

City of Cedar Park  
Planning Department

Residential Traffic  
Management Program

*Approved by City Council on 10/24/02*

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### **Introduction**

Traffic and traffic congestion are major concerns for nearly every developing city in America. Unfortunately, the existing network of major freeways and arterials is often not sufficient. Some drivers seek to use surface streets as “short cuts” to avoid congested intersections. Others view the wide streets with gradual curves as invitations to drive faster than posted speed limits. This behavior can have a negative impact on the livability, tranquility and safety of residential neighborhoods.

The City of Cedar Park is committed to providing safe, efficient and reliable transportation facilities for its residents and visitors. The City also values its identity as a family-friendly, quiet collection of neighborhoods where families and friends can congregate without worrying about speeding cars.

With these goals in mind, the City of Cedar Park has developed a set of traffic management policies and guidelines. These guidelines will help staff address transportation concerns on residential streets.

### **Background**

For the last several decades, American cities have grown in a manner oriented around the needs of the automobile. The creation of satellite cities around major employment centers has led to the “bedroom community” and commuter lifestyle for millions of drivers. The corresponding travel patterns and rush hour traffic jams have encouraged a new problem: the abuse of residential streets for commuter interests.

When the major roads become crowded, commuter traffic filters into residential

roadway networks, often at higher than residential speeds. This commuter traffic on residential roads can lead to complaints about increased traffic noise, vehicle speeds and volumes.

### **Cedar Park Residential Traffic Management Program**

The City of Cedar Park has a two-tier policy for addressing neighborhood concerns about traffic. The purpose of the policy is to ensure that legitimate citizen complaints are addressed in a systematic and satisfactory manner. The use of two distinct tiers of traffic management techniques serves to guard against unnecessary or “heavy handed” solutions.

The City will address and review resident concerns about traffic in a systematic manner. Data collection and engineering analysis have strong roles in all aspects of the traffic management. The use of valid data to document traffic complaints will facilitate the development of solutions that can be applied repeatedly across the City. It is the intention of the policy to encourage the compilation of objective, comprehensive records detailing the speeds, volumes and travel patterns along residential streets.

In order to balance the interests of a particular street or group of citizens with the needs of the general traveling public, careful attention will be paid to the proposed solutions as they may adversely affect critical City services. The resulting process should be one in which citizens and staff can expect a thorough and defensible review of traffic concerns.

**The RTMP Process**

It is City policy to respond within one business day to citizen complaints or concerns. When a resident voices a concern about residential traffic, (speeding vehicles, noise, volumes, etc.) city staff will review the files to determine the scope and extent of the problem.

If the concern is broad in scope (cut through volumes on several streets for example), the request will be expanded into a more formal traffic study at the discretion of city staff. The results of the traffic study will be made available during a public hearing or meeting designated for this purpose. Where feasible, the participation of the affected Homeowner’s Association (HOA) will be solicited to assist in the dissemination of the study findings.

Please note that in order to properly evaluate a specific situation, adequate time must be allowed. Following the initial request, city staff will need to collect and review data, conduct engineering studies and then develop possible remedies to address the issues.

Each step in the process will require a certain length of time depending upon the breadth and/or complexity of the complaint. The following table is for illustrative purposes only and not to be used as a fixed timeline. A flowchart displaying the process is provided in Appendix B. A sample petition for residential traffic study requests is provided in Appendix C.

<u>Action/Activity</u>	<u>Duration</u>
Citizen Contact	1-2 days
HOA Contact	1 month
Data Collection	1 month
Data Review	1 month
Develop remedies	2 months
Public Meeting(s)	1-2 months
Effect Improvements	1-3 months
Review Results	6 months

**Typical Residential Traffic Concerns**

Due to predominant travel patterns in American cities, many residents have similar complaints about traffic. The following list presents the majority of residential traffic concerns:

- speeding vehicles
- excessive volumes of vehicles
- excessive roadway/vehicle noise
- reckless or dangerous driving
- conflict with pedestrians
- conflicts between vehicles
- limited visibility at intersections
- parking access or nuisance

In large part, the above list reflects the difference between residential streets and commercial roadways or thoroughfares. What constitutes reasonable traffic for a commercial development may be considered excessive in front of a local park or private residences.

In addition, it is common for residents and pedestrians to perceive roadway

speeds differently than drivers. This can happen for a number of reasons. For example, a pedestrian typically walks about 2 to 4 miles per hour. When passed by a private car traveling at 30 miles per hour, a pedestrian can perceive the vehicle as driving fast, even though it is moving at the speed limit for residential streets.

Similar differences of opinion can result from the relative quiet of a backyard conversation as interrupted by a passing delivery van. It is for reasons such as these that the City will use data collection to determine the degree and extent of traffic conflicts.

### **Data Collection and Evaluation**

The simplest and most cost effective means of evaluating traffic concerns is through data collection. Traffic data is typically collected during regular school days under good weather conditions. Exceptional dates and times will be examined only when specifically applicable. The data records will include vehicle speeds, traffic volumes by direction, pedestrian activity and/or any other necessary field observations. The length and scope of the data collection will depend upon the type and detail required. City staff will review the data collected to determine the necessary traffic improvements. The time necessary to collect, review and analyze the traffic data may require anywhere from 1 to 3 months.

### **Minimum Thresholds for Action**

In order to insure against unnecessary or excessive traffic controls, the selection of supplemental traffic management measures will be according to minimum thresholds established by the City of Cedar Park Planning Department. Wherever possible, data collection and engineering principles will be used to determine the validity and severity of traffic problems.

In the event that data collection and analysis do not support resident claims about traffic problems, the request for additional traffic management measures (including law enforcement) will be denied.

To warrant further study, at a minimum the collected data must document:

- 85<sup>th</sup> percentile speeds 5 miles in excess of the posted speed limit
- 20% of total daily traffic volume is defined as “cut through”
- Daily roadway volumes at least 20% in excess of design volumes

For complaints about pedestrian safety, intersection visibility and access, on-site investigations will precede any decision to conduct formal studies. Requests for STOP signs, YIELD signs or improved traffic control devices (signals, crosswalks, etc.) will be examined according to accepted standard engineering practice.

### **Supplemental Traffic Management Measures for Consideration**

Some of the complaints about residential traffic can be addressed with the use of simple, cost effective measures such as improved signage and marking, lighting, or increased law enforcement. Only the most serious and persistent problems will require the use of physical measures that

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significantly alter the operation of a roadway. Where the first tier of measures does not adequately address the traffic concerns, more involved improvements will be considered.

In the case where data collection and analysis supports a complaint about traffic conditions, the following list of traffic management measures is available for application. Please note that not all of the following measures can or should be applied in every location. The availability of a measure is no substitute for engineering science and judgment.

### Stage One Measures

The following measures and devices are considered elementary solutions to residential traffic concerns. Please note that the consideration of stage two measures will only occur after stage one solutions have been implemented.

<u>Techniques</u>
Additional signage
Lane markings and striping
Parking restrictions/prohibitions
Restricted movements
Increased law enforcement
Safety studies
Public Information Campaigns

### Additional Signage

Where necessary, additional signs can be placed to instruct drivers, pedestrians and other parties at points of conflict. The signage can be advisory (yellow), regulatory (white) or informational (brown and/or green). The purpose of additional signage is to call attention to conditions that may not be known or respected and which negatively affect public safety.

### Lane Markings

Additional lane markings include the placement or removal of roadway markings that direct vehicle movements. In the case of intersections, approach turns or curves, the markings may be altered to include bicycle lanes, pedestrian crossings and/or turn lane designations. The purpose of modifying the on pavement markings is to provide clearer instruction regarding the safe and predictable movement of vehicles.

### Parking Restrictions

In the event that on street parking is a nuisance or obstruction, staff may choose to restrict, prohibit or limit on street parking to assist in the operations of a given roadway. Requests that on street parking spaces be reserved for personal use will be refused. However, in the interests of public safety and access, on street parking privileges may be removed in certain instances.

### Restricted Movements and Access

At locations of high congestion or constrained access, the prohibition of specific traffic maneuvers may be implemented. No left turn prohibitions and restrictions on access may be implemented to improve safety and traffic operations at congested intersections.

### Increased Law Enforcement

Consistent and reliable enforcement of the traffic laws will help address numerous public concerns about traffic issues. In areas with complaints about speeding, excessive traffic volumes, reckless or inconsiderate driving, a responsive police force can do much towards gaining the public's trust and compliance. Focused speed studies (using radar trailers and traffic counters)

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can be combined with a willing and accessible police department to discourage speeding on residential streets.

### Safety Studies

In locations where residents express concern for pedestrian and/or driver safety, a formal safety study can be conducted to document and evaluate the geometric, operational and signage characteristics of the location. Safety studies can result in the placement or relocation of reduced speed school zones, STOP signs, crosswalks, access restrictions and traffic signals.

### Public Information Campaigns

To address concerns of residential traffic where the behavior of the drivers is an issue, information campaigns are useful. Informational radar speed trailers, flyers, and courtesy patrols can help remind drivers of the impact traffic has on adjacent residential developments.

The following table details some of the anticipated impacts resulting from stage one traffic management measures. Please note that not all impacts of each technique are presented in the table.

**List of Probable Impacts Resulting from Stage One Traffic Measures**

Traffic Device	Traffic Reduction	Speed Reduction	Noise & Pollution	Traffic Access Restriction	Maintenance Problems	Level of Violation	Impact to Bicycles	Costs
Stop Signs	Unlikely	None	Increase	None	None	High	None	Low
Additional Signage	No	None	Decrease	No Turns	Vandalism	High	None	Low
Lane Markings	No	No	No Change	None	Routine	High	Minor	Low
Parking Restrictions	No	No	No Change	Yes	Vandalism	High	None	Low
Increased Enforcement	No	Yes	No Change	No	None	Low	None	High
Safety Studies	No	No	No Change	Some	None	N/A	None	Low
Public Information	No	Some	No Change	No	None	N/A	None	Low

**Aggressive Traffic Management Techniques**

There are instances where the behavior and number of aggressive drivers is greater than can be addressed with traditional traffic control measures. In response, many municipalities have installed various self-enforcing traffic control devices. The majority of these measures are referred to as “traffic calming.”

It should not be assumed that these measures are failsafe or simple to implement. The use of physical constructions within a roadway requires considerable thought and engineering review. In fact, the design, construction and maintenance of traffic calming devices are more in line with geometric roadway improvement programs than typical traffic management practices.

The City of Cedar Park considers traffic calming devices among several traffic and transportation management techniques available for use to address documented traffic problems. Traffic calming devices are not to be installed in isolation, but as a part of the overall traffic management policy. Any installation of physical devices will result from extensive data collection and analysis and conform to engineering standards and acceptable practice. The installation of physical devices will come in combination with additional signage, markings and traffic controls. A more detailed discussion of issues related to traffic calming devices is included in Appendix A.

**Stage Two Improvements**

In the case where all attempts using stage one devices and measures have proven unsuccessful in addressing documented traffic problems, consideration will be given to the second tier of traffic management devices. In the case of residential streets, these stage two devices can include traffic circles, chicanes, speed humps or tables and

partial road closures. As with stage one measures, extensive data collection and analysis is required. Not all of the following measures can or should be applied in every location. The following list of measures and devices are considered Stage Two solutions:

**Stage Two Measures**

<u>Techniques</u>	<u>Primary Applications</u>
Speed humps, cushions & tables	Reduce speeds
Chicanes and neck downs	Reduce speeds
Road closures	Reduce volumes
Medians & barriers	Direct traffic
Diverter	Reduce volumes
Traffic circles	Reduce speeds
Raised crosswalks	Reduce speeds

**Disadvantages of Traffic Calming**

Traffic calming devices can be used as blunt instruments. They can affect all vehicles on the roadway, speeders and non-speeders alike. Certain devices create additional road noise that can concern residents. In addition are the concerns of the emergency and public safety services: (police, fire and ambulance services).

Vertical devices such as speed humps and tables require the longer vehicles (i.e. fire trucks and ambulances) to slow more than standard length vehicles. Horizontal devices such as traffic circles, chicanes or narrowed intersections, can prove too tight for EMS vehicles to navigate easily.

In response to the above concerns, several municipalities involve representatives of the Fire, Police and Emergency Services Departments in the review of proposed traffic calming measures. By involving all affected parties, including concerned members of the public, compromises can be developed, prior to a final design plan.

**Emergency Response Routes**

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Route maps for emergency and public safety services are helpful for planning purposes. Route maps should provide lists of primary and secondary response routes. Designating primary and secondary response routes will help planners and engineers evaluate proposed changes and the impact to EMS.

The selection of primary and secondary response routes is the responsibility of the Fire, Police and EMS Departments working in conjunction with the Planning Department. While the routes are clearly defined, they are subject to revision and modification as conditions change or circumstances warrant.

To protect the integrity of primary and secondary emergency response routes, the City of Cedar Park designates certain streets as preferred access routes for EMS services.

Any and all traffic control devices on these roadways will be reviewed to minimize the impact the provision of emergency services. Certain devices may be prohibited from installation on specific streets due to the difficulty they pose for EMS and Fire Department service vehicles.

There is a list of the designated “primary response routes” in Appendix D.

### Conclusions

The Residential Traffic Management Policy is intended to address resident concerns about traffic on neighborhood streets. The policy is designed to supplement existing staff procedures used to improve traffic operations in the City. For more information, please contact the Cedar Park Planning Department at (512)-258-4121.

### List of Probable Impacts Resulting from Stage Two Traffic Measures

Traffic Device	Traffic Reduction	Speed Reduction	Noise & Pollution	Traffic Access Restriction	Maintenance Problems	Level of Violation	Impact to Bicycles	Costs
Speed Humps	Low	Yes	Increase	None	Moderate	Low	Low	Moderate
Chicanes	Low	Yes	Increase	None	Moderate	Low	Low	High
Road Closures	High	Yes	Decrease	Yes	Moderate	Low	Low	High
Medians & Barriers	High	Yes	Decrease	Yes	Moderate	Low	High	High
Diverters	High	Yes	Decrease	Yes	Moderate	High	Low	High
Traffic Circles	Low	Yes	No Change	Some	Vandalism	N/A	None	High
Raised Crosswalks	None	Yes	No Change	Some	Low	N/A	None	High

## Appendix A – Descriptions of various physical devices



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Chicanes require vehicles to shift laterally the width of one lane to travel through the device. Chicanes are more effective when combined with centerline medians (see above) to avoid vehicles straddling the centerline.

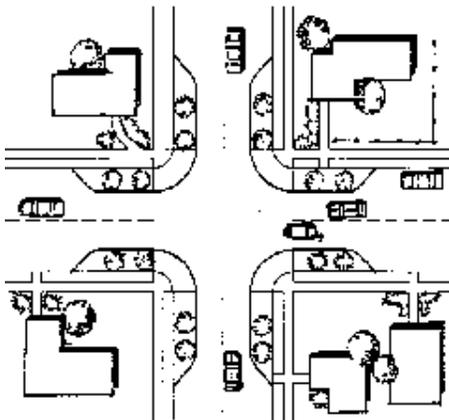
### Centerline Medians



For wide intersections, the location of a dividing median in combination with a crosswalk can reduce risk associated with pedestrian crossings.

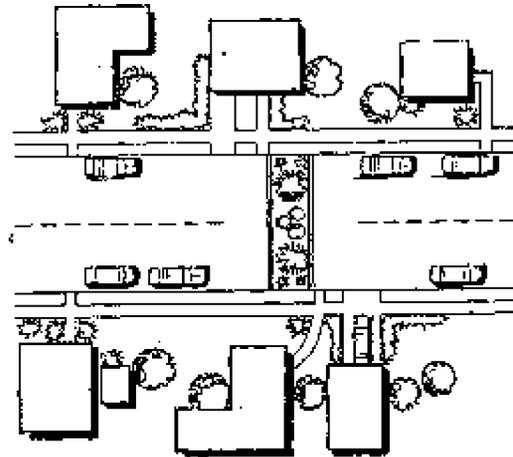
Centerline medians are designed to reinforce lane assignments, especially along constrained roadways. The median can serve as a slight speed reduction device, or to discourage speeding on dangerous curves.

### Intersection Bulb-outs



Intersection bulb-outs can be placed to provide assistance for pedestrian access. The intersection is narrowed to shorten the total distance required to cross the travel lanes. An additional feature of the intersection bulb-out is the narrowing or elimination of travel lanes.

### Road Closures



This device is the most stringent of anti-volume measures. A full road closure prohibits movement through the device entirely, except in certain instances for emergency vehicles. The traffic is forced to use alternative routes, which must be carefully identified prior to installation.

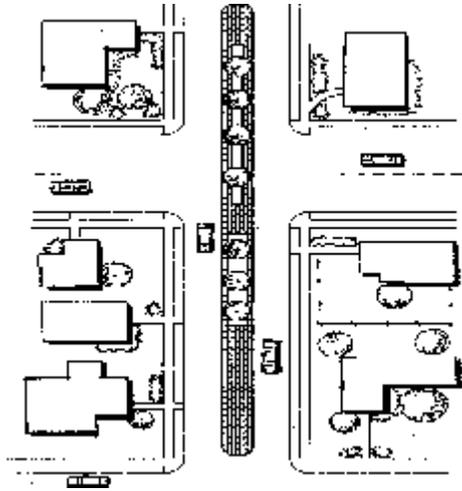
### Partial Road Closure



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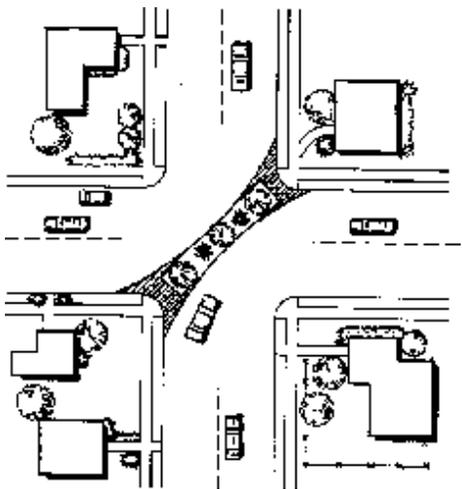
Partial road closures prohibit movement in one direction. Common designs constrict traffic flow and allow exiting movements from a neighborhood. Many designs include mountable curbs or other emergency access methods. The one shown above provides a separate channel for bicycles.

### Median Barriers, turn islands



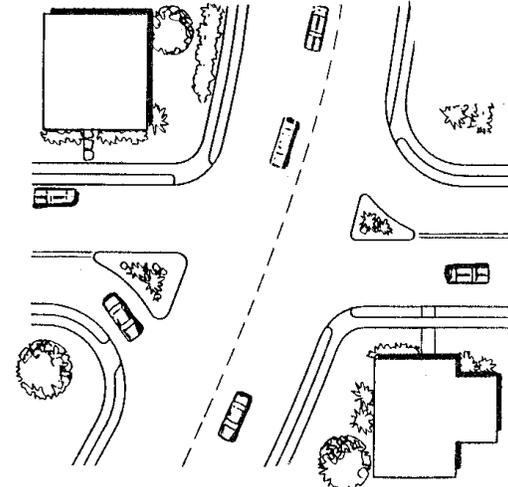
For wide intersections, a center median barrier can be used to prohibit crossing movements exclusively. Similar to the partial road closure, access is denied in a specific direction.

### Diverters, channeling islands



Similar to full road closures, diagonal diverters are high impact anti-volume devices. The diagonal diverter alters the access for traffic into right-angle movements and eliminates through access. The design can include provision for emergency vehicle access.

### Forced Turn Islands



Forced turn islands require that vehicles entering an intersection perform a designated movement. In the case above, entering traffic is channeled north and south to prohibit through movements. Unlike median barriers, forced turn islands allow left-turn access from the main lanes.

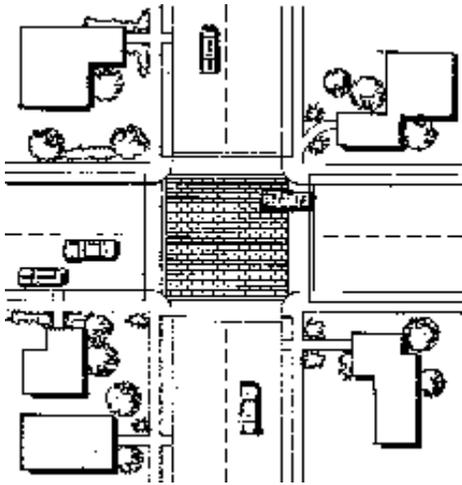
### Residential Traffic Circles



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Residential traffic circles are placed primarily as anti-speed devices. The location of the circles is in the middle of the residential intersection that does not have an existing four-way STOP sign. The circle requires entering traffic to yield to vehicles already in the intersection and to travel counter-clockwise around the device. Traffic circles have proven to be very effective in reducing neighborhood speeds.

### Raised Crosswalks & Intersections



For intersections with large volumes of pedestrians or commercial development the entire intersection can be raised to provide greater visibility for crossing pedestrians. The dimensions of the raised intersection are similar to those of other vertical devices, with the overall height approximately 3 to 4 inches above the travel surface. Several installations have included extensive landscaping.

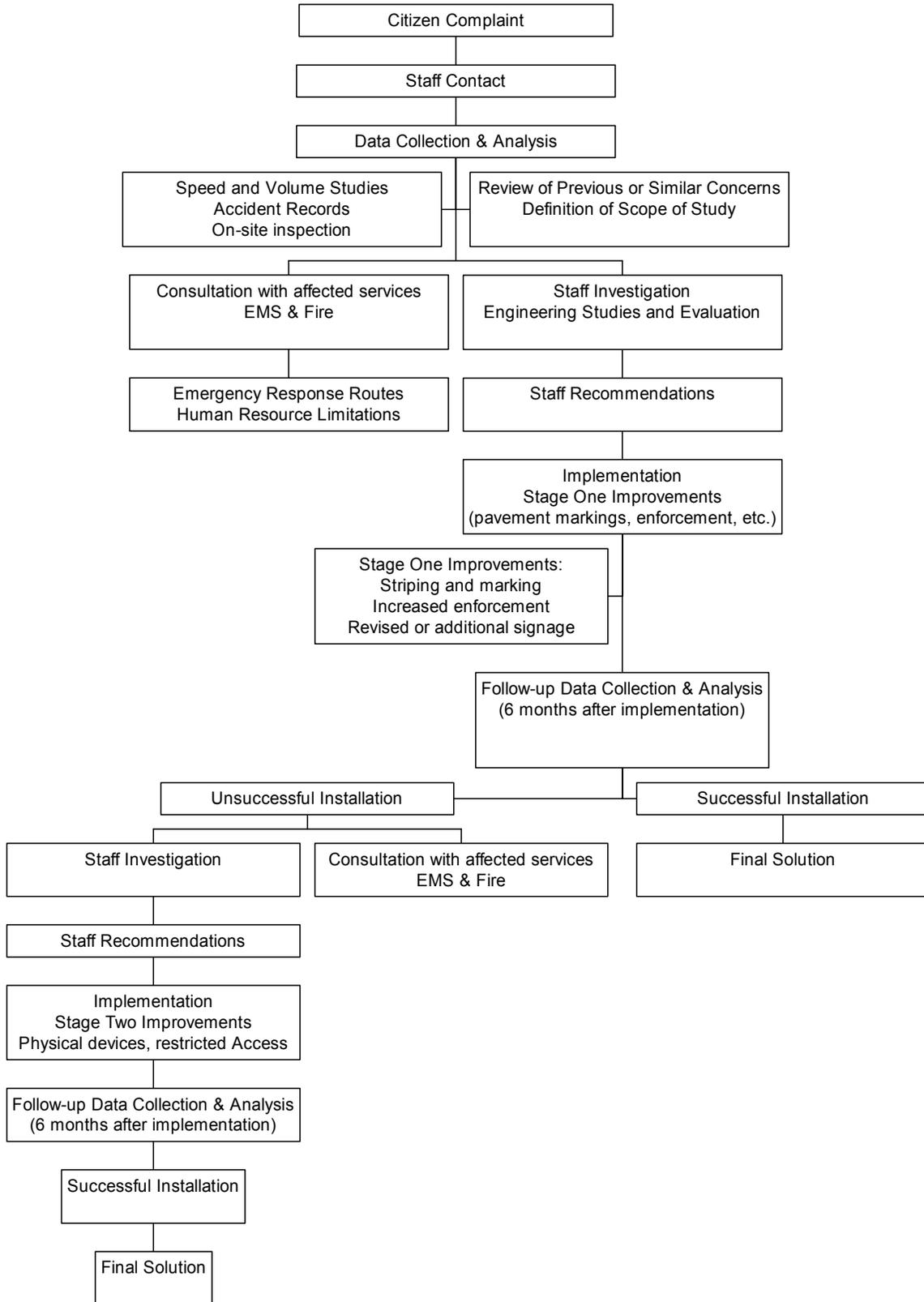
### Raised Crosswalks



Instead of raising the entire intersection, only the crosswalk locations can be raised to serve pedestrians. The dimensions of the raised intersection are approximately the same as those of the 22-foot wide speed table.

## Appendix B – Flowchart of Residential Traffic Management Process

### Residential Traffic Management Policy Process



Appendix C – Sample Petition Form  
for Resident or Homeowner’s Association

PETITION FOR RESIDENTIAL TRAFFIC MANAGEMENT REVIEW

Homeowner's Association:		
Contact Person:	Phone # E-mail:	Home: Work:
Alternate Contact Person:	Phone # E-mail:	Home: Work:

We, the undersigned hereby petition the City of Cedar Park to review, examine and address our concerns regarding the residential traffic patterns according to policies and procedures established by the City of Cedar Park Department of Planning. We understand that any recommended solutions or roadway improvement will be subject to engineering evaluation and review.

Street(s) of concern: \_\_\_\_\_

Primary Problems or Concerns: \_\_\_\_\_

Note: The street(s) mentioned above will be considered for physical devices (called stage two management techniques) ONLY after previous attempts with less invasive traffic management measures have proved unsuccessful. City staff reserves the right to determine the extent, dimension, location and application of all supplemental traffic management techniques applied. Only one signature from each household/business will be considered.

<b>Residence/ Street Address</b>	<b>Name (Please Print Clearly)</b>	<b>Phone Number (Optional)</b>
1.		
2.		
3.		
4.		

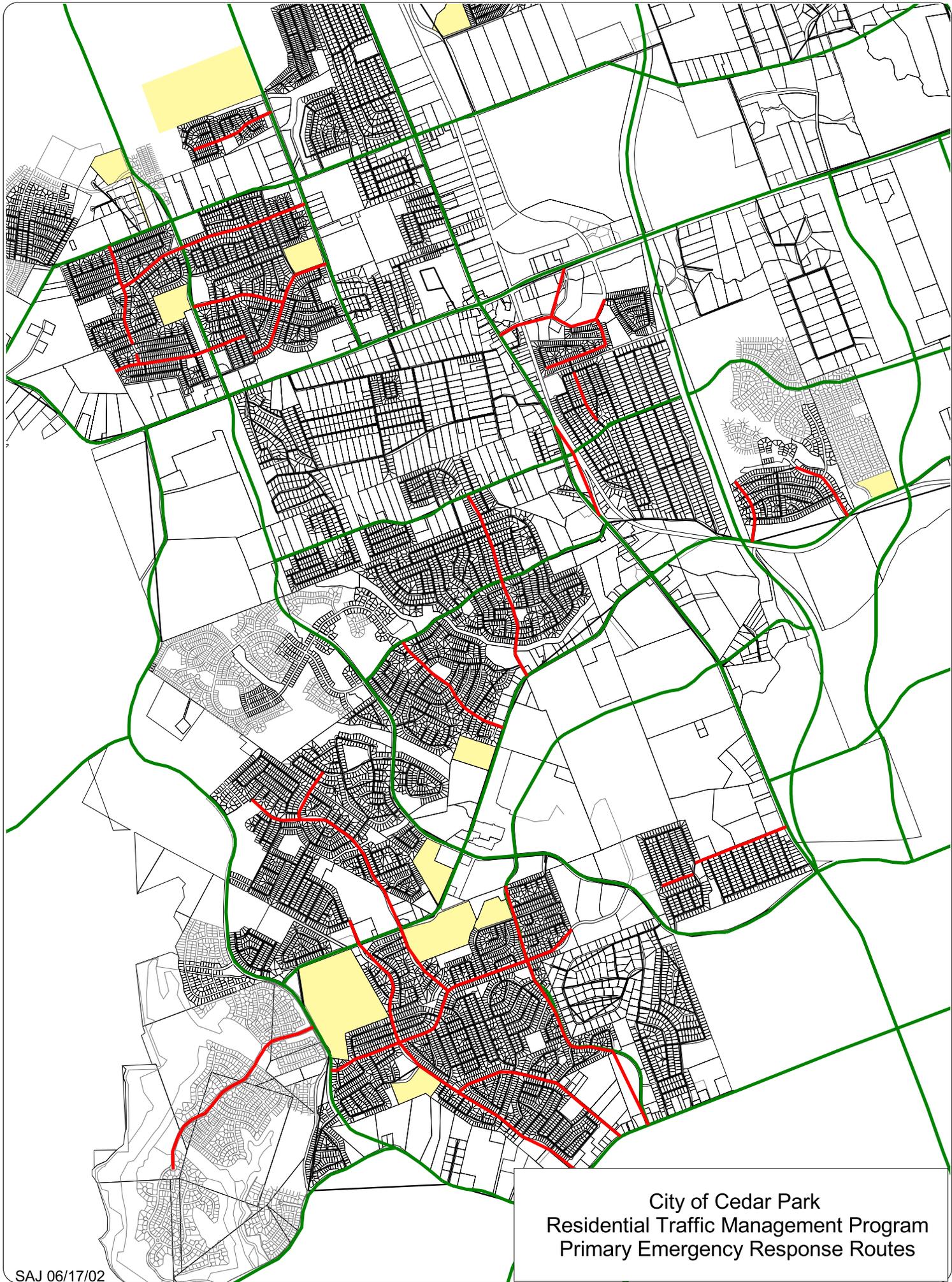
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5.		
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## Appendix D – List of Emergency Response Routes

## List of Emergency Response Routes

<u>Primary Response Routes</u>
<i>All current and future arterials (FM 1431, US Hwy 183, Lakeline Blvd. Etc.)</i>
Barilla Street
Blue Ridge Parkway
Brashear Lane
Carriage Hills Trail
Cedar Hills Boulevard
Cluck Creek Trail
Continental Pass
Darkwood Drive
Discovery Boulevard
El Salido Parkway
Fall Creek Parkway
Hatch Road
Heritage Park Drive
Highland Drive
Little Elm Trail
Lynnwood Trail
Nelson Ranch Road
Old Mill
Old US Highway 183
Paso Fino Trail
Quest Parkway
Riviera Springs Drive
Stallion Drive
Sun Chase Boulevard
Twin Creeks



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Primary Emergency Response Routes