection closure	$40,000
Cul-de-sac	$120,000

[1] Source: Combination of several documents including ITE/FHWA, 1999 "Traffic Calming State of the Practice." and ~1999 Newark, NJ study of ITE reported projects. Prices from study adjusted to 2009 assuming 3% annual inflation. National information from websites tends to be both dated and wildly variable so these costs must be treated as very rough estimates. Local costs from neighboring communities (e.g. speed humps) were used when available.

Costs vary considerably depending upon nature of the measures installed (e.g. extent of landscaping for traffic circles, drainage structures impacted by curb extensions). Construction of measures as stand-alone projects is more expensive than constructing them as part of a larger street reconstruction project.

PRIORITY

Given the cost of traffic calming measures and the fact that demand for this type of program nearly always outstrips available funding, the following point system is being adopted to allow for a prioritization and ranking of petitioned projects.

Criteria	Values	Number of Points Possible	Points Awarded
85th Percentile Speed	7-8 mph over 9-10 mph over >10 mph over	2 3 4	
Crashes per year[1]	1-3 crashes >3 crashes	1 2	
% of Cut-through Traffic[2]	25% - 49% >49%	1 2	
Average Daily Traffic Volume	1,000 – 1,499 >1,499	1 2	
Pedestrian Volume	Elementary/middle school or large park within 600'. Or on a designated school walk route.	2	
Total Points			

[1] Per block

[2] Based upon peak hour. Determined through traffic counts and observations

PROCESS FOR DEVELOPING A NEIGHBORHOOD PLAN

The following process is to be used for the request, investigation and determination of whether to implement traffic calming measures on a street within the City. A flow chart summarizing the process is included in Appendix C.

Step 1 – Neighborhood Petition

A neighborhood identifies a traffic issue(s) and submits a letter and *Neighborhood Traffic Management Petition* to the City.

- The letter should explain the residential traffic concern(s).
- The *Neighborhood Traffic Management Petition* must be signed by 65% of all of the households living on the affected block, indicating support of the resident concern. The *Neighborhood Traffic Management Petition* form is included in Appendix D and is available on the City's website.
- The letter and accompanying petition should be submitted to the City, care of the City Manager. Contact information for a neighborhood representative should be included so that the City can follow up on the letter and petition.

Step 2 – Data Collection and Committee Review

Upon receipt of the letter and petition, the Public Works and Engineering Department will perform a traffic study of the area. The study typically includes a site review of the neighborhood, collection of speed and volume data, and review of the crash history.

The results of the traffic study will be reviewed by the Staff Traffic Advisory Committee (STAC) which will make any necessary traffic management recommendations. The Committee will take all factors into consideration including roadway geometry, snow routes, emergency routes, roadway classification, bike routes, drainage patterns, lighting, street resurfacing schedule, etc. The STAC is comprised of representatives from the Public Works and Engineering, Community and Economic Development, Police, Fire, and Legal Departments.

The Alderman of the subject ward will be kept informed throughout the process. In addition, an email will be sent out to the submitter of the original petition and all those who signed the petition (and included an email address) notifying them of the date, time and location of the STAC meeting so that they may attend if desired.

The STAC will write a response to the neighborhood. Simpler and relatively inexpensive interventions recommended by the STAC such as an enforcement program, signs, or pavement markings may be implemented directly after notification to the residences in the neighborhood.

If more significant changes to the street are warranted and recommended by the STAC, then the following additional steps will be followed.

Prioritization of Projects

It is important to note that even with the resident cost share, the City still faces limitations in staff resources to perform the traffic management studies and traffic management design as well as a limit in the amount of money available to front the project construction costs.

The City will make every effort to address traffic concerns in a timely manner. However, if the demand outstrips available resources, then the City will apply the prioritization formula to the project to determine where it fits in relative to the other petition areas that the City has received. If there is a current waiting list in excess of available City resources, then the location will be put onto the waiting list pending the availability of traffic monitoring equipment, staff time and/or funding.

The traffic management program is designed as a triage rather than a first-come first-served program. Therefore, a petitioned location on the waiting list can be superseded by a newly petitioned street if the new street scores higher in terms of priority.

Step 3 – Neighborhood Survey

If the STAC recommended physical changes to the street, then the City will mail a survey, specific to the type of traffic calming or other measure recommended, to all affected residences. Some measures (e.g. speed humps, diagonal diverters, etc.) have the potential to divert traffic to other local streets. In these cases, surveys will also be sent to residents on adjacent blocks who are likely to be affected. The survey will include:

- Summary of the results of the traffic study
- Explanation of the measures recommended by the City based upon the study
- Concept drawing for any infrastructure changes
- Ranking of the proposed project in the City's priority queue
- Rough preliminary cost estimate of the proposed changes including the cost to each individual residence if the measures are implemented
- Description of the Special Service Area process

The City will then tabulate the survey results. The following conditions must be met for the process to continue:

- A *minimum of 75%* of the residences on the block requesting the traffic calming measure must vote in favor of the project. The survey will state that any surveys *not* returned will be counted as a "NO" vote.

AND, for measures that may divert traffic to other local streets...

- A separate survey will be mailed to the residences on the likely affected adjacent blocks. A *minimum of 51%* of the residences on all of the adjacent blocks must vote in favor of the traffic calming measure. The survey will state that any surveys *not* returned will be counted as a "YES" vote.

Step 4 – Special Service Area (SSA)

If the minimum thresholds are met from the neighborhood survey then City staff will prepare a more detailed engineering design of the proposed measures with detailed cost estimates. Similarly the Legal Department will prepare the necessary paperwork for a special service area (SSA). The SSA is a mechanism for contiguous residential areas to fund localized public improvements through a localized property levy. The SSA process for traffic calming measures will work as follows:

1. A representative of the neighborhood must work with the Legal Department in submitting an application to create the SSA. The application will include: the precise area and list of residences to be included within the SSA; the total dollar amount to be levied upon the SSA; the breakdown of the dollar share attributable to each individual property based upon assessed property value; and the repayment period (between 1 and 15 years).

    a. **SSA Boundary** – The general rule for the SSA is that it includes all of the homes that directly benefit from the improvements to be implemented. For traffic calming measures that occur between intersections (e.g. speed humps, curb extensions), the SSA will include all homes located on the individual block (as determined by driveway frontage). For intersection traffic calming measures (e.g. traffic circles, curb extensions), the SSA will include all homes along the blocks that feed into the intersection. These are general rules only and it is expected that each application will need to be examined individually in order to make a rational determination of the appropriate boundary area. An exhibit showing some sample applications of the policy is included in Appendix E.

    b. **Repayment Period** – Illinois law provides for a maximum repayment period of 15 years for SSA's. Since the City will be fronting the construction funds, the City naturally favors shorter payback periods. A reasonable annual interest rate, as determined by the Director of Finance at the time of the SSA creation, will be applied to the current construction cost in order to account for borrowing costs over the course of the selected repayment period. An exhibit showing sample costs per residence for the boundary area examples, given the various repayment periods, is included in Appendix E.

2. A letter will be sent to each of the homes in the proposed SSA explaining the SSA application, the SSA process and indicating the date for the public hearing.
3. A public hearing will be held for the SSA application at a City Council meeting. The public hearing will be advertised in accordance with State and local requirements.
4. Each residence in the proposed SSA that opposes the formation of the SSA, must submit a counter petition to the City expressing that opposition. Counter-petitions will be accepted for a period of 60 days following the public hearing.
5. If *51 percent or more* of the affected residences within the SSA file counter-petitions within the 60-day period, then the application to form the SSA will be terminated. City staff will work with the residents to determine if there are any alternatives that might be more acceptable to the neighborhood and if necessary repeat the above process.

6. If *less than 51 percent* of the affected residences submit counter-petitions, then the SSA application will be presented before the City Council for review and potential approval at the next available City Council meeting. Note that authority for approval of SSA's and City expenditures for projects rests with the City Council. A favorable vote by the neighbors and/or the STAC still requires the approval of the City Council.

Step 5 – Implementation

Upon approval of the Special Service Area by the City Council, the City will proceed with implementation of the proposed traffic calming measures. The residents will be kept informed of the project progress.

Note: Some measures such as speed humps tend to find general support from residents on the street; however no one wants the device in front of their home. The City will take into account the individual circumstances on each street and recommend a design that minimizes any adverse impacts. However, the placement of measures is to be in accordance with the published technical literature, national standards and guidance, and accepted best practices as determined by the Public Works and Engineering Department, and is not a political process. The location of the proposed traffic calming measures will be depicted as accurately as possible in the concept exhibit sent to residents with the Neighborhood Survey in Step 3.

Step 6 – Evaluation of the Traffic Calming Measures after installation

The Public Works and Engineering Department will collect new traffic data after the implementation of the traffic calming measures in order to conduct a before-after evaluation. The results of the evaluation will be shared with the residents and will be reported back to the STAC in order to build a knowledge base for future decision making.

Request for Removal of Installed Traffic Calming Measures

It has been the experience in some communities that after speed humps in particular are installed, residents have changed their minds and requested that the City remove the speed humps. Due to the cost involved in installing traffic calming infrastructure measures, the City has an interest in avoiding the arbitrary removal of installed measures. As such, if after the installation of the measures the residents determine that they no longer want the installed measures, and provided that the traffic calming measures were installed correctly per plan and there is no evidence of new unsafe conditions as a result of the traffic calming measure, then the following process can be pursued by residents to remove the traffic calming measure:

- Representative of the neighborhood must submit to the City a new petition with signatures from 65% of the households on the subject block, indicating desire to remove the speed hump. The petition must accurately indicate the potential additional costs to the residents as detailed below.
- The measure may be removed during the next scheduled resurfacing, rehabilitation, or reconstruction of the street, depending upon the measures installed, at no cost to the residents. For instance, speed humps consist of asphalt and can feasibly be removed during a typical resurfacing. Curb extensions, however, typically involve concrete curb and drainage work that is beyond the scope of a resurfacing project. Therefore, they would not be eligible for remove until the next significant

rehabilitation or reconstruction of the street. The removal of a measure does not absolve the residences of complete payment of the previously incurred installation costs.

- If the neighborhood does not wish to wait until the next scheduled construction on the street, then they may still have the measures removed. However, the residences in the SSA must reimburse the City for its previous contribution to the installation of the measures and fund the removal of the measures. An amendment to the SSA must be filed following the same procedure used for initially creating the SSA, as outlined in Step 4.

***Coordination between Traffic Calming Projects and Capital Improvement Program**

During the Data Collection (Step 2), the City will review the current 5-year Capital Improvement Program (CIP) to see whether the subject street is scheduled for any upcoming construction work. If the street is scheduled for upcoming work, there is potential for any proposed traffic calming measures to be implemented as part of the larger CIP project, resulting in a decreased cost to the residents.

Furthermore, if upcoming CIP work is scheduled for the subject street, the City reserves the right to delay the installation of any traffic calming measures until that time. This is to prevent the City from having to manage the construction of traffic calming measures, only to have to potentially fund their reconstruction during the CIP work. [Note: As per the "Project Cost Share" table in the Funding Section of this policy, residents pay for the initial construction, but the City then assumes the cost of future maintenance for any installed measures].

The coordination of traffic calming projects with CIP projects will be addressed on a case-by-case basis and will be coordinated with the Alderman and the petitioning residents.

APPENDICES

A. Description of Allowable Traffic Control Measures
B. Speed Hump Exclusion Streets – Maps
C. Flow Chart of Process for Developing a Neighborhood Plan
D. Neighborhood Traffic Management Petition Form
E. Special Service Area – Sample Boundary Areas and Costs
F. 2003 And 2009 Regional Traffic Calming Survey Results

Resources:
AASHTO Policy on Geometric Design of Highways and Streets
Federal Manual of Uniform Traffic Control Devices (MUTCD)
North American Design Guidelines for Traffic Calming Measures
ITE Guidelines for the Design and Application of Speed Humps

Traffic Calming: State of the Practice, FHWA/ITE/Reid Ewing
APWA Traffic Calming Webcast
Traffic Calming Primer, Pat Noyes & Associates

City of Evanston Neighborhood Traffic Management Policy
City of Park Ridge Neighborhood Traffic Management Policy
Village of Wilmette Traffic Calming Policy and Procedure
City of Naperville Neighborhood Traffic Mitigation/Calming Plan
Village of Western Springs Neighborhood Traffic Management Plan
City of Seattle, WA Traffic Calming Program
City of Sarasota, FL Traffic Calming Program Warrants

Cover drawings from web, credited to:
Paul Tuttle of Moore Iacofano Goltsman, Inc. (MIG), consultant for Winchester SNI

APPENDIX A

ALLOWABLE TRAFFIC CONTROL MEASURES

ALLOWABLE TRAFFIC CONTROL MEASURES

These traffic control measures form the basis from which the final recommendations for each neighborhood are to be selected. They are divided into subsections and follow the order listed in the text of this report. Not all measures are appropriate in all situations. Each may have different impacts and levels of inconvenience on neighborhoods.

SPEED MONITORING OPTIONS

Traditional Police Enforcement

Police enforcement is an essential part of any traffic management plan. However, it must be recognized that enforcement is staff intensive and it is impossible to have constant patrol of an area. In addition, once a campaign of enforcement has ended, driver behavior tends to return to "normal."

Mobile Radar Speed Display

This is a trailer-mounted unit that has radar and a speed display showing the speed of the vehicle to the driver. These units are effective in slowing vehicles while they are in place. The City has two units that are rotated throughout the City.

"Keep Kids Alive, Drive 25" Campaign

This is an educational campaign involving the placement of signage on lawns along a street for a fixed period of time. The Police launched a pilot of this program in 2009 in coordination with their neighborhood watch program. The signage can be rotated to trouble locations throughout the City similar to the mobile radar speed display.

CHANGES TO TRAFFIC CONTROL

Turn Restrictions

This measure involves restricting turning movements into or out of neighborhood streets and has been shown to be effective in reducing cut-through traffic. These do require an ordinance. In addition, since many of the arterials within the City are under the jurisdiction of IDOT or Cook County Highway, coordination with these agencies will be required.

While relatively easy and inexpensive to implement, turn restrictions do have drawbacks. First, the turn restrictions apply to residents as well as non-residents, and so can introduce an inconvenience to residents on a street. The second drawback is that turn restrictions will tend to concentrate cut-through traffic to adjacent streets and so a series of turn restrictions may be necessary. Finally, regular police enforcement is necessary to maintain the effectiveness of these restrictions.

Signage

Placing additional regulatory signs (e.g. stop signs, lowered speed limit signs) is often the first request of residents in response to perceived speed issues. However, the location of

stop signs and the level of speed limits are subject to the federal Manual of Uniform Traffic Control Devices (MUTCD).

For example, the role of stop signs is to control right-of-way. They are explicitly not to be used in controlling speeding. The reason for this is that decades of national and local research have revealed that using stop signs where they are not warranted for controlling right-of-way actually makes conditions less safe for pedestrians due to more drivers ignoring these unwarranted signs and also by reducing the credibility of warranted stop signs. Similarly, artificially reduced speed limits have been unquestionably shown to not reduce speeds. They serve only to make violators out of even responsible drivers.

While it is quite easy and inexpensive to litter the City with stop signs and artificially lowered speed limits, doing so would not only not solve the issues, it would knowingly create more hazardous conditions and be a direct violation of federal guidelines. The City will investigate each location against the applicable stop sign and speed limit warrants. However, there are not likely to be many locations remaining in the City where stop signs or lowered speed limits would be warranted.

Pavement Markings

Pavement markings may be used to guide traffic flow or to visually narrow the roadway. A common application is to add a parking lane edgeline on a street, along with diagonal striping in the "no parking" zones adjacent to intersections and fire hydrants. However, this approach is only possible on two-way streets that are at least 28 feet wide or one-way streets that are at least 20 feet wide.

Research indicates that pavement marking tends to slow the fastest drivers on a street due to the psychological narrowing effect. However pavement markings alone do not typically reduce the 85th percentile speed by a substantial margin. And while relatively inexpensive compared to physical changes to the street, the cost of pavement marking can still be significant if a long stretch of street is to be treated.

Parking Modifications

The addition of parking to a street or to both sides of a street can slow traffic due to the narrowing effect it has upon a street. However, various standards apply depending upon the width of and volume of traffic on the street, to ensure safe access for both resident vehicles and emergency response vehicles.

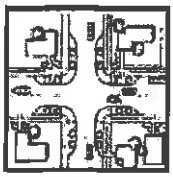
One approach for streets with parking on one side is to alternate the side of the street where the cars are parked in order to create a "chicane" or serpentine effect. Basically this approach serves to help break up a long straight stretch of roadway.

One-way Streets

A strategy used in gridded areas (e.g. Chicago) is to convert alternating streets to one-way traffic. This is typically used to address severe cut-through traffic issues rather than speed issues since the conversion of the street to one-way flow without an accompanying narrowing or addition of parking could actually result in increased speeds.

The main drawback of one-way street patterns is the frustration of having to navigate those one-way street patterns. In addition to simple frustration, the newly-introduced one-way pattern might force some residents to exit their neighborhood at an arterial intersection where turning movements are difficult rather than at the signalized intersection to which they formerly had access.

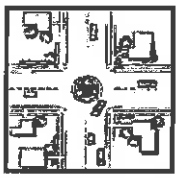
PHYSICAL CHANGES TO STREETS



Curb Extensions and Street Narrowings

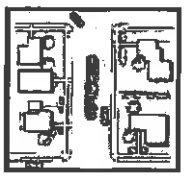
Curb extensions and other narrowings generally involve moving the curb toward the center of the street, thereby creating a bottleneck effect. Curb extensions can be applied at intersections to create a more narrow entrance to a block and to shorten the crossing distance for pedestrians. They can also be applied mid-block. This may require the removal of parking spaces.

Curb extensions are most effective on wider streets with one or two parking lanes. The addition of the extensions tends to have a positive aesthetic benefit for the neighborhood due to the replacement of roadway with additional green grassy area. The cost of curb extensions varies dramatically depending upon the number of drainage structures that are impacted by the extension.



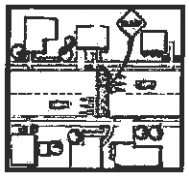
Traffic Circles

Traffic circles are raised circular islands constructed in the center of residential intersections. They reduce vehicle speeds by forcing motorists to maneuver around them. Drivers making left turns are directed to go on the far side of the circle prior to making the turn. The circles serve to break up long straight stretches of roadway and result in safer intersections. In addition, with landscaping the islands can improve the aesthetics of the neighborhood.



Mid-block Islands

Center Islands are used on long sections where there are no intersecting streets. This may require the removal of parking spaces in order to accommodate the shift in the travel lane. This measure serves to break up long, straight stretches of roadway that can encourage speeding.



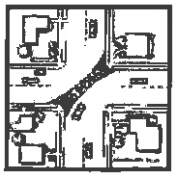
Speed Humps/Tables

Speed humps are approximately 3 to 4-inch high paved humps placed at strategic locations along a street to slow traffic. Humps typically extend the full width of the street with height tapering near the drain gutter to allow unimpeded bicycle travel. There are many different designs in circulation throughout the United States with the 12-foot hump being the most prevalent. However, there has been a movement toward 14-foot humps and even toward exclusive use of 22-foot speed "tables" in some jurisdictions since they are easier on both standard vehicles and the more sensitive emergency response vehicles.

Speed humps are the most widely used of the physical traffic calming measures due to the relatively low cost, relative ease of implementation, and effectiveness in slowing vehicles when applied properly. However, they also tend to be the most controversial, even with residents living on the street where the humps are applied, due to the hassle and the braking/accelerating noise from vehicles. In addition, among the traffic calming measures, speed humps tend to have the greatest adverse impact upon ambulances and the larger fire department vehicles. For this reason, there is a standard list of street types, used by municipalities across the country, where speed humps are not allowed. This full list is included in the policy document.

Speed Bumps

Speed bumps cannot be used on streets but they do have some application for parking lots and alleys. They are generally 1-foot wide and 6 inches high.



Diagonal Diverters, Partial Intersection Closures, and Cul-de-sacs

Each of these measures is intended to fully or partially close access to a street. They are to be measures of last resort both due to their expense and because they, by their nature, fracture the connectivity of the street network. Diversion of traffic to other local streets is an inherent issue with closures.

OTHER OPTIONS

Education (Public Relations)

This technique can involve a range of activities from newspaper articles to neighborhood involvement.

Arterial Improvement

One way to minimize cut-through traffic is to review the arterial street system to ensure that it is working as efficiently as possible. However, most arterials are owned and maintained by either the Illinois Department of Transportation or the Cook County Highway Department. In addition, many arterials or intersections are operating at or above their design capacity due to the steady increase in vehicle ownership and "vehicle miles traveled" throughout the region. Even if funding were available, there is often not a way to feasibly increase the capacity at these locations. Nonetheless, the City will work with the various agencies regarding any potential arterial or signal improvements in problem areas.

APPENDIX B

SPEED HUMP EXCLUSION STREETS - MAPS

Roseville Public Works, Environment and Transportation Commission

Agenda Item

Date: June 28, 2011 **Item No:** 7

Item Description: Utility Capital Improvement Program Review

Background:
The City Manager and the City Council Capital Improvements Sub Committee have requested the PWET Commission review and comment on the Public Works Capital Improvement Plan. They also recommended the Commission review the sub committee's utility rate recommendation discussed at the June 20, 2011 council meeting. Staff will present and review the 20 year utility capital improvement plan and the proposed level of improvements at the meeting. Staff is working on utility rate background information for a discussion at your July meeting. We will be asking for your information needs on this topic.

Recommended Action:

Discuss the 20 year capital improvement plan and provide feedback.

Attachments:
A. Utility Capital Improvement Plan
B. Council Utility Capital Funding Plan Memo
C.

City of Roseville
Capital Improvement Plan
2012-2021
CIP - Water

Description	Type	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	**Total**	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Water main replacement	I	$ 500,000	$ 600,000	$ 700,000	$ 800,000	$ 900,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	**$ 8,500,000**	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000
Elevated storage tank repainting	B	-		-	-	500,000	-	-	-	-	-	**500,000**										
Booster station building maintenance	B	-	28,000	-	77,000	-	-	-	-	-	-	**105,000**	75,000									
Booster station/ElectricMCC replace	B	-	-	250,000	-	-	-	-	-	-	-	**250,000**										
Replace genset & trsfr switch @ booster	B	-	100,000	-	-	-	-	-	-	-	-	**100,000**										
VFD's, HE Motor's, & Pump Seals, 1,3,&4	E	-			29,000							**29,000**		25,000	25,000							
HE Motor, & Seals Pump 5	E	20,000										**20,000**										
Water meter replacement	E	100,000	150,000	150,000	150,000	150,000	80,000	80,000	85,000	85,000	85,000	**1,115,000**	85,000	85,000	85,000	85,000	85,000	85,000	85,000	85,000	85,000	85,000
Automated Meter Reading System	E	100,000	200,000	200,000	200,000	200,000						**900,000**					30,000	30,000	30,000	30,000	30,000	30,000
Replace/Upgrade SCADA system (1/3)	E	-	-	-	-	-	-	-	-	50,000	-	**50,000**										
Electronic message board (4-way)	E	-	-	-	-	-	-	-	-	7,000	-	**7,000**										
Shop sweeper (4-way split)	E	-	-	-	-	-	-	-	-	8,000	-	**8,000**										
GPS Unit (1/3 share)	E	-	-	-	-	-	-	-	-	4,000	-	**4,000**										
Water Truck (1/2 cost)	V	-	-	-	-	55,000	-	-	-	-	-	**55,000**							56,000			
#208 Meter van	V	-	-	-	-	-	25,000	-	-	-	-	**25,000**								28,000		
#210 4x4 pickup	V	-	-	-	-	-	25,000		-	-	-	**25,000**									24,000	
#225 Cat Back-hoe (1/2 wtr, 1/2 storm)	V	-		40,000	-	-	-	-	-	-	-	**40,000**										
#230 Ford 1/2-ton	V		-	-	-	-	20,000	-	-	-	-	**20,000**						21,000				
#234 4x4 Pickup	V	-	-	-	-	-	-	-	25,000		-	**25,000**									26,000	
#360 Backhoe Sand Bucket (3-way split)	V	-	-	-	-	-	-	-	-	-	-	**-**		3,000								
#211 360 Backhoe (3-way split)	V	-	-	-	-	-	-	-	-	60,000	-	**60,000**										
#169 Zero turn mower(1/4)	V	-	5,000	-	-	-	-	-		-	-	**5,000**										
#601 Skidsteer (1/4)	V	-	-	-	-	-	-	-	10,000	-	-	**10,000**										
Self-propelled paver (4-way split)	V		25,000	-	-	-	-	-	-	-	-	**25,000**										
Field Computer Replacement/add		5,000						5,000							5,000							7,000
Replace Air Compressor	E	-	-	-	-	-	-	-	-	-	-	**-**				10,000						
#236 Trailer (2 way split)	V								2,500			**2,500**										
#237 Wacker Compacter (4 way Split)	E			8,000								**8,000**										
#207 Pickup	V	30,000	-	-	-	-	-	-	-	-	35,000	**65,000**										
		$ 755,000	$ 1,108,000	$ 1,348,000	$ 1,256,000	$ 1,805,000	$ 1,150,000	$ 1,085,000	$ 1,122,500	$ 1,214,000	$ 1,120,000	**$ 11,953,500**	$ 1,160,000	$ 1,113,000	$ 1,115,000	$ 1,095,000	$ 1,115,000	$ 1,136,000	$ 1,171,000	$ 1,143,000	$ 1,165,000	$ 1,122,000
Total																						

Summary by Type

Description		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
	L	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -										
Land	B	-	128,000	250,000	77,000	500,000	-	-	-	-	-	955,000										
Buildings	V	-	30,000	40,000	-	55,000	70,000	-	35,000	60,000	-	290,000										
Vehicles	E	220,000	350,000	350,000	379,000	350,000	80,000	80,000	85,000	154,000	85,000	2,133,000										
Equipment	F	-	-	-	-	-	-	-	-	-	-	-										
Furniture & Fixtures	I	500,000	600,000	700,000	800,000	900,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	8,500,000										
Improvements		$ 720,000	$ 1,108,000	$ 1,340,000	$ 1,256,000	$ 1,805,000	$ 1,150,000	$ 1,080,000	$ 1,120,000	$ 1,214,000	$ 1,085,000	$ 11,878,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total																						

Summary by Funding Source

Description		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -										
General property taxes		-	-	-	-	-	-	-	-	-	-	-										
Special assessments		-	-	-	-	-	-	-	-	-	-	-										
Building depreciation charges		-	-	-	-	-	-	-	-	-	-	-										
Vehicle depreciation charges		-	-	-	-	-	-	-	-	-	-	-										
Equipment depreciation charges		755,000	1,108,000	1,348,000	1,256,000	1,805,000	1,150,000	1,085,000	1,122,500	1,214,000	1,120,000	11,963,500										
User fees - utility operations		-	-	-	-	-	-	-	-	-	-	-										
User fees - special purpose operations		-	-	-	-	-	-	-	-	-	-	-										
General obligation bonds		-	-	-	-	-	-	-	-	-	-	-										
MSA revenues		-	-	-	-	-	-	-	-	-	-	-										
Other		$ 755,000	$ 1,108,000	$ 1,348,000	$ 1,256,000	$ 1,805,000	$ 1,150,000	$ 1,085,000	$ 1,122,500	$ 1,214,000	$ 1,120,000	$ 11,963,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total																						

City of Roseville
Capital Improvement Plan
2012-2021
CIP - Sanitary Sewer

Description	Type	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	**Total**	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Sewer main repairs	I	$ 600,000	$ 700,000	$ 900,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	**$ 9,200,000**	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000
I & I reduction	I	150,000	150,000	200,000	200,000	-	-	-	-	-	-	**700,000**										
Lift station repairs/upgrades	B	105,500	25,000	100,000	25,000	38,000	32,000	25,000	25,000	15,000	15,000	**405,500**	150,000	150,000	150,000	80,000	80,000	80,000	80,000	80,000	30,000	10,000
Replace/Upgrade SCADA system	E	-	-	-	-	-	-	50,000	-			**50,000**										
Computer Replacement		5,000							5,000								5,000					
Electronic message board (4-way)	E	-	-	-	-	-	-	-	-	7,000	-	**7,000**										
Shop sweeper (4-way split)	E	-	-	-	-	-	-	-	-	8,000	-	**8,000**										
Replace 1990 air compressor(1/3)	E	-	-	-	-	-	-	-	-	-	-	**-**							15,000			
Mainline televising system	E	-	-	-	-	-	-	-	-	40,000	-	**40,000**										
GPS with computer (1/3 share)	E	-	-	-	-	-	-	-	-	4,000	-	**4,000**										
Zero-turn mower (1/4 cost)	E	-	5,000	-	-	-	-	-	3,300	-	-	**8,300**										
#201 Replace Jetter/Vactor	V	-	-	-	300,000	-	-	-	-	-	-	**300,000**						375,000				
#202 1-ton with dump box/plow	V	-	-	-	-	-	-	-	-	40,000	-	**40,000**										
#203 1-ton service truck	V	-	-	28,000	-	-	-	-	-	-	-	**28,000**					30,000					
#213 Extend-a-jet replacement	V	-	-	-	-		35,000	-	-	-	-	**35,000**										
#220 Towmaster trailer - 10 ton	V	-	-	-	-	-	-	-	-	10,000	-	**10,000**									10,000	
#360 Backhoe Sand Bucket (3-way split)	V	-	-	-	-	-	-	-	-	-	-	**-**				5,000						
#225 Backhoe (4-way split)	V			40,000	-	-	-	-	-	-	-	**40,000**										
#601 Skidsteer (1/4)	V	-	-	-	-	-	-	-	10,000	-		**10,000**								12,000		
Self-propelled paver (4-way split)	V		25,000	-	-	-	-	-	-	-	-	**25,000**										
#211 360 Backhoe (3-way split)										60,000		**60,000**										
#237 Wacker compactor (1/4)	V	-	-	8,000	-	-	-	-	8,000	-	-	**16,000**										
												-										
Total		$ 860,500	$ 905,000	$ 1,276,000	$ 1,525,000	$ 1,038,000	$ 1,067,000	$ 1,075,000	$ 1,051,300	$ 1,184,000	$ 1,015,000	**$ 10,986,800**	$ 1,150,000	$ 1,150,000	$ 1,150,000	$ 1,085,000	$ 1,115,000	$ 1,455,000	$ 1,095,000	$ 1,092,000	$ 1,040,000	$ 1,010,000

Summary by Type

Description		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Land	L	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -										
Buildings	B	105,500	25,000	100,000	25,000	38,000	32,000	25,000	25,000	15,000	15,000	405,500										
Vehicles	V	-	25,000	76,000	300,000	-	35,000	-	18,000	110,000	-	564,000										
Equipment	E	5,000	5,000	-	-	-	-	50,000	8,300	59,000	-	127,300										
Furniture & Fixtures	F	-	-	-	-	-	-	-	-	-	-	-										
Improvements	I	750,000	850,000	1,100,000	1,200,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	9,900,000										
Total		$ 860,500	$ 905,000	$ 1,276,000	$ 1,525,000	$ 1,038,000	$ 1,067,000	$ 1,075,000	$ 1,051,300	$ 1,184,000	$ 1,015,000	$ 10,996,800	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Summary by Funding Source

Description		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
General property taxes		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -										
Special assessments		-	-	-	-	-	-	-	-	-	-	-										
Building depreciation charges		-	-	-	-	-	-	-	-	-	-	-										
Vehicle depreciation charges		-	-	-	-	-	-	-	-	-	-	-										
Equipment depreciation charges		-	-	-	-	-	-	-	-	-	-	-										
User fees - utility operations		860,500	905,000	1,276,000	1,525,000	1,038,000	1,067,000	1,075,000	1,051,300	1,184,000	1,015,000	10,996,800										
User fees - special purpose operations		-	-	-	-	-	-	-	-	-	-	-										
General obligation bonds		-	-	-	-	-	-	-	-	-	-	-										
MSA revenues		-	-	-	-	-	-	-	-	-	-	-										
Other		-	-	-	-	-	-	-	-	-	-	-										
Total		$ 860,500	$ 905,000	$ 1,276,000	$ 1,525,000	$ 1,038,000	$ 1,067,000	$ 1,075,000	$ 1,051,300	$ 1,184,000	$ 1,015,000	$ 10,996,800	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

City of Roseville
Capital Improvement Plan
2012-2021

CIP - Storm Drainage

	Description	Type	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	**Total**	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
	Pond improvements/infiltration	I	$ 250,000	$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ 350,000	$ 350,000	$ 350,000	$ 350,000	**$ 3,150,000**	400,000	400,000	400,000	400,000	450,000	450,000	450,000	500,000	500,000	500,000
	Storm sewer replacement/rehabilitationPMP	I	250,000	300,000	350,000	350,000	400,000	400,000	400,000	450,000	450,000	450,000	**3,800,000**	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
2011	Regenerative air sweeper (vacuum)	I		-	-	-	-	-	-	-	-	-	-		213,950									
	Leaf site water quality improvements	I	-	-	-	-	-	-	-	-	-	-	-											
2002	#132 Elgin sweeper 2002 3-wheel	V	-			-	-	-	-	-	-	-	-											
2006	#167 Elgin Sweeper 2006 3-wheel	V	-	-	-	-	-		191,000	-	-	-	**191,000**								218,000			
	Self-propelled paver 1/4 share	E			25,000	-	-	-	-	-	-	-	**25,000**											
2011	Cement mixer	E		-	-	-	-	-	-	-	-	-	-		4,000									
2008	#171 Tennant 6600 sweeper 1/4 share	V	-	-	-	-	-	-	-		8,000	-	**8,000**											9,000
2008	#163 Electronic message board(1/4)	E	-	-	-	-	-	-	-		7,000	-	**7,000**											8,000
1995	$115 flail mower	E		25,000	-	-	-	-	-	-	-	-	**25,000**							25,000				
1993	#139 Vacall	V	-	-	200,000	-	-	-	-	-	-	-	**200,000**											
2010	#130 Steamer "Amazing Maching"	E	-	-	-	-	-	-	-	-	15,000	-	**15,000**											16,500
1995	#110 LCT 600 Leaf Machine	E		25,000	-	-	-	-	-	-	-	-	**25,000**								25,300			
1997	#131 LCT 600 Leaf Machine	E	-		25,000	-	-	-	-	-	-	-	**25,000**											26,400
2000	#148 lct 600 Leaf Machine	E	-	-	-	-	25,960	-	-	-	-	-	**25,960**											
2000	#236 FT SA trailer 1/2	E	-		-	-	-	-	-	2,500	-	-	**2,500**											3,000
2004	#158 ATL 4300 Trash Vacuum (1/2)	V	-	20,000	-		-	-	-	-		-	**20,000**		16,500									
2007	#237 Wacker Compactor 1/4	E	-	-	8,000	-	-	-		-	-	-	**8,000**			8,800								
2008	#601 Bobcat Skidsteer (1/4) 500 rental year	V	-	-	-	-	-	-	-	10,000	-	-	**10,000**											
2009	#172 Zero Turn Dixie Chopper	V	-		-	-	-	-	-	-	12,000	-	**12,000**											13,200
2006	#169 Toro Zero Turn Mower 1/4 share	V	-	5,000	-	-	-		-	3,300	-	-	**8,300**				3,630							
2007	#164 John Deere Turf Gater	V	-	-	-	10,000	-	-	-		-	-	**10,000**						12,000					
1995	#168 Wildcat Compost Turner	E	-		100,000	-	-	-	-	-	-	-	**100,000**											
	Update stormwater mgmt plan	I	100,000		-	-	-	-	-	-	-	-	**100,000**											
	Field Computer Add/Replacements	E	5,000							5,000								7,000						
	GPS Unit (1/3 share)	E	-	-	-	-	-	-	-	-	4,000	-	**4,000**											
	Control Panel with Aux power at St Croix	E		-		-	300,000	-	-	-	-	-	**300,000**											
	Portable Generator for St Croix (1/2 share)	E	80,000	-	-		-	-	-	-	-	-	**80,000**											
1999	#147 3-Ton Dumptruck	V	155,000		-	-	-	-	-		-	-	**155,000**				174,900							
2009	#103 Ford 450 w/ Plow	V	-	-	-	-	-	-	-	65,000	-	-	**65,000**											71,500
2000	#145 3-Ton Dump w/ Plow	V	-	159,000	-	-	-	-	-	-	-	-	**159,000**					174,900						
1993	#225 Cat Back-hoe (1/2 wtr, 1/2 storm)	V		40,000	-	-	-	-	-	-	-	-	**40,000**											
2008	#211 360 Backhoe (1/3)	V	-	-	-	-	-	-	-	-	60,000	-	**60,000**											66,000
	#211 360 Backhoe (Grapple Bucket)	E		-	-	-	-	-	-	-	-	-	-				17,600							
	#211 360 Backhoe (Sand Bucket) (1/3)	E	-	-	-	-	-	-	-	-	-	-	-		3,000									
	#165 5 ton trailer 1/2	E	-	-	-	-	-	5,000	-	-	-	-	**5,000**								5,500			
1997	#129 Leroi Air Compressor (1/3)	E	-	-	-	-	-	-	-	-	-	-	-				10,000							
	Arona Storm Station Upgrades	E															20,000							
	Millwood Storm Station Upgrades	E				15,000																100,000		
	Owasso Hills Storm Station Upgrades	E																						
	Walsh Storm station Upgrades	E		45,000																				
	Replace/Upgrade SCADA 1/3	E	-	-	-	-	-	-	-	-	50,000	-	**50,000**											
	Total		$ 840,000	$ 879,000	$ 1,048,000	$ 675,000	$ 1,025,960	$ 705,000	$ 941,000	$ 885,800	$ 956,000	$ 800,000	**$ 8,685,760**	900,000	1,137,450	908,800	1,126,130	1,131,900	962,000	975,000	1,248,800	1,100,000	1,213,600

Summary by Type

Description		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Land	L	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -										
Buildings	B	-	-	-	-	-	-	-	-	-	-	-										
Vehicles	V	155,000	184,000	240,000	10,000	-	-	191,000	78,300	80,000	-	938,300										
Equipment	E	80,000	50,000	158,000	-	325,960	-	-	2,500	26,000	-	642,460										
Furniture & Fixtures	F	-	-	-	-	-	-	-	-	-	-	-										
Improvements	I	600,000	600,000	650,000	650,000	700,000	700,000	750,000	800,000	800,000	800,000	7,050,000										
Total		$ 835,000	$ 834,000	$ 1,048,000	$ 660,000	$ 1,025,960	$ 700,000	$ 941,000	$ 880,800	$ 906,000	$ 800,000	$ 8,630,760										

City of Roseville
Capital Improvement Plan
2012-2021
CIP - Storm Drainage

Summary by Funding Source

Description		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
General property taxes		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -										
Special assessments		-	-	-	-	-	-	-	-	-	-	-										
Building depreciation charges		-	-	-	-	-	-	-	-	-	-	-										
Vehicle depreciation charges		-	-	-	-	-	-	-	-	-	-	-										
Equipment depreciation charges		-	-	-	-	-	-	-	-	-	-	-										
User fees - utility operations		840,000	879,000	1,048,000	675,000	1,025,960	705,000	941,000	885,800	956,000	800,000	8,755,760										
User fees - special purpose operations		-	-	-	-	-	-	-	-	-	-	-										
General obligation bonds		-	-	-	-	-	-	-	-	-	-	-										
MSA revenues		-	-	-	-	-	-	-	-	-	-	-										
Other		-	-	-	-	-	-	-	-	-	-	-										
Total		$ 840,000	$ 879,000	$ 1,048,000	$ 675,000	$ 1,025,960	$ 705,000	$ 941,000	$ 885,800	$ 956,000	$ 800,000	$ 8,755,760										

Memorandum

Date: June 20, 2011

To: Roseville Residents and Businesses, Fellow City Councilmembers, and City Staff

From: Mayor Dan Roe, City Councilmember Jeff Johnson, City Manager Bill Malinen, and Finance Director Chris Miller

Subject: Second Part of Capital Funding Plan and Preliminary Subcommittee Report

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The Purpose of the Subcommittee

As stated in the June 13 subcommittee preliminary report memo, this subcommittee was established by the City Council as the result of the Council/Staff work plan discussions held earlier this year. The subcommittee was made up of Mayor Roe, Councilmember Johnson, City Manager Malinen, and Finance Director Chris Miller. The purpose of the subcommittee was to determine a path to a sustainable capital funding plan for the City in light of the ongoing under-funding of capital replacement needs, and propose a plan for consideration by the community and the City Council.

The Problem – A Reminder

As a refresher of information contained in the June 13 memo, in total, the capital needs for the City for the next 20 years have been estimated to amount to around $218 million. Of that total, about $148 million (68% - over two thirds) is un-funded by current sources as projected over the next 20 years. A graphic example of the current situation follows:

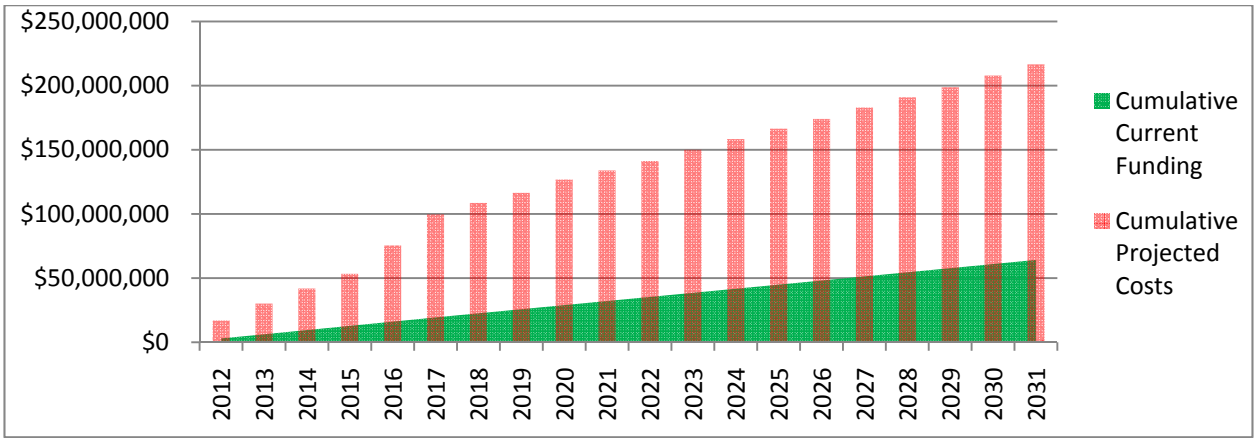

Figure 1. Current Situation - All Funds. The red bars represent cumulative annual capital costs, while the green area represents cumulative projected current annual budgeted capital funding. All figures are in 2011 dollars.

The Second Part of the Recommendation

Utility Needs.

Background. The fee-supported Utilities in the City with significant un-funded capital needs are the Water Utility, the Sanitary Sewer Utility, and the Stormwater Uitility. These utilities all consist largely of underground piping systems that were installed over a period from the 1940's to the 1970's as the City developed. In addition, the Water Uitilty includes the City's water tower, and the Stormwater Utility includes a number of City-maintained stormwater management ponds. This capital infrastructure is provided by the City to deliver safe drinking water to the homes and businesses in the City, to take away sanitary sewer wastewater to the Metropolitan Council's sewer system and treatment facility for safe treatment, and to safely collect stormwater run-off, treat it, and deliver it to the environment via the streams, lakes, and other waterways of the area.

Much of the piping in these systems is approaching 50-60 years of age, and was made of materials that have been found to not last much longer than that, if even that long. The cast iron of the water mains is brittle and subject to leaking and breaks as the result of ground shifting, tree roots, etc. The clay tile of the sanitary sewer lines is similarly subject to leaks and breaking. Since the City pays St. Paul for drinking water, each leak or break in a line costs the City's residents and businesses higher rates to account for that un-used water we purchase. Leaks of raw sewage into the ground pose a danger to the environment.

In an effort to keep current and future costs down, the City is using new materials and technologies to replace or repair existing water and sewer mains. Where City streets are being completely replaced, the water and sewer lines are being replaced (as needed) with more durable materials. Where streets are not programmed for replacement for many years, the City is using re-lining technology that puts a new plastic pipe inside the existing pipe, and does not require excavation of the street.

The capital infrastructure funding gap over the next 20 years in these Utility funds is about $47 million out of total projected costs of $65 million. In other words, 72% of the projected costs are currently un-funded.

Recommendation. The subcommittee recommends a long-term solution for funding the significant capital replacement needs of these Utilities that is a combination of adding revenues and transferring existing funds.

The first part of the recommendation is to increase the annual utility base fees by a total of $2.2 million in 2012, and to maintain that increase permanently going forward. Approximately $850,000 of that amount would be dedicated to Water Utility capital funding, approximately $830,000 to Sanitary Sewer Utility capital funding, and the remaining approximately $500,000 would be dedicated to Stormwater Utility capital funding.

The second part of the recommendation is to transfer $600,000 from the Storm water Fund to the Water Fund (which currently has a $0 balance) in 2012, creating a sustainable fund balance in that fund.

The subcommittee recognizes that this recommendation represents a very significant year-one increase in the utility base fees, but for cash flow reasons prefers that to incremental increases, which delay projects and increase out-year costs, including maintenance costs for older infrastructure.

For reference, with implementation of these recommendations, the typical residential household would see their total utility base fee payment per quarter go up by $44.28 in 2012. (Utility usage fees would not be impacted.)

The subcommittee believes that it is appropriate to refer these proposed rate changes to the Public Works, Environment, and Transportation Commission for their review and comment.

Total Impact of Recommendations.

The proposed subcommittee recommendations contained in the June 13 and June 20 memos are graphically represented, superimposed on the earlier graph of the problem (Figure 1 above), as follows:

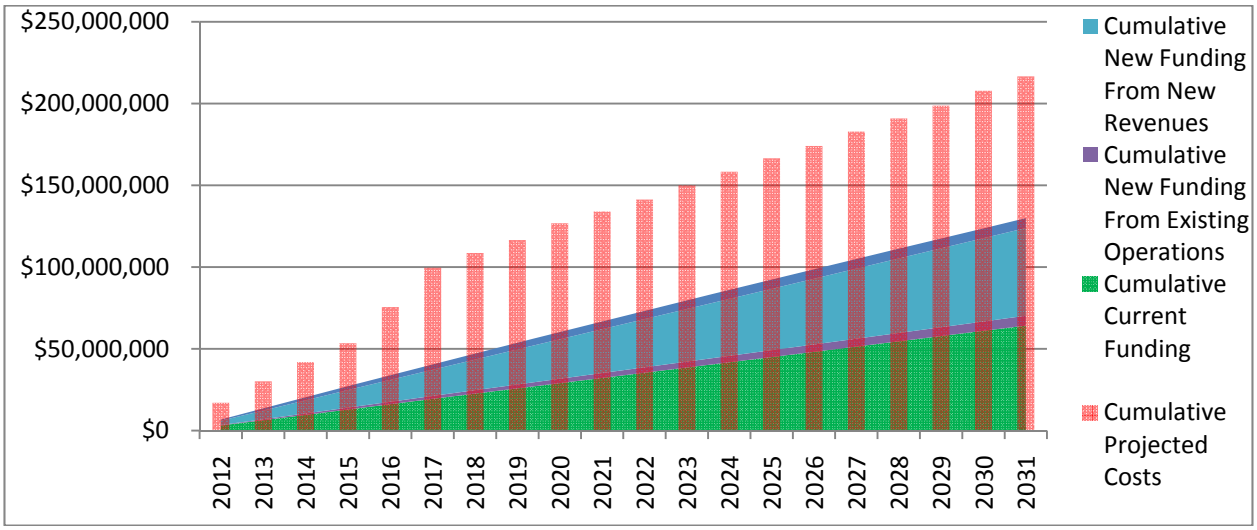

Figure 2. With Recommended Solutions - All Funds. The red bars represent cumulative annual capital costs, while the green area represents cumulative projected current annual budgeted capital funding. The light blue area represents cumulative projected new funding from new revenues. The narrow purple area between the green and light blue areas represents cumulative new funding from operational budget cuts. All figures are in 2011 dollars.

As can be seen, even with the subcommittee recommendations of both the June 13 and June 20 memos, significant work remains – primarily in the Parks and Streets capital funding areas, which are not addressed by these recommendations.

Roseville Public Works, Environment and Transportation Commission

Agenda Item

Date: June 28, 2011 **Item No:** 8

Item Description: Discussion of Look Ahead Agenda Items/ Next Meeting July 26, 2011

Suggested Items:

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Recommended Action:

Set preliminary agenda items for the July 26, 2011 Public Works, Environment & Transportation Commission meeting.