

Neighborhood Traffic Management

Dade County, Florida's Street Closure Experience

**AS A RESULT OF
NUMEROUS REQUESTS
FOR STREET CLOSURES
FROM NEIGHBORHOOD
RESIDENTS, ONE FLORIDA
COUNTY CONDUCTED A
TRAFFIC FLOW
MODIFICATION STUDY TO
ADDRESS RESIDENTS'
CONCERNS.**

METROPOLITAN DADE COUNTY, Fla., USA, with a population of 2,013,821, is a metropolis of vast cultural diversity. Dade County has jurisdiction for traffic control in over 30 municipalities. Within the last several years, traffic on local streets in various parts of Metropolitan Dade County has received widespread attention. Neighborhood residents have inundated the county with requests for street closures; perceivably to improve their quality of life and safety. The Metro-Dade County Public Works Department (MDCPWD) and Metropolitan Planning Organization (MPO) subsequently imposed a moratorium on all pending street closure requests and obtained the professional engineering services of Frederic R. Harris Inc. to conduct a street closure/traffic flow modification study. The purpose of this study was to research issues and concerns relating to neighborhood street closures while developing a traffic management procedure to adequately address and analyze citizen requests for traffic flow modification.

Although the grid network of streets in Metropolitan Dade County often encourages traffic from congested arterial streets to overflow onto residential streets,¹ research on the subject of residential traffic control indicates that citizens' desires for street closures escalate for the following reasons:

- Excessive speed on residential streets;
- Excessive amount of traffic on residential streets;
- Traffic intrusion in communities with multiple access points;
- Accidents;
- Traffic noise; and
- Fear of crime.

DILEMMA FACING GOVERNMENT AGENCIES

Government agencies are increasingly faced with a host of traffic engineering questions when evaluating citizen desires for street closures; questions such as:

- Are volumes, cut-through traffic, vehicular speeds, accidents or crime statistics of such a magnitude to warrant street closures?
- Will diverted traffic as a result of street closures adversely impact other streets or adjoining neighborhoods (and create additional requests)?
- Will the proposed improvements affect emergency vehicle access?
- What other traffic control measures are available to address residents' concerns?
- How will requests for street closure be processed, analyzed, implemented and monitored?

In addition, these agencies also are confronted with both legal and financial challenges when addressing citizen requests for closure. For instance:

- Who will pay for and maintain the requested improvements?
- What are the legal issues that may complicate a traffic mitigation policy?

These public and private concerns must be clearly understood when addressing requests for local street closures or any other neighborhood traffic flow modification.

STUDY OBJECTIVES

The MDCPWD and MPO, in response to increased requests for street closure from municipalities, obtained the professional engineering services of a private consulting firm to conduct a study to investigate alternative solutions to street closures as well as to develop procedures and guidelines. The objective of the study was to develop a uniform set of guidelines

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and standard procedures to be followed by local municipalities and the county for implementing neighborhood and localized area traffic control.

THE STEERING COMMITTEE

A carefully selected project steering committee was comprised of representatives from the consultant, the Florida Department of Transportation, Metro-Dade County and various local municipalities; some of whom had previous experiences with citizen requests for street closures. To maximize public input and information sharing, the steering committee periodically convened throughout the study process. The steering committee developed a standardized set of sequential procedures and guidelines for use by the public, local officials, or other private sector interests considering any request for traffic flow modifications or responding to requests to restrict local traffic access. These procedures would provide Metropolitan Dade County and its municipalities a uniform approach to facilitate the review process. The proposed procedures ensure that the aforementioned concerns would be appropriately studied and evaluated in a timely manner and that the full range of traffic and community impacts would be considered.

EXISTING POLICY

Pre-study Metro-Dade County procedures for implementing street closures may include any of the following methods:

1. Creation of a special taxing district that would allow private neighborhood homeowner associations to petition for traffic control and monitoring of all traffic entering the development in exchange for special assessment fees based on the degree of control;
2. Reverting the right-of-way to the adjacent property owners for street vacations and cul-de-sacs;
3. Within a municipality, citizens petition the municipality for street closure; and
4. In un-incorporated Dade County, citizens submit street closure requests to the Public Works Department.

Procedures for items 1 and 2 were well defined for municipalities and unincorporated Dade County. However, in the case of item 3, municipalities were not sure as to what their requirements and obligations were in terms of before-and-after traffic studies for street closure requests. It should be noted that MDCPW has jurisdiction for traffic control within 30 municipalities throughout the county. Therefore, prior to any traffic flow modifications, the municipalities are required to obtain concurrence from the MDCPW.

THE SURVEY

After reviewing previous procedures, studies and Metro-Dade County correspondence with municipalities and citizens concerning street closures, a questionnaire was developed with the purpose of contacting all municipalities within the county, advising them of the Street Closure Study, and requesting input concerning neighborhood traffic control issues. The survey was conducted primarily via mail, although several personal interviews were conducted with various state, county and local officials as well as local neighborhood associations, street closure activists and other professional engineers. The main topics covered in the survey included:

- The status of existing or pending street closures;
- Typical traffic control measures requested by citizens;
- Identification of typical residential traffic problems;
- Funding methods; and
- Perception of street closure performance.

The survey results revealed that elected officials must increasingly address a number of traffic, socioeconomic, legal and political issues. While the decision to restrict residential street access as a solution to residential traffic control problems has become a popular solution to address citizen complaints the survey also concluded that:

- The problem "to close or not to close" is common to many local governments within Dade County;

- Complex issues such as the relation of traffic intrusion vs. crime are unique to every neighborhood, and often critically debated;
- Creative engineering and planning solutions are needed to appease public and political sentiment;
- Traffic engineers must include the impacts of proposed traffic control measures on a macro-level, since implementing one solution may magnify other problems;
- A typical residents' solution to traffic problems often involves installing "Stop" signs, barricading roads or calling the police; and
- Alternative traffic mitigation techniques should be investigated prior to implementing street closure design.

The survey also confirmed a common thread among many local jurisdictions. That is, a formal process or procedure to identify existing traffic problems, explore a full range of solutions and evaluate potential impacts is often non-existent within most local government agencies.²

Once the issues common to street closure or traffic flow modification were identified, the project steering committee was then able to recommend pragmatic tools to allow governments to effectively address citizens' traffic operations concerns within their neighborhoods.

GOVERNMENTAL AND PUBLIC TRAFFIC CONCERNS

Through extensive literature research, review of county files and aforementioned questionnaire survey, consultants identified the following governmental (institutional) and public traffic concerns relative to street closure or traffic flow modification of local streets.

Institutional Concerns

A number of issues from both municipal officials and local neighborhood representatives regarding the benefits and consequences of street closures were identified. Listed below are those common macroscopic issues public officials are faced with when addressing street closure requests:

- Diverted traffic volumes resulting in degraded Levels of Service (LOS) on adjoining neighborhood streets;
- Diverted traffic volumes resulting in degraded LOS on the adjoining arterial or collector roadway system;
- Degradation of emergency services' access and response times; and
- Degradation of other services such as school buses, public transit, mail delivery and trash collection.

Often, as a result of inadequate or lack of before-studies, these issues are identified after a particular street closure has been implemented rather than during the planning or proposal stage.

Public Concerns

The general public is more concerned about microscopic problems that they perceive to adversely affect the neighborhoods' quality of life. These problems may include:

- Excessive vehicle speeds within residential neighborhoods;
- "Cut-through" traffic or traffic intrusion;
- Excessive amounts of traffic;
- Increase in accidents;
- Safety of pedestrians and bicyclists;
- Perception of increasing crime and drug sales;
- High truck traffic as a result of traffic intrusion;
- Increase in noise levels as a result of high traffic volumes;
- Increase in emergency services' response time; and
- Impact on property valuation as a result of street closures.

Unfortunately, the negative consequences resulting from street closures often have been overlooked. As an alternative, a number of traffic calming devices to mitigate these consequences were presented to the project steering committee for further review and approval.

THE TRAFFIC CALMING ALTERNATIVE

Traffic calming frequently involves implementing geometric changes to streets to regulate vehicle speeds while decreasing the propensity of the non-local driver's intrusion into residential neighborhoods.³

The traffic calming devices recommended to the project steering committee would be designed and installed at strategic locations to discourage cut-through routing or speeding, increase travel time on local neighborhood streets and keep through traffic on arterial roads.⁴ A neighborhood desiring to address specific traffic control problems would find that a strategic plan that utilizes these devices in combination with each other and supported by all affected parties will be effective. Some of the more common physical techniques currently being utilized to calm local residential streets are:

- Education;
- Law enforcement;
- Border landscaping;
- Movement restrictions;
- One-way streets;
- Multi-way stop signs;
- Gateway treatments;
- Raised islands/medians;
- Speed humps;
- Slow point (neckdown);
- Chokers;
- Roundabouts;
- Semi-diverter;
- Diagonal diverter; and
- Street closure.

Levels of Traffic Calming

Several category levels were developed to distinguish those least restrictive (passive) traffic control measures (e.g., signing, pavement markings) from those (active) traffic control measures that are most restrictive⁵ (e.g., diagonal diverters, street closure). It should be noted that among each of the categories to be defined, there could be many design variations unique to each device. The least restrictive measures to address a traffic problem would be employed first (Category I), followed by more active and physical traffic calming devices (Category IV). This incremental approach would allow a cost effective measure to identify the real traffic problem, if any, and better evaluate the impacts of more restrictive measures.

Legal Implications

Metropolitan Dade County is cur-

rently investigating legal opinions regarding the equal rights of its citizens to the lawful use of the public streets and highways within its boundaries. Some government agencies already have addressed the legal issues of traffic regulation within their municipalities. According to the City of San Buenaventura, Calif., USA's "Policy Relative to Closure or Modification of Traffic Flow on Public Streets," chartered municipalities may regulate traffic within their jurisdictional boundaries in order to ensure public safety and health but, absent express authority, may not determine which traffic shall and which shall not use its local streets.⁶

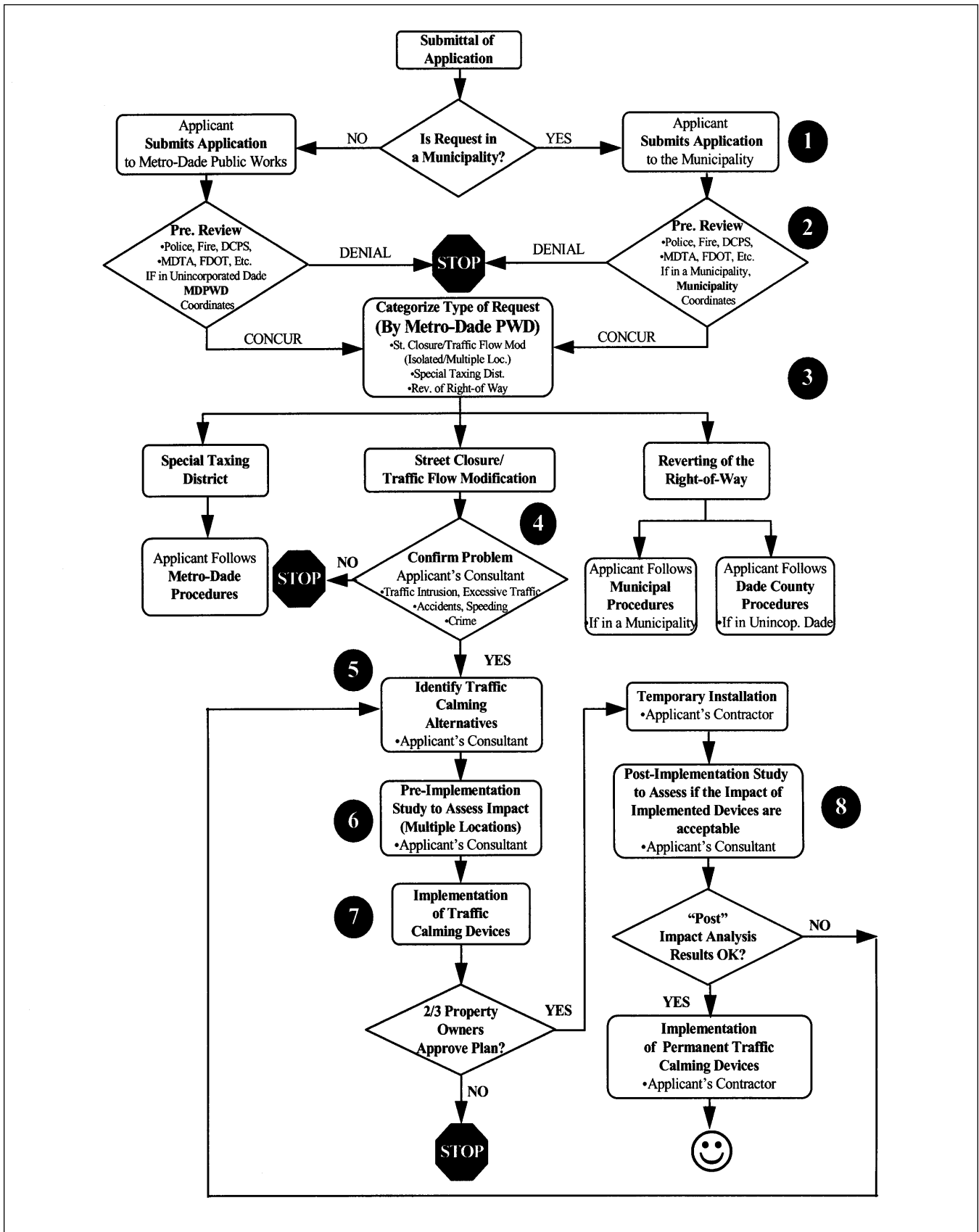
A NEW PROCESS

Future street closure or traffic flow modification within Dade County and its municipalities will be limited to residential local streets and residential collector streets. Prior research⁷ has found that a residential street begins to lose its livability when traffic exceeds 1,500 vehicles per day (vpd) or 150 vehicles per hour (vph). Similarly, the thresholds for a residential collector are 3,000 vpd and 300 vph, respectively. These values represent recommended guidelines for use by engineers as part of the evaluation process. When evaluating the traffic impacts and livability impacts of traffic calming alternatives, the evaluator also must consider and analyze the effects of the implemented alternatives on:

- Speeds;
- Cut-through traffic;
- Level of service—within neighborhood;
- Level of service—neighborhood periphery;
- Accidents and safety;
- Neighborhood cohesiveness;
- Emergency service access—fire/medical;
- Right-of-way requirements;
- Environment (noise, air pollution); and
- Comfort level and livability.

The following requirements must be met prior to MDCPW considering requests for traffic flow modifications (TFMs) including street closures:

Figure 1. Application for street closure or traffic flow modification.



- The facility must be classified as a local street or local collector;
- Commitment from the applicant to acquire additional right-of-way, if needed for cul-de-sacs or turnarounds;
- Pre-implementation data confirm that a problem exists;
- Diverted traffic forecasts indicated that the desired TFM will not create detrimental traffic operation impacts on affected streets and intersections;
- The requested TFM will not result in liability exposure to the county;
- Two-thirds of affected property owners must concur with the requested TFM; and
- The applicant(s) must share the costs involved to implement the requested TFM, specifically engaging a traffic consultant to conduct a traffic study and a licensed contractor to install the approved TFM.

The process of responding to a citizen request or proposal for a street closure or traffic flow modification will contain the following elements:

1. Applicant submits application that identifies perceived problem (traffic intrusion, speeding, excessive traffic volumes, etc.).
2. Preliminary review by the appropriate government agency (county or municipality) which includes fire, police, public schools, transit, FDOT and others that may be affected by traffic flow modifications or street closure.
3. Categorize the type of request accordingly:
 - Traffic flow modification/street closure;
 - Reverting right-of-way to homeowners; or
 - Creation of a special taxing district.
4. Confirm problem, assess needs and define objectives. Pre-implementation data gathering efforts for this study element may include:
 - License plate surveys to confirm cut-through traffic;
 - Average Daily Traffic (ADT) counts to confirm excessive traffic volumes;
 - Spot speed studies to confirm speeding;
 - Accident history for the prior three

- Crime statistics for one year to confirm criminal acts potentially deterred by street closure.
5. Identify alternative traffic calming and traffic control solutions, specifically:
 - Adopt an area-wide, systematic approach to the development of alternative solutions to street closures;
 - Employ the least restrictive measures to address a traffic problem first; and
 - A traffic consultant, with citizen input, will generate a staged traffic calming plan including cost estimates.
 6. Perform pre-implementation traffic study to include, among other items such as traffic counts:
 - Boundary of the affected area;
 - Volume and Level of Service (LOS) analysis;
 - Queuing, storage and phasing requirements at affected signalized intersections; and
 - Emergency vehicle response times and fire hydrant accessibility.
 7. Install traffic control devices for a 90-day trial period after:
 - A public workshop is conducted for all affected property owners, tenants, business owners and public agencies;
 - Applicant obtains concurrence from two-thirds of affected property owners; and
 - Plans are developed by a registered engineer and approved by MDCPW.
 8. Perform "after" study to evaluate impacts of implemented alternative solutions.
 - MDCPW may grant approval for permanent installation if study does not show any adverse impacts within the affected boundary.

A flow chart outlining the application process is shown in Figure 1. It was recommended in the final study that the procedures and devices described herein initially be tested for a trial period and the process fine tuned prior to the county's formal adoption of an improved street closure/traffic flow modification policy.

CONCLUSIONS

The recommended guidelines presented to Metropolitan Dade County address traffic issues in an incremental fashion⁸ with the least restrictive measures applicable to a particular situation tested first, then monitored and supplemented, modified or replaced with more stringent measures if previously implemented measures are found to be ineffective. When non-traffic issues enter into the decision process, the procedures weigh fully both the traffic and non-traffic implications of a street closure or traffic flow modification. The application process described herein shall apply equally to any residential traffic control situation and provide government officials a pragmatic tool to address neighborhood traffic control issues. An 18-month trial period for Metro-Dade County's initial Neighborhood Traffic Management Program (NTMP) was recently approved by the Dade County Commission. The goal of this trial period will be to refine the street closure/traffic flow modification application and implementation process described herein. As of this writing, 20 TFM applications are pending. ■

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