CITY OF GAINESVILLE
every path starts with passion
FLORIDA


Public Works Department

Residential Traffic Calming

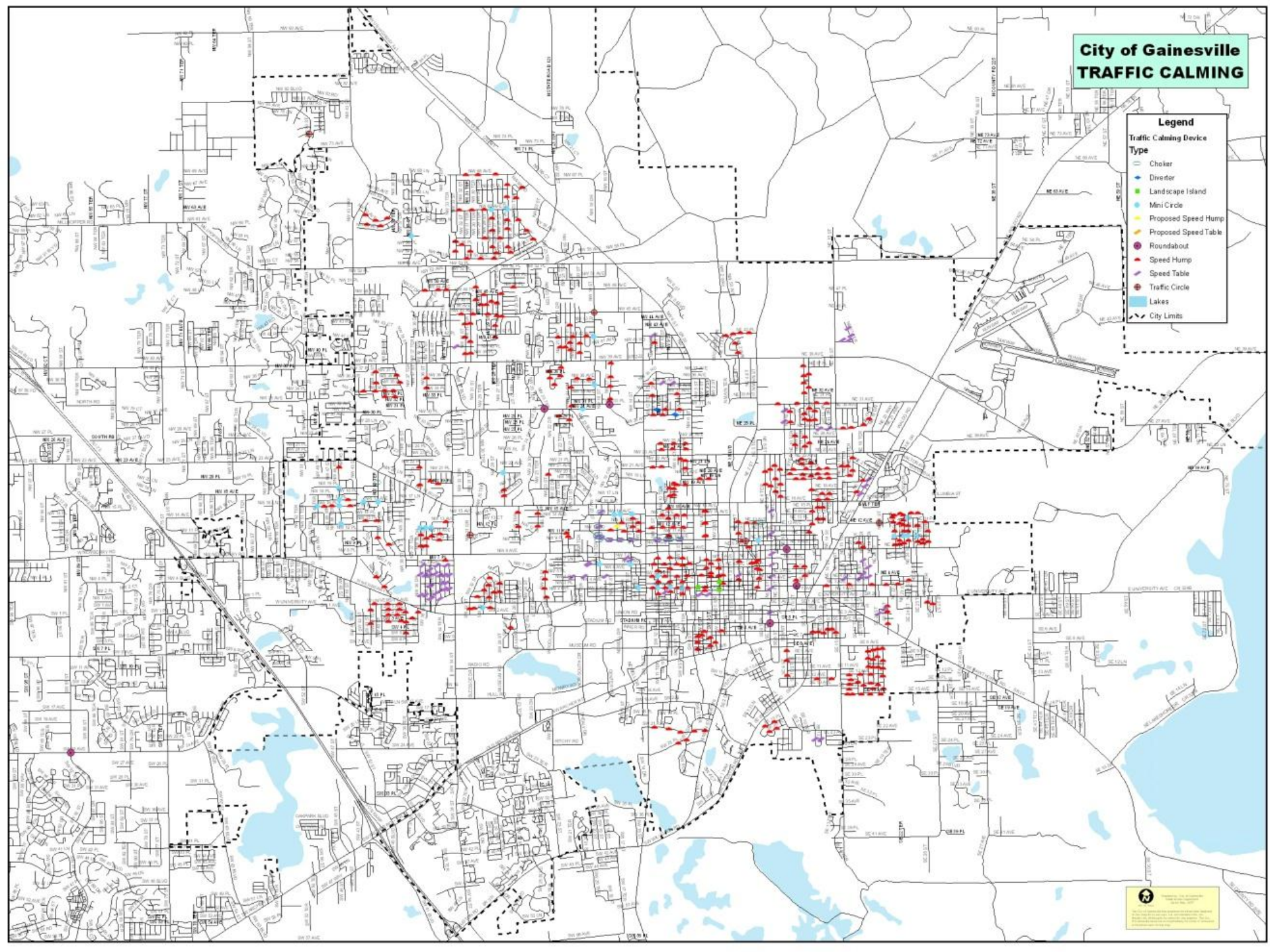
Presentation prepared by Phil Mann

Program Beginnings

- Public Works Dept. began implementing traffic calming in the mid 1980's.
- City Commission adopted the formal Traffic Calming Program Policy in 1997;
- Public Works Dept. received an average of 100 requests per year for traffic calming;
- 58% of the requests were eligible with 6% of eligible requests being voted down by the affected parties;

Program Beginnings (cont.)

- Public Works Department spent over $500,000 in speed humps & tables;
- On average $75,000 per year were spent on installation of traffic calming devices;
- Speed tables had a positive net effect in reducing speeds (10-20% reduction) and eliminating high end speeds – most popular part of program;


City of Gainesville
TRAFFIC CALMING
Legend
Traffic Calming Device
Type
Choker
Diverter
Landscape Island
Mini Circle
Proposed Speed Hump
Proposed Speed Table
Roundabout
Speed Hump
Speed Table
Traffic Circle
Lakes
City Limits

Program Elimination

- Traffic Calming Program was having a negative impact on emergency response times;
- 10% to 15% reduction in response times – per device – for Fire-Rescue & EMS;
- Last “Traffic Calming Fund” project was the radar speed signs in 400-700 block of N.W. 22nd Street in June 2008.

Commission Action

June 28, 2004 – Gainesville City Commission Action:

- Placed a moratorium on speed humps and speed tables;
- Decreed that all mini-traffic circles shall be converted to all-way yields and that all traffic shall rotate around them in a counter-clockwise direction;
- Most residents want speed humps / tables – obvious speed deterrent.

GFR Concerns

- Dramatic Increase in response times in areas where traffic calming devices (TCD's) had been installed.
- TCD's were installed by Public Works after a traffic study; GFR was opposed.
- Higher roadway curbing caused fire and emergency response vehicles to travel farther distances with more turns and stops, eliminated direct routes from major roadways.

1 gallon of water

- Weighs 8.34 lbs
- X 750 gallons = 6255 lbs (just over 3 tons)
- A movable weight that has dramatic effects with stopping, moving and stopping again.
- Engine Vehicle width tire to tire = 8 ft
- Engine Front axle to Rear axle =16 ft 8 in

GFR Apparatus

6 Engines

Advanced Life Support Services

Fire Suppression

Carry 750 gallons of water

Can pump 1,750 gallons per minute

1 ¾ inch hose = 400 feet

3 inch hose = 800 feet

5 inch hose = 1,200 feet

GFR Apparatus

1 Quint

Advanced Life Support Services

Fire Suppression

Rescue

Ventilation

75 ft extendable ladder

Rescue Tools

Carries 500 gallons of water

Can pump 1,750 gallons per minute

1 ¾ inch hose = 400 feet

3 inch hose = 800 feet

5 inch hose = 1200 feet

GFR Apparatus

2 Towers (Trucks)

Advanced Life Support Services

Fire Suppression

Rescue

Ventilation

100 ft ladder with bucket

Rescue Tools

Carry 300 gallons of water

Can pump 1,750 gallons per minute

1 ¾ inch hose = 350 feet

3 inch hose = 300 feet

5 inch hose = 300 feet

Water, Ladder, & Equipment

- 1 Ton of water
- 73,500 lbs of truck
- 4,500 lbs of tools and equipment

We measure everything, Its all about Time

- Dispatch time
- Out the door times
- Travel times
- On-scene times
- How long until fire out
- How long until patient transported

GFR Traffic Calming History

- Higher fuel and emissions costs
- Vehicle and equipment damage
- Emergency personnel injured
- Field trials completed
- Compared to Portland Fire Bureau for validity

GFR Testing Results

- Conducted in conjunction with Public Works
- 12% increase of travel time after the installation of TCD February 2001 – February 2003
- 2.05 % increase in Emergency Response Force for NFPA standard 1710
- EMS calls 7.68% increase in response times post device
- 25% increase in braking, wheel alignment and physical damage to GFR vehicles
- 4% rise of onboard equipment repair post TCD installation

GFR Testing Results (cont.)

- Field Tests resulted in increased travel times from 25.64% to 107.81% and confirmed the cumulative effects of multiple devices significantly increase response time.
- Speed humps – three in a route adds 40 – 69 seconds.
- Speed tables – three in a row adds 20 – 31 seconds

GFR Bottom Line

- Traffic calming devices accomplish what they are designed to do – slow down vehicles which result in longer response times.

Annual PW Costs

- There are annual maintenance costs for the existing traffic calming that are encumbered in the Public Works Budget;
- These costs included:
  - Traffic Signs & Pavement Markings
  - Landscaping & Irrigation
  - Curb and asphalt repair

Speeding Complaints Continue

- During peak travel times, motorists are seeking alternatives to travelling on the major roadways
- In the off-peak travel times, motorists can travel at higher rates of speed from the back of the neighborhood to the entrance/exit
- This is due to the gridded nature of some neighborhoods and the single access point design of others

Traffic Calming Options

- Round-a-bouts / traffic circles
- Speed tables
- Speed Cushions
- Raised Intersections
- Street closures / diverters
- Chicanes
- Staggered on-street parking
- Chokers / Neck Downs

Roundabouts

- Difficult to retro-fit into residential neighborhoods
- Requires additional right of way
- Must accommodate the turning radii of fire trucks, school buses and refuse collection trucks
- All-way yields with traffic circulating in a counter-clockwise pattern

CITY OF GAINESVILLE
every path starts with passion
FLORIDA

Roundabouts

Speed tables

- Vertical traffic calming devices
- Retrofittable on existing street networks and existing curb and gutter lines
- 6’ approach ramps on either side and 10 flat top table
- Reduce travel speeds
- Reduce response times for emergency vehicles

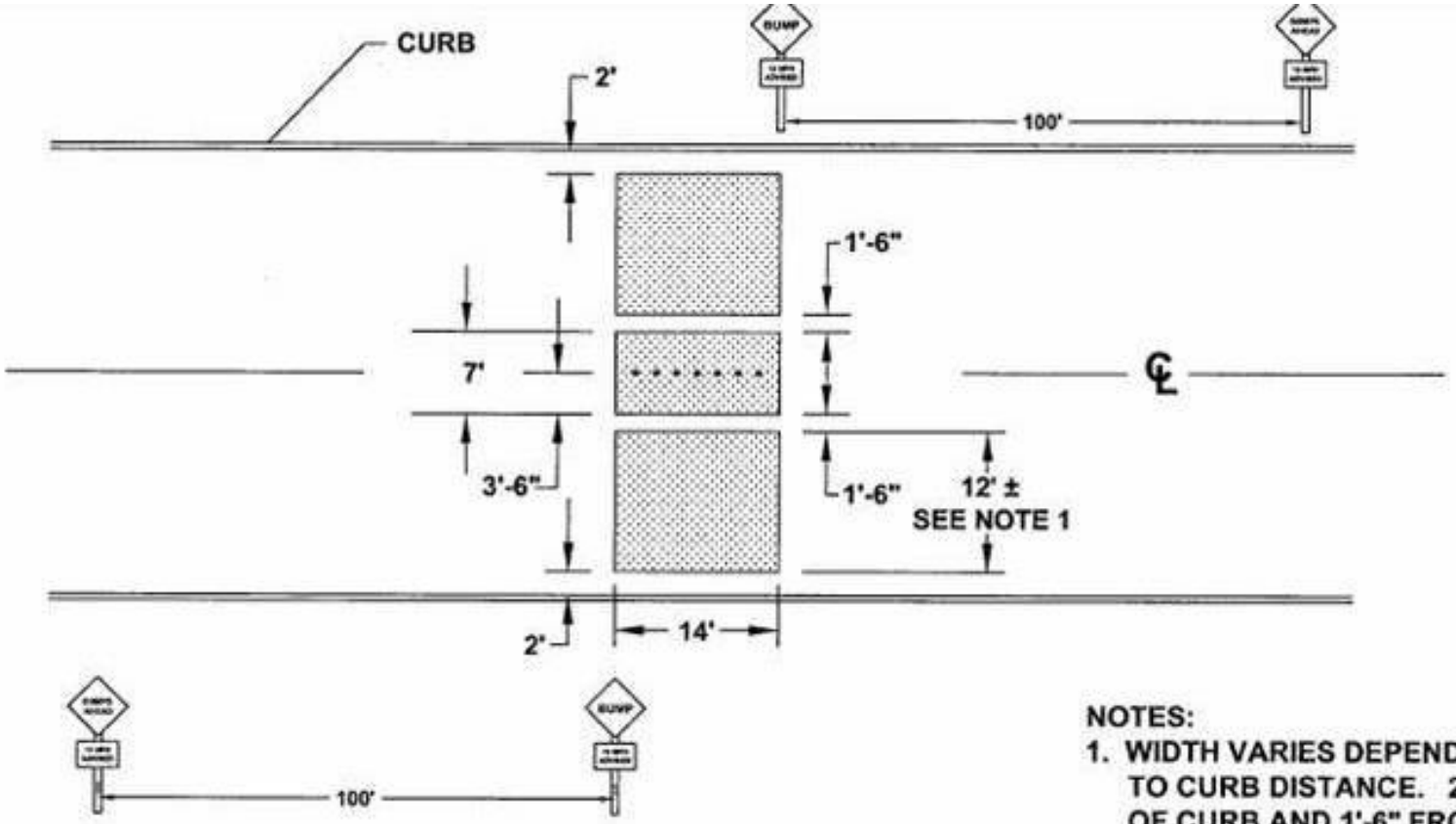
CITY OF GAINESVILLE
every path starts with passion
FLORIDA

Speed tables

Speed Cushions

- Vertical traffic calming devices
- Similar to a Speed Table except there are gaps that an emergency vehicles tires will fit through
- Cushion: 6’ approach ramps on either side and 10 flat top table
- Reduce travel speeds
- Reduce response times for emergency vehicles

Speed Cushion Design



Speed Cushions
Typical - Not to Scale

NOTES:
1. WIDTH VARIES DEPENDING ON CURB TO CURB DISTANCE. 2' FROM FACE OF CURB AND 1'-6" FROM CENTER CUSHION (CRITICAL DIMENSIONS).
2. DIMENSIONS ARE FINISH DIMENSIONS.

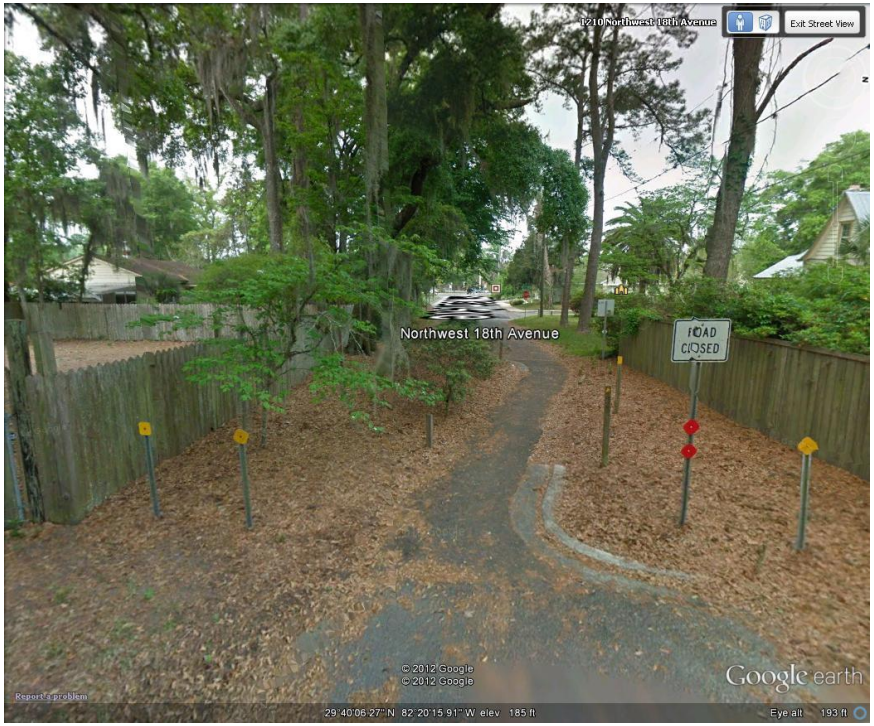
Raised Intersections

- Vertical traffic calming device
- Retrofittable into existing intersections
- 6’ approach ramps on either side and raised intersection
- NW 5th Avenue & 22nd Street
- New Super Wal-Mart Site
- Reduce response times for emergency vehicles

Street Closures

- Access restrictive traffic calming devices
- Creates dead-end streets
- Creates closed neighborhoods
- Maintains pedestrian connectivity
- Minimal impact on response times for emergency vehicles

Street Closures



Chicanes

- Horizontal traffic calming devices
- Retrofittable on existing street networks
- Bulb-out islands are constructed on either side of the street
- Reduces travel speeds when there is traffic on the street
- Minimal impact on response times for emergency vehicles

CITY OF GAINESVILLE
every path starts with passion
FLORIDA

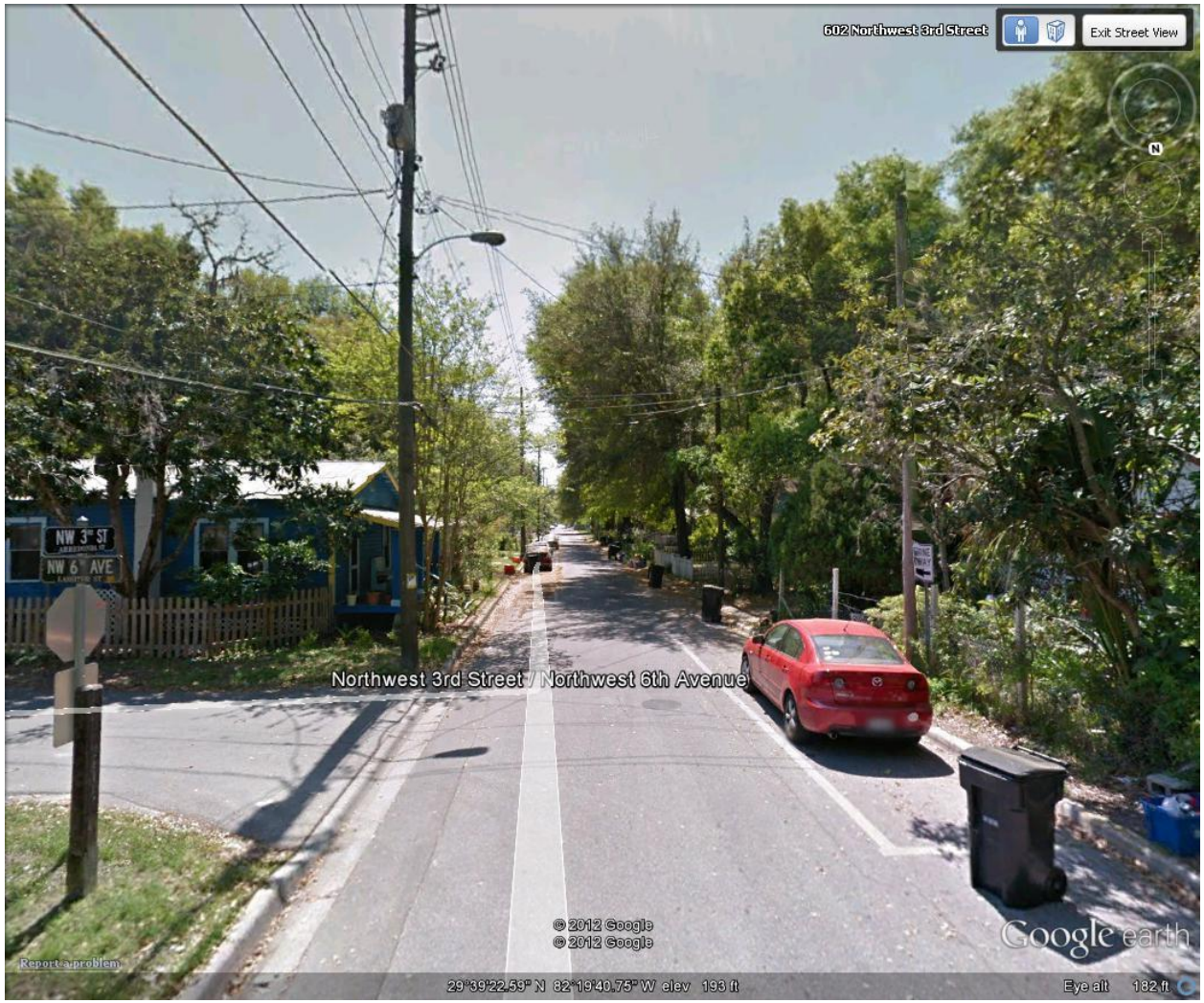
Chicanes

Staggered On-Street Parking

- Effective on narrow and/or one-way streets
- Retrofittable on existing streets
- On-street parking is marked on one side of street for ½ block and then moved to the other side of street
- Reduce travel speeds
- Only effective on streets where on-street parking is utilized

CITY OF GAINESVILLE
every path starts with passion
FLORIDA

Staggered On-Street Parking



Chokers / Neck Downs

- Chokers and neck downs are the installation of islands on one side of a street or on both sides of the street to make the street appear narrower
- The islands can also be installed in the center of the street
- They reduce travel speeds be creating a street with a narrower looking appearance

CITY OF GAINESVILLE
every path starts with passion
FLORIDA

Chokers / Neck Downs

N.W. 31st Drive Data

- 2 Day Study:
  - Monday, September 24, 2012 &
  - Tuesday, September 25, 2012
- Posted Speed Limit 25 MPH
- Total Vehicles: 4428
- Average Speed: 20.5 MPH
- 50th Percentile Speed: 20 MPH
- 85th Percentile Speed: 27 MPH
- 10 Mile Pace: 13 MPH to 22 MPH

Monterey Subdivision Data

- 2 Day Study (NW 40th Street):
  - Wednesday, December 12, 2012 &
  - Thursday, December 13, 2012
- Speed Limit 30 MPH (now 25 MPH)
- Total Vehicles: 1259
- Average Speed: 17.72 MPH
- 50th Percentile Speed: 17 MPH
- 85th Percentile Speed: 23 MPH
- 10 Mile Pace: 11 MPH to 20 MPH

CITY OF GAINESVILLE
every path starts with passion
FLORIDA

QUESTIONS