



CITY OF SALEM

NEIGHBORHOOD TRAFFIC MANAGEMENT PLANS

**NEIGHBORHOOD TRAFFIC CALMING PLAN
NEIGHBORHOOD STOP SIGN PLAN**

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ACKNOWLEDGMENTS



CITIZEN ADVISORY TRAFFIC COMMISSION (CATC)



Julie Warncke
Transportation Planning Manager

Kevin Hottmann
Traffic Engineer

Tony Martin
Assistant Traffic Engineer

Anthony Gmallo
Transportation Planner

These plans were developed in coordination with members of CATC. The committee reviewed and provided input on the procedures and treatments included in the plans.

Scott Mansur

Lacy Brown

Jenna Bogert

Hallie Turk

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DEFINITIONS

CATC	CITIZEN ADVISORY TRAFFIC COMMISSION
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
NA	NEIGHBORHOOD ASSOCIATION
NSSP	NEIGHBORHOOD STOP SIGN PLAN
NTC	NEIGHBORHOOD TRAFFIC CALMING
NTCP	NEIGHBORHOOD TRAFFIC CALMING PLAN
NTMP	NEIGHBORHOOD TRAFFIC MANAGEMENT PLANS
PW	PUBLIC WORKS

INTRODUCTION TO PLANS

Maintaining safe and livable communities is a top priority for the City of Salem and its residents. The two plans in this document, the **Neighborhood Traffic Calming Plan (NTCP)** and the **Neighborhood Stop Sign Plan (NSSP)**, are designed to assist City staff and citizens in addressing common traffic concerns in neighborhoods, such as

speeding, high traffic volumes, uncontrolled intersections, and safety. While both plans hold neighborhood livability at the focal point, each plan utilizes a different process to address applicable traffic concerns.

These two plans were adopted by City Council on February XX, 2023.

NEIGHBORHOOD TRAFFIC CALMING PLAN

The first chapter of this document contains the City of Salem Neighborhood Traffic Calming Plan (NTCP).

THE PURPOSES OF THE NTCP ARE AS FOLLOWS:



Provide a comprehensive toolbox of proven neighborhood traffic management strategies.



Assist with the identification of appropriate neighborhood traffic calming measures.



Establish a fair, equitable, and consistent process for receiving and addressing neighborhood traffic concerns.

There is no single solution to controlling vehicle speeds and traffic volumes on residential streets. Appropriate solutions must be in alignment with the collected traffic data, roadway characteristics, and neighborhood context. The NTCP serves as a guide that must be combined with sound engineering judgment to ensure the correct strategies are implemented and that the selected improvements are prioritized in a fair and equitable manner.

NEIGHBORHOOD STOP SIGN PLAN

The second chapter of this document contains the City of Salem Neighborhood Stop Sign Plan (NSSP).

THE PURPOSES OF THE NSSP ARE AS FOLLOWS:



Provide a consistent process for the installation of neighborhood stop signs when they are not warranted by MUTCD criteria or if multiple intersections within an area are requested.



Provide a list of criteria and guidelines for creating and designing a Neighborhood Stop Sign Plan.

It is very common for residents to request stop signs as a tool for managing vehicle speeds in their neighborhood. However, research and national best practices state that stop signs should not be used to control travel speeds and therefore, are not an effective traffic calming measure. The Neighborhood Stop Sign Plan provides a process for neighborhoods to work with City staff to install stop signs to improve driver expectations and intersection safety in their neighborhoods.

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NEIGHBORHOOD TRAFFIC CALMING PLAN

BACKGROUND

The NTCP was originally adopted by City Council in May 1999 and was revised in 2006. The NTCP implements policies from the Salem Transportation System Plan. It provides the citizens of the City of Salem with a process for addressing their concerns with respect to speeding and high traffic volume issues. The plan also provides the City's Public Works Department staff with a mechanism for evaluating the need for installing a traffic calming device in a neighborhood.

The NTCP employs a two-phased approach to improving the neighborhood transportation system. The first phase requires citizens to collect data and clearly define the problem. If the problem meets the NTCP eligibility criteria, the concern is elevated to City staff for further evaluation. The project is then prioritized based on a set of objective criteria. Implementation will be subject to neighborhood support and funding availability.

PLAN DEVELOPMENT

The NTCP incorporates the most current local, regional, and national research and best practices related to neighborhood traffic management. This Plan was developed in coordination between City staff, the Citizens Advisory Traffic Commission (CATC), Neighborhood Associations, and outside consultants.

OVERVIEW

The six-step process outlined in the NTCP is depicted in the figure to the right. Steps 1 and 2 involve contacting the City either online or by other means and collecting preliminary data. These steps are primarily led by residents. Steps 3, 4, 5, and 6 are primarily led by City staff to confirm project eligibility, identify appropriate solutions, and prioritize projects for funding. Top-tier locations will be entered into a pool for funding, and approval from the neighbors and neighborhood association will be required for a project to be constructed. Each step of the NTC process is described in the NTC Process section.

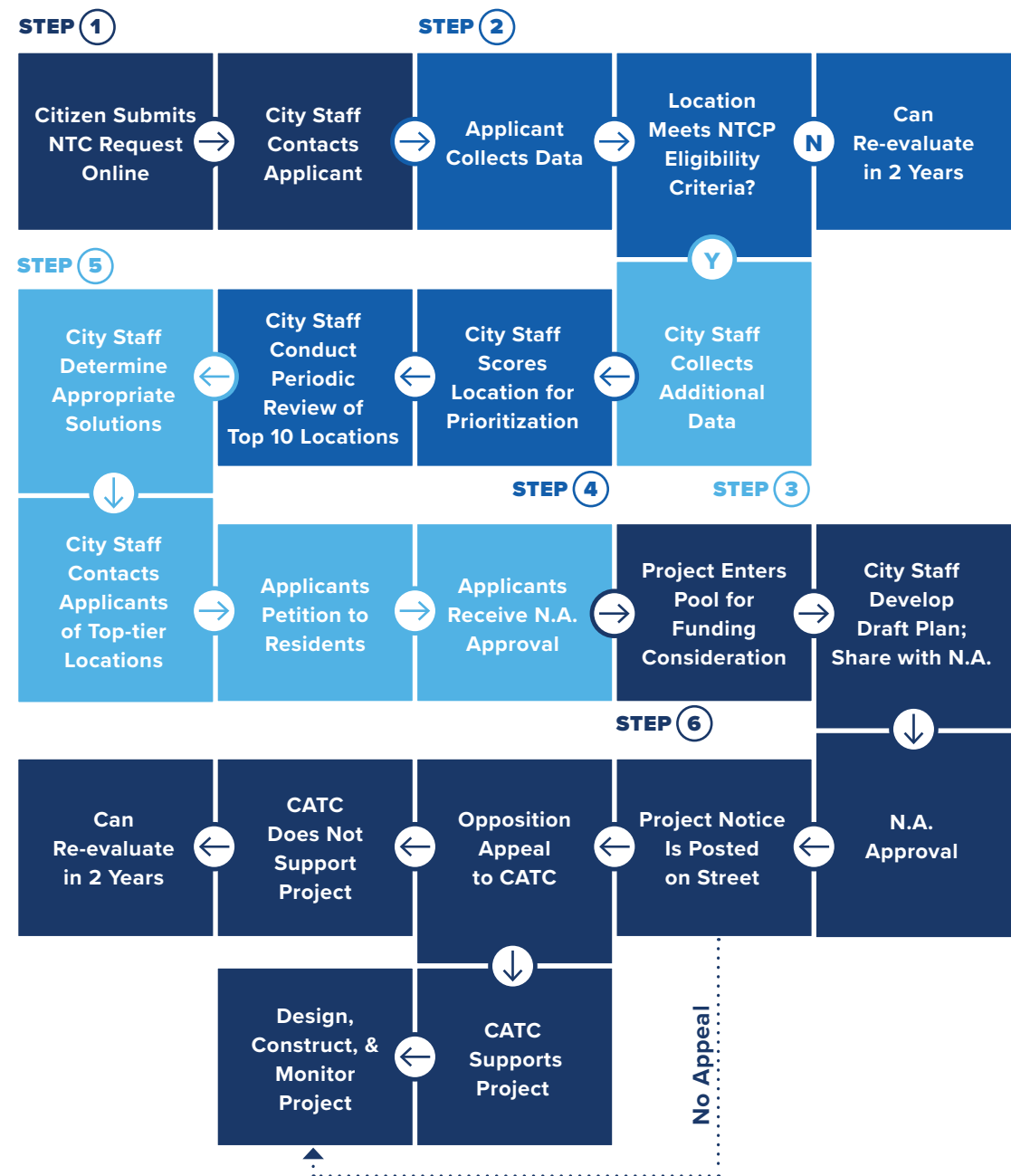


FIGURE 1. NEIGHBORHOOD TRAFFIC CALMING PLAN PROCESS FLOW CHART

MINIMUM NTCP ELIGIBILITY CRITERIA

In order to be eligible to participate in the NTCP process, a potential project must be screened to determine whether the identified issue can be remedied with traffic calming measures. The minimum eligibility criteria are listed below. Both of the criteria must be met for the project to be eligible.

1 The area of concern must be located on a Local street, Residential Collector, or Residential Arterial. The definition of a Residential Collector and Residential Arterial can be found in the Traffic Calming Measures section (**PAGE 9**).

2 On Local streets, the recorded 50th percentile speed is greater than the posted speed **AND** the volume is greater than 400 vehicles per day. On Residential Collector and Arterial streets, the volume criteria is not applicable.

PROCESS

Refer to the flow chart in Figure 1 for an understanding of how these steps relate to one another.

STEP 1 TRAFFIC CONCERN SUBMISSION

To begin the NTC process, citizens with a traffic concern on their residential street should submit an online request on the City of Salem website. The online request form consists of a short questionnaire and once the request has been submitted, City staff will review it and contact the applicant with details on how they can collect speed and volume data at the location of concern. Proceed to Step 2.

STEP 2 DATA COLLECTION AND ELIGIBILITY CRITERIA

The applicant should next collect speed and volume data at the area of concern. Forms and resources to be used for data collection will be provided by City staff and are also provided on the

City's website [HERE](#). It is the citizen's responsibility to collect the preliminary data.

Based upon the preliminary data collected, the applicant must confirm that the project meets the minimum NTCP eligibility criteria shown to the left.

If neither of the eligibility criteria are met, then the project does not progress and it can be re-evaluated in two years. If both the eligibility criteria are met, then proceed to Step 3.

STEP 3 ADDITIONAL DATA COLLECTION

The applicant will need to provide all data collected in Step 2 to City staff. It is important to note that the citizen is responsible for describing the issue and providing preliminary data to support the issue.

The City staff will review the applicant-collected data and verify that the project meets eligibility criteria. Because the data collected by the applicant may not encompass enough information to continue the NTC process, City staff may collect additional speed and volume counts to accurately determine the underlying issues and appropriate solutions.

STEP ④ SCORING AND PRIORITIZATION

NTCP project locations will then be prioritized using objective criteria to help the City invest its limited funding in locations with the greatest need. The criteria, which are intended to represent the underlying factors that contribute to safety risks, are described in greater detail in the following section (**TABLE 1**). Criteria and scoring vary depending on the intended function (functional classification) of the roadway being evaluated.

A periodic scoring of the project locations will be conducted by City staff. If a project location scores in the top 10 locations citywide, then the project can proceed to Step 5, which is identifying an appropriate NTC treatment. Project locations that do not score in the top 10 locations in the list will be retained for future consideration.

STEP ⑤ IDENTIFY TRAFFIC CALMING MEASURE AND APPROVALS

Because the City has limited resources available to invest in NTC projects, it is likely that only two or three projects can be implemented each year. As such, the City staff will develop solutions for the 10 locations with the highest score. An impact analysis will be conducted as part of the City's process for identifying appropriate solutions. The impact analysis will evaluate if the proposed solution would shift the problem elsewhere or introduce other unintended issues. This analysis will evaluate such impacts as possible increases in emergency

response times and impacts to adjacent residential streets. Preliminary cost estimates for the traffic calming measure(s) at the top 10 project locations will also be prepared by City staff as part of this step.

Once potential NTC measure(s) are identified, City staff will reach out to the applicants of the top 10 locations to share the potential NTC measure(s).

Applicants will be asked to petition to neighborhood residents and collect signatures of support (from at least 50% of residents). They must also receive support from the Neighborhood Association where the project is located. If the applicant receives the required support from residents and the Neighborhood Association, then proceed to Step 6.

STEP 6 IMPLEMENTATION

Once approvals in Step 5 are acquired, the project location will go into a pool of projects available for funding consideration. When funding is available, City staff will develop a Draft Project Plan. The Draft Project Plan will include the design concept of the identified traffic calming measure(s), preliminary cost estimate, impact analysis, and implementation schedule.

The draft plan will be forwarded to the Neighborhood Association for their final approval. Any additional requirements from the Neighborhood Association could be added at this time and incorporated into a Final Project Plan.

Notice of the Final Project Plan will be posted on the project street and an opportunity to appeal the project will be provided. If the proposed project is appealed, a hearing will be scheduled with CATC, which acts as an oversight committee for traffic projects within the City of Salem. If there is no appeal, then the Final Project Plan will be submitted to the City Engineer for detailed design.

The NTCP projects will be constructed in order of priority, as funding is available. City staff may conduct before-and-after evaluations of NTCP installations to ensure that they are functioning properly and that they achieve the desired outcome.

PRIORITIZATION CRITERIA

The prioritization criteria are used in Step 4 of the NTCP process to rank each project location based on the underlying safety risks. See **TABLE 1**. This prioritization method helps provide a consistent and quantifiable way to identify the highest need locations throughout the City.

However, it should be noted that this tool is just a guide and was created to assist the Public Works Department in making fair and equitable decisions. Final decisions on the importance of a project location may deviate from this tool after thoughtful and careful consideration by Public Works staff.

TABLE 1. NTCF PRIORITIZATION CRITERIA FOR PROJECT LOCATIONS

CRITERIA	LOCAL STREETS		RESIDENTIAL COLLECTOR & RESIDENTIAL ARTERIAL STREETS	
	DETAILS	MAXIMUM SCORE	DETAILS	MAXIMUM SCORE
Speed	• (85th percentile speed - posted speed) x 5 pts	35	• (85th percentile speed - posted speed) x 3 pts	35
Volume	• 1 point for every 75 vehicles per day	25	• 1 point for every 400 vehicles per day	15
Pedestrian Generator	• 3 points for the presence of each of the following land uses within 300 feet: <i>Apartment complexes, Parks, Schools</i>	9	• 3 points for the presence of each of the following land uses within 300 feet: <i>Apartment complexes, Parks, Schools</i>	9
Family Friendly Bikeways	• 10 points if the entire segment is designated as a Family Friendly Bikeway • 5 points if a portion of the segment is designated as a Family Friendly Bikeway	10	• 10 points if the entire segment is designated as a Family Friendly Bikeway • 5 points if a portion of the segment is designated as a Family Friendly Bikeway	10
Sidewalks	• 10 points if no sidewalks • 5 points if sidewalks are discontinuous or on one side	10	• 10 points if no sidewalks • 5 points if sidewalks are discontinuous or on one side	10
School	• 10 points if a school abuts the subject street and has a marked crossing • 5 points if either a school or marked crossing are present • 0 points if neither are present	10	• 10 points if a school abuts the subject street and has a marked crossing • 5 points if either a school or marked crossing are present • 0 points if neither are present	10
Equity^{a, b}	• 10 points if located in census tract with more than twice the regional average of disadvantaged population • 5 points if located in census tract with above average disadvantaged population • 0 points if located in census tract at or below average disadvantaged population	10	• 10 points if located in census tract with more than twice the regional average of disadvantaged population • 5 points if located in census tract with above average disadvantaged population • 0 points if located in census tract at or below average disadvantaged population	10
TOTAL		109		99

^a https://www.mwvcog.org/wp-content/uploads/2022/06/Demographic_Profile_Report_2022.pdf

^b <https://mwvcog.maps.arcgis.com/apps/webappviewer/index.html?id=c6251a653084df3a7391095f6af8d6d>

TRAFFIC CALMING MEASURES

There are two types of traffic calming strategies identified in the NTCF, Level 1 and Level 2.

- **Level 1** measures can be implemented on any residential street. These measures are education and enforcement and are typically low-cost and easy to implement. Some measures require coordination with the Police Department.
- **Level 2** measures require engineering study and community acceptance. These measures can alter the configuration of streets, impede traffic flow, and change travel patterns to discourage speeding and lower vehicle volumes. They are more expensive to implement.

A comprehensive list of potential NTC measures, descriptions of their effectiveness, and their corresponding levels can be found in the Appendix.

When identifying the appropriate Level 2 traffic calming measure (Step 5), there are many tools available for consideration. However, not all measures are appropriate for a location. Some streets classifications, due to the road users, vehicle volumes, and speeds, are not eligible for certain treatments. For this reason, the City has established three types of residential roadways. Roadway classifications can be found in the City of Salem's TSP.¹

- **Local streets** provide access to adjacent land uses. These roads are not intended for use in long distance travel except at the beginning or end of a trip. Thus, Local Streets have the lowest volume and lowest posted speeds. Local Streets are often the primary target for traffic calming measures.
- **Collector streets** provide links between Local Streets and Arterial Streets. Their primary function is to move traffic through neighborhoods. Efficiency is much less of a concern

on local and collector streets than arterials because there is less traffic demand. Traffic calming measures on local and collector streets serve to change driving behavior within residential areas to discourage the use of local streets by cut-through traffic.

- **Arterial streets** have the highest volume and highest speeds. Their primary function is to move traffic across the city; they connect major activity centers and provide a high degree of mobility for through traffic. Most Level 2 traffic calming measures are not intended for use on Residential Arterial Streets because they inhibit circulation within the city.

No formal definition currently exists within City of Salem code for **Residential Collector** or **Residential Arterial** streets. However, this plan utilizes language from the Oregon Revised Statutes (ORS) to create a definition for residential collectors and residential arterials in Salem. Using ORS 801.430, a Residential

¹ <https://www.cityofsalem.net/home/showpublisheddocument/5158/637798388452130000>, page 3-11

Arterial or Residential Collector in Salem is a street with at least one driveway or approach to a residential land use or supporting residential land use per 150

feet of roadway. Supporting residential land uses include residential care facilities, churches, public parks, and dwellings or buildings used for business.

Below is a list of Level 2 measures that are suitable for each roadway functional classification. Each of the NTC measures is described in detail in [APPENDIX A](#).

FIGURE 2. LEVEL 2 MEASURES SUITABLE FOR EACH ROADWAY FUNCTIONAL CLASSIFICATION

LOCAL STREETS	RESIDENTIAL COLLECTORS	RESIDENTIAL ARTERIALS	OTHER COLLECTORS & ARTERIALS
CENTER ISLANDS CHICANES CHOKERS CURB EXTENSIONS DIVERTERS INTERSECTION REALIGNMENT MEDIANS ON-SREET PARKING ONE-WAY STREETS PART-TIME RESTRICTIONS RAISED CROSSWALKS REDUCED SPEED LIMIT SPEED BUMPS SPEED CUSHION SPEED FEEDBACK SIGNS	CHICANES CHOKERS CURB EXTENSIONS DIVERTERS INTERSECTION REALIGNMENT LANE STRIPING MEDIANS ON-STREET PARKING ONE-WAY STREETS PART-TIME RESTRICTIONS RAISED CROSSWALKS REDUCED SPEED LIMIT SPEED CUSHION SPEED FEEDBACK SIGNS TEXTURED PAVEMENT	CHOKERS CURB EXTENSIONS LANE STRIPING MEDIANS PARKING REDUCED SPEED LIMIT SPEED FEEDBACK SIGNS TEXTURED PAVEMENT	NOT SUITABLE FOR NTC MEASURES

SETTING SPEED LIMITS IN SALEM

Statutory speed limits are specifically defined in Oregon state law based on the road type (ORS 811.111 and ORS 811.105). Speed limits that differ from the statutory speed limit of a roadway are known as designated speed limits. ORS 810.180 allows ODOT primary authority to designate speeds on all public roadways when it is different than the statutory speed. In order to post a designated speed limit, ODOT must complete an engineering investigation and obtain approval from the State Traffic Roadway Engineer. The investigation is based on both Oregon law and national best practices, and includes a full review of roadway characteristics.

In 2021, House Bill 3055 amended ORS 810.180, adding subsection (5)(g). This new subsection allows ODOT the ability to delegate its authority of speed limit setting to any incorporated city and two counties (Multnomah and Clackamas)

ATTRIBUTES USED TO SET SPEED LIMITS INCLUDE:

CONTEXT TO THE ROADWAY, AS DEFINED IN THE OREGON ADMINISTRATIVE RULES (OARS)

FEDERAL FUNCTIONAL CLASSIFICATION

CRASH HISTORY

ROADSIDE CULTURE AND DENSITY

TRAFFIC VOLUMES

ROADWAY ALIGNMENT, WIDTH AND SURFACE

MOTOR VEHICLE SPEEDS

upon their request. This request can be made for specific roadways or for all low volume roads under the jurisdiction of the requesting agency. Delegations are only allowed if ODOT determines the requesting agency “will exercise the authority according to criteria adopted by the department.” Additionally, a city may establish, by ordinance, a designated speed for a road under the jurisdiction of the city that is five miles per hour lower

than the statutory speed if the highway is located in a residence district and is not an arterial highway per subsection (11)(c).

In summary, the City does not have the authority to change the process or criteria for setting designated speed limits on city streets. However, the City may elect to set a designated speed that is 5 miles per hour lower than the statutory speed limit, in residential districts.

TABLE 2. STATUTORY SPEED LIMITS

ROAD TYPE	SPEED LIMIT (MPH)
Alleys / Narrow Residential Roads	15
Business District Roads	20
Roads in Public Park	25
Local or Collector Roads in Residence District	25
Interstate Highway	65
All Other Roads	55

Note: Refer to ORS 801.430 and 801.170 for the definition of “Residence District” and “Business District”

ENFORCING SPEEDS IN SALEM

The Level 1 measures focus on traffic enforcement and education.

Enforcement of posted speeds is most effective when patrolling and ticketing is conducted by the police department. There are also tools, such as radar cameras, that are available to assist with speed enforcement.

While traffic enforcement efforts can be effective, they also pull resources from other important enforcement activities. Implementing enforcement strategies must be coordinated with Salem Police and balanced with competing needs for the limited funding and staffing available.

Oregon Revised Statute (ORS) 810.434 states that any city may operate cameras designed to photograph drivers who either fail to obey a traffic control device (e.g., running a red light at a traffic signal) or who violate the posted speed by 11 miles per hour or greater.

The statute also states that a city that chooses to operate a camera for either of these purposes must:

- Provide a public information campaign to inform local drivers about the use of cameras before citations are actually issued.
- Conduct a process and outcome evaluation every two years that includes the camera's effect on traffic safety, its degree of public acceptance, and its process of administration for use.

Currently, the City of Salem operates several speed enforcement cameras within the City.

These speed enforcement cameras are aimed at improving safety by targeting high volume intersections with a focus on reducing crashes.

2

NEIGHBORHOOD STOP SIGN PLAN

BACKGROUND

The City of Salem receives a high number of requests every year from residents for the installation of stop signs in their neighborhood. Often, the requested intersections do not have traffic volumes high enough to meet stop sign evaluation criteria.¹ However, the City acknowledges that there are situations where an intersection or neighborhood area would benefit from the installation of stop signs despite the MUTCD criteria not being met. The purpose of this plan is to provide a consistent process and set of guidelines for implementing neighborhood stop signs. The guidelines are based on collected data, local knowledge, and traffic engineering principles.

PLAN DEVELOPMENT

The NSSP utilizes current local, regional, and national research and best practices related to stop sign installation. This Plan was developed in coordination between City staff, the Citizens Advisory Traffic Commission (CATC), and Neighborhood Associations.

¹ Criteria and guidance for stop sign installation can be found in the Manual on Uniform Traffic Control Devices (MUTCD), Chapter 2.

PROCESS

Refer to **APPENDIX B** for a flow chart of the NSSP process.

The NSSP starts with a citizen request for stop sign(s) at a single or multiple locations. If a single location is requested, then City staff determines if the stop sign request is appropriate and if it meets MUTCD criteria. If it does, then the stop sign(s) will be installed. See the Definitions section for how this plan defines “appropriate.”

If stop signs at multiple intersections within a neighborhood are requested, or if the stop sign(s) are not determined appropriate by City staff, then a NSSP is pursued.

The NSSP starts with the identification of the neighborhood boundary by City staff. The citizen requesting the stop sign(s) will need to show City staff that there is general support for the requested stop signs from the neighbors and Neighborhood Association.

If there is support, then City staff will develop the NSSP with input from the Neighborhood Association. Ballots will be mailed to the neighborhood and the City staff will count the ballots and post the results to the City website. At least 50 percent of residents must support the NSSP.

DEFINITIONS

Appropriate: City staff will determine if the request is appropriate for the Neighborhood Stop Sign Plan or whether a single stop sign should be evaluated against MUTCD criteria. Staff will also determine if the requested stop sign would meet drivers’ expectations.

Neighborhood: A residential district (>50% single family homes and/or apartments) that can clearly be identified and bounded on all sides by major streets (parkway, major arterial, minor arterial, collector), waterways, railroad, industrial land, commercial land, city limits, urban growth boundary, or other clearly identifiable boundaries. Neighborhood Association boundaries do not necessarily define a neighborhood for this definition.

GENERAL GOALS FOR CREATING A NSSP:

- Establish the right-of-way for vehicles at each intersection in a logical and expected manner
- 600’ spacing on local/residential streets
- 900’ spacing on residential collector streets (if appropriate)
- Stop “every other block” in both directions
- All-way stops may be used where appropriate to achieve spacing goals
- All-way stops will NOT be supported for every intersection
- Short cul-de-sac streets will always be stopped
- “T” Intersections will be evaluated individually for potential all-way stop
- Show 50’ parking restrictions at stop signs

APPENDIX

A. NEIGHBORHOOD TRAFFIC CALMING PLAN MEASURES LIST

B. NEIGHBORHOOD STOP SIGN PLAN FLOW CHART

APPENDIX A. NEIGHBORHOOD TRAFFIC CALMING PLAN MEASURES LIST

● MINOR ●● MODERATE ●●● SIGNIFICANT

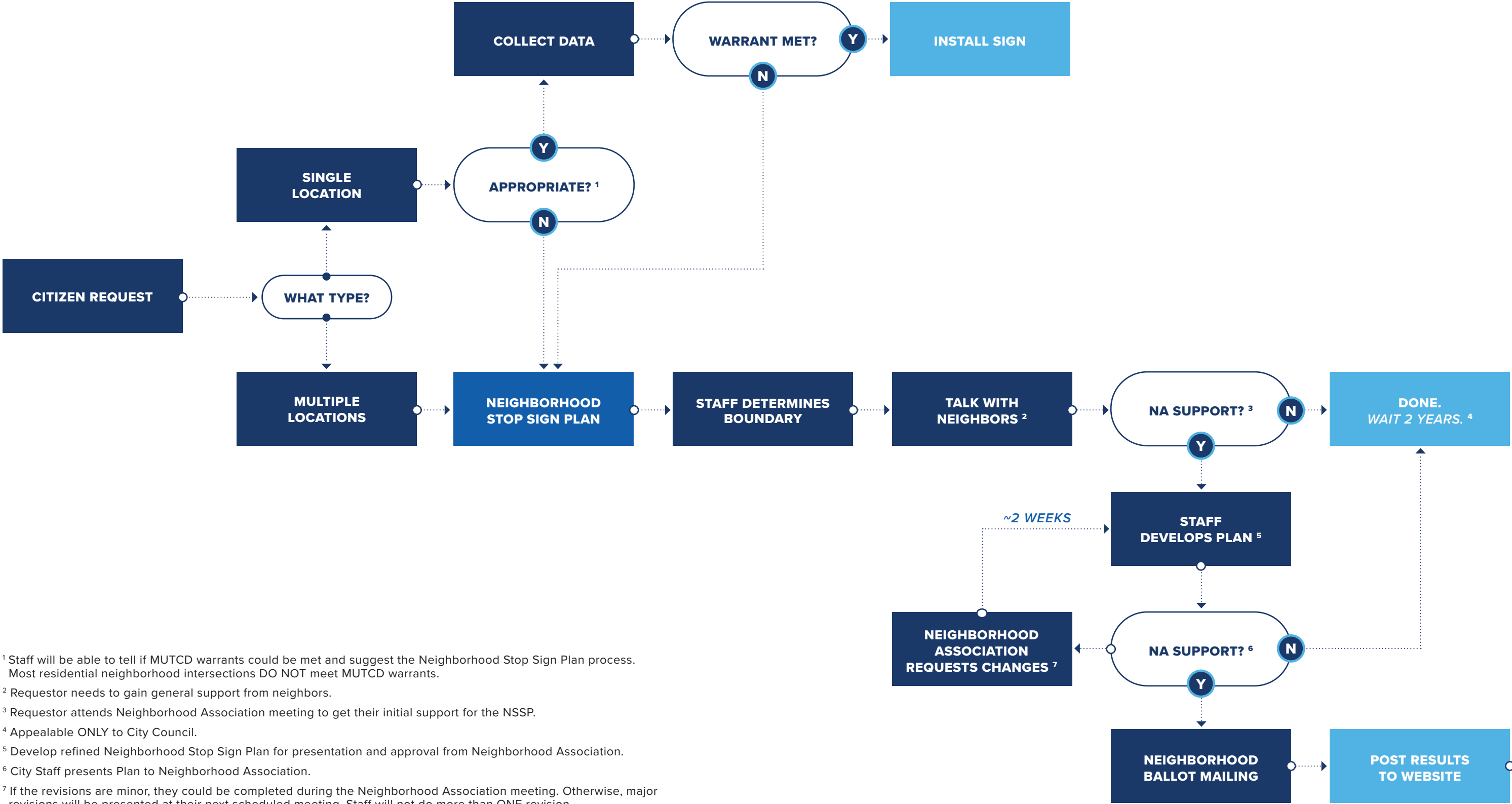
LEVEL	NTC MEASURE	DESCRIPTION	ROAD TYPE APPLICATION	EFFECTIVENESS	KEY DESIGN PARAMETERS	EXPECTED:				BLOCK LOCATION
						SPEED REDUCTION	VOLUME REDUCTION	CRASH REDUCTION	MULTIMODAL SAFETY BENEFIT	
1	Radar speed evaluation	Handheld radar gun provided by City to public to gather speed data	Local, Residential Collector, Residential Arterial	• Not measured		●				Midblock
1	Portable radar trailer	Trailer equipped with a radar unit placed by City of Salem PD which detects and displays the speed of passing vehicles on a digital reader board	Local, Residential Collector, Residential Arterial	• Not measured		●				Midblock
1	Signage (warning, statutory, etc)	Communicates with roadway users to regulate speeds and warn about upcoming speed reduction zones	Local, Residential Collector, Residential Arterial	• Not measured	• Consider quantity of existing nearby signage to avoid “sign pollution” Signs that will not be considered: <i>SLOW CHILDREN AT PLAY, SPEED LIMIT 15 MPH</i>			●	●	Midblock, intersection
1	Enforcement (selective)	Police issuing tickets to vehicles violating speed zones	Local, Residential Collector, Residential Arterial	• Not measured	• Depends on law enforcement availability; resident must request by contacting police non-emergency					Any
1	Public Awareness	Flyer distribution, newsletters, and yard signs to educate neighbors or visiting drivers about local safety concerns	Local, Residential Collector, Residential Arterial	• Not measured	• Yard signs must be kept clean and moved periodically www.keepkidsalivedrive25.org					Any
2	Lane striping	Delineates parking areas, travel lanes, bike lanes, walking areas. Can be used to narrow travel lanes in an effort to reduce vehicle speeds	Residential Collector, Residential Arterial	• Not measured		●				Midblock, intersection
2	Speed Feedback Radar signs (permanent)	Directs a driver’s attention to the posted speed limit and digitally displays the vehicle’s speed on a message board	Local, Residential Collector, Residential Arterial	• ODOT CRF: 10% • No quantitative speed or volume data available	• Note that speed reductions are only maintained through short distances • Appropriate near intersections or where sight distance is restricted	●●	●	●	●	Midblock, intersection
2	Raised crosswalk	A raised area of roadway pavement approximately 3 inches in height with a marked crosswalk on top, typically located at a mid-block location	Local, Residential Collector	• ODOT CRF: 30% • FHWA: dramatic speed reduction, volume reduction by 20%	• Only use on streets 25 mph or less • Use where speed control at ped crossings is desired (school zones or near parks) • Must meet ADA guidelines for pedestrian use"	●●●	●●	●●	●●●	Midblock
2	Speed bump	A raised and rounded area of roadway pavement approximately 3 inches in height that causes a vehicle to produce a rocking motion. Material may be substituted for rubber.	Local	• ODOT CRF: 50% • FHWA: volume reduction by 20% • ITE: 20% speed reduction, 13% crash rate reduction	• Not appropriate for emergency routes, roads posted 30 mph or more, or grades greater than 8 percent • Asphalt bumps may last longer than rubber bumps • Rubber bumps may be cheaper than asphalt bumps"	●●●	●●	●	●	Midblock
2	Speed cushion	Similar to speed bumps, but includes gaps to allow for the expedient passing of emergency vehicles	"Local, Residential Collector Currently not used in Salem due to impacts to snow plow routes on collectors"	• FHWA: speed reduction by 25% with little effect to emergency vehicles	• Can be used on emergency routes • Do not use on snow routes • Not appropriate for roads 30 mph or more or grades greater than 8 percent	●●●	●●	●	●	Midblock
2	Curb extension	Extending the curb toward the center of the street to narrow the roadway	Local, Residential Collector, Residential Arterial	• ODOT CRF: 30% • No quantitative speed or volume data available	• Must not extend into bicycle lanes • Often require extensive storm drainage modifications, impacting cost	●●	●	●	●●●	Intersection
2	Median	Raised islands placed in the center of a roadway to separate opposing traffic and narrow the roadway	Local, Residential Collector, Residential Arterial	• ODOT CRF: 30% • No quantitative speed or volume data available	• Consider neighborhood, business, and emergency access • Consider large vehicles and turning radii • Consider parking and driveway impacts • Provides pedestrian safety improvements by allowing peds to cross one travel direction at a time	●●	●	●	●●●	Midblock

APPENDIX A. NEIGHBORHOOD TRAFFIC CALMING PLAN MEASURES LIST (CONT.)

● MINOR ●● MODERATE ●●● SIGNIFICANT

LEVEL	NTC MEASURE	DESCRIPTION	ROAD TYPE APPLICATION	EFFECTIVENESS	KEY DESIGN PARAMETERS	EXPECTED:				BLOCK LOCATION
						SPEED REDUCTION	VOLUME REDUCTION	CRASH REDUCTION	MULTIMODAL SAFETY BENEFIT	
2	Chicane	Channelization or curb extension that realigns the straight path of a street	Local, Residential Collector	<ul style="list-style-type: none">FHWA: limited effect on speedNo quantitative volume data available	<ul style="list-style-type: none">Best for speed limits 35 mph or lessConsider impacts to parking and driveways	●				Midblock
2	Choker (pinch point)	Use of curb lines, landscaped curb-side islands, or pedestrian extensions to narrow the roadway	Local, Residential Collector, Residential Arterial	<ul style="list-style-type: none">Minimal impact on volumesTraffic speeds likely to decrease	<ul style="list-style-type: none">Only at midblock locationsConsider visibility by adding lighting, striping, or reflectors	●				Midblock
2	Center island	A round island in the middle of an intersection	Local	<ul style="list-style-type: none">ITE: slight speed reduction, no volume reduction	<ul style="list-style-type: none">Best for speed limits <=35mphMust be controlled by YIELD signs on all approachesIf intersection is already stop-controlled, requires restriping and re-signingConsider large vehicles and turning radii	●				Intersection
2	Diverter	Channelization or islands that restrict movements at an intersection; typically allows right turns and prohibits through traffic	Local, Residential Collectors	<ul style="list-style-type: none">ITE: no speed reduction, improved bicycle and pedestrian safety	<ul style="list-style-type: none">Not appropriate for transit or emergency routes				●●	Intersection
2	Intersection realignments	Skews a standard 3 or 4 leg intersection to deflect traffic	Local, Residential Collectors	<ul style="list-style-type: none">ITE: speed reductions between 5 and 13mph within intersection limits	<ul style="list-style-type: none">Most applicable at T-intersections (3 leg)Not appropriate for roads >25mphCan be used along emergency routes	●				Intersection
2	One way streets	Makes an access road one-way only	Local, Residential Collectors	<ul style="list-style-type: none">ITE: no speed reduction, may reduce volumes, may improve pedestrian crossing safety	<ul style="list-style-type: none">Not appropriate along bus transit routes					N/A
2	Pavement texture pavement markings	Creates pavement roughness by installing reflective buttons or colored concrete with patterns; may be used as a centerline delineator on curves or a delineator between pedestrian paths and travel lanes	Residential Collector, Residential Arterial	<ul style="list-style-type: none">Not measured	<ul style="list-style-type: none">Consider striping maintenance (City street painting program) and snowplow accessConsider noise impacts					Any
2	Parking on-street	Allowing car parking on both sides to narrow the roadway	Local, Residential Collector, Residential Arterial	<ul style="list-style-type: none">ITE: improves pedestrian safety (buffer between sidewalk and road), but may impair visibility of pedestrians for driversNo quantitative speed or volume data available	<ul style="list-style-type: none">More appropriate in urban/suburban settingsCannot be used at or near transit stopsConsider best practices near intersections; for example, should not be considered near roundabouts or within 50 feet of a traffic control device				●	Midblock
2	Part time restrictions	Use signs to limit vehicle movements during key times (typically school times or peak hours)	Local, Residential Collectors	<ul style="list-style-type: none">Not measured	<ul style="list-style-type: none">More appropriate in urban/suburban settings		●			N/A
2	Reduced speed limit	Reducing the statutory posted speed by 5 mph	Local, Residential Collector, Residential Arterial	<ul style="list-style-type: none">PSU Study: 25 mph to 20 mph limit change reduces percentage of vehicles traveling over 30 mph	<ul style="list-style-type: none">85th percentile speed on study roadway must be at least 5 mph above posted speedConsider on local or residential collectors that are within 1 block of schools that do not already have 20 mph school speed zonesConsider on designated family-friendly bikewaysMeasure must be implented in partnership with enforcement	●			●●	N/A

APPENDIX B. NEIGHBORHOOD STOP SIGN PLAN FLOW CHART



¹ Staff will be able to tell if MUTCD warrants could be met and suggest the Neighborhood Stop Sign Plan process. Most residential neighborhood intersections DO NOT meet MUTCD warrants.

² Requestor needs to gain general support from neighbors.

³ Requestor attends Neighborhood Association meeting to get their initial support for the NSSP.

⁴ Appealable ONLY to City Council.

⁵ Develop refined Neighborhood Stop Sign Plan for presentation and approval from Neighborhood Association.

⁶ City Staff presents Plan to Neighborhood Association.

⁷ If the revisions are minor, they could be completed during the Neighborhood Association meeting. Otherwise, major revisions will be presented at their next scheduled meeting. Staff will not do more than ONE revision.

APPENDIX B. NEIGHBORHOOD STOP SIGN PLAN FLOW CHART (CONT.)



¹ Citizen Appeal of the “NO” vote to install Stop Signs.
² Citizen Appeal of the “YES” vote to install Stop Signs. Minority Appeal.
³ Overturn minority (<50%) vote and approve implementation of Stop Sign Plan.
⁴ Overturn majority (>50%) vote and deny implementation of the Stop Sign Plan.
⁵ Concur with Neighborhood Association decision to overturn minority (<50%) approval support and install stop signs.
⁶ Concur with Neighborhood Association decision to deny stop plan and the majority vote.