CITY OF LAKE JACKSON

TRAFFIC MANAGEMENT PLAN

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Lake Jackson Traffic Management Plan – Overview

Section 1

Lake Jackson Traffic Management Plan

Over the years citizens have approached the Traffic Commission and the City Council about the volume and speed of traffic primarily on residential streets. The response has generally been to increase, at least temporarily, enforcement and occasionally involved the placement of signage.

During the summer and fall of 2007 the City Council, in response to additional citizen complaints, formed a "traffic calming task force". This task force was made up of the members of the City Council, Traffic Commission, Planning Commission, concerned residents and city staff. Mr. Nathan Corrick volunteered his services as a facilitator and a series of 5 workshops were held.

Rather than simply meet to argue over what traffic calming devices or what techniques we could utilize, the task force worked to establish a philosophical framework for when implementing any traffic calming measure.

The task force established the following vision statement and mission statement:

Vision Statement

Through the implementation of a clear and objective process, using appropriate and clearly defined innovative traffic calming techniques that promote a smooth flow of traffic, Lake Jackson neighborhoods feel and are safe at all times so citizens can play and walk throughout our community.

Mission Statement

The City of Lake Jackson will promote its vision of a smooth flow of traffic and keep its citizens safe by applying a city-wide traffic management process.

Keystones

To achieve the vision and the mission statement four (4) key areas or "keystones" were developed by the task force. They are:

1. Establish a clear and objective process.

2. Use appropriate, clearly defined innovative and efficient traffic calming devices/techniques.

3. Promote the smooth flow of traffic

4. Safety first and foremost in making neighborhoods feel/are safe so citizens can walk and play throughout our community.

1. Clear and Objective Process
   Crucial to the viability of the plan and its acceptance by the community is to have a clear and objective process that is understood by all.

The process showed to be clear and include written and agreed upon measurements published for all residents.

It is important that objectives be measurable, actionable, independent and impartial. Data would be collected through various methods; which would include speed surveys, traffic counts, accident reports, citizen input (such as complaints/petitions), and other data related to the geography of the neighborhood/area, pedestrian/bike traffic and other related factors.

To make this work there needs to be adopted guidelines for setting specific speed limits for uniform traffic control and for the placement of traffic calming measures for our various streets – residential, collector, and arterial.

Decision makers would include analysis of the data collected such as:

- Is the 85th percentile speed greater than the posted limit?
- Does the street design support the 85th percentile speed?
- Is there local support from the residents?
- Would traffic calming measures impede emergency response?

2. Use appropriate and clearly defined, innovative and effective traffic calming devices/techniques

Definitions established by the task force were:

Appropriate – best suited device or technique for the roadway being addressed dependent upon width and volume of traffic.

Innovative and effective – looking at all methods available and choosing methods that by past performance promote safety without impeding traffic flow.

It is important to identify the various streets in the city and how they are built and classified by our road classification system. These are:

A. Residential – 27 foot wide curb to curb, travel width of 25 feet. This would include all courts and cul-de-sacs.

B. Collector – These are higher volume streets, still built to the 27 foot residential street standards which "collect" residential traffic and move the traffic to arterials.

C. Minor arterial – these are 30 foot wide and generally connect collector streets to arterials and major arterial streets.

D. Arterial – these are 48 foot wide and move traffic through the city.

E. Major arterial – also known as thoroughfares. These major streets range from 60 to 70 foot wide and often include two lanes in each direction separated by medians.

Traffic calming devices/techniques run the gamut from education to physical barriers. What is appropriate for any specific location depends on various factors. What may be workable on a neighborhood, residential street may not be appropriate for a collector, arterial or throughfare.

A list or "toolbox" of traffic calming devices/techniques is provided in section 9.

3. <u>Promote the smooth flow of traffic</u>

   A. Definitions

      i) Promote – smooth traffic flow is a priority – in other words, smooth traffic flow must be a consideration as well as other objectives, such as safety, and cannot be comprised by unnecessary or ill-planned implementation of traffic calming/altering techniques.

      ii) Smooth – for traffic flow to be considered smooth, the following criteria should be met:
         - Continuous
         - Flowing
         - Efficient
         - Non-encumbering
         - 85th percentile compliance
         - Safe

      iii) Other considerations
         - Smooth traffic flow does not mean excessive speed or necessarily higher speed than is desired.
         - Reduction of noise pollution caused by stop and start of stop signs, traffic lights, etc.

   B. Identify traffic calming devices/techniques that promote the smooth flow of traffic rather than impede traffic flow – keep in mind that implementation of traffic altering devices/techniques should ensure that areas for pedestrians and areas for vehicular traffic are well defined.

      This can be difficult to accomplish since traffic calming by its nature is intended to slow down and/or reduce the volume of traffic on any given street. Lake Jackson is unique because the original design of our city by Alden Dow features fairly narrow, winding streets. Our residential streets are 27 feet wide from back of curb to back of curb, which means the travel way is 25 feet wide. Parking is allowed on residential streets, which reduces the travel way and therefore the speed at which someone can travel down a residential street. Again, many of the streets in the city are "winding". The problems we have

experienced with excessive speed complaints tend to be on streets with "straight of ways" 600 feet or longer.

An important factor to consider is whether intentionally or unintentionally traffic flow on collector, arterials and throughfares has been "restricted" by too many stop signs, "lengthy" traffic lights, speed limits that are "too low", and the like which can encourage drivers to "rat run" through residential neighborhoods. Keeping a smooth and safe flow of traffic on collector, arterials and throughfares will help reduce the temptation or "need" for drivers to divert through residential neighborhoods. However, since Lake Jackson is primarily a residential community most of our collector and arterial streets also run through neighborhoods and have homes facing them.

The challenge is to find the balance between calming traffic and the smooth flow of traffic.

4. <u>Safety first and foremost in making neighborhoods feel/are safe so citizens can walk and play throughout our community.</u>

   A. A safe neighborhood has:
      - An 85th percentile speed which is less than or equal to the posted speed limit.
      - No unobstructed views for the vehicle or pedestrian
      - Adequate street lighting
      - Street structures as dips, sharp turns, etc. are eliminated, minimized or identified.
      - Safe pedestrian walking areas.
      - Adequate informational signage

   B. A citizen may bring to the attention of the Traffic Commission a neighborhood that does not meet the safe neighborhood criteria or if (75% of 90%) of a neighborhood perceive the neighborhood to be unsafe.

   C. To determine if the traffic calming process has resolved the safe neighborhood issue, a neighborhood workshop will be held 6 months after calming treatments are implemented.
      - Evaluate data collected pre and post implementation
      - Gather neighborhood evaluation of temporary calming treatments before permanent changes are made and compare to collected data

Lake Jackson Traffic Management Plan – Process

Section 2

Lake Jackson Traffic Management Plan Process

The Lake Jackson Traffic Management Plan utilizes a multi-step approach to addressing traffic and safety concerns of our citizens.

This section describes the process and requirements of the Lake Jackson Traffic Management Plan.

Step 1 – Report the problem

Citizens are always encouraged to call the police department for an incident occurring in their neighborhood for speeding, reckless drivers or the like and our officers will respond and work to correct the situation. There is no need for a formal process at this point.

However, when a problem persists in a neighborhood, a more systematic approach is available for citizens to utilize. These problems can include excessive speed, a high volume of traffic, "cut through" traffic utilizing a neighborhood to avoid a traffic light or other traffic control devices.

In such cases a resident has several options. They can access the city's web site at www.ci.lake-jackson.tx..us and click on the "Citizen Information Center, Q & A" link. Here they will complete a complaint form and submit a traffic calming request form. Also, a citizen can simply call the City Manager's office at 415-2500, for information.

Once the complaint is received, city staff will review the request to determine the proper course of action.

Step 2 – Neighborhood Consensus

After the initial request, city staff will contact the individuals who initiated the process. Staff will discuss the option's available.

City staff will identify an "area of influence" in the neighborhood. The area of influence includes properties abutting the street and properties on intersecting streets within a reasonable distance of the "problem" street.

City staff will provide those who initiated the process with a neighborhood petition form to be signed by residents in the "area of influence". Each property is entitled to one signature. Valid signatures include those from (1) A property owner or spouse, (2) An adult head of household, or (3) An adult renting the property.

Step 3 – Data collection

After verifying the validity of a petition, city staff will collect traffic volume and speed data over a minimum 72 hour period and evaluate other traffic conditions on the street, using the following criteria:

Traffic Calming Criteria

Criteria	Application	Points
Traffic Volume	**Criteria- Average daily traffic volumes(weekday) 1 point for every 100 vehicles per day.**	
85th Percentile	**Criteria- 2 points for every mph that the 85th percentile exceeds the posted speed limit.**	
Accident data	**Criteria- > 6 accidents, past 5 years – 5 points 3-5 accidents, past 5 years – 3 points 1-2 accidents, past 5 years – 1 point An additional 5 points per each accident resulting in an injury to a motorist or pedestrian.**	
Cut Through Traffic	**Criteria- Through a license plate survey determine the number of vehicles along the neighborhood as a "rat-run". One point per every 5 vehicles.**	
Percentage of residents expressing concern	**Criteria- > 90% of households -5 points > 80% of households -3 points > 75% of households -1 points**	
Pedestrian Volume	**Criteria – 1 point for every 10 pedestrians if the Street has a sidewalk, 5 points per 10 pedestrians If no sidewalk. Counts are made in either the peak traffic hour or the hour when students are Traveling to or from school**	

Step 4 - Traffic Commission Review

The street will be scored using the criteria. Using this score and reviewing additional criteria, city staff and concerned residents will present those data to the City's Traffic Commission. Upon reviewing those data, hearing from residents and city staff, the Traffic Commission will determine if the street is eligible for Stage 1 Traffic Calming alone or both Stage 1 and Stage 2 Traffic Calming.

Streets that receive up to 25 points are eligible for some part or all of Stage 1 Traffic Calming only. Streets that receive a combined total of at least 12 points in the "Traffic volume", "85th percentile" and "Accident data" criteria and more than 25 points total will be eligible for both Stage 1 and Stage 2 Traffic Calming.

For streets eligible for both Stage 1 and Stage 2 Traffic Calming, the Traffic Commission may recommend that Stage 1 Traffic Calming be implemented prior to recommending Stage 2 measures. City council must approve Stage 2 Traffic Calming measures. Once Stage 1 Traffic calming measures are implemented, the Traffic

Commission will wait approximately three to six months and collect traffic speed and volume data and evaluate other traffic conditions on the street. The data would then be analyzed using the Traffic Calming criteria to determine if the stage 1 Traffic Calming measures were successful. If the measures were successful, then the Traffic Calming process will end at this point. Otherwise, the Traffic Commission will move on, and working with residents and city staff, analyze and recommend possible Stage 2 Traffic Calming methods.

Stage 1 Traffic Calming

Stage 1 Traffic Calming does not involve the use of physical controls or impediments on the roadway system. These are primarily education and enforcement measures. These can include any combination of the following at the Traffic Commission and/or City Council's discretion:

Neighborhood Awareness Campaigns and Education

Some people drive too fast in their own neighborhoods. "Speeders" are not always from somewhere else – some are neighbors and friends, responsible people who want safe, peaceful neighborhoods. Several creative methods of reducing traffic problems in neighborhoods can be undertaken by residents to remind their neighbors to pay attention to driving habits:

- Write letters to local newspapers or publish articles in neighborhood newsletters.
- Hold a "slow down" block party to get people to think about their driving habits.
- Walk the neighborhood with door hangers and talk to neighbors about neighborhood traffic safety

Radar Speed Deployment. This is a temporary device that is primarily used to remind motorists that they may be exceeding the posted speed limit. The trailer uses radar to monitor speeds and a reader board to show drivers how fast they are going but does not photograph vehicles. The use is contingent on availability.

Traffic Enforcement Actions. This is traditional enforcement activity on the part of Police Department's traffic enforcement officers. The intent is to modify behavior to result in a safer situation for all drivers and neighbors.

Traffic Signs and Pavement Marking. Traffic Commission and City staff will review the traffic signing and pavement markings in the area. If necessary, staff will modify or add traffic signing and pavement markings upon recommendations of the Traffic commission and/or City Council.

Stage 2 Traffic Calming

Stage 2 traffic calming methods involve physical modifications of the street intended to control traffic speeds. Please see Section 9 for a list of possible Traffic Calming methods.

The following criteria apply to Stage 2 traffic calming measures:

1. The construction and installation of some traffic calming devices may be expensive. The least costly form of traffic calming should be considered as the primary modification in any specific case. When expensive devices are approved, the neighborhood may need to wait an extended time for installation. Once the actual date of installation is determined, the primary contact person will be notified in writing.
   Funding – note: City Fund? Neighborhood fund? Joint?

2. The design of traffic calming devices will follow recommended Institute of Transportation Engineers (ITE) or other national recommended guidelines, if available.

The Traffic Commission and City staff are available to discuss traffic calming measures with residents. In addition, several publications and web sites provide definitions, descriptions, costs, and design guidelines for traffic calming measures. Residents who are interested in learning more about traffic calming on their own may make use of resources on the internet. For example, the web site for the Institute of Transportation Engineers (ITE) contains excellent information and several links concerning traffic calming at: http://www.ite.org/traffic/index.html

Emergency Access

Emergency vehicle access and response time must be considered when designing and installing Traffic Calming devices. Emergency vehicles, particularly ambulances, have more difficulty with "vertical" devices such as speed bumps.

While Traffic Calming devices on isolated residential streets may have minimal impact on emergency vehicles, the same can not be said for collector and arterial streets. Therefore caution should be used when placing any "vertical" Traffic Calming device. Input from the Police department, Fire department and EMS will be crucial in the determination as to whether vertical type Traffic Calming is considered.

Once installed, traffic calming devices will stay in place for a minimum of three years unless residents pay the full cost of removal. However, at any time following construction completion, if it is determined that traffic calming measures should be removed for public health and safety reasons, the City Council will be requested to authorize the removal of one or more traffic calming measures, upon notification of the neighborhood representatives. If the City has no concerns with the project but the

neighborhood itself decides that the traffic calming measures should be removed or significantly altered, a petition must be signed by at least 75 percent of the owners or residents of properties within the "area of influence". The City Council will review petitions requesting removal or significant alteration and will be provided a staff analysis and Traffic Commission recommendation.

Step 5 – Staff Recommendation, Traffic Commission Reviews, and City Council Approval

The Traffic Commission and city staff will develop a recommendation of actions to be taken. This recommendation will be forwarded to the primary contact person of the neighborhood. The following information will be included, as appropriate:

- Information on upcoming Traffic Commission and City Council meetings at which the recommendations will be discussed.

- A discussion of proposed Stage 1 education and enforcement measures.

- For stage 2 traffic calming, the number, location, and dimensions of proposed traffic calming devices, displayed on a map of the neighborhood.

- A photograph of proposed traffic calming devices and directions to a nearby street with a similar device, if applicable.

- Information about the traffic calming device's effects on speeds and traffic volumes.

- Comments from Emergency services, including LJEMS, LJVFD and the LJPD.
    - Emergency vehicle access within and through neighborhoods will be carefully considered in the evaluation process and selection of traffic calming devices. Certain traffic calming devices may result in increased emergency response times on some streets and these impacts should be carefully considered

The Traffic Commission will review the proposed action and will make a recommendation to the City Council.

The City Council makes the final decision concerning actions to be taken. The Council will review the residents' petition, the staff analysis and recommendation, the Traffic Commission recommendation, comments from emergency services, and public comments. The Council may choose to hold a public hearing on the recommendation prior to Traffic Commission or City Council meetings at which the recommendation will be discussed.

Notice of Public Meetings. When the recommendation is to install Stage 2 traffic calming measures, residents within the "area of influence" will be given notice of

meetings of the Traffic Commission and City Council at which the recommendation will be discussed. City staff will develop a flyer to notify residents of the meeting. The flyer will include the date, time, and place of the meeting and a description of proposed traffic calming devices. City staff will mail the flyer to each residence in the "area of influence" at least 10 calendar days before the meeting. For each property that is not owner-occupied, city staff will also mail the flyer to the property owner of record at least 10 calendar days before the meeting.

Step 6 – Follow-up evaluation

Following the implementation of traffic calming measures, a follow-up evaluation should be performed to ensure that the measures are effective. City staff will wait approximately three to six months and collect traffic speed and volume data and evaluate other traffic conditions on the street.

Traffic Calming Request Form

Traffic Calming Request Form

This form is used to report a speeding or traffic problem on a residential street. When this form is submitted, city staff will evaluate the complaint to determine the nature of the problem, and make sure that the location is a city-maintained, residential street. After the initial report, city staff will explain how residents may put together a petition to verify that there is a widespread concern for the speeding or traffic issue.

1. Contact Information

Name (please print) _____
Address, City, and Zip: _____
Phone Number _____
Email: _____

2. Please describe the location of the traffic concern. Attach a map or picture if necessary:

_____
_____
_____
_____

3. Please describe the nature of the neighborhood traffic problem you are concerned with (attach additional sheets if necessary):

_____
_____
_____
_____
_____
_____

4. Please list possible solutions to the problem that you would like the City of Lake Jackson to consider:

_____
_____
_____
_____
_____
_____

Please fill out this form and return to:
City of Lake Jackson
City Manager's Office
25 Oak Drive
Lake Jackson, Texas 77566
Fax 979-297-8823

Neighborhood Petition Form

Neighborhood Petition Form (Page 1)

Please fill out this form and return with attached sheets to:
City of Lake Jackson
City Manager's Office
25 Oak Drive
Lake Jackson, Texas 77566
Fax 979-297-8823

THE UNDERSIGNED AGREE TO THE FOLLOWING:

1. All persons signing this petition do hereby certify that they own property or reside within the following area:

_____
_____
_____
_____

2. All persons signing this petition do hereby agree to the following problem in the defined area:

_____
_____
_____
_____

3. All persons signing this petition do hereby agree that the following contact person(s) represents the neighborhood in matters pertaining to items 1 and 2 above:

Name of key contact person #1 (please print): _____

Address, City, and Zip Code: _____

Telephone (day): _____ Fax: _____ E-mail: _____

Name of key contact person #2 (please print) _____

Address, City, and Zip Code: _____

Telephone (day): _____ Fax: _____ E-mail: _____

Please attach additional pages if necessary to discuss the request.

Date Submitted: _____

Neighborhood Petition Form (Page 2)

This Petition is provided so that residents in a neighborhood may verify that there is a widespread concern for a speeding or traffic issue.

City staff will identify an "area of influence" in the neighborhood. The area of influence includes properties abutting the street and properties on intersecting streets within a reasonable distance of the problem street. City staff will provide a map and addresses for the area of influence.

The petition must be signed by at least 75 percent of the owners or residents of properties within the "area of influence." Each property is entitled to one signature. Valid signatures include those from (1) a property owner or spouse, (2) an adult head of household, or (3) an adult renting the property.

SIGNATURE AND PRINTED NAME	ADDRESS OF PROPERTY	DATE

Speed Limit Reduction Request Process

Speed Limit Reduction Request

By state statute, streets within the City of Lake Jackson have a speed limit of 30 miles per hour, unless otherwise posted.

State law generally requires an engineering study before a speed limit can be changed. However, a provision has been provided which allows the standard 30 mph residential speed limit to be reduced to 25 mph on any given residential street, without a full engineering study.

Therefore, a request to reduce a residential street to 25 mph will be handled as any other Traffic Calming technique. A citizen may request such a reduction. As with any other Traffic Calming request, the established process will be followed. This will include collecting data on speed, volume, accidents and other factors – such as pedestrian traffic. The same petition process will be followed to determine neighborhood support.

It is important to note that simply lowering a speed limit does not alter driving behavior. National and international studies have shown limited safety improvement from simply lowering a speed limit. Therefore, lowering the speed limit on any street is one possible alternative to slowing down or "calming" traffic on any given street. Other factors would include the condition and design of the street itself.

Without a thorough analysis of each request, simply lowering a speed limit is expedient, but may not alter driver behavior and could give a false sense of security to the neighborhood. It is impossible to have an officer present all the time to enforce the speed limit. So, efforts such as education and enforcement can help reinforce proper behavior. Then, if additional measures are needed, Traffic Calming options can be considered.

The intent is to balance neighborhood safety with the smooth flow of traffic.

Stop Sign/Yield Sign Policy

CITY OF LAKE JACKSON

STOP SIGN / YIELD SIGN POLICY

GENERAL DESCRIPTION

The primary purpose of either STOP or YIELD signs within the City shall be to control traffic flow at intersections and aid in establishing right of way. Speed control *should* not be a principal function of such signs. The following is a summary of the process for the Stop / Yield sign application. *A stop sign will only be used for speed control as a last resort.*

A. When a request is made for a stop/yield sign it is placed on a Traffic Commission agenda for discussion. The requestor is informed of the process and criteria needed to warrant a sign. The citizen may submit a petition along with the application.

B. At the meeting the Traffic Commission, if it wished to pursue the sign request, would place the request on its next agenda for action. Traffic counts, if warranted, would be taken. Staff is responsible for notifying all residents, by mail, within 200 feet of the proposed action. A "Posting Barricade to Notify of Traffic Change" for a period of two weeks at the affected location is erected. This notifies citizens of the proposed traffic change, and permits them to contact staff prior to a specified date should they wish more information or to voice support or opposition to the change.

   A report on how the request meets the established criteria is prepared by staff and submitted to the Traffic Commission for their review.

C. At the next meeting the request would be considered and public comments received. The Commission will review whether the request meets the criteria and whether to recommend request to City Council for action.

D. If the Traffic Commission recommends the request, City Council will review and take action. Two readings of the ordinance are required by City Charter before a sign can be installed and enforced.

STEP ONE: REQUEST

A request from a resident or representative must be directed to the:

City Manager
City of Lake Jackson
25 Oak Drive
Lake Jackson, Texas 77566
(409) 297-2481

Each request must include a name, address and phone number of a contact person. The contact person will receive all correspondence and be responsible for gathering evidence of support. Each contact person must acknowledge designation by signing the request.

The request must be for a specific street intersection and should include at least the following information:

- The requested street name and intersecting street
- Name of contact person
- Address of contact person
- Daytime phone number of contact person
- Signature of contact person

CITY OF LAKE JACKSON

STOP SIGN / YIELD SIGN POLICY

STEP TWO: CRITERIA FOR STOP SIGN / YIELD SIGN

Several factors shall be used by the Traffic Commission to assist in determining the need for individual signs. Among these factors are:

1. Requirements of State Law - (example: stipulation that 2-lane streets shall intersect 4-lane streets at stop signs.)

2. Poor visibility - encroaching residences, fences, shrubbery, etc., or approaching angle of road obstructing line of sight.

3. Obvious vagueness or uncertainty over right of way at specific intersection.

The specific placement of signs at City intersections can be any of the three listed below:

a) 4-way STOP signs (or 3-way, in the case of T-shaped intersections). This arrangement is used whenever traffic density on both streets is high and reasonably equal.

b) 2-way STOP signs. This arrangement is best suited for all streets intersecting a heavily-traveled thoroughfare (Oyster Creek Drive), where traffic density on the cross street is low.

c) 2-way YIELD signs. This arrangement is normally considered for intersections where traffic density on both streets is not high, but where factors such as 2) and/or 3) above come into play and it is deemed necessary to caution traffic on one of the intersecting streets that a particular hazard exists.

d) A stop sign will be used for speed control only as a last resort.

CITY OF LAKE JACKSON

STOP SIGN / YIELD SIGN PETITION

The undersigned hereby petition for a Stop Sign / Yield Sign (circle one) on _____ at the intersection of _____.

Return petition form to: City Manager
City of Lake Jackson
25 Oak Drive
Lake Jackson, Texas 77566

Address	Name (Print)	Signature	Phone

CITY OF LAKE JACKSON

STOP SIGN / YIELD SIGN APPLICATION

Request for Stop Sign or Yield Sign

The following is a request form for placement of a Stop sign or Yield sign (please feel free to submit this form as a formal request). Each request must contain the completed information as indicated in both part A and B. The request will be processed according to the procedures detailed in the Stop Sign / Yield Sign Policy.

A. Street Study Information

Each request must provide the name of the street on which a sign is requested and the intersecting street.

Requested Street: _____

Intersecting Street: _____

Example:
Requested Street: Circle Way
Intersecting Street: Oak Drive

B. Contact Person Information

Each request must provide a contact person. The contact person will receive all correspondence and be responsible for gathering evidence of support when requested.

Name: _____

Address: _____

Daytime Phone No. _____

I agree to be the contact person for the above request.

Signature:_____

School Zone Policy

School Zone & Crossing Policy
Approved by City Council
January 2013

School Zones

1. All streets contiguous with kindergarten through eighth grade school property shall be school zoned for hours agreed upon by the Brazosport Independent School District (BISD) and the City of Lake Jackson.

2. Other streets deemed critical by the Traffic Commission and or the City Council may be designated as school zones.

    A. Criticality is based on the combination of high pedestrian school traffic and heavy vehicular traffic.

    B. Funneling of school pedestrians to single crossings of critical streets is encouraged to shorten the length of the school zones.

3. Lighted zones (flashing yellow lights):

    A. Signs with lights should be used where the speed limit is greater than or equal to 35 mph.

    B. Non lighted signs should be used where the speed limit is less than 35 mph unless an in-depth evaluation demonstrates a need for lighted signs.

Crossing Guards

4. When deemed necessary, a review should be conducted by the Brazosport Independent School District (BISD) and the City of Lake Jackson to determine the location of crossing guards and to decide/confirm who will provide the necessary resources.

    Unless established otherwise:

    A. BISD will provide crossing guards at locations contiguous to school properties.

    B. The City of Lake Jackson will provide crossing guards at locations that are not contiguous to school property and at major intersections adjacent to school property as decided upon by City Council.

5. Factors to consider when determining location of crossing guards:

    A. Age of school children using the crossing, with a priority given to children in kindergarten through sixth grade. Students bussed to another location and released in bulk should also be considered.

    B. Volume of traffic and number of children

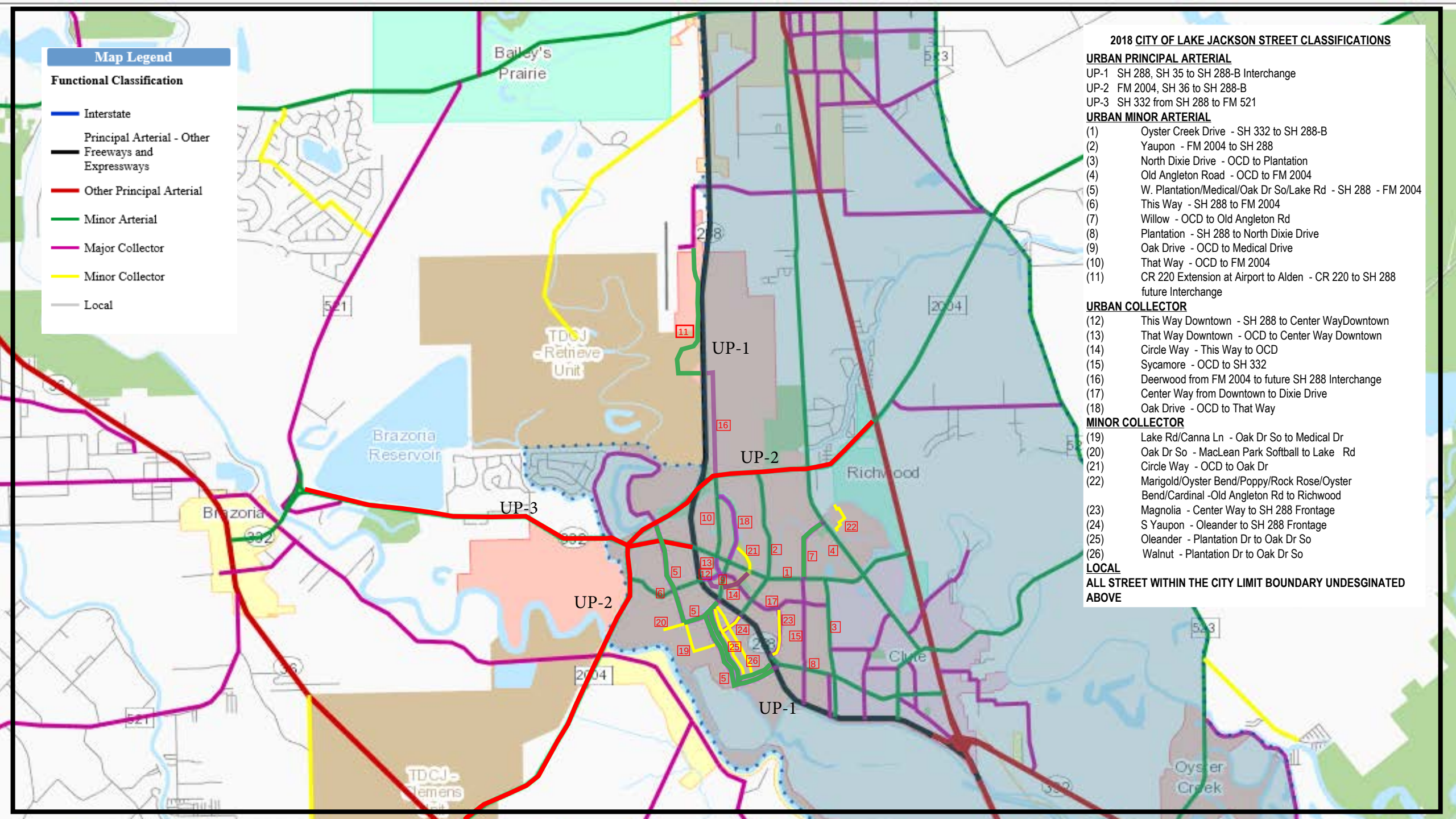
    C. Traffic speed and sight distance at crossings

    D. Presence of traffic control devices, including traffic signals, signs, and pavement markings

    E. Width of the street and number of lanes with priority given to four-lane and funneled crossings

    F. Accident history

Street Function and Classification System

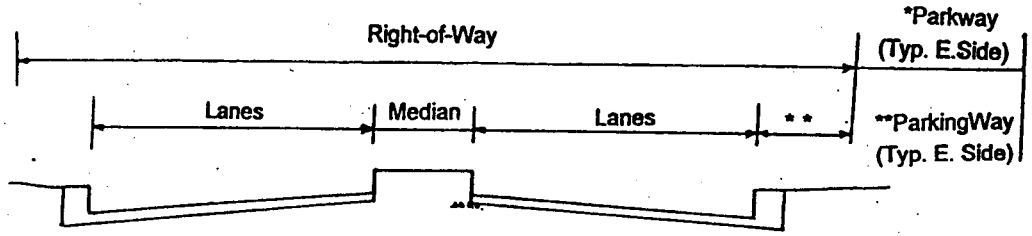

Map Legend
Functional Classification
Interstate
Principal Arterial - Other Freeways and Expressways
Other Principal Arterial
Minor Arterial
Major Collector
Minor Collector
Local
Bailey's Prairie
TDCJ - Retrieve Unit
Brazoria Reservoir
Brazoria
Richwood
Clute
Oyster Creek
UP-1
UP-2
UP-3
UP-2
UP-1
2018 CITY OF LAKE JACKSON STREET CLASSIFICATIONS
URBAN PRINCIPAL ARTERIAL
UP-1 SH 288, SH 35 to SH 288-B Interchange
UP-2 FM 2004, SH 36 to SH 288-B
UP-3 SH 332 from SH 288 to FM 521
URBAN MINOR ARTERIAL
(1) Oyster Creek Drive - SH 332 to SH 288-B
(2) Yaupon - FM 2004 to SH 288
(3) North Dixie Drive - OCD to Plantation
(4) Old Angleton Road - OCD to FM 2004
(5) W. Plantation/Medical/Oak Dr So/Lake Rd - SH 288 - FM 2004
(6) This Way - SH 288 to FM 2004
(7) Willow - OCD to Old Angleton Rd
(8) Plantation - SH 288 to North Dixie Drive
(9) Oak Drive - OCD to Medical Drive
(10) That Way - OCD to FM 2004
(11) CR 220 Extension at Airport to Alden - CR 220 to SH 288 future Interchange
URBAN COLLECTOR
(12) This Way Downtown - SH 288 to Center WayDowntown
(13) That Way Downtown - OCD to Center Way Downtown
(14) Circle Way - This Way to OCD
(15) Sycamore - OCD to SH 332
(16) Deerwood from FM 2004 to future SH 288 Interchange
(17) Center Way from Downtown to Dixie Drive
(18) Oak Drive - OCD to That Way
MINOR COLLECTOR
(19) Lake Rd/Canna Ln - Oak Dr So to Medical Dr
(20) Oak Dr So - MacLean Park Softball to Lake Rd
(21) Circle Way - OCD to Oak Dr
(22) Marigold/Oyster Bend/Poppy/Rock Rose/Oyster Bend/Cardinal -Old Angleton Rd to Richwood
(23) Magnolia - Center Way to SH 288 Frontage
(24) S Yaupon - Oleander to SH 288 Frontage
(25) Oleander - Plantation Dr to Oak Dr So
(26) Walnut - Plantation Dr to Oak Dr So
LOCAL
ALL STREET WITHIN THE CITY LIMIT BOUNDARY UNDESGINATED ABOVE

Map Legend

Functional Classification

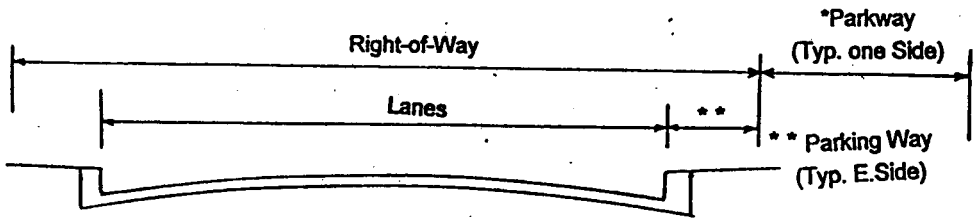
- Interstate
- Principal Arterial - Other Freeways and Expressways
- Other Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

GEOMETRIC STREET DESIGN STANDARDS
(Minimum Standards)



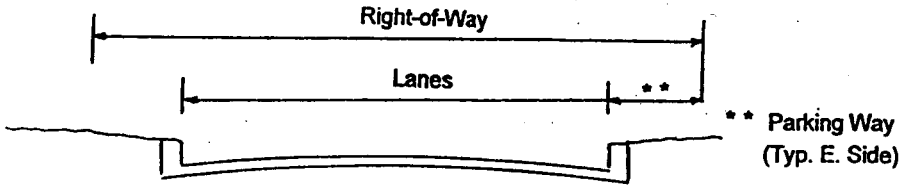
DIVIDED ROADWAYS
Arterials

P6D - Principal Arterial, 6 Lanes, Divided
P4D - Principal Arterial, 4 Lanes, Divided
P4DWP - Principal Arterial, 4 Lanes, Divided with Parkway
P4DIC - Principal Arterial, 4 Lanes, Divided / Commercial



UNDIVIDED ROADWAYS
Arterials - Collectors

M4U - Minor Arterial, 4 Lanes, Undivided
C4U - Major Collector, 4 Lanes, Undivided
C2U - Minor Collector, 2 Lanes, Undivided
C2UWP - Minor Collector, 2 Lanes, Undivided with Parkway

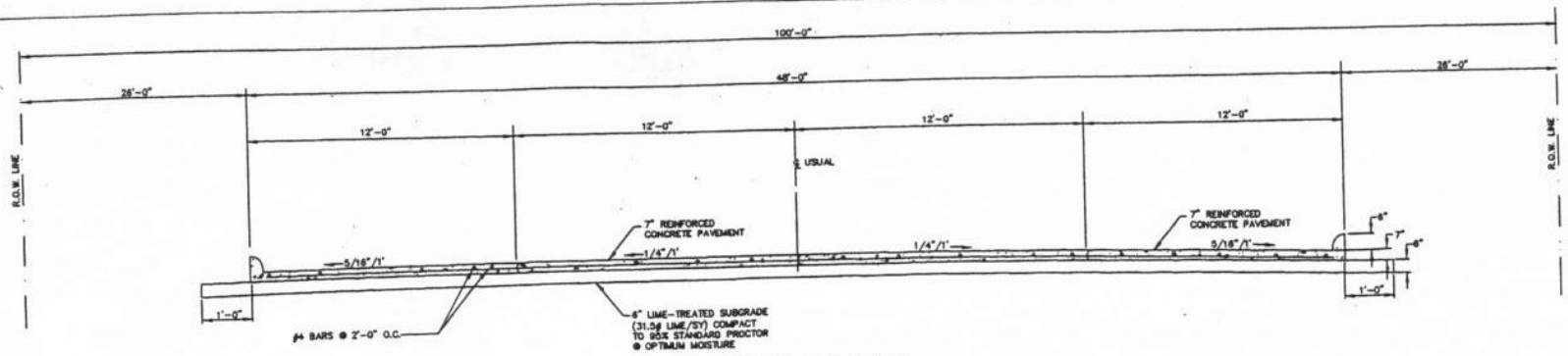


LOCAL STREET

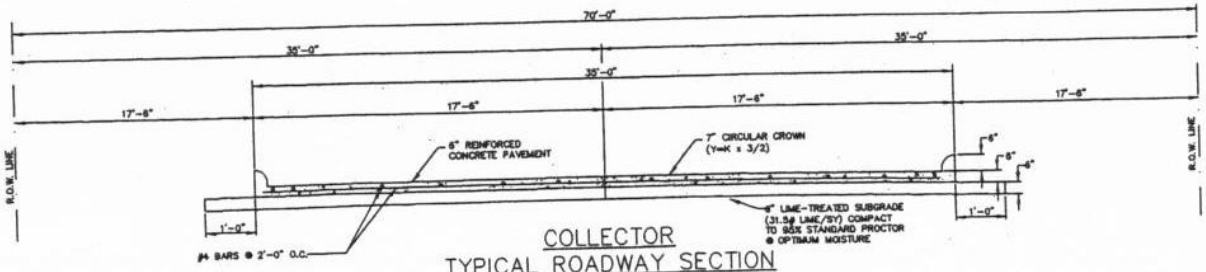
L2U - Residential, 2 Lanes, Undivided
* Parkway - Greenway Area

Design Element	Roadway Type							
	P6D	P4D	M4U	C2UWP	C2U	L2U	P4DWP	P4DIC
Number Traffic Lanes	6	4	4	2	2	2	4	4
Left Turn Lane Width	12	12	-	-			12	12
Lane Width (Ft.)	12	12	12	29 F-F	34 F-F	26 F-F	12	12
R.O.W. Width (Ft.)	120	100	100	50	70	60	130	90
Design Speed (MPH)	40-55	40-50	35-45	30-40	30-40	20-30	40-50	40-50
Max. Grade (%)	6	6	6	8	8	10	6	6
Stopping Sight Distance (Ft.)	325-525	325-475	250-400	200-325	200-325	125-200	325-475	325-475
Horizontal Curvature Min. * Radius (Ft.)	2000	2000	1050	850	850	450 or 300(*)	2000	2000
Vertical Clearance (Ft.)	15.5	15.5	15.5	15.5	16	15.5	15.5	15.5
Lateral Clearance (Ft.)	6	6	6	6	6	-	6	6
Min. Median Width (Ft.)	12	12	-	-	-	-	12	14
Parking Way Emergency Zone Width (Ft.)	10	14	26	10	18	16.5	14	14
Parkway Width (Ft.)	-	-	-	50	-	-	50	-

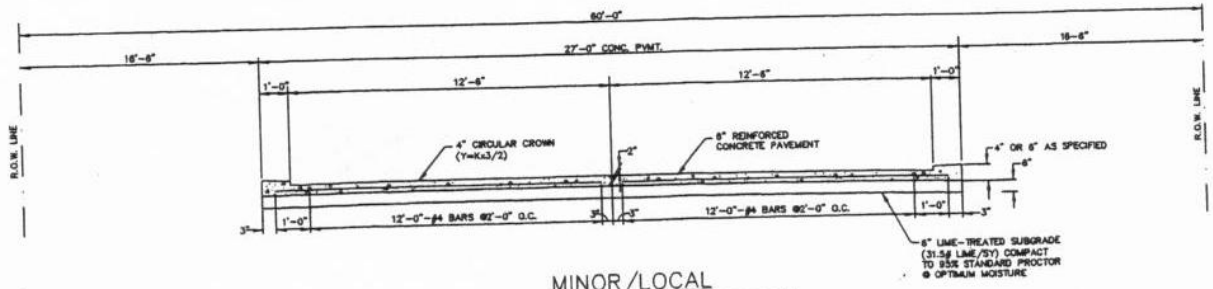
(*) For local streets less than 2,000' long.'
* Variance to these shall be applied and approved by the Traffic Commission with adjustment of design speed and council regulation.



MINOR ARTERIAL
TYPICAL ROADWAY SECTION
48 B-B (4 LANE)
N.T.S.



COLLECTOR
TYPICAL ROADWAY SECTION
35 B-B (2 LANE)
N.T.S.



MINOR/LOCAL
TYPICAL ROADWAY SECTION
27 B-B
N.T.S.

PAVEMENT CONSTRUCTION

DRAWING DETAIL

LJP-3

CITY OF ENCHANTMENT · LAKE JACKSON, TEXAS ·

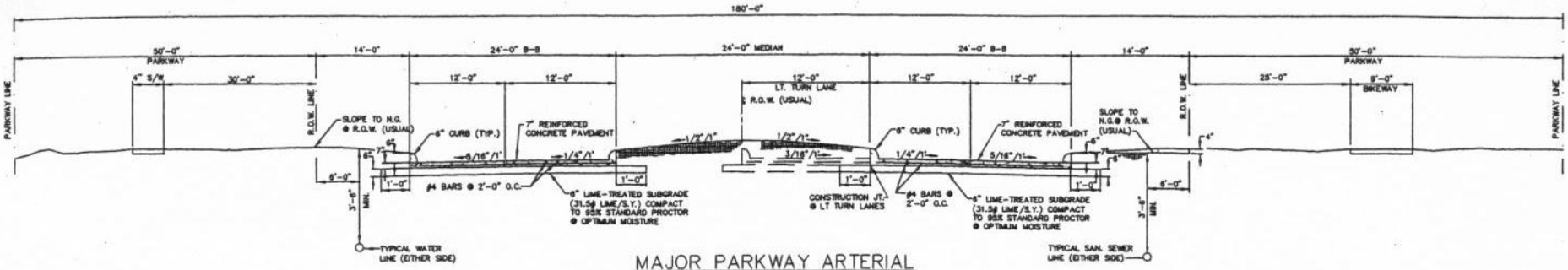
DEPARTMENT OF ENGINEERING AND PUBLIC WORKS

SEAL

DESIGN ENGINEER: DATE:

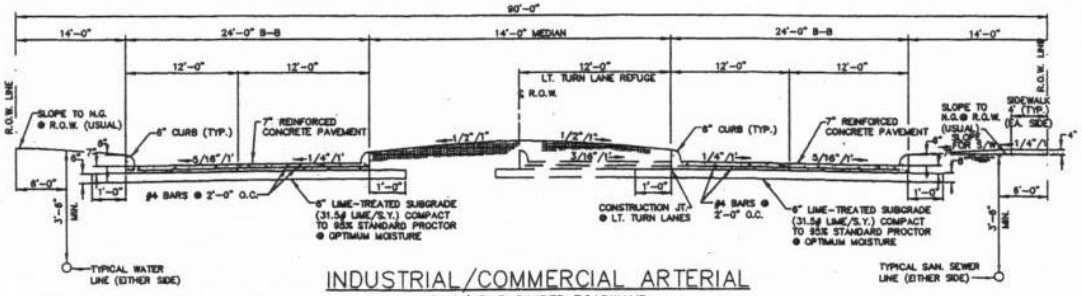
SUBMITTED:
SCALE:
DATE:

SHEET 3 OF 9



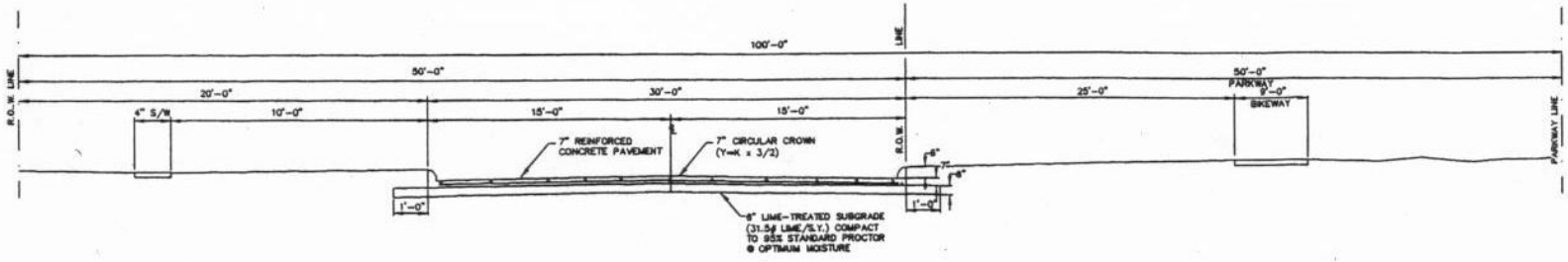
MAJOR PARKWAY ARTERIAL

2-24' B-B DIVIDED ROADWAYS
4 LANE DIVIDED
W/LEFT TURN REFUGE LANE
N.T.S.



INDUSTRIAL/COMMERCIAL ARTERIAL

2-24' B-B DIVIDED ROADWAYS
4 LANE DIVIDED
W/LEFT TURN REFUGE LANE
N.T.S.



MINOR PARKWAY ARTERIAL

30' B-B (2 LANE)
N.T.S.

PAVEMENT CONSTRUCTION

DRAWING DETAIL

LJP-2

CITY OF ENCHANTMENT · LAKE JACKSON, TEXAS

DEPARTMENT OF ENGINEERING AND PUBLIC WORKS

SEAL

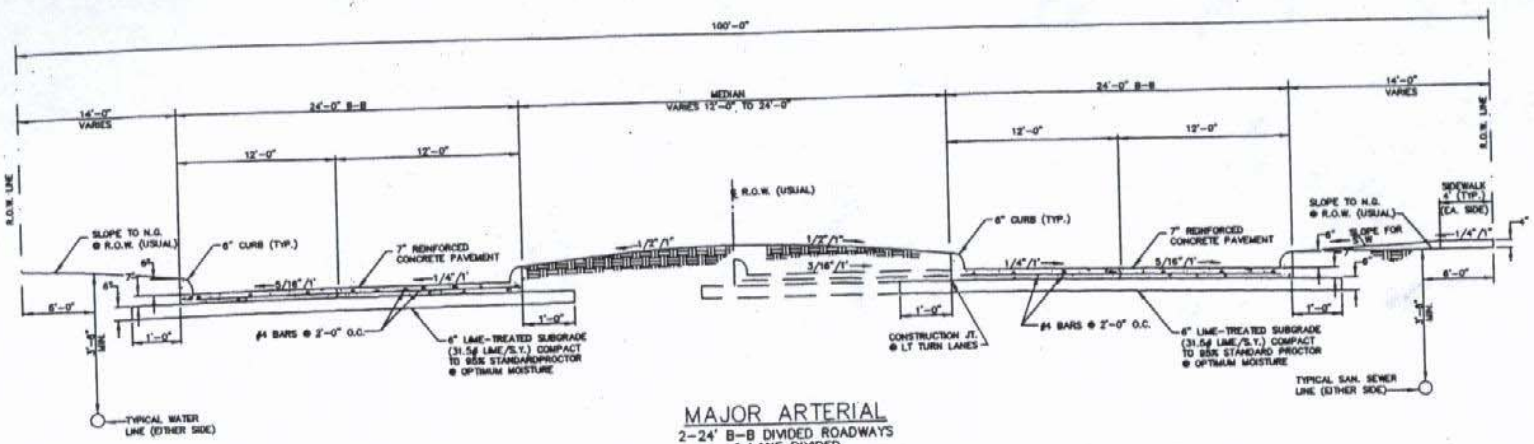
DESIGN ENGINEER: DATE:

SUBMITTED:

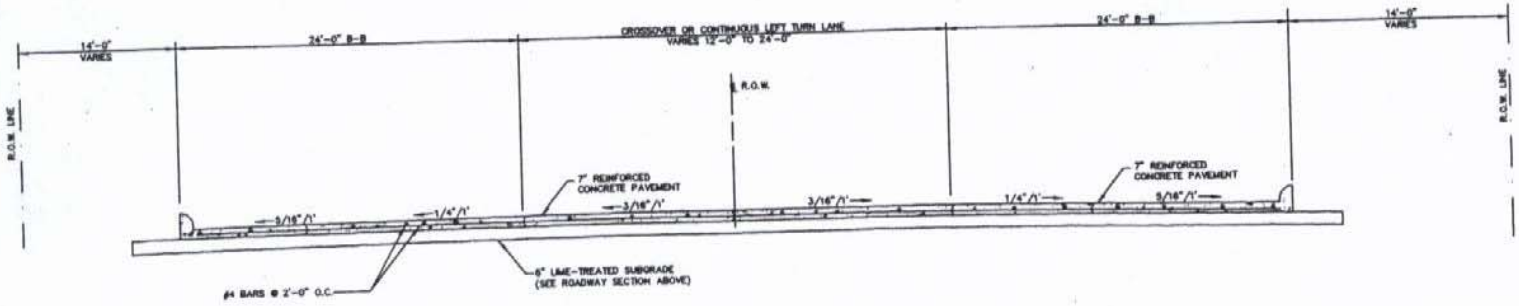
SCALE:

DATE:

SHEET 2 OF 9



MAJOR ARTERIAL
2-24' B-B DIVIDED ROADWAYS
4 LANE DIVIDED
W/LEFT TURN REFUGE LANE
N.T.S.



MAJOR ARTERIAL
2-24' B-B DIVIDED ROADWAYS
4 LANE DIVIDED
W/ CONTINUOUS LEFT TURN LANE
N.T.S.

PAVEMENT CONSTRUCTION

DRAWING DETAIL

LJP-1

CITY OF ENCHANTMENT LAKE JACKSON, TEXAS

DEPARTMENT OF ENGINEERING AND PUBLIC WORKS

SEAL

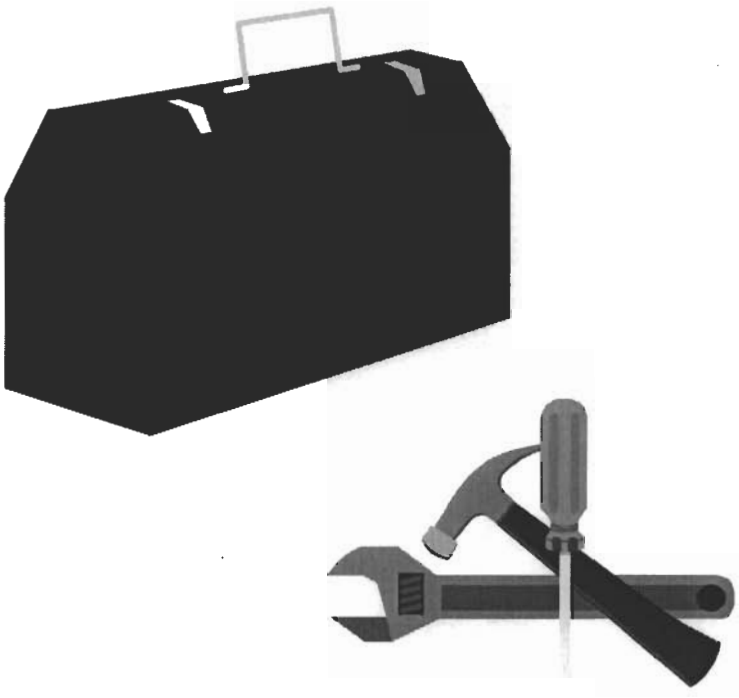
DESIGN ENGINEER: DATE:

SUBMITTED:
SCALE:
DATE:

SHEET 1 OF 9

Traffic Calming Toolbox

Traffic Calming Toolbox



Traditional Police Enforcement

Description:

Police presence to monitor speeds and issue citations.

Application:

- Streets with documented speeding problem and need for quick mitigation
- Locations where restrictions are being violated

Advantages:

- Effective while officer is actually monitoring speeds
- Flexible measure that can be implemented in almost any location at short notice

Disadvantages:

- Not self enforcing; temporary measure
- Fines do not typically cover cost of enforcement
- Disrupts efficient traffic flow on high volume streets
- Short "memory effect" on motorists when enforcement officer no longer present

Special Considerations:

- Often helpful in school zones
- May be used during "learning period" when new devices or restrictions first implemented

Cost:

- High cost primarily due to the staffing requirements

Photo Radar Speed Enforcement

Description:

Radar triggered camera to document vehicles and motorists who are exceeding the speed limit and system to issue speeding tickets to violators (or vehicle owners).

Application:

- Streets with speeding problems

Advantages:

- Speed enforcement with minimal staffing
- May have widespread effectiveness due to mobile nature, difficulty to anticipate, and widespread application

Disadvantages:

- Public perceptions related to invasion of privacy
- Vehicle owners may receive the ticket when they were not driving
- Legal issues need to be addressed before implementation

Special Considerations:

- Legal jurisdiction must be defined
- May assess fines without points against driver license
- May contract service to private providers

Cost:

- Moderate cost to implement system. May be low cost if contracted.

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Speed Monitoring Trailer

Description:

Mobile trailer mounted radar display that informs drivers of their speed.

Application:

- Any street where speeding is a problem

Advantages:

- Educational tool
- Good public relations
- Effective for temporary speed reduction needs

Disadvantages:

- Some motorists may speed up to try to register a high speed
- Duration of effectiveness may be limited
- Not self enforcing

Special Considerations:

- Should not be used in remote areas

Cost:

- Moderate cost to use due to staffing requirements
- Expensive to enforce

Speed Limit Sign

Description:

Signs that define the legal driving speed under normal conditions.

Application:

- Streets where speeding is a problem

Advantages:

- Provides clear definition of legal speed limit
- Provides context for enforcement efforts
- Provides goal for traffic calming efforts

Disadvantages:

- Typically not effective in and of itself
- Not self enforcing
- Requires on-going police enforcement
- Unrealistically low speed limits are difficult to enforce and tend to be disregarded
- More visual pollution from signs in the neighborhood

Special Considerations:

- Speed limits set by an engineering analysis tend to be higher than limits set by political pressures

Cost:

- Low; inexpensive to install
- High; expensive to enforce

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All-Way Stop Signs

Description:

Stop signs on the "main street" at an intersection where typically only the "side street" would be required to stop.

Application:

- Non-arterial street intersections

Advantages:

- Require through traffic to stop at an intersection
- Increase opportunities for pedestrians to cross the roadway
- May discourage cut-through traffic

Disadvantages:

- Penalize all motorists on the main street even if they were obeying the speed limit
- May create compliance problems if motorists do not acknowledge the need to stop
- Safety issues for pedestrians when compliance is poor
- Mid-block speeds may increase as motorists try to make up for lost time
- Noise and air pollution increased
- Unwarranted stop signs not supported by traffic engineers
- May increase traffic accident frequency
- May increase emergency response times

Special Considerations:

- Should not be used on critical emergency response routes

Cost:

- Low cost to install. Cost increases if enforcement is required.

Restricted Movement Signing

Description:

Sign that prohibits certain movements at an intersection.

Application:

- Streets where reducing cut-through traffic is desired

Advantages:

- Redirects traffic to main streets
- Reduces cut-through traffic
- Addresses time-of-day problems

Disadvantages:

- Not self enforcing
- May increase trip length for some drivers
- More visual pollution from signs in the neighborhood

Special Considerations:

- Can be used on a trial basis
- Has little or no effect on speeds for through vehicles

Cost:

- Low - high: inexpensive to install, expensive to enforce

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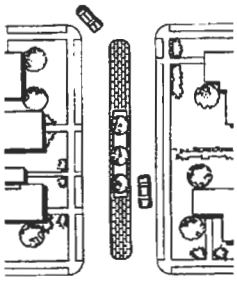
Median



Description:

Raised island in the center of the roadway with one-way traffic on each side.

Application:

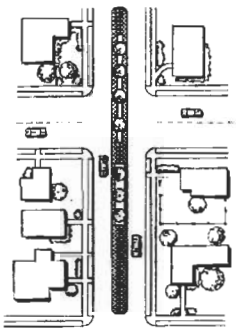
- Used on wide streets to narrow each direction of travel and to interrupt sight distances down the center of the roadway

Advantages:

- Narrowed travel lanes provide "friction" and can slow vehicle speeds
- Significant opportunity for landscaping and visual enhancement of the neighborhood
- Can utilize space which otherwise would be "unused" pavement
- Can be used to control traffic access to adjacent properties if desired

Disadvantages:

- Long medians may impact emergency access and operations
- May interrupt driveway access and result in U-turns
- May require removal of parking



Variations:

- Medians of various lengths can be constructed
- Can be constructed mid-block only to allow all turning movements at intersection
- Can be extended through intersections to preclude left turns or side street throughs

Special Considerations:

- Vegetation should be carefully designed not to obscure visibility between motorists, bicyclists and pedestrians at intersection and pedestrian crossing areas
- Maintain 12 foot wide lane minimum on each side
- Maximum length between access points should be 200' to accommodate emergency response - turning radii for a fire truck should be maintained at these breaks

Cost:

- High cost to construct, landscape and maintain

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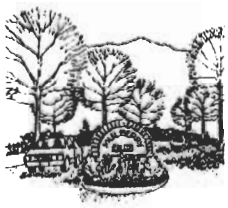
Entry Island (Neighborhood Identification Island)



Description:

A raised island in the center of a two-way street that identifies the entrance to a neighborhood.

Application:

- Placed in a roadway to define the entry to a residential area and/or to narrow each direction of travel and interrupt sight distance along the center of the roadway

Advantages:

- Notifies motorists of change in roadway character
- Helps slow traffic
- Opportunity for landscaping and/or monumentation for aesthetic improvements
- May discourage cut-through traffic

Disadvantages:

- Need for maintenance (and irrigation)
- May necessitate removal of parking

Variations:

- Can incorporate neighborhood identification signing and monumentation

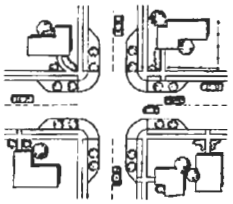
Special Considerations:

- Care should be taken not to restrict pedestrian visibility at adjacent crosswalk

Cost:

- Low to medium cost to install, landscape and maintain

Neckdown or Curb Extension



Description:

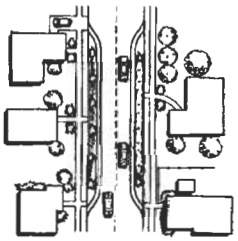
Segments of roadway narrowing where curbs are extended toward the center of the roadway.

Application:

- Typically used adjacent to intersections where parking is restricted
- Can be used to narrow roadway and shorten pedestrian crossings

Advantages:

- Pedestrian visibility increased and crossing distance reduced
- Narrowed roadway section may contribute to vehicular speed reduction
- Can "reclaim" pavement for pedestrian and streetscape amenities
- Breaks up drivers' line-of-sight



Disadvantages:

- Creates drainage issues where curb and gutter exist
- May create a hazard for bicyclists

Variations:

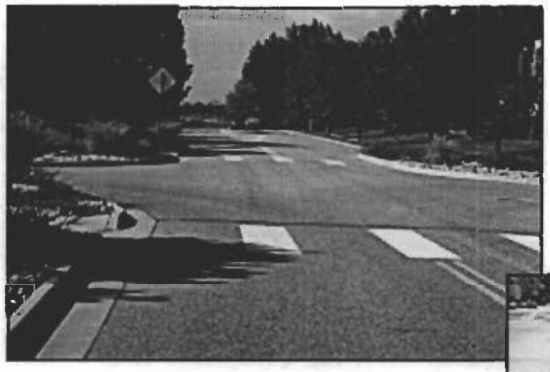
- Mid-block neckdowns often used in conjunction with pedestrian crossing treatments

Special Considerations:

- Curb extensions should not extend into bicycle lanes where present

Cost:

- Medium to high cost depending on landscaping, pavement treatments and storm drainage considerations



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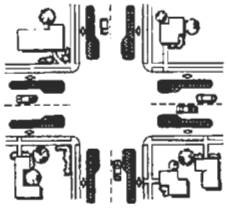
Chokers



Description:

Raised islands built to narrow the roadway. The islands are detached from the curbline, allowing drainage or bike lanes to continue behind the choker.

Application:

- Typically used adjacent to intersections where parking is restricted
- Can be used to narrow roadway and shorten pedestrian crossings

Advantages:

- Pedestrian crossing distance reduced
- Narrowed roadway section may contribute to vehicular speed reduction
- Breaks up drivers' line-of-sight

Disadvantages:

- May create hazard for bicyclists who are less visible to cross street and turning traffic

Variations:

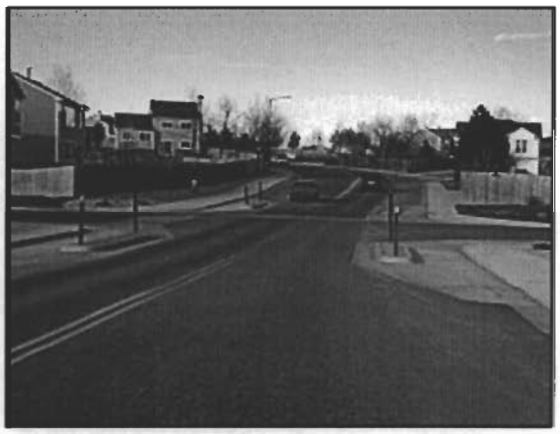
- Mid-block chokers
- One-lane chokers that narrow the street to create a short one-lane, one-way section

Special Considerations:

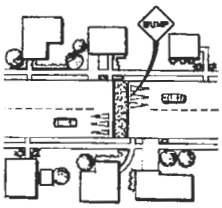
- Significant problems with maintenance and snow removal
- Debris builds in bikelane between the choker and the curbline, creating hazard for bicylists

Cost:

- Moderate



Speed Hump



Description:

Speed humps are areas of pavement raised 3-6 inches in height over a minimum of 8 feet. The combination of different heights, lengths and approach ramps will vary the speed a vehicle can comfortably go over the hump. They are marked with signs and pavement markings.

Application:

- Local streets where speed control is desired
- Local streets where cut-through traffic is to be discouraged

Advantages:

- Slows traffic
- Self enforcing
- Requires minimum maintenance; pavement markings must be maintained
- Minimal impact on snow removal

Disadvantages:

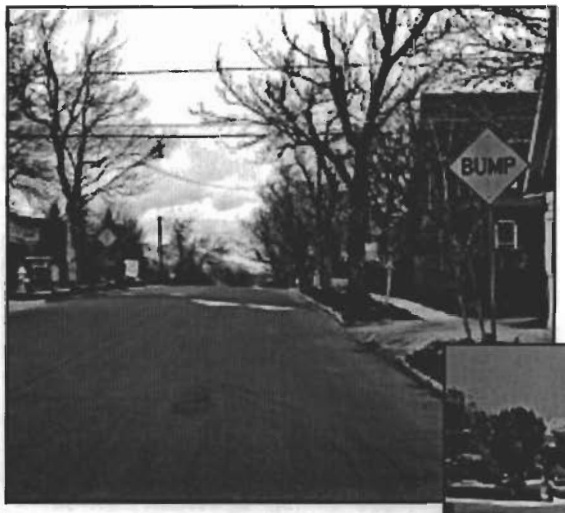
- Increases emergency response times
- May damage emergency response vehicles if not carefully designed
- May increase traffic noise in vicinity of hump

Special Considerations:

- Should not be used on critical emergency response routes
- Needs to be used in series or in conjunction with other traffic calming devices to control speeds
- Longer designs can minimize impact on long wheelbase vehicles

Cost:

- Low to moderate



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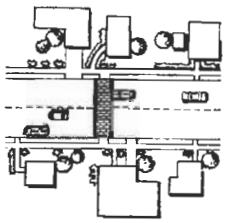
Raised Crosswalk



Description:

Flat-topped speed hump built as a pedestrian crossing.

Application:

- Local streets where speed control and pedestrian crossing designation are desired
- Local streets where cut-through traffic is to be discouraged

Advantages:

- Slows traffic
- Increases pedestrian visibility in the crosswalk
- Clearly designates the crosswalks
- Requires minimum maintenance; pavement markings must be maintained
- Minimal impact on snow removal

Disadvantages:

- Increases emergency response times
- May damage emergency response vehicles if not carefully designed
- May increase traffic noise in vicinity of crosswalk
- May create drainage issues where raised crossing extends from curb to curb

Variations:

- Pavement treatment without the raised hump to create a pedestrian crossing focal point

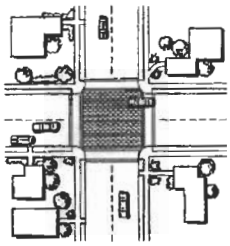
Special Considerations:

- Appropriate near schools and recreation facilities
- Should not be used on critical emergency response routes
- Needs to be used in conjunction with other traffic calming devices to control speeds
- If a new crosswalk location, may reduce available on-street parking
- May require extensive signing

Cost:

- Moderate

Raised Intersection



Description:

A raised section of roadway at an intersection where the pavement is elevated to be flush with the top of the curbing and the approaches are ramped like speed humps.

Application:

- Streets where speed reduction is desired
- Streets where discouragement of cut-through traffic is desired

Advantages:

- Effective speed mitigation
- Opportunity for attractive pavement treatments
- Improved pedestrian safety at intersection

Disadvantages:

- Requires storm drainage
- May require bollards to define the corners of the intersection
- May reduce emergency response time

Special Considerations:

- Special signing required
- Should not be used on critical emergency response routes

Cost:

- High cost of construction and storm drainage

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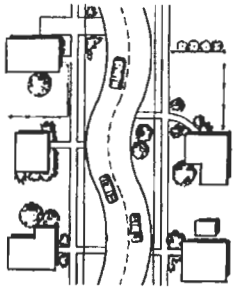
Curvilinear Street



Description:

A curved street alignment can be designed into new developments or retrofitted in existing rights-of-way. The curvilinear alignment requires additional maneuvering and reduces drivers' line-of-sight.

Application:

- Any street where speed control is desired
- Any street where reduced line-of-sight is desired

Advantages:

- Little to no impact on snow removal
- Aesthetically pleasing
- Provides landscaping opportunities
- Minimal impact on emergency response

Disadvantages:

- Expensive
- May have little or no impact on cut-through traffic
- Needs to be combined with narrowing or other traffic calming tools to have significant impact on speeds
- May require additional right-of-way to be effective

Variations:

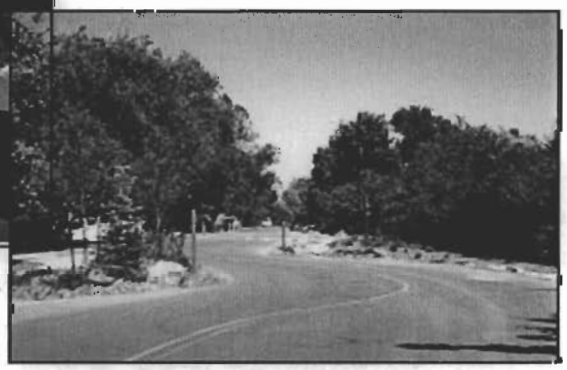
- Chicanes
- Off-set curb extensions
- Systems of devices alternating from the center to curbside of the road

Special Considerations:

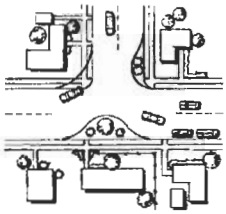
- Cannot be used where right-of-way is limited
- May require removal of on-street parking

Cost:

- High



Realigned Intersection



Description:

Realigns T-intersection to make the "through movement" a turning movement.

Application:

- Streets where it is desired to redirect traffic to another facility
- Streets where slowing traffic as it enters the neighborhood is desired

Advantages:

- Provides landscaping opportunities
- Discourages traffic from continuing through a neighborhood
- Slows traffic as it enters a neighborhood
- Breaks up sight-lines on straight streets

Disadvantages:

- May redirect traffic to another local street
- Fairly expensive

Variations:

- Stop sign control on one leg
- Stop sign control on all three legs
- Neckdowns in the intersection

Special Considerations:

- Drainage
- Potential for redirecting traffic to adjacent local streets
- May change stop configuration and affect emergency response times

Cost:

- High

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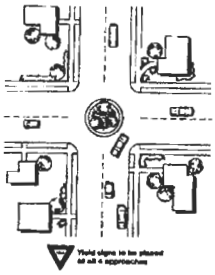
Traffic Circle



Description:

Traffic circles are raised circular medians in an intersection with counterclockwise traffic flow. Vehicles must change their travel path to maneuver around the circle and are typically controlled by "Yield on Entry" on all approaches.

Application:

- Streets where speed control is desired
- Intersections where improved side-street access is desired

Advantages:

- Provides increased access to street from side street
- Slows traffic as it drives around circle
- Breaks up sight-lines on straight streets
- Opportunity for landscaping in the intersection

Disadvantages:

- Definition of right-of-way is contrary to the "yield to the vehicle on the right" rule
- May impede emergency response
- Relatively expensive if curb extensions are required
- May impede left turns by large vehicles
- On streets with bicycle facilities, bikes must merge with traffic around circle

Variations:

- With or without neckdowns
- With or without diverter islands
- Different sizes and dimensions
- Barrier curb and gutter face or tapered/mountable face

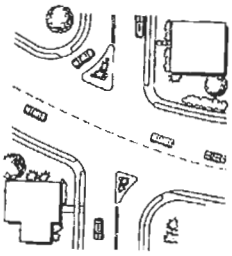
Special Considerations:

- Need to be used in series or in conjunction with other traffic calming devices
- Should not be used on critical emergency response routes
- May require extensive signing
- Maintenance concerns associated with plowing, sweeping and asphalt maintenance around circle
- May require educational campaign and learning period

Cost:

- High

Restricted Movement Barrier



Description:

Barrier island that prevents certain movements at an intersection.

Application:

- Streets where reducing cut-through traffic is desired

Advantages:

- Redirects traffic to main streets
- Reduces cut-through traffic
- Increases opportunity for landscaping in the roadway

Disadvantages:

- May negatively affect emergency response
- May increase trip length for some drivers

Variations:

- Medians on main street that allow left and right turns in but restrict left turns out or straight across movement from side street

Special Considerations:

- Should not be used on critical emergency response routes
- Has little or no affect on speeds for through vehicles

Cost:

- Moderate

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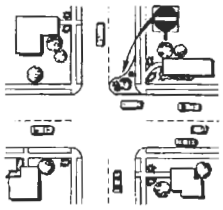
Entrance Barrier



Description:

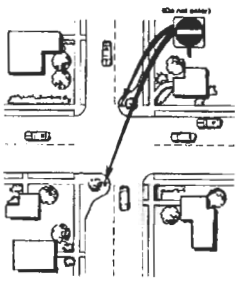
Physical barrier that restricts turns into a street. Creates a one-way segment at the intersection while maintaining two-way traffic for the rest of the block.

Application:

- Local streets where cut-through traffic is a concern
- Local streets where vehicles from nearby facility circulate looking for parking

Advantages:

- Restricts movements into a street while maintaining full access and movement within the street block for residents
- Reduces cut-through traffic
- Opportunity for increased landscaping
- More self enforcing and aesthetically pleasing than turn restriction signing



Disadvantages:

- May redirect traffic to other local streets
- May increase trip length for some drivers
- In effect at all times; even if cut-through problem exists only at certain times of day

Variations:

- Can be used in pairs to create a semi-diverter, restricting turns onto the street and movements across the intersection

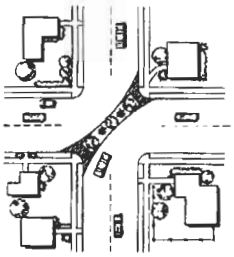
Special Considerations:

- Should not be used on critical emergency routes
- Has little or no effect on speeds for local traffic
- Consider how residents will gain access to street

Cost:

- Moderate to high

Diagonal Diverter



Description:

Raised areas placed diagonally across a four-way intersection that restrict through movements in all directions.

Application:

- Local streets where cut-through traffic is a problem

Advantages:

- Reduces cut-through traffic
- Self enforcing
- Maintains continuous routing opportunities
- Not as restrictive as street closure

Disadvantages:

- May redirect traffic to other local streets
- May increase trip length for some drivers
- In effect at all times - even if cut-through problem exists only at certain times of day

Variations:

- Traversable diverters that allow access for emergency response vehicles

Special Considerations:

- Provide pedestrian and bicycle access through barriers
- Should not be used on critical emergency response routes
- Consider how residents will gain access to street
- Has little or no effect on speeds for local traffic

Cost:

- Moderate to high

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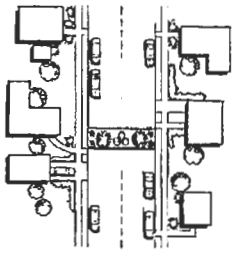
Street Closure



Description:

Full closure of a street.

Application:

- Local streets where cut-through traffic is the major concern

Advantages:

- Restricts all through traffic
- Self enforcing

Disadvantages:

- May redirect traffic to other local streets
- May increase trip length for some drivers
- May increase emergency response times

Variations:

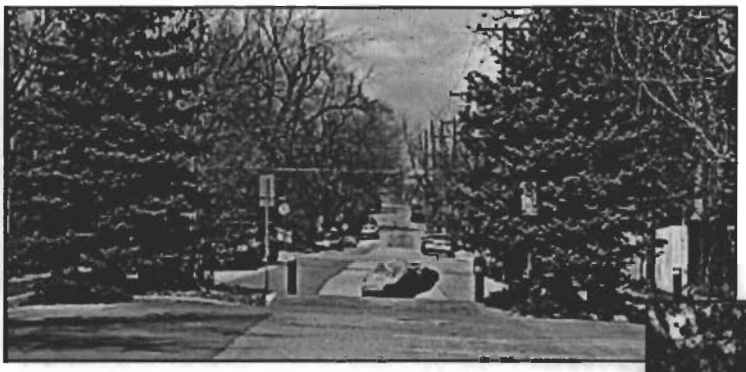
- Mid-block closure
- Intersection closure
- Pocket parks
- Maintain emergency access
- Provide bicycle and pedestrian access

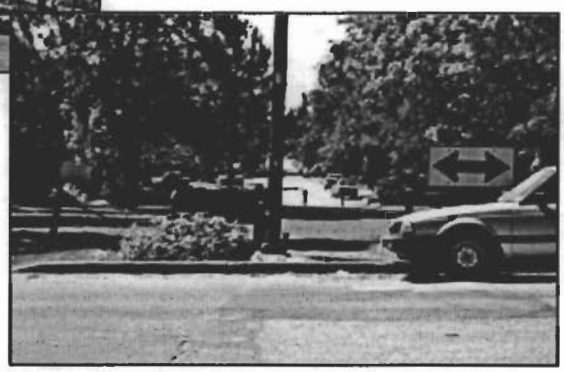
Special Considerations:

- Should not be used on critical emergency response routes
- Consider impacts to adjacent streets
- Consider emergency response requirements

Cost:

- Moderate to high





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Traffic Calming Taskforce Report

City of Lake Jackson
Traffic Calming Process

Vision Statement: **Through the implementation of a clear and objective process, using appropriate and clearly defined innovative traffic calming techniques that promote a smooth flow of traffic, Lake Jackson neighborhoods feel and are safe at all times so citizens can play and walk throughout our community.**

Mission Statement: **The City of Lake Jackson will promote its vision of a smooth flow of traffic and keep its citizens safe by applying a city-wide traffic management process.**

Keystone #1

Clear and Objective Process

Vision Statement → **Vision Implementation Plan**

PP → **Root Cause Analysis**

PP → **Implement solutions/evaluate the results of the solution and modify as necessary**

A&R Keystone → **Use Education to modify the behaviors of the drivers**

Keystone #2

Using appropriate clearly defined innovative and efficient traffic calming devices/techniques

Lower Speeds → Define Solutions A&R

Research and Identify Calming devices → Define Solutions A&R

Innovation → Define Solutions A&R

Keystone #3

Promote smooth flow of traffic
→Smooth traffic flow is a priority (see definition)
→For traffic flow to be considered smooth (1B,1-6)
→Other considerations (1C, 1&2)

PPL → **Identify traffic calming devices/techniques that promote smooth traffic flow rather than impede traffic flow - keep in mind that implementation of traffic altering devices/techniques should ensure that areas for pedestrians and areas for vehicular traffic are well defined. (See 2A through 2L Solutions)**

PPL → **Identify specific traffic flow impediments (see 3A through 3M - defines specific traffic flow impediments)**

A&R Keystone → **Develop criteria for identifying traffic problem area (refer to cases in the traffic calming measures handbood for good examples)**

Keystone #4

Safety First and Foremost in making neighborhoods feel/are safe so citizens can walk and play throughout our community.

Neighborhoods and drivers are educated → Define Solutions A&R

Use of Human factors engineering for neighborhood specific solutions (new & existing) → A&R Keystones #2 & #3

Appropriate hike and bike trails or sidewalks on all streets → Define Solutions A&R

Drivers behavior is modified in targeted neighborhoods

Define Solutions - A&R - This describes the identifires used to prove if the corrective action is effective. If not, then return to Keystone #1

Parking Lot KS=Keystone Litmus=Proof VS=Vision Statement

• Develop neighborhood Management program city wide - KS#1/V.S.
• Control rat runs through Flagridge and other areas - KS#3
•Good flow on collector and arterial streets to reduce rat-runs - KS#3
•New Developments - work with builder so that they keep safety of children and pedestrians in mind - KS#2&#3 Litmus KS#4
•Lower speed limit in neighborhoods - 5mph - KS #2 & #3
•Have discussion about what works and doesn't' work in established community - KS#2 Litmus KS#4
•Behavior changes/behavior modification - KS#2 Litmus KS#4
•Develop criteria for us to understand what is an appropriate traffic calming device is in that area - KS#2 Define Solutions
•System in place so we can identify those things that are different and apply process for the neighborhood of concern - KS#1 Litmus KS#2, #3, & #4
•Information for us to keep in mind that residents need to be responsible for ordinances in place - overnight parking prohibited - KS #4 Litmus
•Root cause analysis so that we can return to the innovation Lake Jackson was founded on - KS#1

Sequence of Events

1. Use KS#3 to help Flesh out KS#1, 2 & 4

2. Locate Keystone item duplicates & establish item in the appropriate keystone - ensure this is reasonable - duplication may be necessary.

3. Establish feedback loops to verify if the corrective actions developed out of the root cause analysis are appropriate reasonable and meet the vision statement. Ensures inovation and appropriateness of the traffic calming as the complexion of Lake Jackson changes/growth

4. Clear parking lot/create mission statement

5. Gain unanimous process agreement

Comments

A&R = Appropriate and Reasonable
This is the process clarifier. Is the solution Appropriate and reasonable and in its Implementation does it meet the vision statement

PPL = Proper Process Litmus
The items delineated in the keystone are appropriate and reasonable in meeting the defined areas of each separate keystone.

•Note that each Keystone (2, 3 & 4) becomes the litmus to ensure the corrective actions developed out of the root cause analysis are appropriate, reasonable and that the vision statement is met.

City of Lake Jackson

Traffic Calming Process

VISION STATEMENT

MISSION STATEMENT

Keystone #1

Clear and Objective Process

Clarifiers

- Methology to identify problem area (residential petition, traffic monitors, crash data, road characteristics, rat-runs See Keystone #1 Appendix
- Review and analyze data collected - data calls for/data does not call for traffic calming - See Keystone #1 Appendix

Collected data is appropriate to conduct a root cause analysis and define corrective actions.

Conduct a detailed root cause analysis to determine why the undesirable behavior or behaviors exist.

Determine corrective actions based on the results of the analysis

Corrective actions are reviewed and selected based upon the corrective action being appropriate and reasonable (A&R Litmus)

Apply selected corrective actions to Keystone #2

Unselected corrective actions appropriate and reasonable?
Yes - Reconsider - No - Disregard

Go to Keystone #2

Keystone #2

Using appropriate clearly defined innovative and effective traffic calming devices/techniques

Clarifiers

- Traffic calming slows vehicles where drivers travel at higher speeds than is desirable
- Corrective actions developed out of the root cause analysis are appropriate, reasonable and meet our vision statement - See Keystone #2 Appendix
- Treatments for traffic calming move to appropriately modify driver/pedestrian behavior through education, treatements - See Keystone #2 Appendix

Validate corrective actions are appropriate and reasonable tool box - traffic calming handbook, benchmark sucessful communities project costs, etc. - See Keystone #2 Appendix

Selected corrective actions pass keystone#2 Litmus. - See Keystone #2 Appendix

Go to Keystone #4

Litmus

Keystone #3

Promote Smooth Flow of Traffic

Clarifiers

- Smooth traffic flow is a priority See Keystone #3 Appendix
- For traffic flow to be considered smooth See Keystone #3 Appendix
- Other considerations See Keystone #3 Appendix

Identify traffic calming devices that promote smooth traffic flow rather than impede traffic flow keeping in mind that implementation of traffic altering devices/techniques should ensure that areas for vehicular traffic are well defined. See Keystone #3, 2A, 2L Solutions

Identify specific traffic flow impediments. See Keystone #3, 3A - 3M Defines specific traffic flow impediments

Apply specific traffic flow impediments to root cause analysis and A&R Litmus

Keystone #4

Safety First and Foremeost in making neighborhoods feel/are safe so citizens can walk and play throughout our community

Clarifiers

- Our community is safe and livable due to the traffic calming techniques/devices implemented - See Keystone #4 Appendix
- Implemented traffic calming treatments are effective - post implementation data collection - See Keystone #4 Appendix
- Neighborhoods gain support and consensus for traffic calming treatment - verify by survey, etc See Keystone #4 Appendix

Present traffic calming treatment to Traffic Commission, Planning Commission, City Attorney for approval (see Clarifiers)

Present traffic calming treatment to Mayor, City Council and City Manager for approval (see Clarifiers)

Approved traffic calming treatment implemented

Implement post installation data collection
- Behavior modified - effective corrective action
- Behavior not modified - corrective action is ineffective → return to Keystone #1

A&R = Appropriate and Reasonable
This is the process clarifier. Is the solution appropriate and reasonable and in its implementation does is meet the vision statement

PPL = Proper Process Litmus
The items delineated in the keystone are appropriate and reasonable in meeting the defined areas of each separate keystone. Note that each Keystone (2,3,4) becomes the litmus to ensure the corrective actions developed out of the root cause analysis are appropriate, reasonable and that the vision statement is met.

KEYSTONE #1

CLEAR AND OBJECTIVE PROCESS

For the process to be “CLEAR” it must have

- written and agreed upon measurements published for all residents/citizens

The OBJECTIVES must be

Measurable
Actionable
Independent
Impartial

Collectable data:

Speed surveys
Accident/police reports
Citizens reports, petitions, etc.
Geographic
Networking
Geometry

Adopt guidelines for setting specific speed limits for uniform traffic control

Residential
Collectors
Arterial (not appropriate or reasonable)

Decision makers:

Is 85% percentile greater than posted speed	Yes	No
Does street design support 85%	Yes	No
Is this local residential support	Yes	No
Would impact impede emergency response	Yes	No
Would traffic calming support residential area	Yes	No
Does crash analysis support change	Yes	No

Keystone #2

Using appropriate clearly defined innovative and effective traffic calming devices/techniques

1. Definition of Keystone
   a. " appropriate" – best suited device or technique for the roadway being addressed dependent upon width and volume of traffic.

   b. "innovative and effective"- looking at all methods available and choosing methods that by past performance promote safety without impeding traffic flow.

2. Identify types of streets

   1 Residential
      27 ft wide
      Courts
   2 Collector
      27 ft wide
      High volume- Sycamore
      Low volume- North Oak
   3 Minor Arterial
      30 ft wide
      That Way (between OCD and 2004)
      Deerwood
   4 Arterial
      48 Ft wide
      Plantation Dr
   5 Major Arterial
      60-70 ft wide
      Dixie, Oyster Creek Drive, Oak (center)

3. Identify devices available for traffic calming

   1 Markings and signage
   2 Rumble strips
   3 Medians
   4 Improved visibility (foliage)
   5 Table tops (low speed bumps)
   6 Chokers
   7 Landscape
   8 Street parking
   9 Education

10 Street design and alignment
11 textured paint
12 round-a-bouts
13 Police enforcement
14 Traffic lights
15 Stop signs

4. Types of devices for each type of roadway

Types of streets	Appropriate calming devices
Residential streets	Markings and signage Improved visibility (foliage) Chokers Landscape Street parking Education Police enforcement Stop signs
Collector- High volume	Markings and signage Medians Improved visibility (foliage) Landscape Street parking Education textured paint Police enforcement Stop signs
Low volume	Markings and signage Medians Improved visibility (foliage) Landscape Street parking Education Police enforcement Stop signs
Minor Arterials	Markings and signage Rumble strips Medians Improved visibility (foliage) Landscape Street parking Education Street design and alignment Police enforcement Stop signs

Arterial	Markings and signage Rumble strips Improved visibility (foliage) Street parking Education Police enforcement Traffic lights
Major Arterial	Markings and signage Rumble strips Improved visibility (foliage) Street parking Education round-a-bouts Police enforcement Traffic lights

Keystone #3
Promote smooth flow of traffic

1. Definition of keystone
    a. "Promote" (smooth traffic flow is a priority – in other words, smooth traffic flow must be a consideration as well as other objectives such as safety and cannot be compromised by unnecessary or ill-planned implementation of traffic calming/altering techniques)
    b. "Smooth" – for traffic flow to be considered smooth, the following criteria should be met
        1. Continuous
        2. Flowing
        3. Efficient
        4. Non-encumbering
        5. 85 percentile compliance
        6. Safe
    c. Other considerations
        1. Smooth traffic flow does not mean that excessive speed or necessarily higher speed is desired
        2. Reduction of noise pollution caused by stop and start of stop signs, traffic lights, etc.
2. Identify traffic calming devices/techniques that promote smooth traffic flow rather than impede traffic flow - keep in mind that implementation of traffic altering devices/techniques should ensure that areas for pedestrians and areas for vehicular traffic are well defined for new and existing neighborhoods
    a. Street design
    b. Green lights vs. Red lights
    c. Replacement of traffic lights with traffic circles and roundabouts where appropriate (e.g. proposed traffic light at This Way and Abner Jackson Pkwy)
    d. Gateways
    e. Landscaping
    f. Speed Monitoring Trailer
    g. Speed limit signs where speed limits are often not observed – maybe some eye-catching signs like "avoid a speeding ticket by driving 30 mph" or "this is not your driveway – please get off the phone and drive the speed limit which is 35"

h. Traffic lights which are synchronized so that while driving the speed limit, one can navigate through multiple traffic lights reducing the temptation to beat the next light

i. Replace stop signs with yield signs when appropriate criteria are met.

j. Traffic signals could change to “blink” status during non-work hours, allowing main traffic to continuously flow and only entering traffic to stop or yield.

k. Right turn “only” lanes at those traffic signals where the predominant traffic usually turns right. (i.e. East bound lane of OCD at Dixie, South bound lane of Lake Drive at This Way, or West bound lane of Oak Dr at Highway 332)

l. Design “U-Turn” lanes rather than allowing turns at traffic signals.

m. Consider horizontal traffic calming devices and visual effect (striping and landscaping) prior to the use of vertical devices such as speed tables and bumps.

n. Identify and use horizontal devices at spot location (neighborhood mail boxes, school bus stops) to promote centralized pedestrian crossing traffic.

o. Implement techniques that will improve safety without jeopardizing emergency response needs, creating hazards, or reducing mobility

p. Proper speed limits set as determined by the 85th percentile approach (see Gene Brannan’s notes)

q. Behavior changes

r. Develop criteria for appropriate traffic calming devices in specific areas

s. Good traffic flow on collector and arterial streets to reduce rat runs and overflow traffic on side streets

t. Residents need to be responsible for ordinances that are in place (i.e. Parking on city streets, overnight parking, blocking sidewalks, etc.)

3. Identify specific traffic flow impediments

a. Street parking

b. Playing in the streets

c. Street design

d. Traffic lights which are not timed for continuous flow (Oyster Creek Dr, Highway 332)

e. Excessive stop signs

f. Roads which are deteriorating (curve on Oak Dr where it meets Huisache)

g. Long lights at major intersections which in turn create rat-runs through smaller, residential streets (e.g. Flagridge)

h. Long lights which result in traffic backup and encourage drivers to continue through the intersection during traffic light change to red (e.g. Oyster Creek Dr and underpass of Highway 288/332; This Way and Highway 332)

i. Lights that turn red when not necessary to allow side traffic to enter main road (e.g. right turn off Hospital Rd onto Oak Dr)

j. Depending on the traffic volume, the speed limit can impede traffic flow if the speed is too slow or if the speed usually forces drivers to experience a long delay because of timing with traffic signals

k. Killer curbs which can catapult your vehicle into the ditch – because such curbs exist speed limits must be set in consideration of curb hazard rather than actual use of the street

l. Low speed limits when not needed (e.g. school zones beginning at 7am; 20mph along Lake Road in front of Rec Center when no event is happening or the event is located very far off the road; 20mph downtown when very little activity is occurring and therefore vision is not impeded by parked cars)

m. Red light cameras (will cause drivers to break in an unsafe manner when continuing through an intersection would have been safe)

4. Develop criteria for identifying traffic problem areas (refer to cases in Traffic Calming Measures handbook for good examples)

    a. Analysis

    b. Point system

    c. Determine if studied problem qualifies for traffic calming measures

    d. Identify which traffic calming measure would be implemented

    e. Identify source of funding and implementation plan

Comment on remaining parking lot items – these items do not fit neatly into this keystone

- New developments – work with builder so that they keep safety of children and pedestrians in mind (vision statement should include something to the effect that traffic flow and safety should be monitored on an ongoing basis to ensure that any measures which have been implemented continue to be effective)
- Have discussion about what works and doesn’t work in established community (human factor engineering) (part of process of this task force)
- Behavior changes (keystone #1)

- Information for us to keep in mind that residents need to be responsible for ordinances that are in place – overnight parking prohibited
- Root cause analysis so that we can return to the innovation that Lake Jackson was founded on. Behavior Modification (possibly keystone #1)

Keystone #4
Safety First and Foremost in making neighborhoods feel/are safe so citizens can walk and play throughout our community.

1. A Safe Neighborhood has:
   - An 85th percentile speed which is less than or equal to the posted speed limit.
   - No unobstructed views for the vehicle or pedestrian.
   - Adequate street lighting.
   - Street structures such as dips, sharp turns, etc. are eliminated, minimized or identified.
   - Safe pedestrian walking areas.
   - Adequate informational signage.

2. A citizen may bring to the attention of the Traffic Commission a neighborhood that does not meet the Safe Neighborhood Criteria or if (75% of 90%) of a neighborhood perceive the neighborhood to be unsafe, the Traffic Calming Process may begin as outlined in Keystone No. 1.

3. To determine if the Traffic Calming Process has resolved the Safe Neighborhood Issue, a Neighborhood Workshop will be held **6 months** after calming treatments are implemented.

   - Evaluate data collected pre and post implementation of calming treatments.
   - Gather neighborhood evaluation of temporary calming treatments before permanent changes are made and compare to collected data.

Bibliography

Bibliography

1. Lalani, Nazir, 'Traffic Calming (Part 1) Best Practices', Teleconference, Thursday, September 27, 2007

2. Lalani, Nazir, 'Traffic Calming (Part 2) Lessons learned, Teleconference, Thursday, September 27, 2007

3. Ewing, R., 'Traffic Calming, State of the Practices,' Institute of Transportation engineering, Federal Highway Administration, Washington D.C., USA, 1999

4. *Traffic Calming Primer*, Pat Noyes and Associates, Boulder, Colorado, USA., 1998

5. *Neighborhood Traffic Management Program*, Collier County, Florida, U.S.A.

6. *Residential Traffic Management Plan for speed and traffic control*, Town of Carrboro, North Carolina, U.S.A.

7. Burden, Dan 'The Citizens' guide to Traffic Calming, streets and sidewalks, People and cars, local government commission center for livable communities, Sacramento, CA., U.S.A., 2000

8. *Traffic Calming Policy*, City of Winston-Salem, North Carolina, U.S.A., 2003

9. *Policies and Procedures for speed hump installation and removal*, City of Houston Public works and Engineering, Houston, Texas, U.S.A., 2002.

10. *Traffic Calming Comprehensive Project*, City of Austin, Austin, Texas U.S.A.

11. *Neighborhood Traffic Management*, Charlotte Department of Transportation, Charlotte, North Carolina, U.S.A.

12. *Traffic Calming*, chapter 9, U.S. Department of Transportation, Federal Highway Administration, Washington D.C., U.S.A.

13. *Traffic Calming Programs 2004*, city of Santa Fe Public Works Department (Transportation Engineering), Santa Fe, New Mexico, U.S.A. 2004

14. *User Manual*, US Limits version v 1.0, U.S. Department of Transportation, Federal Highway Administration, Washington D.C., U.S.A.