



City Of Raleigh
NORTH CAROLINA

December 8, 2016

MEMO TO: Transportation and Transit Committee
FROM: Tansy Hayward, Assistant City Manager *TJH*
SUBJECT: December 13, 2016 Transportation and Transit Committee Meeting

I. Item 15-01 Neighborhood Traffic Management Program Policy (6/14/16)

This item was discussed at the October 25, 2016 Transportation and Transit Committee. Attached is a staff report. A representative from the Transportation Department will be at the meeting to review research about city strategies to supplement the multi-way stop considerations in the Manual on Uniform Traffic Control Devices and potential policy options and approaches, as well as to follow up on previous discussions by the City Council to add specific provisions to the neighborhood streetscape policy to address alternative design elements and temporary installations.

(Attachment I)

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TRANSPORTATION AND TRANSIT COMMITTEE AGENDA

The Transportation and Transit Committee will meet on **Tuesday, December 13, 2016 at 4:00 P.M.**

Location: Room 305, Raleigh Municipal Building, 222 West Hargett Street, Avery C. Upchurch Government Complex, Raleigh, North Carolina. For information call 919-996-3040 (City Clerk's office) or 919-996-3070 (City Manager's Office).

All the following items are pending in Committee; however, only those items that are shown in bold print will be discussed during this meeting.

I. 15-01 Neighborhood Traffic Management Program Policy (6/14/16)

The following items were referred from the December 6, 2016 City Council meeting:

NONE

*** Council Chamber is Assistive Listening System equipped. Deaf and hearing impaired individuals needing interpreter services should provide 48-hour notice by calling 919-996-3100 (voice) or 919-996-3107 (TDD). ***

***PLEASE NOTE CHANGE IN TIME
FOR THIS MEETING ONLY***

NOTE: The agenda backup will be available after 4:00 p.m. on the Friday preceding the meeting. CTRL + Click on the link below to access the City Council Committees page on the City of Raleigh Web site.

<http://www.raleighnc.gov/government/content/BoardsCommissions/Articles/CityCouncil.html>



CITY OF RALEIGH, NORTH CAROLINA

Transportation and Transit

ONE-PAGE SUMMARY

AGENDA ITEM:

Transportation and Transit Committee – Neighborhood Traffic Management Program Policy

COMMITTEE DATE:

12/13/2016

ORIGIN OF ITEM:

Referred by Councilor Mary-Ann Baldwin at October 25, 2016 Transportation and Transit Committee

DEPARTMENT CONTACT:

Jed Niffenegger, PE, Senior Transportation Engineer, 919-996-4039
Jason S. Myers, AICP, Senior Transportation Planner, 919-996-2166

DESCRIPTION/SUMMARY:

At the October 25th Transportation and Transit meeting, Committee members requested staff research about city strategies to supplement the existing policy for multi-way stop control and potential policy options and approaches, as well as to add specific provisions to the neighborhood streetscape policy to address alternative design elements and temporary installations.

BUDGET IMPACT (FUNDING SOURCE/BUDGET ACTION):

No Impact. Funding is currently sourced from prior Transportation Bonds and Capital Improvement Project.

RECOMMENDATION:

For the Multi-Way Stop policy options and approaches, staff recommends the Committee consider adoption of one of three options for a new multi-way stop policy. The three options proposed are:

1. Keep the MUTCD warrants and add an appeals process
2. Come up with new warrants (City of Charlotte)
3. Come up with new warrants and add an appeals process

For the Neighborhood Streetscape process, staff will broadly discuss some potential processes changes and seek Council feedback about:

- Goals for the revisions
- Points and methods of City Council input and approval in the process
- The use of temporary treatments

ALTERNATIVES:

Please see the attached reports for details.

Transportation and Transit Committee
Item 15-01 Neighborhood Traffic Management Program Policy

Background

At the October 25, 2016 Transportation and Transit Committee meeting various components of the proposed new policy were discussed. The Committee recommended changes to the policy including; evaluation, ranking and removal process in addition to the Traffic Calming (speed humps/tables) project section. City Council subsequently voted in agreement with the Committee's recommendations which also included keeping the Multi-way Stop Control and Neighborhood Streetscape component in committee.

Multi-way Stop Control Overview

Stop signs are no different than a yield sign or a traffic signal as their sole intended purpose it to dictate right of way at an intersection. The guidelines specifying when, where and how stop signs are used are spelled out in the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD). NCDOT and Raleigh's City Council have fully adopted the MUTCD which contains guidelines on multi-way stop control.

Multi-way stop control if used appropriately can provide a huge benefit for drivers, pedestrians, cyclist, and the overall community. Multi-way stop control is inherently more safe then the traditional side street stop control since it stops all traffic at an intersection. In addition, multiway stop control can have an effect on vehicular speed in certain circumstances. For example, a traditional square block setting where the volumes are relatively equal and the blocks are around 500' or less, multi-way stop control can lower the 85th percentile speed.

The guidelines on Multi-way Stop control have "warrants" or criteria that should be met before consideration. These criteria were derived over decades of refinement of best Engineering practices. The MUTCD looks at the following major criteria;

- A. Used as an interim measure until a justified traffic signal can be installed
- B. A crash pattern that could be considered correctable by multi-way stop (5 or more crashes in a 12 month period)
- C. Certain volume thresholds

Other criterion that is also reviewed includes;

- A. A need to control left turn conflicts
- B. A need to control pedestrian conflicts near locations with high pedestrian traffic
- C. Inadequate sight distance
- D. An intersection of two through streets of similar design and operating characteristics where a multi-way stop would improve traffic operation

These criteria were established because stopping a movement can have unintended consequences. In addition, greater noise and air pollution for the residents that live adjacent to the intersection.

NTMP Evaluations

Multi-way stop is one of the four components of the Neighborhood Traffic Management program in addition to speed limit reductions, traffic calming projects and neighborhood streetscape projects. Every year staff receives numerous requests for multi-way stop control. Staff evaluates them against the warrants in the MUTCD. Below is a chart showing the number of requests we receive and the number we recommend or get installed.

Year	Multi-way Stop Requests	Multi-way Stop Installations
2012	55	6
2013	76	3
2014	80	4
2015	47	3
2016	55	3
Totals	313	19

Flexibility

Since City Council formally adopted the MUTCD, staff follows all “shall” conditions. The warrants from multi-way stop control have multiple “should” warrants. Staff uses “engineering judgement” with each evaluation specifically for the “should” warrants rather than strict adherence. For example, if an intersection meets the volume warrants for 6 or 7 of the required 8 hours, staff still might recommend installation. Each location studied is unique and field visits combined with a holistic view of the surrounding neighborhood help staff when a warrant may not be satisfied. Details such as proximity to a school can sway staff to recommend a multiway stop if the warrants are close but not satisfied

Evaluation of Current Policy and Practices

Currently, anyone can request a multi-way stop. Once staff conducts an evaluation, the requestor has no recourse if the warrants are not met. This has resulted in residents petitioning City Council directly. At the last Transportation and Transit Committee, staff was asked to look into developing “Raleigh” specific warrants or a revised policy. To assist in this process, staff conducted a peer review using the same City’s that were used for the entire NTMP policy review. Over 100+ of the most populated Cities were looked at in addition to the larger urban centers in North Carolina. Out of that, only a handful of Cities had policies that differed from the warrants in the MUTCD. The City of Charlotte, NC and San Jose, CA had policies that differed. The City of Charlotte’s policy is relatively straight forward (see attachment B) however San Jose’s is complex and involves a point system. Numerous Cities reviewed did have an appeals process. The processes varied widely and included a more formal process before a Transportation Board, a petition based on proximity, and a review by the Transportation Director.

Staff Recommendations

Coming up with warrants or criteria for multi-way stop control that deviates from a universally adopted publication like the MUTCD can be done however it does not necessarily change things. Anytime warrants or criteria are established, there will always be situation for someone to challenge them. For example, the City of Charlotte's policy requires streets to have a minimum traffic volume of 600+ vehicles a day. A community could overwhelmingly want multi-way stop control at an intersection however if the warrants are not met, the same thing that currently happen (in Raleigh) will continue. Charlotte's policy addresses this via an appeal process. If a certain percent of residents living within a set distance of the intersection want the multi-way, it will be installed.

Staff would suggest the Committee consider one of the following;

1. **Keep the MUTCD warrants and add an appeals process.** The appeals process would be handled by staff by mailing ballots to the specified area from the subject intersection. If enough ballots were returned, staff would add an item to the consent agenda. Staff would suggest setting a distance of 500' (a City block) from the subject intersection and keeping the same criteria as used for traffic calming projects (60% of ballots returned with 70% in favor)
2. **Come up with new warrants.** The warrants used in the MUTCD are universally adopted and derived from years of engineering studies and best practices. If new warrants are used, staff would recommend using something similar to Charlotte who has had the policy in effect for multiple years and worked any issues out.
3. **Come up with new warrants and add an appeals process.** If this is pursued, Staff would recommend using something similar to Charlotte however using a ballot system instead of a petition. The citizen circulated petition process has proven to be problematic in the past and the staff mailed ballot system would be in line with recent changes to the NTMP

Attachment A

Manual on Uniform Traffic
Control Devices (MUTCD)



Section 2B.07 Multi-Way Stop Applications

Support:

01 Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.

02 The restrictions on the use of STOP signs described in [Section 2B.04](#) also apply to multi-way stop applications.

Guidance:

03 *The decision to install multi-way stop control should be based on an engineering study.*

04 *The following criteria should be considered in the engineering study for a multi-way STOP sign installation:*

- A. *Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*
- B. *Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*
- C. *Minimum volumes:*
 - 1. *The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*
 - 2. *The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but*
 - 3. *If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.*
- D. *Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*

Option:

05 Other criteria that may be considered in an engineering study include:

- A. The need to control left-turn conflicts;
- B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
- C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and
- D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

Attachment B

Charlotte Department of Transportation

Neighborhood residents may request multi-way stop sign controls at intersections. The procedure for obtaining multi-way stops involves a two-step process:

Step 1: Obtain a multi-way stop request form from CDOT or [submit a request online](#). Complete and mail in the form furnishing information needed for CDOT to begin an evaluation to determine if the intersections qualify for multi-way stop controls. The evaluation will determine if the location(s) requested are eligible based on the criteria below.

- Intersections which are not clearly visible on the approaches not previously stopped, or are intersections which, by CDOT judgment, motorists would not expect to stop, may be deemed ineligible.

Criteria/Policy (effective 10/23/06)

- Streets with 600+ vehicles per day, allow both three- and four-way multi-way stops.
- Multi-way stops must be removed from streets with less than 2500 vehicles per day if speed humps are installed.
- Speed humps and multi-way stops are only permitted on streets between 1000-2500 vehicles if the street already has multi-way stops, there is a continued, documented speeding problem, and has gaps between multi-way stops greater than 600 feet. Speed humps may be installed in these gaps to further calm the street.
- The street must have a speed limit of 25 - 30 mph, and documented speeding problem of 5+ mph over the posted speed limit.

Step 2: If intersections are eligible for multi-way stop controls, neighborhood support is desired, and can be obtained by one of two methods:

1. A letter of endorsement by the neighborhood association. The neighborhood association will be required to notify affected property owners of the proposed installation of the multi-way stop, and no petition will be required, or
 2. If the neighborhood association does not support the proposed service, the resident can petition. Petitions require signatures of at least 60% of all property owners within a 1200 ft. radius of the multi-way. If a petition is required, the CDOT will provide a petition that identifies those streets/blocks to be petitioned.
- Letters of endorsement or petition(s) should be mailed to the Public Service & Communication Division. After receipt and validation, multi-way stop sign controls will be installed. CDOT will install multi-way stops at some intersections due to special safety or traffic flow problems, but where a traffic signal is not yet justified. Guidelines followed are the national "Uniform Manual on Uniform Traffic Control Devices."

Transportation and Transit Committee
Item 15-01 Neighborhood Traffic Management Program Policy

Background

City Council recently approved changes to many aspects of the policies of the Neighborhood Traffic Management Program (NTMP). Council also voted in agreement with the Transportation and Transit Committee’s recommendations to keep the Multi-way Stop Control and Neighborhood Streetscape components of the polity in committee. This report provides information for discussion on the Neighborhood Streetscape portion of the NTMP.

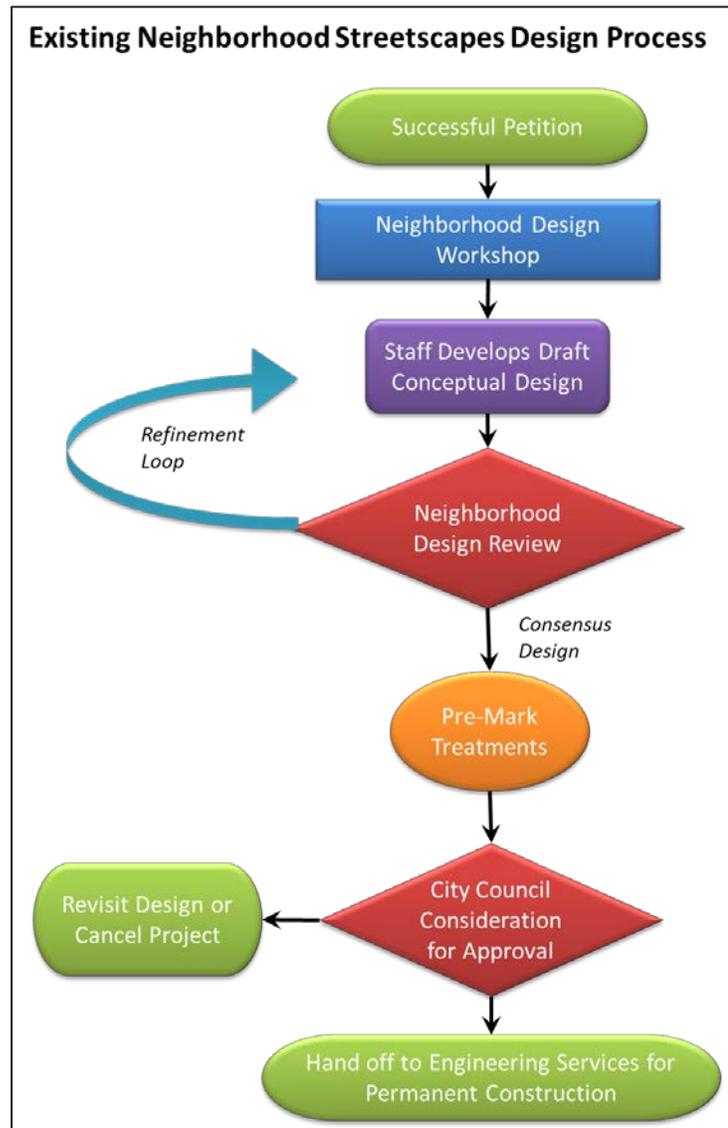
Neighborhood Streetscape Design Development Process

Existing Process

With minor adjustments over time, seven approved major traffic calming or neighborhood streetscape projects have followed the same rough process, outlined in the flowchart at right. Projects on Brookside Dr., Kaplan Dr., and Glascock St. are complete. Projects on Milburnie Rd., Cross Link Rd., Town and Country Rd., and Currituck Dr. are in various stages of implementation by the Design/Construction Division of Engineering Services.

In the existing process, a Neighborhood Design Workshop is the kickoff point to developing a conceptual design. City Staff has approached these meetings without developing potential treatment options in order to encourage open-ended input from participants.

The input is then compiled and a draft conceptual design is developed. Occasionally this design includes alternatives for some portions of the project. This draft design is presented back to the neighborhood at the Neighborhood Design Review, where input is sought to improve the design or to choose between options at a specific location. When staff feels that they have the best design possible which has consensus approval from the neighborhood, the treatments are



marked on the street and the City Council consideration is scheduled. When a conceptual design is approved by City Council, the project is handed off to the Engineering Services Department for implementation.

Challenges that the city has faced through this design and approval process include a lengthy and often uncertain time between project initiation and completion. Additionally, it has been difficult to bring a conceptual design to City Council that has clear strong support, especially when weighed against the significant investment these projects require. While the design development process is built on public input, the input is front loaded largely to the beginning of the process, when engagement about the project is often lowest. In addition, the open ended nature of the communication strategies may not best harness resident's abilities to respond to choices about their neighborhoods.

Goals for Potential Changes

Staff's understanding of the City Council's discussions is that there are several goals of an improved Neighborhood Streetscapes process and policy:

- Faster results and a more certain timeline for project completion,
- More ability for residents and City Council to exercise choice in determining a preferred design or strategy,
- More chances for traffic calming strategies on a particular street to improve through iteration, and
- Better communication of design alternatives.

Staff seeks confirmation and clarification of these goals as they work to develop an improved Neighborhood Streetscape process.

Major Points of Discussion

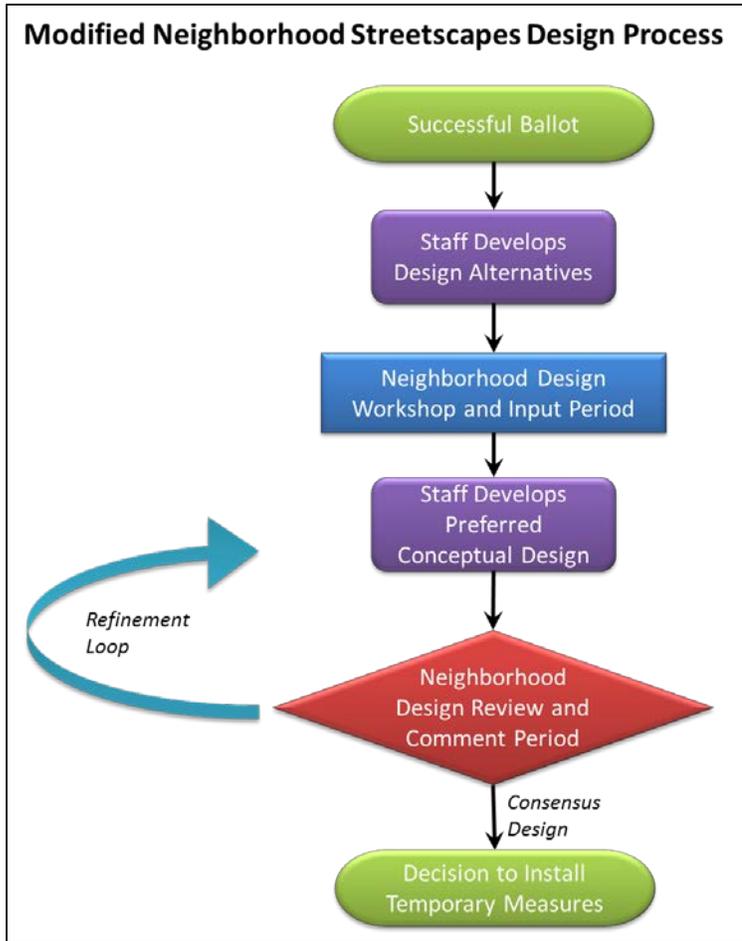
Staff has examined the existing process and has brainstormed a number of ways to improve it. Before developing a fully-formed process and policy, there are several major points to discuss with the Transportation and Transit Committee:

- Should the Neighborhood Streetscape program utilize temporary installations as a part of the design process? **Staff's recommendation is yes.** We should use this method to development designs and delivery projects. Temporary installations help to manage uncertainty, improve communications, and can deliver many project benefits on a much shorter timeline.
- Should the ballot process be repeated after temporary treatments are installed? Staff believes that the Transportation and Transit Committee members have implied that this is their desire.
- Should staff be enabled to test designs by installing temporary measures without direct council approval? **Staff's recommendation is yes.** Authorizing specific temporary treatments by City Council may not add value to the process. Final project approval should be by City Council action.
- What level of detail about the design process, alternatives, and decisions does City Council want to receive; at what points does Council wish the information to be provided? The flowcharts that follow do not yet contain these points of communication.

Modified Process

As a starting point to refine the Neighborhood Streetscape process, staff proposes the flowchart at right. This process includes the same number of public meetings as the existing process, but shifts the development of design alternatives to before the first public meeting. In addition, this process expands the public input beyond simple web content, phone calls/emails, and public meetings. Mailings used and invite neighborhoods to the public meetings would be modified to include links to the design alternatives and methods to provide input on the designs and/or choose alternatives.

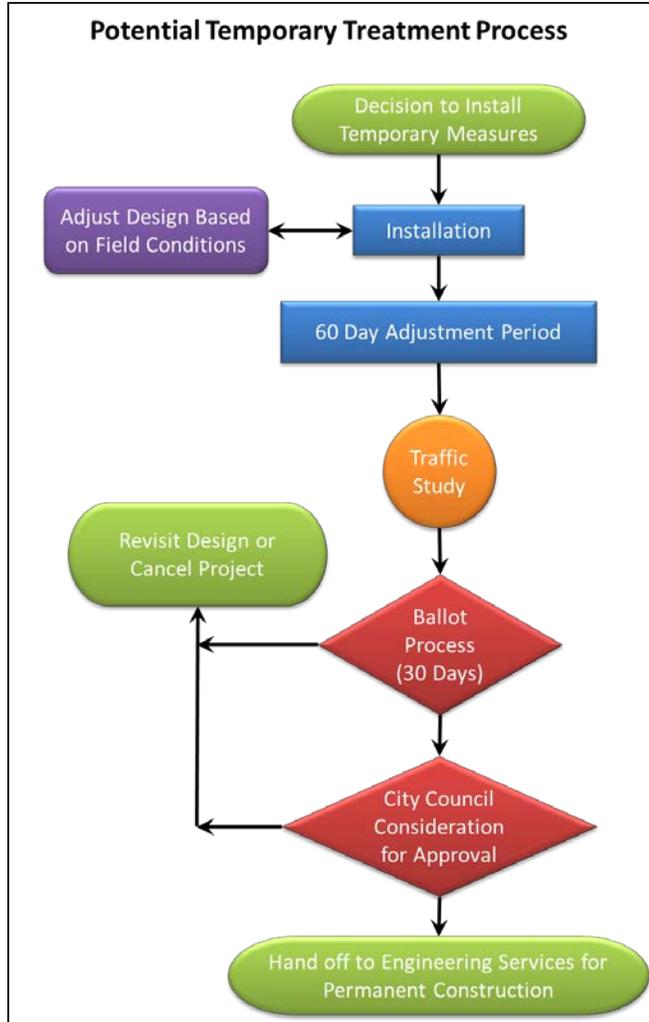
The purpose of both changes is to increase the depth of public input by providing citizens more choices, rather than asking more open-ended questions. In the past, the Neighborhood Design Workshop was an opportunity for attendees to tell city staff what the issues on a street were and to locate traffic calming treatments at locations important to them.



Temporary Treatment Process

The modified design process above is meant to complement a second stage of installing temporary measures, using materials such as flexible curbing or bollards. These temporary installations can function much the same as permanent construction, without the aesthetic or other benefits that landscaped installations provide. The flowchart at right describes a process to use temporary installations to complete the design process.

In this process, when city staff has a consensus design, temporary versions of the treatments are installed on the street. During a 60 day period, adjustments due to conditions in the field may be required, and public comments will be received. After this 60 day period, most drivers will have adapted to the treatments and representative traffic speed and volume measurements will be taken. This data will be presented to the public and a project approval ballot will be circulated using the same method as the project approval. If this ballot result is affirmative, then the project will be presented to City Council for approval. If



it is not successful, or if City Council does not approve the project, it can be canceled or the design can be reconsidered and modified. After a project is approved, it is expected that implementation can proceed on the same path as the current process, but that temporary installations can remain until permanent construction begins.

Conclusion and Staff Recommendation

Raleigh Department of Transportation Staff has discussed the Neighborhood Streetscape design process and the ideas expressed by the City Council. Some of the process steps have additional details to work out on a staff level within the Department of Transportation in order to effectively implement. The implications of any process change will require consultation with the Design/Construction Division of Engineering Services. With Council direction on the overall process, staff can determine these details and develop a complete draft policy for full consideration.