

Report for



City of Camas

Neighborhood Traffic Management Plan



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Introduction

Probably no one issue generates more citizen comment to the City of Camas than traffic on residential streets. In the spring of 2000 the City of Camas authorized the development of a citywide neighborhood traffic management program to comprehensively address the issues of traffic on residential streets. A citizen steering committee was formed to guide consideration of neighborhood traffic management in Camas and provide recommendations to the planning commission and city council for adoption on this matter. The committee met six times over the course of six months, reviewing information regarding traffic calming, establishing goals and a problem statement, meeting with agency staff from cities that have implemented neighborhood traffic management programs and working through development of a process for implementation.

Background

As the result of continued growth in the community, there is a greater potential for the quality of life in neighborhoods to be impacted by increased traffic volumes and speeding. Many neighborhoods in Camas already experience these problems and their detrimental effects on safety and livability. Left unmanaged, the City could find itself responding to these issues in an inefficient, case-by-case manner.

The purpose of Neighborhood Traffic Management (NTM) is to address the negative impacts of unchecked speed and volume on neighborhood streets. This not only means fixing existing problems on existing streets, it also means not relocating the problem to another area and addressing this issue with new developments so that no further problems are created. It also means having adequate arterial capacity and connectivity to serve future need (see Camas TIF and Comprehensive plans).

While the increasing awareness of NTM can be generally attributed to growth in the community, other (more direct) factors play a role in creating this need. Livability and safety are motivating reasons to consider traffic calming. Neighborhood traffic management encompasses a wide range of measures and activities that are effective in building livability into communities.

Camas has undertaken several activities independently that could be considered elements of NTM. Speed watch programs, speed trailers, installation of medians and traffic circles are examples that have been implemented, but not in a coordinated manner. Several cities have



implemented citywide NTM plans successfully in the Portland-Vancouver region, as well as throughout the world. Substantial background on the experiences in other communities exists on the World Wide Web. This plan provides a foundation for public and private transportation investment in NTM that builds upon these prior experiences and focuses on the needs of the community.

Policy Framework

The steering committee developed a policy framework for the neighborhood traffic management plan through statement of the problem, goals for the plan, and review of current city policy.

Problem Statement

The issue of traffic speed and volume in neighborhoods affects the quality of life throughout Camas. As the city grows in the future, a citywide approach to neighborhood traffic management (that includes education, enforcement and engineering) is needed to preserve and sustain the operation of streets at the speeds and volumes that meet their designated function.

Goals

- ◆ Planning should address needs for arterial capacity or lack of connectivity that can result in traffic infiltration through neighborhoods.
- ◆ Streets should be designed and built to operate at their designated speed and volume.
- ◆ NTM projects should use appropriate tools that match the designated street category (no speed humps on arterials, for example).
- ◆ Measures should enhance safety and not impede the multi-modal use of the streets (measures should not limit the use of the street by public transit, emergency response, school buses, delivery vehicles, pedestrians or bicycles)
- ◆ Solutions should assure that they do not simply move the problem elsewhere.
- ◆ NTM projects should include funding for maintenance to insure sustainability.
- ◆ Allocation of public funds should be prioritized to the greatest needs.



Current City Policy

In the community vision outlined in the Camas Comprehensive Plan the quality of life is the first advantage listed in the land use element¹. Retaining the small town character and use of primarily two lane roadways are key statements made in that vision. The City mission statement states:

The City of Camas commits to preserving its heritage, sustaining and enhancing a high quality of life for all its citizens, and developing the community to meet the challenges of the future. We take pride in preserving a healthful environment while promoting economic growth. We encourage citizens to participate in government and community, assisting the city in its efforts to provide quality services consistent with their desires and needs.

The development of a NTM plan is consistent with citywide statements desiring a high quality of life in the city.

Roadway Classification

Roadway classification plays an important role in NTM. The functional classification of the street can help guide the use of the most appropriate NTM measure. It can also assure that adequate arterial capacity and connectivity are planned for the future, both of which can directly result in lower traffic volumes on neighborhood and local streets. The City of Camas Existing Functional Classification figure from the Camas TIF is shown in the appendix.

The NTM citizen steering committee reviewed all the streets in Camas and outlined streets that they felt experienced problems associated with traffic volume and speed. These routes were identified to help define existing areas that may be part of future efforts to address traffic calming. Figure 1 summarizes the routes identified by the committee. These streets represent the locations where neighborhood traffic management measure might be considered to increase safety and livability for pedestrians, bicycles and motorists. It should not be assumed that because a route is designated a possible problem route that it will automatically get speed humps. The NTM process will help define the appropriate measures to mitigate current or future problems. There are several issues to evaluate before determining if NTM measures are necessary and which measures would be most appropriate.

¹ 1994 Comprehensive Plan, City of Camas, May 1994, page 4-1.



Since one of the NTM Plan's primary goals is to enhance safety, measures that impact public safety (by having the potential to significantly reduce response times on emergency routes) would not be considered appropriate. The City has emergency route classifications (Figure 2, emergency routes as defined by the fire department and snowplow routes as defined by the maintenance department). No emergency route should have speed humps installed because of the delays incurred to emergency vehicles (1-9 seconds per speed hump)².

The NTM citizen steering committee reviewed the existing City of Camas functional classification (1995 Comprehensive Plan, Figure 3) and felt that NTM issues were unique and a special categorization was needed. Figure 4 shows the street categorization proposed for the City of Camas NTM Plan. The steering committee identified four categories of streets for the NTM Plan – "A" streets, "B" streets, "C" streets and "D" streets.

As shown in Figure 4, Category "A" streets are streets that provide regional connections between and through Camas to adjacent Cities/areas. These would be appropriate routes for access control to preserve capacity: routes that should carry through traffic. They are typically multi-lane (3 or more lanes) streets that access freeways. All of these routes are emergency and snowplow routes, which limits the spectrum of NTM measures that would be appropriate.

Category "B" streets provide both access and circulation within residential and commercial/industrial areas providing more of a citywide circulation function. They are typically two lanes wide and do not require as extensive control of access as "A" (but still should have some access management). "B" routes penetrate residential neighborhoods, distributing trips from the neighborhood and local street system. Category "B" routes typically are not emergency or snowplow routes (except where routine spacing of Category "A" streets has not been maintained (one mile)).

Category "C" streets are usually long relative to local streets and provide connectivity to category "B" or "A" streets. Because category "C" streets have greater connectivity, they generally have more traffic than local streets and are used by residents in the area to get into and out of the neighborhood, but do not serve citywide/large area circulation. Traffic from cul-de-sacs and other local streets may drain



² "The Influence of Traffic Calming Devices on Fire Vehicle Travel Times", City of Portland, January 1996. (www.trans.ci.portland.or.us/Traffic_Management/trafficcalming/Emergency/firerpt.htm)

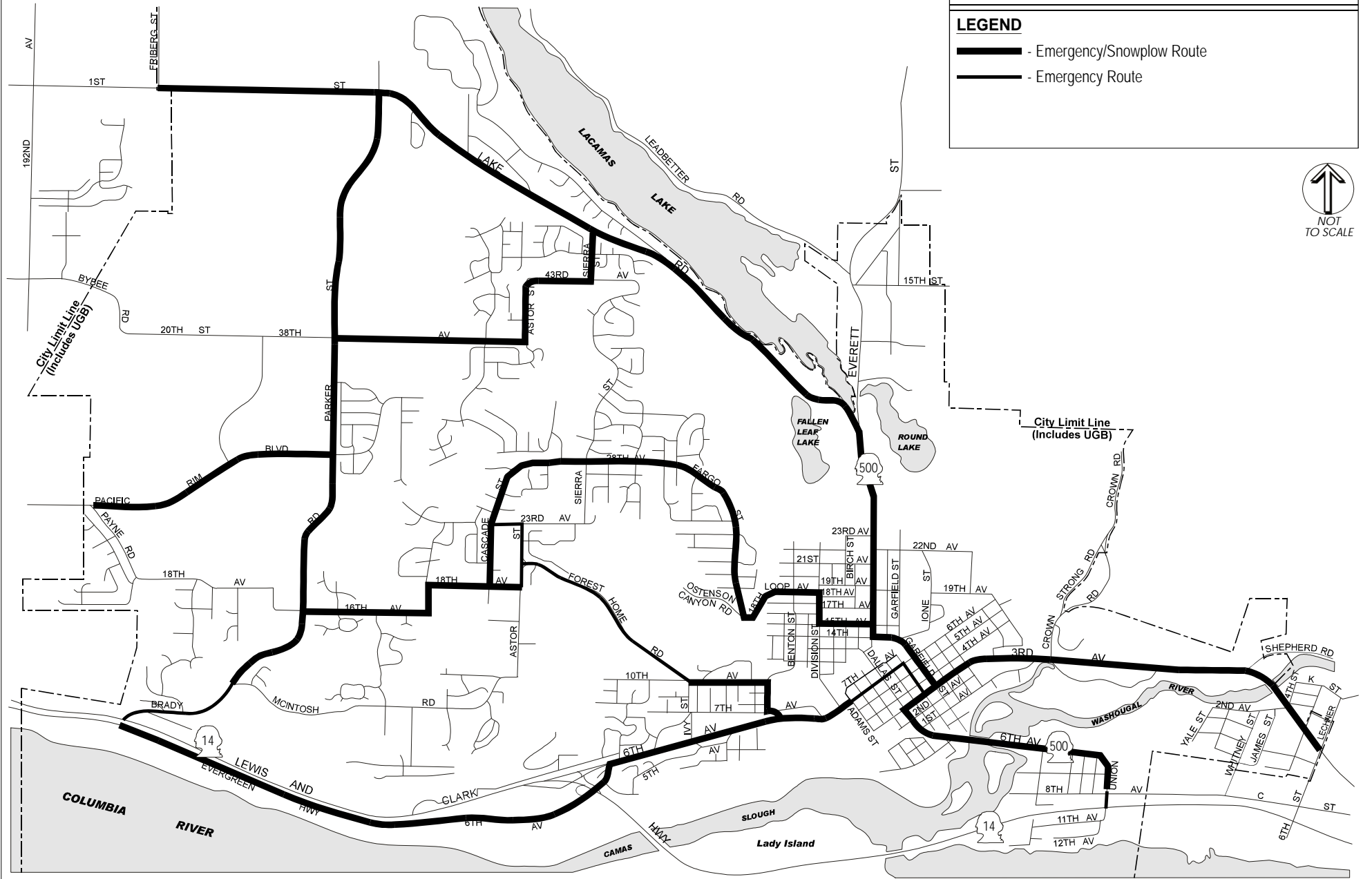
City of Camas
Neighborhood
Traffic Management



Figure 2
DESIGNATED
EMERGENCY/SNOWPLOW
ROUTES

LEGEND

-  - Emergency/Snowplow Route
-  - Emergency Route



**City of Camas
Neighborhood
Traffic Management**

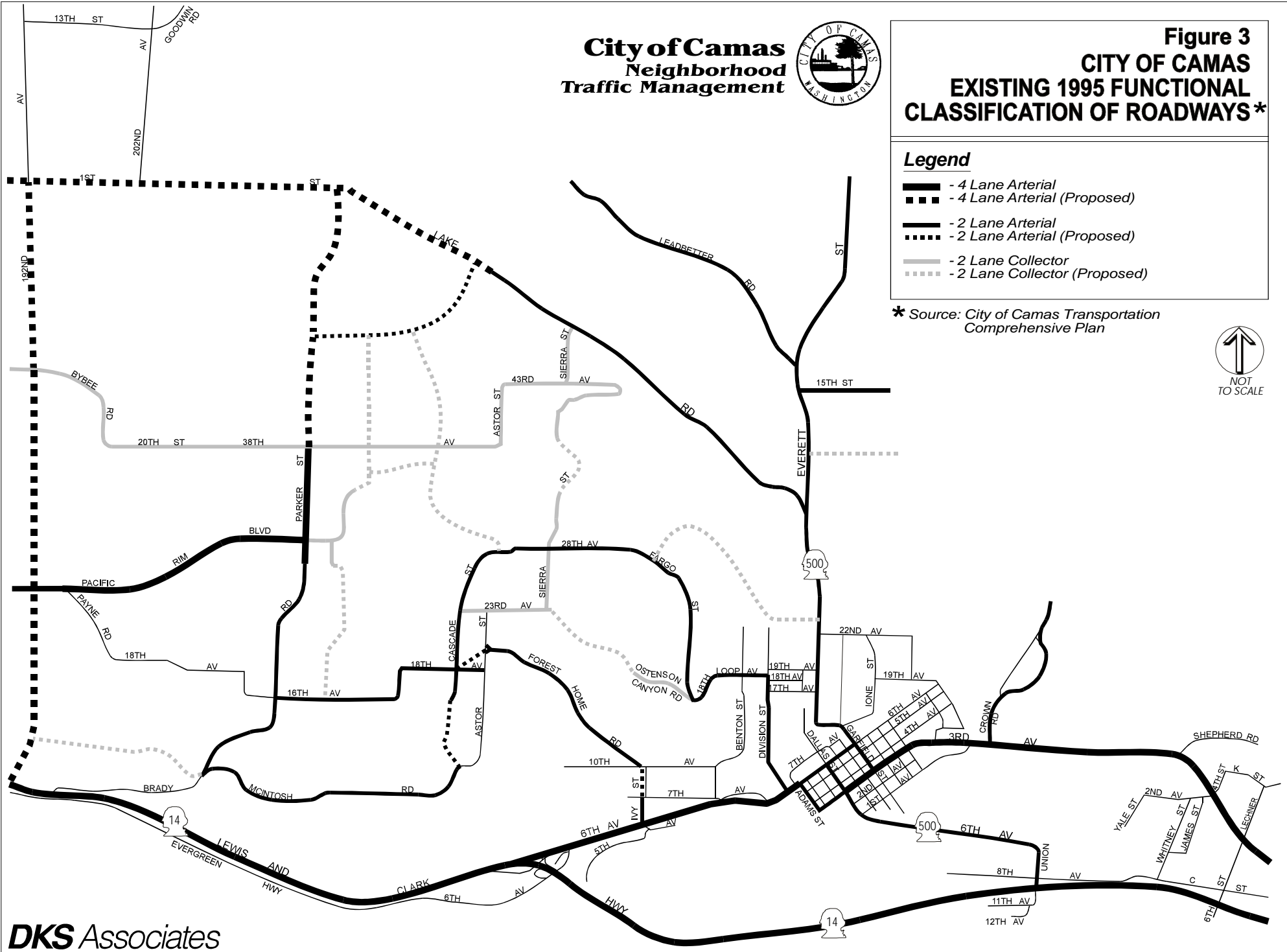


**Figure 3
CITY OF CAMAS
EXISTING 1995 FUNCTIONAL
CLASSIFICATION OF ROADWAYS***

Legend

- 4 Lane Arterial
- 4 Lane Arterial (Proposed)
- 2 Lane Arterial
- 2 Lane Arterial (Proposed)
- 2 Lane Collector
- 2 Lane Collector (Proposed)

* Source: City of Camas Transportation Comprehensive Plan



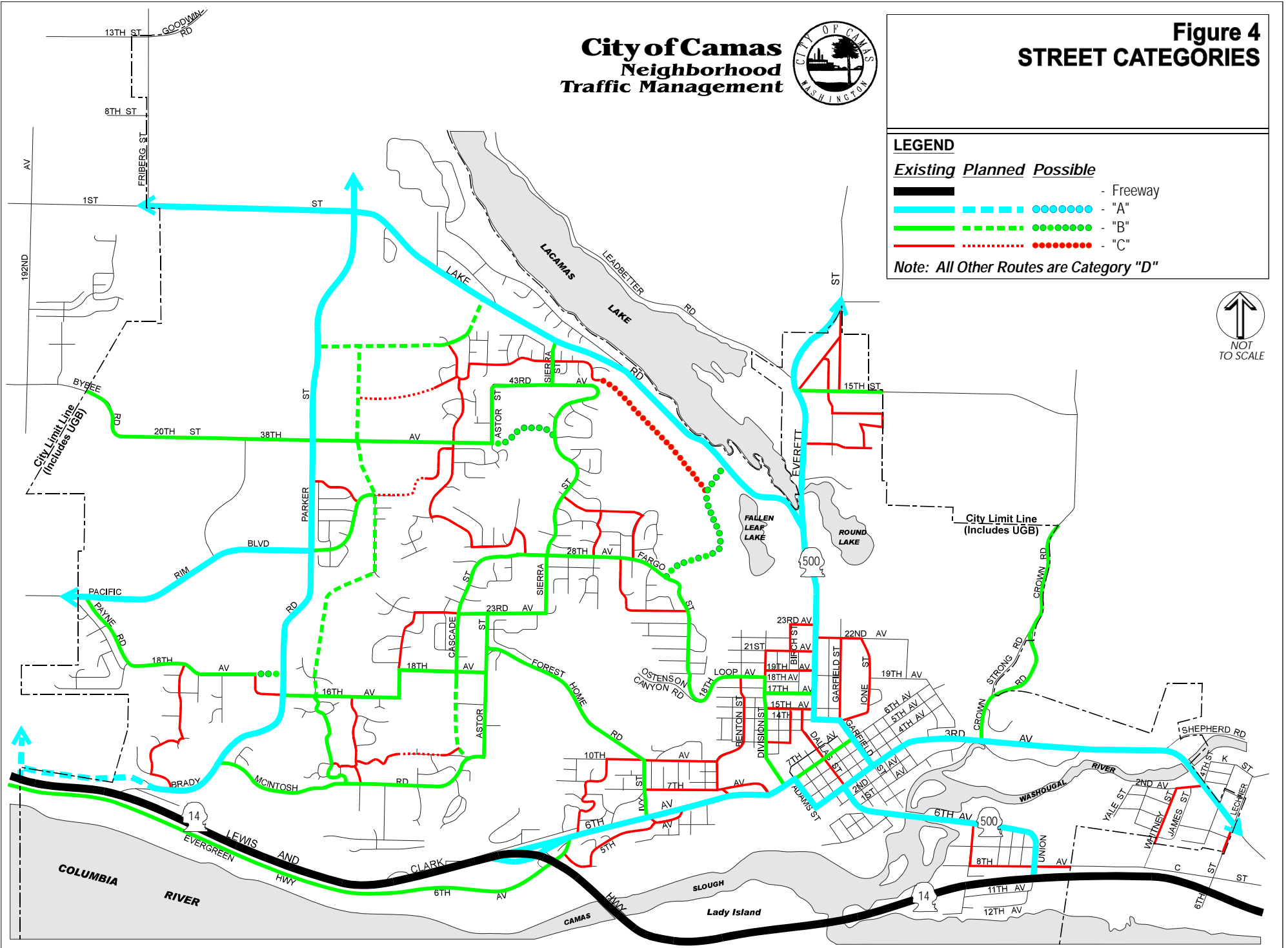
City of Camas Neighborhood Traffic Management



Figure 4 STREET CATEGORIES

LEGEND

- | <i>Existing</i> | <i>Planned</i> | <i>Possible</i> | |
|-----------------|----------------|-----------------|-----------|
| | | | - Freeway |
| | | | - "A" |
| | | | - "B" |
| | | | - "C" |
- Note: All Other Routes are Category "D"*





onto category “C” streets to gain access to category “A” or “B” streets. These streets are not emergency or snowplow routes. All other routes (primarily local streets and cul-de-sacs) were defined as being in category “D”.

NTM measures range from education to enforcement to engineering (the three E’s) solutions for streets impacted by traffic volume and speed. It should be recognized that not all NTM measures are appropriate for all streets. This plan defines the type of NTM measures appropriate for each category of street (“A”, “B”, “C” and “D” – see Table 8). Where appropriate, NTM measures may be installed in neighborhoods to manage traffic speed and volume; on category “B” streets to reduce speeding and enhance pedestrian safety; and category “A” streets to enhance neighborhood pedestrian safety.

It is sometimes desirable to have higher speeds and volumes on class “A” roadways to improve the roadway function and reduce the need to cut through lower category streets. Category “A” roadways should have speed limits posted near the 85th percentile traveled speeds to better serve the motorists (with appropriate exceptions in school zones). The use of the 85th percentile speed in setting speed limits in Camas is not a current policy and the adoption of this NTM Plan will make it (along with engineering studies) a key determinate for setting speed limits on “A” roadways. This will provide consistency in setting speed limits on key roadways³. Access management is the key to managing and improving the category “A” roadways. Often a combination of solutions including elements from all three E’s is considered to be effective.

Criteria

The Steering Committee provided input as to the criteria that may be used in a NTM plan for considering needs and priorities. The committee then ranked their level of importance. Table 1 summarizes the findings of the Steering Committee. Traffic speed, traffic volume, school zone presence and pedestrian activity were the top ranking criteria of over 20 issues considered.

³ Traffic fines are set through Revised Code of Washington (RCW) in Washington to avoid disparity throughout the state. Doubling of fines are permitted with proper signing for school and construction zones. Currently, Washington Administrative Code (WAC) or RCW do not provide provisions for any other increases in speeding fines. In the Infraction Rules for Courts of Limited Jurisdiction (IRLJ) Section 6.2 “the penalty for any infraction listed in this rule may not be changed by local court rule. The court may impose on a defendant a lesser penalty in an individual case”. The fine schedule is set through these rules.



**Table 1
Steering Committee Findings**

Criteria	Score
Speed	25.8
Volume	15.6
School Zone	10.2
Pedestrian Activity	8.2
Visibility Impairment ⁴ (safety criteria)	5.9
Amount of Cut Through Traffic	5.2
Cost	5.1
Accident history (safety criteria)	5.0
Impacts to Emergency Routes	4.5
Street Classification	4.4
Residential Acceptance	4.2
Presence of Crosswalks (pedestrian criteria)	3.2
Key Land Use	2.6
Pavement Condition	2.2
Relationship of traffic volume to time of the day (volume criteria)	2.0
Number of Stop Sign Violations (safety criteria)	2.0
Amount of Traffic Diversion	1.5
Future Traffic Volume (volume criteria)	1.5
Bus/Truck Route	0.8
Presence or absence of centerline striping	0.1

The top four criteria identified by the Steering Committee are similar to criteria used by numerous agencies with neighborhood traffic management programs. Ranging from the City of Portland to the City of San Buenaventura in California, nearly all cities use speed, volume, school zone presence and pedestrian activity in varying ways to identify the need for NTM measures and the priority of NTM projects.

Process

Working with the Steering Committee, a process was developed for neighborhood traffic management in Camas. The foundation of the process is built off the three “E’s” of transportation:

- ◆ **Education:** By making people aware of the negative impact that traffic has on their neighbors, people can act responsibly by slowing down, staying on arterial and collector streets and/or using other modes of transportation.

⁴ Related to lighting and/or vegetation/physical obstructions that block sight lines.



- ◆ **Enforcement:** By focusing law enforcement efforts to acknowledged areas of concern, community awareness of speeding problems can be raised.
- ◆ **Engineering:** There are several traffic calming measures that can be designed and built to reduce speeding and/or affect traffic volume.

The process for the City of Camas NTM program incorporates each of the fundamental “E’s” at various stages of the plan. Figure 5 summarizes the process graphically. There are two basic stages of the process: I – where short term measures are utilized to address an issue and initial analysis performed to better understand the nature of the issue; and II – where short term measures are not adequate to address the issue. The following sections describe the steps in the process. The Steering Committee requested that three key elements be addressed within the process including:

- ◆ Addressing problems in existing neighborhoods
- ◆ Addressing new development at development review
- ◆ Addressing impacts of new development

1. Problem Identification

Neighborhood traffic problems can be identified several ways. From a resident’s individual concern to a neighborhood organization issue to a matter identified by city staff (engineering, maintenance or planning) to concerns of businesses⁵. The process to NTM program will be initiated in the following manner:

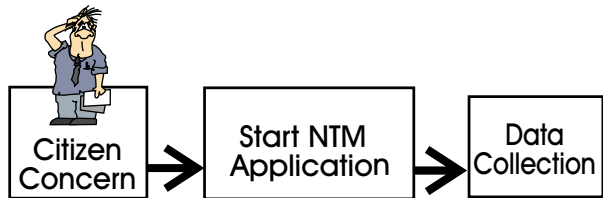
- ◆ A problem noticed and reported by City of Camas staff, police or other governmental agency;
- ◆ Formal request from a neighborhood organization in writing (signed by organization officials following a formal vote); or
- ◆ A letter from an individual outlining a problem, which is co-signed by five other property owners/renters living on the street.

⁵ It is important to note that many citizen concerns related to traffic and transportation do not fall within the purview of NTM. These include requests for installation or changes to traffic control devices, on-street parking issues and requests for turn lanes, street lights and street maintenance. These will continue to be handled through established procedures.

STEP

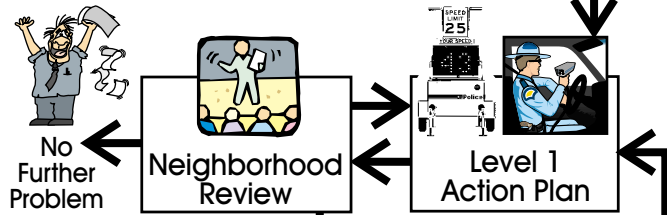
1

Identification



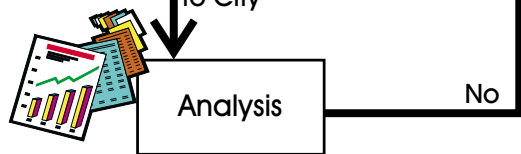
2

**Stage I
Action
Plan**



3

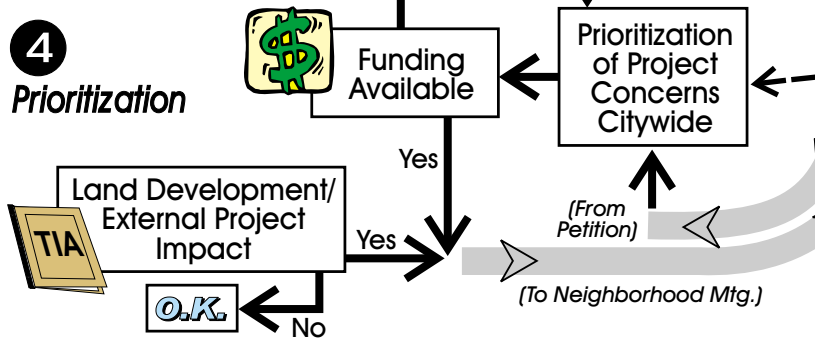
Analysis



Stage I
Stage II

4

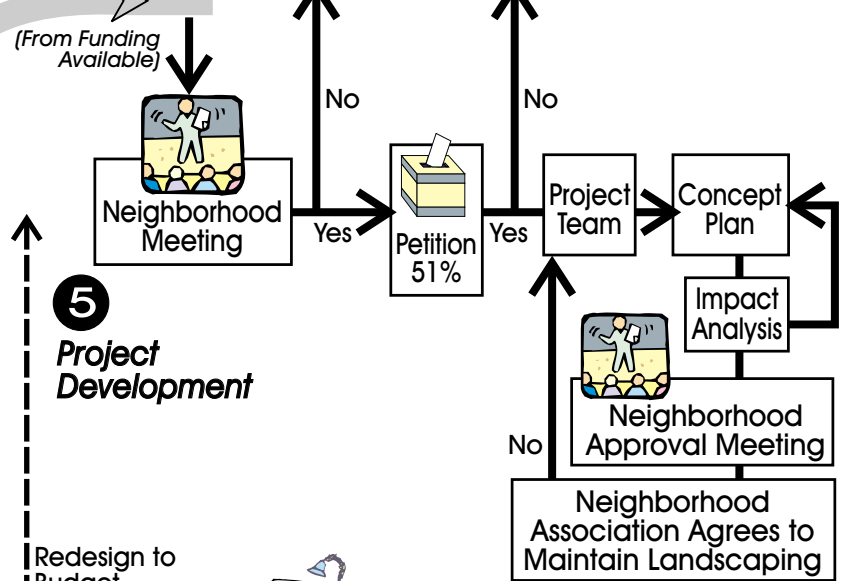
Prioritization



(From Funding Available) (Back To Prioritization)

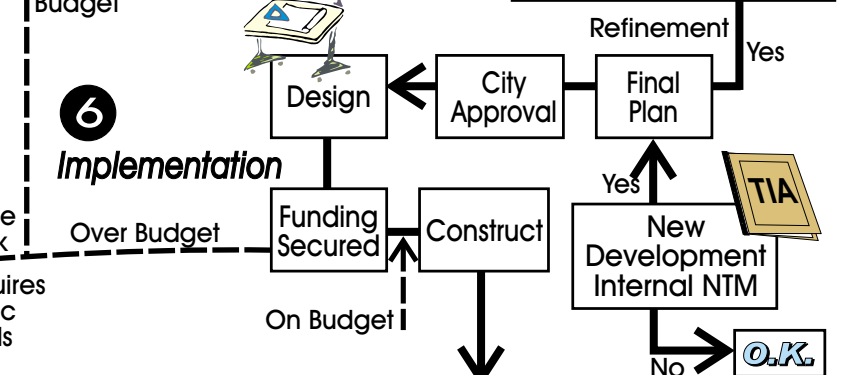
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**Project
Development**



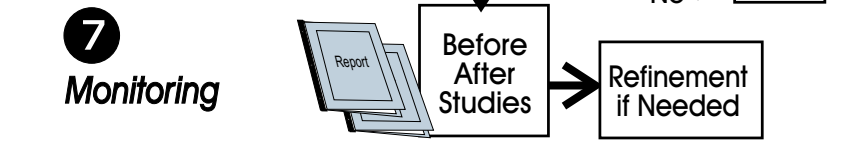
6

Implementation



7

Monitoring



**Figure 5
Camas Neighborhood
TRAFFIC MANAGEMENT PROCESS**



To assist citizens and neighborhood associations, the City will maintain a set of informational brochures on NTM matters for distribution following a request. Similar information will be maintained on the City's web page. If an individual citizen request is made within the boundaries of an existing neighborhood association, copies of the correspondence will be provided to the neighborhood association for coordination.

At this point the project study area will initially be defined by City staff. Study areas shall include all fronting property owners/renters on the subject street and generally not be less than 1000 feet or greater than one mile. Other streets that may be affected by NTM action on a project street should be defined. Staff will attach the project area map with its letter to requesting groups acknowledging receipt of the request and the steps in the Stage I Action Plan that will be initiated in Step 2.

Actions in this step: A formal request to initiate consideration of a street is prepared by a citizen, neighborhood group or staff. Staff initially defines study areas and responds by noting Stage I will proceed.

2. Stage I Action Plan

Once a problem has been presented to the City, an educational and enforcement action plan will be developed for the request. Educational actions may include:

- ◆ Placement of temporary NTM yard signs by volunteers;
- ◆ Neighborhood speed watch program (for education of neighbors, data collection and distribution of letters of concern to speeding drivers);
- ◆ Door-to-door distribution by volunteers of NTM brochures;
- ◆ Staff (police or engineering) presentation to neighborhood group;
- ◆ Notice on the City web page and neighborhood newsletters defining the problem location as a NTM "hot spot"; and
- ◆ Data collection by neighborhood volunteers regarding volume of traffic.

Concurrent with educational activities, enforcement related actions might include:

- ◆ Placement of speed reader board trailer;



- ◆ Increased enforcement within problem area, targeted based upon data from the speed trailer (need smart trailers to record data) and combined with speed trailer placement; and
- ◆ Future consideration of photo enforcement, should state legislation permit its use.

Monitoring within Stage I will include review of prior police records (for example, speed data from citation history), prior traffic counts (from citizens and prior city information) and collision records. Within 4 months of the initiation of a Stage I action plan a follow up with the neighborhood organization and sponsoring citizen will be conducted to determine if the Stage I action plan has resolved the issues or if further consideration is necessary. If actions taken in Stage I are determined effective, comparable measures will continue in the future with the input of the neighborhood group.

If it is determined that actions taken in Stage I are not adequate to address the problem, step 3 of the process will be undertaken.

Actions in this step: Steps are taken by citizens, enforcement and public works staff to address issue through education, enforcement and low cost measures. Follow-up performed by staff to determine if process needs to proceed to Step 3.

3. Analysis

Working together with residents, City staff will utilize a data checklist to assess conditions at the problem location. Initially available data will be utilized (from step 2 and readily available data). The checklist will identify the type of data to be obtained. Traffic volume and speed data will be collected. The checklist will include items such as:

- ◆ 24 hours of traffic volume and speed data
- ◆ Street width
- ◆ Presence of sidewalks and pedestrian activity
- ◆ Location of schools
- ◆ Nearby land uses (noting special activity centers such as parks, senior housing, retail centers, institutional uses and/or major employment within 1,000 feet)
- ◆ Fronting land uses (residential, commercial, vacant,...)
- ◆ Emergency route status (primary route?)
- ◆ Snowplow Route
- ◆ Collision data from past three years
- ◆ Bus routing (transit and school buses)
- ◆ Functional classification



- ◆ Sight distance issues
- ◆ General assessment of pavement condition
- ◆ On-street parking conditions
- ◆ Driveway locations
- ◆ Proposed or future projects in the area (including roads)

This information will be used to make two assessments: 1) determine if all the threshold criteria are met for consideration of Stage II NTM (see Table 2); or 2) if Stage II threshold criteria are not met, what further or additional Stage I measures should be considered. Other measures could include category “A” street traffic signal timing enhancements or low cost category “A” street operational improvements (TSM) to keep traffic on category “A” streets, additional signing or striping modifications, through commercial vehicle restrictions, lighting, high visibility crosswalks, turning restrictions (medians), rumble strips (using raised pavement markers) and/or stop signs (if warranted⁶). The operational enhancements to category “A” streets is aimed at possible conditions where poor operation may result in cut-through traffic.

Table 2
Threshold for Stage II Consideration (must meet all 3)

Street Type	Speed	Volume	Fronting Land Use
C	85 percentile speed > 28 MPH	> 700 vehicles per day	>75% residential and institutional (including parks)
B	Median speed > Posted speed	>1400 vehicles per day	>75% residential and institutional (including parks)
A	Median speed > Posted speed	N/A	>75% residential and institutional (including parks)

For new developments, analysis will be required that indicates the amount of added traffic on existing city streets and the amount of forecasted (total)* traffic on new streets within developments. Future volumes shall be used for threshold comparisons. This analysis will be required from the developer as part of the land use review.

***Actions in this step:** Evaluation is undertaken by city staff to determine if further actions are necessary, consistent with citywide criteria. If criteria not met, further Stage I actions are pursued.*

⁶ Manual on Uniform Traffic Control Devices, US DOT, FHWA, 1988, Section 2B-5 (or updated versions).

* Total mean existing plus project plus approved projects and future development of adjacent vacant land according to zoning.



Stage II

This step initiates activity in Stage II of the NTM Plan. The next four steps carry Stage II of the NTM process from concept planning to implementation, including:

- ◆ Prioritization (including scoring/ranking projects and reviewing available funding)
- ◆ Project Development
- ◆ Implementation (final funding and construction)
- ◆ Monitoring

4. Prioritization

Once the thresholds in step 3 have been met, the priority of the specific project will be determined. This process is necessary to assure the public that the city resources are being applied where the greatest needs exist, rather than a first in, first serve basis. It is presumed that the city will have limited resources to address issues of traffic calming throughout the city and prioritization will assure that the city gets maximum benefit for the public investment. A technical scoring system has been developed to assist with the prioritization process. Tables 3, 4 and 5 outline the prioritization process that uses criteria that were ranked most important by the NTM Steering Committee. The process separates criteria by category of roadway (“A”, “B”, and “C”). Bonus points are awarded to streets by category to focus NTM improvement on neighborhoods (Table 6) and to encourage partial or full private funding of NTM (Table 7). The specific emphasis of these two bonus awards is to focus projects in neighborhoods and reward greater levels of private funding support. City staff will be responsible for this task (using data from step 3 and additional information collected for this analysis).

Once the ranking process is completed by the City staff, the project will be listed along with other traffic calming projects on the City’s Public Works Capital Improvement Program (CIP). Without outside funding, the budget allocation in the CIP will be the funding source for NTM projects. Should funding be available, the process will proceed to the next step. Should funding not be available given the citywide NTM rankings, the Stage II process will stop until a new budget is prepared, outside funding is provided, or other funding sources become available (Stage I will continue). The reason for this break in the process is to assure the public that when a project goes into development, implementation will be likely. The objective is to avoid expending all the energy and effort to develop a project and then not doing anything (lowering the public’s confidence in the program).



Projects that have met the minimum thresholds (Table 2) and can be completely funded privately will proceed to the next step in the process (including funds provided as mitigation of development or local neighborhood funding).

The bonus for private funding was discussed extensively with the steering committee. After discussion both ways (for and against the bonus), it was decided to promote private funding through a bonus score in the prioritization such that the same public dollars could go further. The objectives were to 1) increase the bonus for higher levels or percentages of private funding (not linear) to encourage matching funding; 2) place a maximum amount on local funding bonus so that you do not get more points for more dollars; 3) relate the bonus to the

Table 3
Category “C”, and all other local streets,
Street/Prioritization/Scoring Process

Criteria	Maximum Points	Basis for Scoring
Speed	35	(85 th percentile speed – posted speed) x 3 points
Volume	25	4 points for every 100 vehicles per day over 700 vpd
School Bus/Transit Route	5	5 points if the street is on a transit or school bus route
Safety Measures	<i>Subtotal 25</i>	
Pedestrian Generators	5	5 points if within 500 feet of street there are pedestrian generators (parks, schools, trails, elderly housing, colleges, hospitals or retail/commercial uses)
Sidewalks	10	10 points if no sidewalks, 5 points if sidewalks are discontinuous or on one side
Schools	5	5 points if an elementary or middle school (public or private) is within 500 feet of the street
Visibility Limitations	5	1 point for each of the following visibility limitations <input type="checkbox"/> Presence of On-Street Parking <input type="checkbox"/> Un-maintained Vegetation/Landscaping (visual inspection) <input type="checkbox"/> Horizontal Curves (designed for less than 5 mph above posted speed limit) <input type="checkbox"/> Vertical Curves (designed for less than 5 mph above posted speed limit) <input type="checkbox"/> Lack of Lighting (AASHTO requirements for lighting levels not met)
Presence of Young Children	10	Compute the average number of children per household under the age of 14 and award 1 point for every 0.1 (obtained by neighbors)
TOTAL SCORE	100	



project prioritization score so that higher scoring projects get more of a bonus related to private funding than do lower scoring projects; and 4) private funding means any non-City of Camas related funding (UCAN grants cannot be utilized to get bonus points since they are City public funds).

To address the relationship between projects prioritization score and the bonus, a maximum bonus was established equal to 10 percent of the prioritization scoring. In cases where point totals are below 100 points, this would result in 10 or fewer points (the basis would be the prioritization score prior to any bonus). For example, a project that has a prioritization score of 85 points could not get more than 8.5 bonus points. Table 7 summarizes the bonus scale.

Table 4
Category “B” Street Prioritization/Scoring Process

Criteria	Maximum Points	Basis for Scoring
Speed	35	(85 th percentile speed – posted speed) x 3 points
Volume	15	1 points for every 300 vehicles per day
School Bus/Transit Route	5	5 points if the street is on a transit or school bus route
Safety Measures	<i>Subtotal 35</i>	
Pedestrian Generators	10	10 points if within 500 feet of street there are pedestrian generators (parks, schools, trails, elderly housing, colleges, hospitals or retail/commercial uses)
Sidewalks	10	10 points if no sidewalks, 5 points if sidewalks are discontinuous or on one side
Schools	10	10 points if an elementary or middle school (public or private) is within 500 feet of the street
Visibility Limitations	5	1 point for each of the following visibility limitations <input type="checkbox"/> Presence of On-Street Parking <input type="checkbox"/> Un-maintained Vegetation/Landscaping (visual inspection) <input type="checkbox"/> Horizontal Curves (designed for less than 5 mph above posted speed limit) <input type="checkbox"/> Vertical Curves (designed for less than 5 mph above posted speed limit) <input type="checkbox"/> Lack of Lighting (AASHTO requirements for lighting levels not met)
Presence of Young Children	10	Compute the average number of children per household under the age of 14 and award 1 point for every 0.1 (obtained by neighbors)
TOTAL SCORE	100	



Table 5
Category “A” Street Prioritization/Scoring Process

Criteria	Maximum Points	Basis for Scoring
Speed	10	(85 th percentile speed – posted speed) x 2 points
Volume	10	1 points for every 1000 vehicles per day
School Bus/Transit Route	10	10 points if the street is on a transit or school bus route
Safety Measures	<i>Subtotal 60</i>	
Pedestrian Generators	20	20 points if within 500 feet of street there are pedestrian generators (parks, schools, trails, elderly housing, colleges, hospitals or retail/commercial uses)
Sidewalks	20	20 points if no sidewalks, 10 points if sidewalks are discontinuous or on one side
Schools	15	15 points if an elementary or middle school (public or private) is within 500 feet of the street
Visibility Limitations	5	1 points for each of the following visibility limitations <input type="checkbox"/> Presence of On-Street Parking <input type="checkbox"/> Un-maintained Vegetation/Landscaping (visual inspection) <input type="checkbox"/> Horizontal Curves (designed for less than 5 mph above posted speed limit) <input type="checkbox"/> Vertical Curves (designed for less than 5 mph above posted speed limit) <input type="checkbox"/> Lack of Lighting (AASHTO requirements for lighting levels not met)
Presence of Young Children	10	Compute the average number of children per household under the age of 14 and award 1 point for every 0.1 (obtained by neighbors)
TOTAL SCORE	100	

Table 6
Bonus Relationship Between Categories

Functional Class	Bonus Points
Category “C”	25
Category “B”	10
Categories “A” & “D”	0

Table 7
Bonus Relationship Between Outside Funding Contribution

Share of Non-City Funds	Bonus Points*
0 % -19 %	1
20 % - 29 %	2
30 % - 49 %	4
50 % - 75 %	7
76 % - 99 %	10

* - Note: Maximum bonus for private funding limited to a maximum of 10% of prioritization score.



Finally, the process of setting budgets for projects in step 4 was discussed with the steering committee. There were three key topics: 1) what/when should the budgets be set?; 2) what happens if in steps 5 and 6 the project team generates a project that exceeds budget?; and 3) what happens to maintenance costs?

- 1) The budgets should be set and approved in step 4 to assure that all the public process associated with step 5 will result in implementation. Without funding approval, step 5 could end with agreement but no project. Because there is little experience in NTM implementation in Camas, some initial concept budgeting techniques should be used. For example, utilizing the approximate cost data from the listing of NTM measures in the appendix – guessing the type of measures that may be possible and establishing a tentative budget for step 4. Generally speaking, projects below \$15,000 would be considered small projects, \$15,000 to \$35,000 medium sized projects and about \$35,000 large projects (for future reference these costs should be indexed starting in 2000 using the Engineering News Record Construction Cost Index). Setting these budgets will improve over time as more projects are implemented and local knowledge about costs increase.
- 2) If the initial project budget is exceeded, the project will be required to do one of three things: a) the project is sent back to the project team with the understanding that they will redesign it within budget; b) private funds are utilized to make up the difference between the budget and the project cost; or c) the project is sent back to step 4 to compete with other projects for additional public funding.
- 3) It will be the policy of this plan that all landscaping associated with all implemented NTM measures will be maintained by the homeowners association that requested the project. Failure to maintain landscaping could result in project modification in the future. If there is no homeowners association, the city will either maintain the landscaping or attempt to design the project with minimal maintenance needs. All striping, signing and paving will be maintained by the city.

Actions in this step: City staff conducts prioritization of the proposed NTM project area. Public Works staff reviews priorities in establishing an annual project list for NTM projects within the CIP



process approved by City Council⁷. Local projects with highest ranking or non-public funding proceed to project development.

5. Project Development

Using the CIP process for transportation projects in the City, those projects within two years of construction will go into project development. This step involves extensive public involvement and project teams or subcommittees involving the City staff. The NTM toolbox was developed for the City of Camas based upon the input of the Citizens Advisory Committee to provide a standard set of measures that could be uniformly applied through the city (Table 8). Using measures from the toolbox, each project team will identify appropriate measures for use in the project. Non-engineering solutions (such as street trees and landscaping) are included, but include unique design and maintenance considerations⁸. Design standards will guide the selection and placement of NTM measures. Measures specific to the category of street will be considered. At the end of this step the NTM project will need to have community support for the final design and have been presented to the public before gaining administrative approval of the Public Works Department.

Actions in this step: The basic steps of project development will include the following:

- ◆ *Project is within two years of funding through CIP.*
- ◆ *The project limits from Step 1 will be refined the City staff. This includes not only the location of the project, but areas possibly impacted by diverted traffic from the project.*
- ◆ *A neighborhood meeting is held to determine whether an improvement project is desired and to discuss the project and outline a potential schedule of activities.*

⁷ It should be noted that if conditions change between the time a project enters into the NTM process and the time of the annual approval of the Street Plan in July of each year – the criteria scoring will reflect the current conditions. Therefore, as part of a Stage I action plan, if a sidewalk were built in the study area or striping changes were made that slowed traffic, the prioritization scoring would reflect the current condition with the sidewalk and the slower traffic – not the pre-existing conditions before actions were taken).

⁸ Such as responsibilities for maintenance and design standards for tree/landscape selection.



**Table 8
NTM Tool Box**

Category “C” & “D”		Category “B”	Category “A”
Chicane	Choker	Pavement Texture	Medians
Circle	Diverter	On-Street Parking	Curb Extensions
Pavement Texture	Speed Hump	One way entry/exit	Street Trees/ Landscaping
On-Street Parking		Truck Restrictions	
One way entry/exit		Turn Restrictions	
Truck Restrictions		Medians	
Turn Restrictions		Curb Extensions	
Other Level 1 Measures		Roundabouts	
Street Trees/Landscaping		Street Trees/ Landscaping	
For New Construction (not retrofit), also Consider			
Category “C” & “D”		Category “B”	Category “A”
Connected Curvilinear Street			
Medians			
Narrow Street (28’ to 32’)			
Street Grid			
Shared Space			

- ◆ *The sponsoring citizens for the project will complete a NTM petition form. This requires the signatures of support of 51 percent or more of all fronting property owners/renters within the project limits for a NTM project. Without this support, the project will stop at this point and return to Stage I and Step 4.*
- ◆ *A project team/subcommittee is assigned by the Public Works Director that includes citizens and staff to develop conceptual design for the NTM project. Input from emergency services, police, school and maintenance will be obtained at this step of the process. The subcommittee will be advisory to staff.*
- ◆ *A concept plan will be prepared that outlines the type of measures anticipated and the possible alternatives (if any). The NTM project will use selected measures from the Camas NTM Tool Box of NTM measures for different categories of streets. Deviations from measures for which standards exist will require a separate deviation process.*
- ◆ *Impact analysis of the NTM project will be undertaken by the City staff and will include “fatal flaw” impact assessments. These are:*
 - ◆ *Potential diversion. Potential diversion of traffic to adjacent street will be estimated for the project. If diversion of over 300 vehicles per day is anticipated to another category “C” street, residents from that*



street will be required to be added to the NTM petition form.

Diversion to category "A" or "B"

streets will not be considered an impact.

- ◆ *Impact to Emergency Routes. Obstruction measures (such as speed humps or traffic circles) will not be allowed on routes designated by the fire and police departments as primary response routes.*
- ◆ *Multi-modal Access. Bicycle and pedestrian access will not be negatively impacted, and transit access will not be prevented by the NTM project.*
- ◆ *Visual/Aesthetic Concerns. Samples of the visual character of the NTM measures selected will be reviewed in the public process.*
- ◆ *Maintenance. The effect of the NTM program on maintenance will be identified. This includes added costs for NTM measure maintenance (street sweeping, structural repairs, landscaping, etc.) and impact to maintenance activities.*
- ◆ *Desired Effect. Using Table 9 as a guide, the selected measure should produce the speed and/or volume benefit desired.*
- ◆ *With the concept plan and assessment approved by the project subcommittee, the NTM project will be presented to the neighborhood for review. Approval will be considered complete when the petition is submitted that is signed by 60% or more of the residents approving the concept.*
- ◆ *Refinement will be done if necessary based on the neighborhood meeting.*
- ◆ *Final approval by the City based on the street category. A category "C" or "D" street NTM project does not need to go before the City council for approval. Category "A" and "B" street NTM projects will need to be approved by the City council and TAC committee. This was done to avoid having local groups take steps on roadways of city-wide significance in Camas that would be considered not in the city's overall best interests. By having this additional hearing, the City Council can address the specific nature of these city-wide changes appropriately and with adequate public input which may extend beyond the project limits.*
- ◆ *Projects will receive final approval from the Department of Public Works, if the concept project was listed in either the CIP approved by City Council or included as conditions of development approved by the City.*



- ◆ Final design will be done based on recommendations from the project team.

**Table 9
NTM Performance**

Measures	No. of Studies	Speed Reduction (MPH)			Volume Change (ADT)			Public Satisfaction
		Low	High	Average	Low	High	Ave.	
Speed Humps	262	1	11.3	7.3	0	2922	328	79%
Speed Trailer	63	1.8	5.5	4.2	0	0	0	90%
Diverters	39	-	-	.4	85	3000	1102	72%
Circles	26	2.2	15	5.7	50	2000	280	72%
Enforcement	16	0	2	2	0	0	0	71%
Traffic Watch	85	.5	8.5	3.3	0	0	0	98%
Chokers	32	2.2	4.6	3.3	45	4100	597	79%
Narrow Streets	4	5	7	4.5	0	0	0	83%

SOURCE: Survey of Neighborhood Traffic Management Performance and Results, ITE District 6 Annual Meeting, by R S. McCourt, July 1997.

6. Implementation

Projects that have completed step 5 will be advanced to the city for potential funding and implementation. As identified in step 4, the highest rated group of projects will be forwarded to the CIP for funding.

Actions in this step: The final steps for implementation will include:

- ◆ Private funding (if provided) will be secured.
- ◆ City Staff will prepare a schedule for implementation and notify the neighborhood association.
- ◆ Construction will be completed.

7. Monitoring

Once an NTM project is completed, data collection will be conducted approximately six to 12 months after completion to determine effectiveness and whether further refinements to the plan are required. Volume and speed data will be collected and summarized in a Before and After Report by City staff. If refinements are necessary, they will be identified following analysis of before/after data.

The overall NTM Plan will be reviewed for updates and revisions as the plan evolves. To avoid a separate process, this review could be linked to existing plan approvals. The street plan is approved annually in July and the comprehensive plan updated every 5 to 10 years –



which were the two most logical times to update the NTM plan. The steering committee felt that the plan maps and criteria should be considered and updated, as needed, annually with the street plan. The objective is that City Council approves the street plan and can approve changes at one time in the year rather than scattered through the year, without overall context.

***Actions in this step:** City staff will set up a standardized approach to before and after studies and tabulate performance data on all NTM project implementation. Over time this research will be used to refine or upgrade the elements of the plan. No NTM project shall be removed, instead of modified, unless it is determined to create an unforeseen, unsafe condition. Complaints from citizens outside of the project limits should be handled consistently by reminding the citizen that the streets can still be driven at 25 miles per hour or the speed limit and determine the cause for their concern. Before and after data are critical for this purpose.*

Funding

Funds for the NTM projects would most likely come from voter approved funding, private funding, or the approved Capital Improvement Program (CIP) for the current year budget. Funding may be limited or not available in any given year. NTM projects with private funding will be able to proceed through the NTM process even if public funding is not available at the time. While there are federal and state funding sources that could be applied to NTM⁹, since the needs are primarily local, it may be best to address funding locally.

Concepts such as creating a traffic impact fee (TIF) element to fund NTM were considered. The state laws surrounding the use of TIFs require a direct nexus between the fee, the need for public facilities and capacity impacts of future development. The use of TIF to fund NTM was rejected since NTM is not related to increasing roadway capacity with growth, but rather limiting the impacts of more traffic. A more appropriate funding mechanism for NTM would be through conditions of development approval – where a projects impact on neighborhood streets is mitigated through NTM using the State Environmental Protection Act (SEPA) procedure for exactions. With the NTM plan criteria, clear and objective standards will be in place to define impacts and identify potential solutions for new development.

⁹ The Community Preservation Pilot project established by TEA-21 is an example.



There are several options for funding NTM measures in Camas. They will include:

- ◆ Adding NTM funding to a Transportation levy in the City of Camas
- ◆ Full funding through the CIP, using the existing budgeting process to create a budget
- ◆ Partial funding through the CIP
- ◆ New voter approved funding dedicated to NTM
- ◆ Private funding NTM without public funds
 - ◆ Local residents pay cash
 - ◆ Local residents agree to a local improvement district
 - ◆ Private development funds NTM as a mitigation measure of project approval or as an element of site plan design
- ◆ Full funding as a mitigation measure of a transportation project (for example a roadway project that potentially could impact a neighborhood and includes NTM measures in its funding plan to address impacts).

Land Use Review Process Guidelines Including NTM

While the prior sections primarily focus on the implementation of NTM in retrofit situations, the most opportune time to address neighborhood needs is at the point of development (when the streets are built). Whether it is a residential subdivision, commercial development or a transportation project, incorporating NTM elements into the design, development, and mitigation of the off-site impacts of a project assures that the inventory of neighborhood problems does not grow. To best address this through policy, a two tiered approach is recommended. The first tier is aimed at new residential development planning and the second tier is focused on mitigating impacts of new land use or transportation development. If in either case it is desired to consider a NTM measure that is not part of the tool box, the applicant (using a registered professional engineer) will be required to provide and certify the appropriate performance and design standards.

Tier 1: Design of New Residential Street System. Any new streets built with development should incorporate NTM in design. An additional level of analysis should be added into the Traffic Impact Analysis guidelines for proposed projects. A map should be prepared that identifies all nearby streets (especially category “C” streets) that the proposed land use action may create or impact. On all projects,



any internal street reaching the threshold of 700 vehicles per day will enter the NTM process at Step 6 and demonstrate how speed and volume will be kept at 25 mile per hour to the satisfaction of the Department of Public Works prior to approval. In project review, this criteria will be evaluated and if adequate measures are not identified, staff can request that the site plan be modified to reflect the future neighborhood needs for NTM measures.

Tier 2: Mitigating the Impact of New Development. All new major land developments will be required to provide information in their Traffic Impact Analysis (TIA) that identifies the potential impact on neighborhoods or local streets. This goes beyond the capacity analysis that is conducted presently. A section would be added to the TIA that assesses the impact of a land use or transportation project on neighborhood routes or local streets (all nearby category “C” streets). The TIA should identify if the project adds more than 25 vehicles per hour (two way – AM, PM and/or retail peak hours) to a street and the street volume is projected to be larger than 700 vehicles per day. An estimate will be made of the potential (in the future at build-out of nearby lands) for a neighborhood or local street to exceed 700 vehicles per day. Determination of potential streets for consideration for each project should be reviewed with city staff prior to submitting the TIA.

If a project exceeds this threshold, they will be required to enter the NTM process at the end of step 4 (Prioritization). At this point, the developer will have the option of working with the public and continuing through the NTM process or providing a cash contribution, equivalent to the applicant’s fair share impacts, to the NTM program to be used as the impacted neighborhood sees fit to mitigate impacts. The cash contribution shall be a minimum of \$25,000 (or greater if determined by City staff) to address measures implemented by the City. Working with the public in Step 5, the project team (which may include the developer or their representative) will determine the appropriate NTM measures to mitigate the project impacts. Following completion of Steps 5, 6, and 7 the City shall refund any remaining funds to the developer.

Standards for NTM

Implementing NTM measures can impact several stakeholders that use public streets - from utilities to garbage companies, delivery companies to school buses, from emergency services to maintenance, from the postal service to the school district. The needs of all the stakeholders should be considered in any NTM measure. To best



address the input of key stakeholders, it is recommended that a series of design standards be developed, reviewed and approved for inclusion in the *City of Camas Street Design Standards*. This process will allow critical input and review by the stakeholders at one point, rather than having to seek each stakeholders input for each NTM project that is contemplated.

The benefit of developing design standards is that NTM can be uniformly applied in Camas. The standardization of NTM elements also helps keep the costs down. Most importantly, by going through a process of adopting the design standards with stakeholder input, the potential liability to the City is significantly reduced.

The development of standards can build off experience in Washington and Oregon with NTM and throughout the United States in tailoring a set of standards that meet Camas's needs. As long as the standard of design are adhered to, the stakeholders can be assured of the character and nature of what may impact the street related to their operational needs.

The Manual of Uniform Traffic Control Devices (MUTCD) provides a reference for most traffic signing and striping needs. While MUTCD does not address many of the NTM measures outlined in the tool box, many other cities, and Camas itself, have working design experience with many of the measures. The following standards should be developed for the City of Camas. In some cases, samples from other cities are attached for reference.

- ◆ Speed Humps (City of Portland has the most recognized standards in the area – also need spacing criteria)
- ◆ Circle
- ◆ Medians
- ◆ Street Width (several cities in the Vancouver-Portland region has extensive experience with 28 and 32 foot streets)
- ◆ Street Curvature (possibly 50 foot radius, reversing curves for curvilinear)
- ◆ Chicane
- ◆ Curb Extensions
- ◆ Pavement Texture

Other Issues




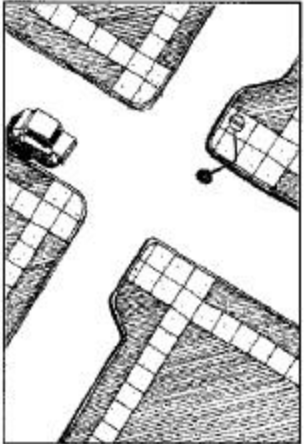
During the development of the NTM plan, the issue of photo enforcement or automated enforcement was raised. These measures have been used in communities (Vancouver, Portland, and Beaverton are examples) to address speeding in neighborhood areas and school zones. Elsewhere in the United States, automated enforcement is being used to address red light running of traffic signals and violating at-grade railroad crossing controls. In Europe, the use of the speed-reader board trailers has developed into permanent speed reader signs in critical locations. These measures would need legislative action for implementation in Camas and may be considered in the future to be included in the NTM Tool Box should the necessary legislative issues be adequately addressed such that judges will support its appropriate use.

Appendix

Sample NTM Measures

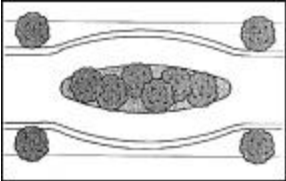



Sample Neighborhood Traffic Management Measures

Measure	Sample	What is it?	What does it do?	How much does it cost?
Chicane		Channelization or curb extension that realign the straight path of a street, deflection straight vehicle movement.	Speed reduction (3 - 4 MPH) Low volume reduction and diversion	\$3,000 to \$20,000
Choker (curb extension)		A roadway narrowing. This could be a curb extension at an intersection (also called bulb outs, neckdowns and throating) to reduce the roadway width at a selected location.	Speed reduction (3.3 MPH) Moderate volume reduction and diversion	\$5,000 to \$15,000

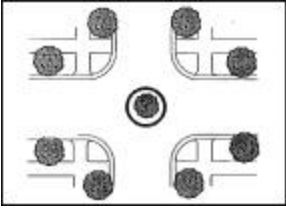

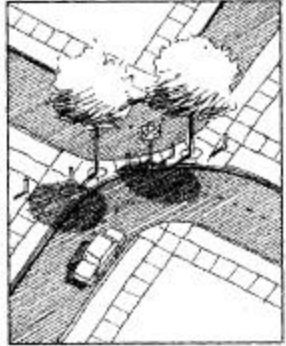


Sample Neighborhood Traffic Management Measures

Measure	Sample	What is it?	What does it do?	How much does it cost?
Choker (median)		<p>A roadway narrowing. With a median, the narrowing of the roadway comes from placing an island in the middle of the road. Some cities have used large raised pavement markers on the centerline at intersections to reduce speed of turning traffic. Medians can also be used for pedestrian refuge and/or access control to restrict turning movements. For access control it is important that medians are long enough to effectively create right-in/right-out restriction.</p>	<p>Speed reduction (3.3 MPH) Moderate volume reduction and diversion</p>	<p>\$3,000 to \$10,000</p>
Choker (pinch point)		<p>A roadway narrowing . Curb lines are extended into the street area (usually landscaped islands or pedestrian extensions) to narrow the roadway.</p>	<p>Speed reduction (3.3 MPH) Moderate volume reduction and diversion</p>	<p>\$5,000 to \$15,000</p>






Sample Neighborhood Traffic Management Measures

Measure	Sample	What is it?	What does it do?	How much does it cost?
Circles		A round island in the middle of an intersection	Speed reduction (5.7 MPH), Low volume reduction and diversion	\$5,000 to \$15,000
Curvilinear		Similar to a chicane but over a longer distance or segment of street. Typically reversing curves designed to 25 MPH speed. Still provides direct connectivity with little out of direction travel.	Speed reduction (similar to chicane) Low volume reduction	Generally designed into original plans.
Diverters		Channelization or islands that restricts movements at an intersection. Typically, allows right turns, not through traffic. There are full and partial diverters depending upon the number of movements restricted or diverted at an intersection.	Minor speed reduction (0.4 MPH) High volume reduction, high diversion impact	\$3,000 to \$15,000

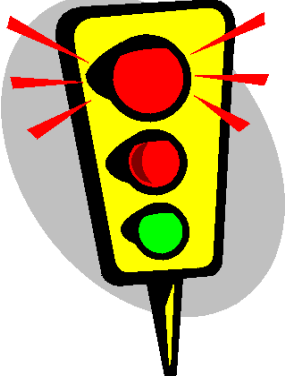
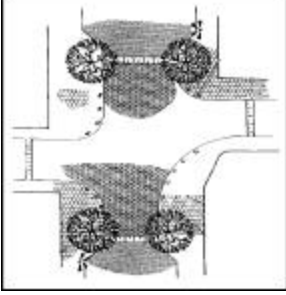


Sample Neighborhood Traffic Management Measures

Measure	Sample	What is it?	What does it do?	How much does it cost?
Enforcement (selective)		Police issuing tickets to vehicles violating speed zones. Can be effectively combined with other NTM elements such as education, public awareness, speed trailer and signs/banners.	Minor speed reduction documented (2 MPH)	Redirects enforcement resources from other policing activities
Enforcement (automated)		Use of photo or video enforcement to ticket violators of speed zones. Also red light running photo enforcement is being developed. Requires legislative change.	Speed reduction (limited data)	Revenue from tickets can pay for system (depending upon fund allocation). Portland's system does not pay for itself.
Education		Providing training in drivers education, courses for ticketed drivers, mailings (handouts/flyers), public service advertisements	No data on results	\$2,000 to \$50,000/year
Enhance Arterial and Collector Performance/		Providing adequate capacity, spacing and connectivity for	Speed reduction can be moderate - mostly due to	Street Improvements are VERY expensive



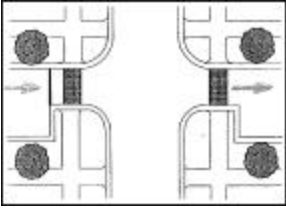


Sample Neighborhood Traffic Management Measures

Measure	Sample	What is it?	What does it do?	How much does it cost?
Coordinate Signal Timing		<p>arterials and collectors allow longer trips to stay on these facilities and not on neighborhood routes. Coordinated traffic signals can also be effective in keeping through traffic on arterials. In some cases, coordinated signal timing can reduce the amount of green signal time given to side streets. While this can be viewed as an impact to some, it can deter cut through traffic.</p>	<p>removing faster traveling through moving traffic from neighborhood routes.</p> <p>Can significantly reduce volume where congestion exists.</p>	<p>Typically not considered NTM projects</p>
Entry Treatments		<p>Generally use of landscaping and architectural elements at the roadway entrance to a neighborhood. Can include curb extensions and pavement texturing.</p>	<p>Similar to chokers</p>	<p>\$5,000 to \$25,000</p>
Humps		<p>Raising of pavement surface about 3" over about 10 to 20</p>	<p>Speed reduction (7 MPH) Low volume reduction or</p>	<p>\$3,000 to \$5,000</p>



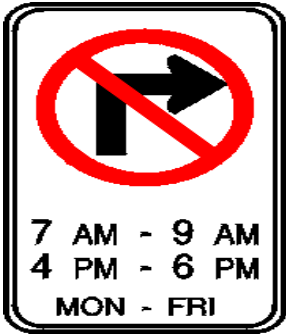


Sample Neighborhood Traffic Management Measures

Measure	Sample	What is it?	What does it do?	How much does it cost?
		feet (an undulation). Similar to this measure are speed tables, raised pedestrian crossings and raised intersections.	diversion	
Intersection Realignment/ Route Modification		Takes a standard 3 or 4 leg intersection and skews it to deflect traffic while maintaining safe design characteristics. Modify a route to make it less direct.	Similar to Circles	\$4,000 to \$20,000
One Way Streets		Takes the entry to a neighborhood area and makes the access road one way (typically out). Similar in some respects to a diverter. Can be used in connection with entry treatments.	Speed reduction (no data) Significant volume reduction and diversion	\$5,000 to \$30,000
Pavement Texture		Instead of smooth pavement	Limited speed reduction	

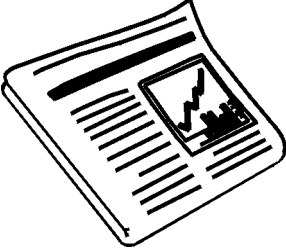
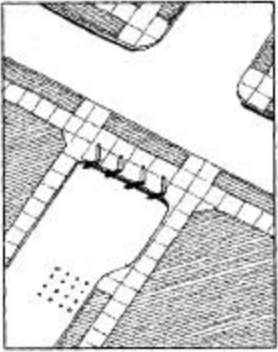


Sample Neighborhood Traffic Management Measures

Measure	Sample	What is it?	What does it do?	How much does it cost?
Pavement Markings		surface, create roughness by using raised markers, pavers, colored concrete with patterns. Can be used to emphasize pedestrian crossing location. Sometimes paint is used to create channelization or narrowing.	Limited volume change Increases driver awareness of changed conditions (entering a neighborhood or pedestrian zone).	\$1,000 to \$15,000
Parking On-street		Many streets less than 32' do not allow parking on one or both sides. By allowing parking, the traveled way is narrowed. Speeds must be slow for safe sight distance.	Speed reduction Limited volume reduction.	\$0 - \$1,000
Part Time Restrictions (PTR)		Use signs to limit vehicle movements during key times (typically school times or peak hours). Can be turn restriction, truck restrictions, through traffic restrictions, etc... Very difficult and expensive to enforce and can have high violation rates.	Moderate speed reduction (if through traffic removed) Moderate volume reduction (if restrictions enforced).	\$500 - \$5000
Public Awareness/Traffic		Campaigns typically	Speed reduction (limited)	\$1,000 to \$30,000 per year


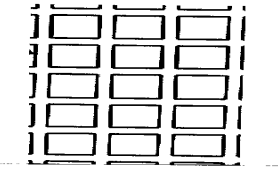



Sample Neighborhood Traffic Management Measures

Measure	Sample	What is it?	What does it do?	How much does it cost?
Watch		<p>organized by agency to involve neighbors. Speed watch can include neighbors using a radar speed measuring device to identify speeders who receive a standard letter. Public awareness can include education activities, but also banners, newsletters, yard signs, web page material, neighborhood organization activities, etc...</p>	<p>data)</p>	
Road Closure		<p>Uses islands or barricades to close the end of a street. Creates a cul-de-sac for vehicles, pedestrians and bicycles can go through. Contrary to emphasis on connectivity.</p>	<p>Speed reduction limited to site of closure. Significant volume reduction and diversion.</p>	<p>\$2,000 - \$15,000</p>
Shared Space		<p>A European concept where there are no curbs in the roadway right-of-way. The</p>	<p>Speed reduction Significant volume reduction and diversion.</p>	<p>\$10,000 - \$50,000</p>

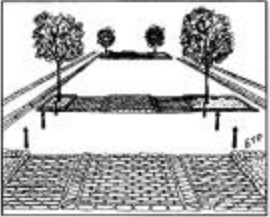
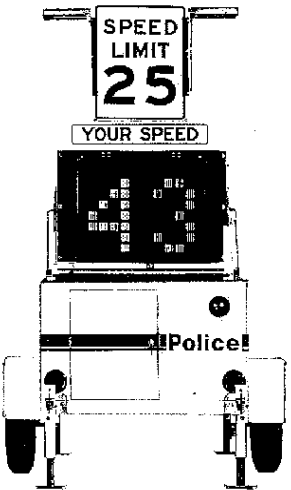


Sample Neighborhood Traffic Management Measures

Measure	Sample	What is it?	What does it do?	How much does it cost?
		road area is share among various users, using bollards, chokers and landscape elements to help define vehicle areas.		
Short Block Spacing		Shorter blocks create more streets with traffic distributed over more streets. The intersections created may require stop signs where warranted.	Limited speed reduction Significant volume reduction if done area wide	Typically part of original design and plans.
Signs		In the past “Slow Children” signs have been used. Yard signs have more recently been used (typically used as part of a public awareness or education program. Possible yard sign idea could include progressing signs that say 1) Did you Know, 2) That your Neighbors think, 3) You drive TOO FAST.	Speed reduction, however, the effectiveness (if any) diminishes (no data substantiating a benefit)	\$50 - \$500
Speed Cushions		A European device similar to a speed hump, but narrower	Speed reduction Little volume reduction	\$1,500 - \$3,000





Sample Neighborhood Traffic Management Measures

Measure	Sample	What is it?	What does it do?	How much does it cost?
		<p>to allow buses or emergency vehicles with larger wheel bases to pass over without impact.</p>		
<p>Speed Trailer</p>		<p>A trailer unit with a reader board that indicates the approaching vehicle speeds. Portable and can be moved from site to site. Can be reinforced with actual police enforcement on a selective basis.</p>	<p>Speed reduction (4.2 MPH) however, reduction occurs only when trailer is present. No volume reduction.</p>	<p>\$10,000 - \$25,000 + labor</p>



Sample Neighborhood Traffic Management Measures

Measure	Sample	What is it?	What does it do?	How much does it cost?
Speed Zone Changes		Typically, for collector and arterial streets, the 85 th percentile speed is used as a guide. Past studies have proven that unrealistically low speed zones are ignored by drivers.	Little speed or volume change (without enforcement)	\$20,000 (for signs and studies)
Street Narrowing		Different from chokers in that this would narrow an entire street rather than a point in the street. Street widths between 22 and 32 feet have been considered and used in some cities for specific applications.	Speed reduction (4.5 MPH) Low volume reduction or diversion	Typically done at construction of street or with reconstruction



Sample Neighborhood Traffic Management Measures

Measure	Sample	What is it?	What does it do?	How much does it cost?
Stop Signs		<p>Typically placed at intersections. Warrants determined by MUTCD. Significant research on unwarranted stop signs and their negative impact. MUTCD specifically indicates stop signs are not to be used for speed control. The volume warrant is for 500 vehicles entering the intersections for each of 8 hours.</p>	<p>Mixed findings on speed reduction (some up some down) Low volume reduction and diversion A device for traffic control and safety, generally not NTM</p>	<p>\$250 - \$2,500 (including studies, staff time and installation)</p>
Truck Restrictions		<p>No truck signs are posted at key cut through routes affecting through truck trips not local truck trips.</p>	<p>No speed reduction Significant truck volume reduction (if enforced)</p>	<p>\$ 250 - \$1,000</p>

Source for graphics:

Traffic Calming, American Planning Association, Planning Advisory Service, Report Number 456, July 1995.

Handbook for Walkable Communities, Burden & Wallwork.

Civilised Streets: A Guide to Traffic Calming, Environmental & Transport Planning, Brighton, Great Britain, 1992.

Note: Cost Estimates are in 2000/2001 dollars. Average construction cost inflation per year based on 10-year data is 2-3% per year.

Meeting Minutes



Camas Neighborhood Traffic Management Plan Steering Committee

March 29, 2000 Kickoff Meeting Minutes

Attending:

Eric Levison	Woody Woodruff	Linda Dietzman
Randy McCourt	Bruce Lindoff	Melanie Canifax
Bob Howe	Joe Keller	Walt Stille
Natalie Wood	Chris Kralik	
Doug Murray	Greg Anderson	

Following introductions, Eric Levison gave a brief overview of the history leading up to this study. Randy McCourt reviewed the study scope, schedule and key activities for the next six months leading to October 2000. He also provided an overview of traffic calming measures with slides from the area and Sweden showing speed humps, medians, diverters, circles, entry treatments, speed trailers, narrow streets, curve-linear streets, center line treatments and some school area treatments. The discussion then moved to each committee member, describing positive attribute of the transportation in Camas and livability as compared to negative or problem areas in that respect. The following listing summarizes the comments.

Positive Attributes

- ❖ City typically addresses issues before they become problems – keeps trying to solve problems and provides environment to create change
- ❖ Small town feel
- ❖ Police enforcement has been responsive to neighbors needs and speed trailer application has been helpful
- ❖ There have been cases where when the street function has changed, the speed limit has been lowered to reflect the character of the street
- ❖ Speed limits seem lower than other towns where people have lived
- ❖ New development appears to address livability better than before (house back to arterial streets)
- ❖ Want to maintain or improve the quality of life in Camas – not have it go down. Traffic is one of the most visible means to measure quality of life.

Possible Issues/Problem Areas

- ❖ Traffic seems to be growing quickly and speeding seems to be the number one problem on residential streets
- ❖ Many key through streets allow houses fronting access (driveways) which is not compatible with function of the street – this is particularly a problem for many of the older streets in town that have had traffic grow because they were the only through road. Many of these streets have rural character from the past with fronting homes, but now have greater traffic. No other through roads designed to carry through traffic were provided.
- ❖ School areas and traffic are a concern – many people come into these areas.

- ❖ Hilly topography results in speeding – in many cases the roads are not designed for these growing conditions.
- ❖ It has taken a long time to address traffic calming issues
- ❖ Continue to make mistakes with new development allowing residential uses to front onto major through streets.
- ❖ WSDOT seems to have a negative image of speed humps.

Upcoming Meetings

Wednesday May 10, 2000 at 4:00 PM

Wednesday May 31, 2000 at 4:00 PM

Wednesday June 14, 2000 at 4:00 PM

Meetings to be at City of Camas City Council chambers.

- ❖ Scope of Services Outline and Schedule

Task 1: Establish Involvement Process

- ❖ Advisory Steering Committee
- ❖ Technical Advisory Committee
- ❖ Stakeholder Interviews
- ❖ Council Workshops
- ❖ Committee Surveys

Schedule for Meetings (tentative)

1. April Kickoff
2. May Policy Draft
3. May/June Neighborhood Route/Criteria
4. June/July Process
5. September Draft Plan
6. October/November Recommended Plan

Task 2: Identify Neighborhood Traffic Management Measures

- ❖ Matrix of NTM measures
- ❖ Meeting with implementing agencies (Portland and Beaverton)

Schedule: May

Task 3: Develop Criteria for Use of NTM Measures

- ❖ Neighborhood Route Characteristics
- ❖ Matrix of Criteria
- ❖ Priorities of a Process

Schedule: May/June

Task 4: Develop Policy Framework

- ❖ Process Development
- ❖ Criteria/Thresholds for action
- ❖ Implementation Policy needs
- ❖ Design Standards Needs

Schedule: July

Task 5/6: Draft NTM Plan

- ❖ Checklist of process
- ❖ Process flow chart and test of process
- ❖ Draft Plan
- ❖ Recommended Plan

Schedule: September/October



Camas Neighborhood Traffic Management Plan Steering Committee May 10, 2000 Meeting Minutes

Attending:

Eric Levison	Bob Howe	Joe Keller
Randy McCourt	Doug Murray	Woody Woodruff
Bruce Lindoff	Linda Dietzman	Chris Kralik
Natalie Wood	Dara McNeice	Stephanie Ongtooguk
Walt Stille		

The initial discussion focused on a problem statement that captured the issues associated with neighborhood traffic and the goals of any program. After review the material provided at the meeting, the following edits were made:

Problem Statement

The issues of traffic speed and volumes in neighborhoods affects the quality of life throughout Camas. As the city grows in the future, a citywide approach to neighborhood traffic management (that includes education, enforcement and engineering) is needed so preserve the operation of streets at the speeds and volume that meet their designated function.

Goals

Planning should address needs for arterial capacity or lack of connectivity that can result in traffic infiltration through neighborhoods.

Streets should be designed and built to operate at their designated speed and volume.

Measures should enhance safety and not impede the multi-modal use of the streets (measures should not limit the use of the street by public transit, emergency response, school buses, delivery vehicles, pedestrians or bicycles)

Solutions should assure that they do not simply move the problem elsewhere.

Allocation of public funds should be prioritized to the greatest needs.

Criteria

A series of typical criteria that can be used in a NTM plan was provided by Mr. McCourt. The committee provided additional input as to the types of criteria that could be considered in a neighborhood traffic management plan.

- Presence or absence of centerline striping
- Accident history (safety criteria)
- Presence of crosswalks (pedestrian criteria)
- Relationship of traffic volume to time of the day (volume criteria)
- Number of stop sign violations (safety criteria)
- Future traffic volume (volume criteria)
- Visibility Impairment¹ (safety criteria)

The committee worked together to map out streets where issues of traffic speed and volume are issues today. The attached map reflects the streets identified in the exercise.

Finally, the committee provided input as to the roles of the citizens, neighborhood groups, commission/council and staff. Key ideas included:

- Citizens can see day to day problems that others cannot see
- Council balances public input with professional guidance
- Citizens can work with experts to identify solutions
- Technical staff can help prioritize needs
- Leaders need to select projects and allocate funding
- Neighborhood groups are responsible for sharing information, educating and taking information back to neighbors
- There must be a process for citizens to go through
- Citizens can be part of on-going advisory committees
- Even if citizens are not in a neighborhood association, they should have access to the NTM program
- Communication between all levels is critical for success

Next Meeting: May 31, 2000 4:00 PM

¹ Related to lighting and/or vegetation/physical obstructions that block sight lines.



Camas Neighborhood Traffic Management Plan Steering Committee May 31, 2000 Meeting Minutes

Attending:

Eric Levison	Bob Howe	Joe Keller
Randy McCourt	Doug Murray	Woody Woodruff
Bruce Lindoff	Linda Dietzman	Chris Kralik
Natalie Wood	Dara McNeice	Stephanie Ongtooguk
Greg Anderson	GUESTS: Randy Wooley, Beaverton Ellis McCoy, Portland	

An initial discuss regarding the meeting minutes was held. The 5/10/00 minutes were requested to add visibility impairment to the criteria listing. A question regarding the use of the speed trailers in Camas was asked (the Police handle it today). A request was made to state that streets should be “proactively” designed and built to operate at their designated speed and volume.

Mr. Ellis McCoy from the City of Portland and Mr. Randy Wooley from the City of Beaverton were present to outline their experiences with implementing neighborhood traffic management plans in their cities and to answer questions from the committee about citywide plan development.

Portland:

- Started in 1984
- Public involvement was critical
- Have several programs (School, local street, district collector, streamline hump)
- Started out with circles and a diversion oriented program – evolved in the 1990’s to a hump and speed reduction program due to cost and effectiveness
- Target speed of 26 to 27 mph
- Do not place humps on slopes over 6%
- Council provided policy directive to improve livability
- All projects have a balloting (petition) process
- Complex projects have a traffic committee set up to guide planning and design
- Process is very important no matter how slow it may be to assure success

Beaverton:

- Had done traffic calming ad hoc before 1996 Bond Levy passed to fund it
- Council wanted Citywide program, building from other cities work
- Public involvement is extensive to best serve entire neighborhoods
- Work cooperatively with police enforcement as a first step
- Process includes data collection, criteria and prioritization
- City has a Traffic Commission which reviews project development
- Anybody can forward a project – requires 51% petition

- Larger projects form a committee to steer project development
- Once the project is developed, it must get 67% approval from owners near site
- Process takes about one year to complete – sometimes results in frustration
- Before citywide process, had situations where neighborhood process did not exist resulting in calming measures being removed
- Process is important to keep council involvement minimized
- Emergency service providers are commonly on project committees

QUESTIONS:

- 1) How does NTM work with street sweepers, fire and police?
Have developed primary and secondary response routes – NTM prohibited from primary response routes in Portland. Cumulative impact on response time is key concern of emergency service providers. Generally, should include this group on project development – they can outline the comparative impacts in the decision process.
- 2) Does your program include requirements for new development?
Portland has little new development and Beaverton's plan is too new but has a goal to incorporate NTM into new development.
- 3) Use of curb extensions and island?
Portland has shied away from these lately due to construction costs and higher maintenance costs due to landscaping.
- 4) Staffing needs?
Recent bond levy in Beaverton funded three positions. Portland has gone from a high of 8 to 12 people down to about 5 people in the last five years to a new organization where the NTM elements of projects are folded into planning, capital projects and design rather than separate group. Both speakers recommended having a single program focus at the beginning is important to success and starting slowly/small – to allow staff and citizens to work out process and details (pilot projects are a good example).
- 5) How is monitoring done – is it safer or just fewer complaints?
Both cities require before and after studies to determine effectiveness of project and types of measures. Beaverton does after study a year after implementation. Most after studies have shown lowered speeds and more importantly significant reductions in the number of high speed vehicles.
- 6) What are the rough budgets for NTM?
Beaverton's levy provides between \$300,000 and \$500,000 per year. Portland's budget was severely cut back with reorganization. It was as large as about \$2 - \$4 million per year (primarily from motor vehicle fees).
- 7) What have been some of the signing and enforcement issues with speed?

Both cities have had better luck with speed zones that are close to reasonable limits – enforcement seems to break down when speed zones are set unreasonably low (officer’s don’t ticket since judges waive tickets). Beaverton’s first actions are use of the speed trailer, photo enforcement and speed watch to raise awareness.

8) Do you use stop signs?

Stop signs are viewed as traffic control devices not traffic calming. The City of Portland did a bunch of stop signs in the past and did not find them useful for speed control.

9) How has photo enforcement worked?

It has been used as another tool in the traffic calming tool box. Portland and Beaverton have limited statewide authority to use photo enforcement. Legislative requirements are critical for enforcement.

Committee members were asked to complete their criteria scoring (10 points “any way you see them” system – see attached form if you have not done it already) and review the neighborhood route map for edits. These must be to Eric by no later than Friday June 9 at noon.

Next Meeting: Wednesday June 14, 2000 4:00 PM

Criteria	Score
Speed	
Volume	
Pedestrian Activity	
Street Classification	
Amount of Cut Through Traffic	
Impacts to Emergency Route	
Amount of Traffic Diversion	
Cost	
Key Land Use	
Pavement Condition	
Residential Acceptance	
School Zone	
Bus/Truck Route	
Presence or absence of centerline striping	
Accident history (safety criteria)	
Presence of crosswalks (pedestrian criteria)	
Relationship of traffic volume to time of the day (volume criteria)	
Number of stop sign violations (safety criteria)	
Future traffic volume (volume criteria)	
Visibility Impairment ¹ (safety criteria)	
TOTAL	10

¹ Related to lighting and/or vegetation/physical obstructions that block sight lines.



Camas Neighborhood Traffic Management Plan Steering Committee

June 14, 2000 Meeting Minutes

Attending:

Eric Levison	Chris Kralik	Joe Keller
Randy McCourt	Woody Woodruff	Greg Anderson
Bruce Lindoff	Linda Dietzman	
Natalie Wood	Stephanie Ongtooguk	Steve Quinn

The meeting opened with discussion of grade or slopes of some roadways in Camas as a comparison to the 6% criteria that the City of Portland mentioned as a limiting factor for speed hump placement. Grade as expressed in percent represents how steep a road is, the high the percent, the steep the road. A 12.5% grade is equal to 12.5 feet of vertical rise for every 100 feet of horizontal distance. Eric listed the grade of several streets in Camas as samples, noted below:

Street	Location	Grade
18 th Loop	Ostenson Cayon to 18 th	12.5%
Fargo	Retaining wall to Ivy	7.25%
Pacific Rim	Landa to west	7%
3 rd	Crown Rd to Joy St.	6%
Benton	Drake to 12 th	5.6%
Dalia	32 nd to 34 th	18%
Norwood	7 th to 8 th	11.75%
Elm	10 th to 11 th	15%
14 th	Garfield to Ione	3.6%
Oak	6 th to 19 th	17%
22 nd	Birch to west	6%
22 nd	West to Division	11%
22 nd	Benton to end	15%

Review of the 5/31/00 minutes took place and the criteria scoring exercise results were presented. A few of the committee members mentioned that they had not seen the accident criteria when they did their scoring. The table on the following page provides the cumulative scoring of each criteria by the committee members.

The four highest scoring criteria were speed, volume, school zones and pedestrians. The following 12 criteria were within four points of one another. Comments from the committee indicate that safety related criteria should be highlighted.

Criteria	Score
Speed	25.75
Volume	15.6
School Zone	10.2
Pedestrian Activity	8.25
Visibility Impairment ¹ (safety criteria)	5.9
Amount of Cut Through Traffic	5.25
Cost	5.05
Accident history (safety criteria)	5
Impacts to Emergency Route	4.45
Street Classification	4.4
Residential Acceptance	4.25
Presence of crosswalks (pedestrian criteria)	3.25
Key Land Use	2.55
Pavement Condition	2.25
Relationship of traffic volume to time of the day (volume criteria)	2
Number of stop sign violations (safety criteria)	2
Amount of Traffic Diversion	1.5
Future traffic volume (volume criteria)	1.5
Bus/Truck Route	.75
Presence or absence of centerline striping	.1

¹ Related to lighting and/or vegetation/physical obstructions that block sight lines.

Discussion of NTM Process

Using the June 9, 2000 memo as a guide on key questions, the committee discussed the framework of a process for NTM.

Tiering. The general consensus of the committee is that the NTM process should be tiered – providing education, enforcement and low cost strategies at the first level, analysis, prioritization and funding at a second level and project development, implementation and monitoring at a third level. The tiering approach was noted to be a more strategic and proactive approach to NTM, allowing the neighbors to buy into the any plan that may be developed. Committee members stated that by having a process and a standard program makes it easier to communicate with citizens, making it easier for citizens, various departmental staff and officials to explain to each other how to address problems and justify action in a consistent manner.

First Steps – “When do we have a problem?”. The discussion on this subject ranged from individuals ability to initiate action to establishing a traffic commission to involving neighborhood organizations to requiring written letters and signatures. Key comments included making sure there was a common understanding and response at all levels from council to staff to the police department to neighborhood leaders. There were concerns expressed about requiring citizens to work within the neighborhood associations, write a letter or meet with UCAN. It was believed that the neighborhood groups have high turnover of leadership and little institutional memory. Other statements were made regarding the need for citizens to be involved in the solution beyond their individual desires – involving others. It was thought that Police records could be used to help define if there was a problem (number of citations in a year,). It was stated that one complaint does not constitute a problem. The committee was in agreement that the process should include a step that initiates the first tier of the NTM process when either a citizen has submitted a letter with 3 to 5 property owner signatures or a neighborhood association requests that action be taken on a specific street.

What happens first? The majority of discussion focused on this subject. There was consensus that there should be a standard response by the city – including things such as education, enforcement, data collection and involvement. It was noted as very important that the citizens should take ownership of the process.

Education: This could include a hand out on NTM, a web page with additional information about the process, presentations to neighborhood groups by staff/police, a neighborhood newsletter/ mailing, use of the speed trailer, initiation of neighborhood speed watch where neighbors use a radar gun to track speed of vehicles and provide license numbers to the Police Department of speeders for them to send an informational letter and NTM yard signs.

Enforcement. This could include focused patrols, patrols combined with the speed wagon and if legislative authorization exists in the future – possible use of photo enforcement.

Data Collection. As part of the information packet provided to the citizens, a data collection form could be provided to use with the neighborhood speed watch radar gun or on other days to obtain information about volume and speed of traffic. Police records regarding number and type (speed) of citations, as available, could be provided. Accident records for the prior three years could be reviewed to determine if any collisions occurred on the subject street. The speed trailers could be made to be “smart”, saving speed and volume data at ever site they are placed.

Involvement. There was little discussion on this topic – but as an expansion of the education task, neighborhood meetings could be held to discuss the actions being taken and to seek broad support of the upcoming steps in the process.

What happens if these efforts do not work? Following a period of time (2 to 6 months) should the neighborhood association or citizen group indicate that the problem is not improving, the city staff, residents and neighborhood group(s) will determine if further action is necessary. This feedback step would be done collectively. If the point is reached that actions taken are not enough, more information would be needed to determine the extent of the problem. The City could use a data collection check list initiate data collection for speed, volume and other typical characteristics on the subject street. Following data collection and analysis, further first tier activity could be pursued (enforcement targeted by time of day using the data collected as a guide, striping changes, other signing needs). A concern was raised about how long a problem would stay in the first tier. It was felt that by the third cycle that any issue would forward into the next tier for further consideration.

What determines if a problem requires more than first tier response? There was general consensus that a threshold is needed to determined if a problem needed further tier 1 response or should considered for more extensive neighborhood traffic management measures. Comments were made that the threshold could be set high to assure the greatest needs are met first or set low to address many needs. The threshold could be extensive with lots of measures or simple with the most significant criteria. If a project exceeded the threshold(s), it would move to the next step involving prioritization, funding and solution development. If the project did not meet the threshold, further tier 1 concepts could be considered (as noted about it was requested that a problem not stay in the first tier forever).

If the threshold is passed, does that mean we build speed humps? The discussion on this next step focused on prioritizing the problem locations using the criteria and determining if funding is available to proceed to the next tier. It was mentioned that the prioritization process will be drafted up for committee review before the next meeting. Funding could be provided from public or private sources. It was discussed that if funding did not exist, projects would not proceed to the next tier. The petitioning of fronting/nearby property owners would occur later.

What is the last tier? There was limited discussion on this item. Project development teams were discussed to allow the neighborhood input to the solutions. Petitioning would occur before the project would go further into development. If local approval is reached,

solutions could be developed further and reviewed by the neighbors for acceptance before design work starts. Design, implementation and monitoring (before/after studies) would be part of the last tier.

How can new development be incorporated in the process? Two areas were discussed; 1) incorporation of traffic calming features in the design of new projects; and 2) mitigation of impacts by new development on existing neighborhoods. The potential of separate vs combined process was discussed. The group generally wanted the process to be all inclusive, not separate programs. Funding by a private development could allow an existing project on the priority list to move forward. The new development would go through a similar process to implement NTM in existing neighborhoods as it would if the neighborhood initiated the NTM process on their own.

What is the City Council's role? The clear direction was to have the council approve the process for NTM and funding on an annual basis. The council would have approved standards that can be used without their involvement in implementation. Annual hearings on funding (November) would be the place where residents that want projects to move ahead could provide input into the allocation of funds for any NTM program. Development actions would be another place where the council would be involved in NTM issues, through potential mitigation measures. The decision to publically fund an NTM program would be the council's.

NEXT MEETING: Wednesday August 23, 2000
 Review draft plan and input from stakeholders and technical
 committee



Camas Neighborhood Traffic Management Plan Steering Committee August 23, 2000 Meeting Minutes

Attending:

Eric Levison	Chris Kralik	Doug Murray
Randy McCourt	Greg Anderson	Bob Howe
Chris Maciejewski	Woody Woodruff	Joe Keller

The meeting opened with discussion of the timeline that groups would face for NTM improvements if they had already gone through the petitions, data collection, and education/enforcement stages. A few of the committee members expressed concern of groups who may have started parts of the process before the plan existed and not having them start from square-one in the NTM process. It was determined that these groups would have to enter the NTM plan as any other group would, but that they would move through the steps much faster since they had already completed several of them.

Review of Input from last meeting

Review of the 6/14/00 minutes took place and generally no concerns were presented. The general consensus of the committee was that the NTM tiering was O.K. The timeline was set at 6-8 weeks to present the plan to the City Council.

Discussion of TAC Input on the Draft Plan

Snow Routes. From the TAC meeting, it was determined that speed humps were not desired on snow routes. The point was raised by the committee that snowplows only work 3-5 day per year, while speeding takes place 365 days per year. Additionally, the committee decided that the snowplows would not damage the speed humps, and that the plows should not receive any damage due to the type of blade used. However, the committee decided that where the snow plow routes coincide with the emergency routes, speed humps would not be the desirable NTM measure.

Emergency Routes. At the TAC meeting, it was stated that the speed humps have an unacceptable effect on emergency vehicle response time (1 to 9 seconds). The emergency response personal want no speed humps on their designated routes. The general consensus of the committee was that speed humps do not need to be used on emergency response routes. Other NTM tools are available and would be a more appropriate solution to the problems on the emergency response routes.

Funding. The TAC committee raised the concern of funding maintenance for NTM improvements. The concern was that project would be constructed, and then the painting/signing/...etc that is part of all projects would not be maintained. The NTM committee discussed the idea of having funding set aside for maintenance for each project. For example, a \$50,000 project should have \$5,000 set aside for maintenance.

The general consensus of the NTM committee was that having sustainable projects was desirable.

NTM Plan Discussion

Background. It should be stated that NTM would fix existing problems and not create any new problems on existing streets. The background section should include a statement that the NTM plan will seek corrective measures for a problem, not just put in a speed hump. Finally, there should be a statement that addresses future development adhering to the NTM goals.

Problem Statement. The committee reviewed the problem statement and determined it to be generally acceptable with one addition. The problem statement should be changed to include a statement regarding the sustainability of all NTM improvement projects.

Goals. The goals portion of the NTM plan was reviewed and changes were discussed by the committee. The idea of having sustainable projects was once again raised and agreed upon to include in the goals. The goal regarding designing and building streets to operate at their designed speed and volume was discussed and suggestions were made to improve the goal. The committee decided to add that appropriate measures would be used based on the problem and the street use.

Functional Classification. This topic was discussed at length by the committee in order to improve that NTM plan. Eric and Randy gave examples of which streets had which classifications so that the committee members had a better idea of the classification system. In general, the committee didn't agree with some of the classifications. The point was raised that Camas does not have many true arterials, which receive additional funding. The committee agreed that future roadways designed to be arterials would be desirable to increase connectivity and traffic flow through the city. Through further discussion, the committee decided that the idea of functional classification would cause a problem with the NTM process. It was decided that the NTM should use a classification system based on designations of A, B, and C instead of local, collector, and arterial. A map will be created that defines the class of each roadway and reviewed by the committee.

Problem Identification. The committee decided to have five co-signers instead of four. The cosigners should not be identified as only owning different property, but also as having different addresses. This would allow residents of apartments equal rights as homeowners. Additionally, it was discussed and agreed upon that problems can be identified by City Staff and City Police for the NTM process.

Analysis. The analysis portion of the NTM plan was discussed and clarified, but no changes were made to the draft. The committee discussed the reasoning behind the threshold numbers for Stage 2 consideration, and Randy and Eric provided input on the basis of collected data and engineering experience. Randy explained that the speed thresholds come from experience with driver expectations and complaints. The volume thresholds also come from experience and collected data. The number of 700 vehicles per day was allowed for the local streets after Eric and Randy gave examples to the group

of how that number compared to the Camas streets. In addition, it was explained that the 700 vehicle per day threshold would include future project generated volumes.

Prioritization. Each part of the scoring process was analyzed and evaluated by the committee. Randy explained that he used the results of the scoring criteria survey completed by the committee to determine scoring criteria for the NTM plan. In addition, it was discussed that the criteria are things that should be easily measured and can be included in future GIS developments. The committee agreed to the point weighting for speed and volume for all three categories. However, the volume scoring for “B” roadways was changed to 1 point for every 300 vehicles per day from 1 point for every 1000 vehicles per day. The speed scoring basis was accepted for all three categories. The safety measure portion of the criteria was discussed at length. The two main concerns of the committee were that visibility and the presence of young children were left off of the criteria. The local street (category “A”) scoring was used as the basis of discussion and reevaluation. It was noted that schools had the potential of scoring under several criteria, and may be weighed to heavily. The committee decided that a revision to add criteria for children and visibility was necessary to have the scoring results work in a desirable fashion for the Camas street system. A category of young children under the age of 14 was included to replace the partial private funding category. The children category will be assigned 10 points based on a rating of children per household. A visibility criteria worth 5 points was added to the scoring. This criteria shall be judged based on field determinations that rate the street on a scale of 0-5 using a list for a guide. The pedestrian generator criteria was changed to 5 points in addition to adding trails to the list of example generators. The school criteria was also changed to 5 points in order to meet the total score of 100. The committee decided that this scoring system for category “A” streets should also be used for the other categories, with appropriate weighting adjustments as reflected in the draft. The bonus points in Table 6 of the draft were discussed by the committee. The consensus was that the bonus points were needed to ensure that all of the NTM funding did not go to the class “C” or “B” projects. The table was changed to reflect the new category rating. Class “A”, “B”, and “C” streets will receive 30, 10, and 0 bonus points, respectively.

New Developments. The location of developments in the flow diagram was discussed by the committee. The general consensus of the committee was that it is good to make developers work with the community. Randy explained that at the prioritization level, if the developments has impact on external areas, they developer will have to move into the project development step of the NTM plan and complete the process from there. The committee decided that it would be good to have a conservative lump sum for the developer to pay into the NTM fund, which the affected neighborhood could use for any improvements their determined desirable, based on similar trip generation criteria as the TIF plan. This would keep developers from having to deal directly with the public, as well as creating additional funding for other NTM projects. The committee next discussed the new developments at the implementation step. All projects would have to pass through this step because even if they didn’t meet the impact threshold, their internal street system would have to meet NTM standards. Projects that did not meet impact thresholds would skip to implementation, where their design would have to be approved by the City. The requirement for the developments to adhere to these guidelines would be driven by SEPA.

City Approval. The City approval stage in the design was discussed by the committee. The general consensus was that the lower category the project was the lower level of approval it would need. Woody and Greg were not sure what would have to happen at the level of public hearings, and decided that they would meet with the council and provide us with a decision at a later time. Additionally, the amount of TAC involvement in the approval process needs to be defined.

Refinement. The refinement stage of the monitoring step was discussed by the committee to determine what would need to be done if the project was not working, or if the public did not like the improvement. The committee decided that if the project was constructed and was not working, the solution would be to re-evaluate the tools used and not necessarily take them out without putting new tools in their place. This would mean that the project could possibly be put back into the NTM process at the neighborhood review step, or at the prioritization step for further funding. Another point was discussed on what would happen if the citizens local to the project (who voted on it) liked the solution, but outside users complained they were slowed down and did not like that. The general consensus of the committee was that they complaining citizens should be told that they can still drive the speed limit. The committee did decide to add a statement to the refinement stage that calming measures could not be removed if they were serving their purpose unless they were creating unsafe affects in other ways.

Other General Comments

Enforcement. There was some discussion on the effectiveness of police enforcement of speeding. The committee agreed that the most effective police enforcement came from focused efforts on “hot-spots.” Additionally, the committee agreed that speed trailers only slow drivers while the trailers are present, or for a short time thereafter. The general consensus was that enforcement measures are not a cohesive measure to solving problems.

TIMELINE: Mid-September : New draft to committee
End of September: Comments from committee
September 29, 2000: Mail drafts to stakeholders
October 2000: Public Meeting (set open house date)
October 2000: Stakeholder interviews



Camas Neighborhood Traffic Management Plan Steering Committee September 27, 2000 Meeting Minutes

Attending:

Eric Levison	Mike Brown	
Randy McCourt	Greg Anderson	Bruce Lindoff
Doug Norcross	Joe Keller	Woody Woodruff

The meeting opened with an overall discussion of the draft review plan – generally everyone said it was workable, leading into detailed discussion of issues. The draft plan will be immediately updated and sent to the committee, stakeholders and available for the public open houses. The following items for discussion are followed by brief summaries that describe how the draft plan will address them.

ITEMS/QUESTIONS

- Trigger for evaluation confusing – 700 vpd, 600 vpd, 500 vpd
The revised plan will have only two levels – 700 vpd and 600 vpd.
- “Softer” items not mentioned in detail, such as landscaping and trees
Page 19, Table 7 lists street trees in every street category. In the revised text street trees will be modified to street trees and landscaping. Additional text will mention that design details will need to be developed for these non-engineering (softer) items
- In step 4 project funding approval is done before the projects are detailed – how are cost estimates going to be done at this point in the process?
This discussion evolved into three areas: 1) what/when should the budgets be?; 2) what happens if in steps 5 and 6 the project team generates a project that exceeds budget?; and 3) what happens to maintenance costs?
 - 1) *the budgets should be set and approved in step 4 to assure that all the public process associated with step 5 will result in implementation. Without funding approval, step 5 could end with agreement but no project. Because there is little experience in NTM implementation Camas, some initiate concept budgeting techniques should be used. For example, utilizing the approximate cost data from the listing of NTM measures in the appendix – guessing the type of measures that may be possible and establishing a tentative budget for step 4. Generally speaking, projects below \$15,000 would be considered small projects, \$15,000 to \$35,000 medium sized projects and about \$35,000 large projects (for future reference these costs should be indexed starting in 2000 using the Engineering News Record Construction Cost Index). Setting these budgets will improve over time as more projects are implemented and local knowledge about costs increase.*
 - 2) *If the initial project budget is exceeded, it should be required that one of three things is required to occur: a) the project is sent back to the project team with the understanding that they will redesign it within budget; b) private funds are utilized to make up the difference between the budget and the project cost; or c) the project is sent back to step 4 to compete with other projects for additional public funding.*
 - 3) *It will be the policy of this plan that all landscaping associated with all implemented NTM measures will be maintained by the homeowners association that requested the project. Failure to maintain landscaping could result in project modification in the future. If there is no homeowners association, the city will either maintain the landscaping or attempt to design*

the project with minimal maintenance needs. All striping, signing and paving will be maintained by the city.

- In the scoring system the additional points for private funding contributions were removed from the prior draft – should not there be an incentive to promote private funding such that the same public dollars can go further?

It was the collective decision of the committee to include some bonus scoring for project with private funding. The objectives were to 1) increase the bonus for higher levels or percentages of private funding (not linear) to encourage matching funding; 2) place a maximum amount on local funding bonus so that you do not get more points for more dollars; 3) relate the bonus to the project prioritization score so that higher scoring projects get more of a bonus related to private funding than do lower scoring projects; 4) maximum bonus should be 20 points; 5) private funding means any non-City of Camas related funding (UCAN grants cannot be utilized to get bonus points since they are City public funds).

To address the relationship between higher scoring project and the bonus, the bonus could be set at a maximum level of 20% of the prioritization scoring. In cases where point totals are below 100 points, this would result in 20 or fewer points. For example, a project that has a prioritization score of 85 points could not get more than 17 bonus points. This can also be used to address the issue of “buying points” by capping the total amount of the bonus. Also by sliding the scale for points relative to the matching share it assures that to gain the bonus points your must contribute a significant percentage of the costs rather than the true dollars. For example, the scale could be set as follows:

	<u>20 point scale</u>	<u>10 point scale</u>
0-9% private match	1 bonus point	1 bonus point
10-19%	2	1
20-29%	3	2
30-49%	6	4
50-75%	9	7
76-99%	20	10

Again the maximum bonus would be limited to the value of 20% of the prioritization score (100 points plus the street category bonus – maximum 125). With this bonus, the highest score a project could achieve is 145 points. It may be desirable to limit the private funding bonus to 10 points since a “C” route could get half its score if the funding bonus is 20 points. With a 10 point bonus, it could only get a third.

- Discussion at a work session with City Council confirmed that the delegated authority model for the process was appropriate

Delegating authority of the project to public works was satisfactory as long as there were criteria that the council approved. The plan now includes three places where Council involvement is required in the process: 1) funding in step 4; 2) approval of measures on streets with greater city function (“B” and “C” routes); 3) should some form of appeal take place.

- The role of new development in the NTM process is confusing related to how the actions in steps 4 and 6 relate

Figure 4 will be modified along with associated text to state the relationship between internal roadways to the development and external impacts of the developments.

- The developer “buy out” should be different (larger) for “B” routes than “C” routes

The committee agreed that the “B” buy out should be larger due to complexity of the type of project that may be required on these routes. For now the amount will be set at \$35,000 and both the \$25,000 and \$35,000 values will be revisited in the updates to the plan. They should both have ENR construction cost indexes applied annually following 2000.

- The difference between the Traffic Impact Fee approach and exaction approach in the text seem a little confusing and should be reviewed for consistency
Modifications to the text have been made address this.
- “C” routes are not the same as local streets in the overall process – how are local streets to be addressed?
The committee decided that “D” routes should designate all other local streets for clarity. The NTM process for “D” routes would be the same as for “C” routes except they would not be allowed the functional class bonus points.
- The statement that on “A” routes the speed limits should be set by the 85th percentile speed is a good idea, but the current policies of the city do not reflect this. Changes will be necessary to bring consistency to the setting of speed limits on these routes.
This comment was noted and the text will reference that a policy decision is necessary on this item.
- Can speed violation fines be adjusted?
Fines are set through WCR in Washington to avoid disparity throughout the state. Doubling of fines are permitted with proper signing for school and construction zones. Currently, WAC or WCR do not provide provisions for any other increases in speeding fines. In the Infraction Rules for Courts of Limited Jurisdiction (IRLJ) Section 6.2” the penalty for any infraction listed in this rule may not be changed by local court rule. The court may impose on a defendant a lesser penalty in an individual case”. The fine schedule is set through these rules.
- Payne Road should be included in Figure 1
This change was made.
- If a sidewalk gets built during the NTM evaluation process, do the points for the NTM project get reduced to account for the fact that a sidewalk is now available?
It was the direction of the committee that if a sidewalk was built, it may be a Stage 1 action to improve conditions and the prioritization score should reflect that change. Text will be added to the plan to reflect this detail.
- On page 3 it is mentioned that speed humps should not be utilized for emergency and snow plow routes – We thought it was to be only for emergency routes?
This change has been made in the text.
- Create a graphic for step 5 that summarizes all the elements included in the discussion.
This will be done in the next version.
- Why is City Council approval needed for “A” and “B” routes on page 20?
This was done to avoid having local groups take steps on roadways of city wide significance in Camas that would be considered not in the city’s overall best interests. By having this additional hearing, the City Council can address the nature of these city-wide changes appropriately and with adequate public input which may extend beyond the project limits.
- How often will the maps and details of the plan be updated?
The street plan is approved annually in July and the comprehensive plan updated every 5 to 10 years – which were the two most logical times to update the NTM plan. It was felt that the plans maps and criteria should be considered and updated, as needed, annually with the street plan. The objective is that City Council approves the street plan and can approve changes at one time in the year rather than scattered through the year, without overall context.

The closing discussion revolved around potential locations in the city that the NTM process could be tested to evaluate how the process works. The following list of streets was identified for consideration. The police records will be used to identify which of the streets has the highest number of tickets issued and complaints. One street in each category will be selected based upon this criteria.

“A” Routes

Lake Road

“B” Routes

Fargo/28th

Cascade (28th – 18th)

Sierra (48th - 23rd)

Pacific Rim Drive (east of Parker)

“C” Routes

Whitney

19th

21st

Garfield

Ione

22nd

Knapp

Dallas (because we have most the data already)

NEXT STEPS

The plan will be mailed out to the committee the first week of October. The stakeholder group will get a copy of the plan and be contacted for interviews from the beginning of October through the end of October. Two public open houses will be conducted following a newspaper article on the plan. Following these activities, all comments will be collected and reviewed by the Steering committee and TAC. A revised version of the plan will be prepared for review and approval of City Council in November/December.

Stakeholder Interviews

MEMORANDUM

TO: Eric Levison, City of Camas

FROM: Ransford S. McCourt, P.E., P.T.O.E
Chris Maciejewski

DATE: March 12, 2001

SUBJECT: Camas NTM Stakeholder Interviews

P00063

The purpose of this memo is to summarize the stakeholder interviews conducted by DKS Associates as part the development of the City of Camas Neighborhood Traffic Management (NTM) Plan. The following questions were the main topics in the stakeholder interviews. Stakeholder comments have been summarized for each question. The attached Table 1 graphically summarizes the stakeholder responses to each main topic from the questions.

1. Do you understand what Neighborhood Traffic Management is? How would it effect your operation? What is your overall impression of the proposed NTM Plan?

Greg Kohn, UPS: Yes, I understand the plan. The mitigations could impact our delivery routes. The plan itself is very well laid out.

Monte Brachman, City of Camas Public Works: Yes, I understand the plan. It will have no effect on our operation. Everything in the plan looks good.

Curt Christianson, Fort James Corporation: Yes, I understand what the plan is trying to do. I'm not sure what the impacts are to our company. Overall, the plan looks good and is something that will meet the communities needs.

Don Chaney, City of Camas Police Department: Yes I understand the plan. It won't change our operation because it is reflective of what we currently do. Overall, the plan looks O.K.

Dave Artz, City of Camas Fire Department: Yes, I understand the plan. I understand the impacts it might have to our operation. I have been involved with the City from the start on the project. The plan looks good at this point.

Dick Essex, Camas School District: Yes, I understand the plan. It will be needed with the future growth of the community.

Jim Cox, The Columbian: Yes, I understand the plan. It would not impact our operation because we operate in the early morning hours at a slow service rate. The overall plan looks good and very comprehensive.

Andrew Dugger, Camas Post Office: Yes, I understand the plan. It could potentially impact our delivery routes. Overall, the plan is well thought and laid out.

Ed Lagergren, WSDOT: Yes, I understand the plan. Overall, it looks good. The two-step process is a commonly used standard for this sort of plan.

Damon Webster, Home Builders Association: Yes, a NTM plan should benefit residential areas by discouraging speeding and pass through traffic on existing local access streets. The NTM Plan would effect the design of new improvements for both the public and private sector. However, meeting the requirements would probably only marginally increase the cost of design. Overall, the NTM plan will benefit everyone. The plan will help the public address their concerns with existing problems, mitigate existing problems, and prevent future problems from occurring. The plan may also help minimize neighborhood opposition to new development.

2. The proposed process outlines the procedures to define a problem, develop solutions, and prioritize projects. Is this a reasonable process? Do you have any concerns or suggestions as to how to improve the process?

Greg Kohn, UPS: If the timeline from the beginning to end of the process is reasonably short, the process looks good. Otherwise it seems that projects may be tied up in a political process.

Curt Christianson, Fort James Corporation: Everything looks good.

Don Chaney, City of Camas Police Department: The process is a reasonable one. However, the flow chart is too complex for publications to the community. A simplified version should be created that can be put on a website, in flyers, and in packets for walk-ins at the City or library.

Dave Artz, City of Camas Fire Department: It looks reasonable. No changes are needed.

Dick Essex, Camas School District: It looks good. We can't expect to have anything better.

Jim Cox, The Columbian: It looks great. The process is very detailed, especially the prioritization. No suggestions for improvement.

Ed Lagergren, WSDOT: The process looks understandable. A simplified version should be created for distribution to the public.

Damon Webster, Home Builders Association: Initially, the graphical portrayal of the NTM process seems too involved and cumbersome to complete. However, given the funding constraints placed on a public agency, the process may not be easily simplified.

3. A significant policy element addresses future problems by requiring that traffic impacts to neighborhood streets be mitigated as part of the approval process for new developments. Site plans will need to integrate NTM measures into their street designs to head off future problems. Projects that create off-site impacts on neighborhoods streets will have to mitigate those impacts. Are these appropriate requirements?

Greg Kohn, UPS: These are excellent requirements that should make established citizens happy.

Curt Christianson, Fort James Corporation: These are definitely appropriate. Requirements are needed to insure the implementation of the NTM Plan.

Don Chaney, City of Camas Police Department: Generally the requirements are O.K. We need to be sure that another level of bureaucracy is not added to the development process because in Camas, the approval comes from a citizen council. Their reviews and opinions could tie up developments. To avoid a problem with this, we need to be sure that the standard NTM toolbox is applied appropriately to each project so that changes will not be made at the time of review.

Dave Artz, City of Camas Fire Department: Yes, the requirements are reasonable. They are already being used with current developments to a certain extent.

Dick Essex, City of Camas Fire Department: The requirements look good. We need to be sure that the new developments include a safe place for children to catch the school bus.

Ed Lagergren, WSDOT: This is an appropriate part of the development process and is a key part of any NTM Plan. Requiring developments to work with the NTM Plan is just another step to mitigating their offsite impacts.

Damon Webster, Home Builders Association: Yes, as long as there is a nexus between the proposed project and the identified problem, the mitigation should be a condition of approval for the project.

4. The plan requires standards to implement the NTM policies in a uniform way to minimize impacts to safety, maintenance, public transit, emergency response and other users. What types of standards would you recommend?

Greg Kohn, UPS: The idea of applying toolbox standards based on the street category is very important to the success of the NTM Plan. In general, I would like to see speed humps instead of speed bumps. The best would be to have a small raised island between the speed humps on each side of the street that an emergency response vehicle could straddle and clear, which would allow them to pass without slowing for the hump. In general, any form of speed humps is better than lane restrictions. Also, any through road closures or diversions would seriously impact our delivery route system.

Curt Christianson, Fort James Corporation: In general, speed cushions as shown in the appendix would be a much better alternative than speed humps/bumps, especially for the emergency response vehicles. The best standard for increasing safety in the downtown Camas area would be truck restrictions.

Don Chaney, City of Camas Police Department: The policy statement that speed humps should not be put on emergency routes is not necessarily the best idea. In some situations, it may be beneficial to use speed humps on emergency routes if the benefit is large enough. This should be decided on a case by case level instead of a citywide level. Any geometric mitigation such as chicanes, chokers, and medians can cause signing issues because they can be built and operable before they are signed for use. Additionally, the signing must be engineered correctly to ensure safety.

Dave Artz, City of Camas Fire Department: The emergency route designation addresses any concerns about putting speed humps in locations that would negatively impact emergency response. The mitigation involving islands/traffic circles should include a detail that parking cannot be allowed near the islands/traffic circles. These are tight turns for emergency vehicles as designed, and parking near the turn can make it impossible for an emergency vehicle to make it through.

Dick Essex, Camas School District: All mitigations need to be designed to ensure that a 40 foot school bus can safely maneuver around the radius. In general, this refers to diverters and traffic islands/circles. Speed humps do not significantly impact school bus routes, and therefore can be installed anywhere they are warranted.

Jim Cox, The Columbian: In sub-rural areas where mail is delivered to mailboxes by cars, it would be beneficial to include a standard for including landscaping strips between curbs and sidewalks so that mail box post's can be installed near the street.

Andrew Dugger, Camas Post Office: The delivery routes used by the post office could be impacted by the road closure or turn restriction implementation measures. Generally, the City should notify the Post Office of any potential route changes well in advance of implementation so that the postal routes can be adjusted accordingly.

Ed Lagergren, WSDOT: The proposed standards and toolbox look reasonable. In particular, the connected curvilinear street is an important tool to use for new residential developments.

Damon Webster, Home Builders Association: The sample NTM measures included in the draft plan all have their appropriate use. The NTM Toolbox should be refined as the plan is further developed with stakeholder and public input.

5. A number of funding options for NTM projects have been identified. Which options do you think are the most appropriate?

Greg Kohn, UPS: All seem appropriate except the fully funded mitigations for developers. They should pay a fair share amount based on their contribution to growth.

Curt Christianson, Fort James Corporation: Partial private funding by the citizens in the project area would best meet the communities needs, especially if it means improved prioritization scores. Developers should pay a fair share of the mitigations required for off site impacts based on their growth (similar to the TIF).

Don Chaney, City of Camas Police Department: Funding options that depend on council decisions per case will be difficult. The problem is that the voters might not live in the problem areas, so they will not be inclined to vote for the budget spending. Other fully funded options are good due to the substantial tax base in the Camas area.

Dave Artz, City of Camas Fire Department: All of the funding options are valid and should be considered. It would be good for developers to pay for their impacts.

Dick Essex, Camas School District: All of the proposed options should be considered because they might be the best for any number of situations.

Ed Lagergren, WSDOT: The main focus on the funding options should be on the local aspect of NTM measures. Citizens should form local improvement districts or neighborhood groups to pay for improvements on their streets. Developers should pay their fair share of the improvements that are required once warrants are met. To supplement these main funding options, there does need to be some general public (City) fund programs.

Damon Webster, Home Builders Association: Since many of the NTM measures will be implemented to address existing problems, the City's CIP budget should be the funding source. New projects should be required to mitigate their proportional share of the impact to a roadway.

6. Do you have any additional comments or concerns?

Curt Christianson, Fort James Corporation: Adams Street is a major concern for the safety of the Fort James Corporation due to the pedestrian volumes. Adams should not be a truck route. Trucks should be diverted to Dallas and Garfield.













































Don Chaney, City of Camas Police Department: On page 9 of the NTM Plan, it states that category "A" streets should have speeds posted near the 85th percentile speed. This should be revised to include an exception for extenuating circumstances, such as a nearby school.

Ed Lagergren, WSDOT: Stating that speed limits on category "A" streets should be set near the 85th percentile speed is very important. Generally, the plan is well laid out. Hopefully the City of Camas can adhere to the step by step process to alleviate the politics that are often associated with transportation improvements and developments.

DKS Associates

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Table 1: Stakeholder Response Summary

 Yes / Great  O.K. / Good with Comments  No / Has Deficiencies A blank means that no comment was received.	Jim Cox The Columbian	Damon Webster Home Builders Association	Dick Chaney Police Department	Dick Essex Camas School District	Monte Brachman Camas Public Works	Postmaster Camas Post Office	Dave Artz Fire Department	Greg Kohn UPS	Curt Christianson Fort James Corporation	Ed Lagergren WSDOT
What is your overall impression of the proposed NTM policy?										
Is the proposed procedure to define a problem, develop solutions, and prioritize a project reasonable?										
Are the requirements regarding new development mitigations of off-site impacts and site plans appropriate?										
What is your overall impression of the typical NTM implementation standards shown in the appendix?										
Do you think that the proposed funding options are appropriate?										

Acknowledgements

The following people participated in the production of this report:

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