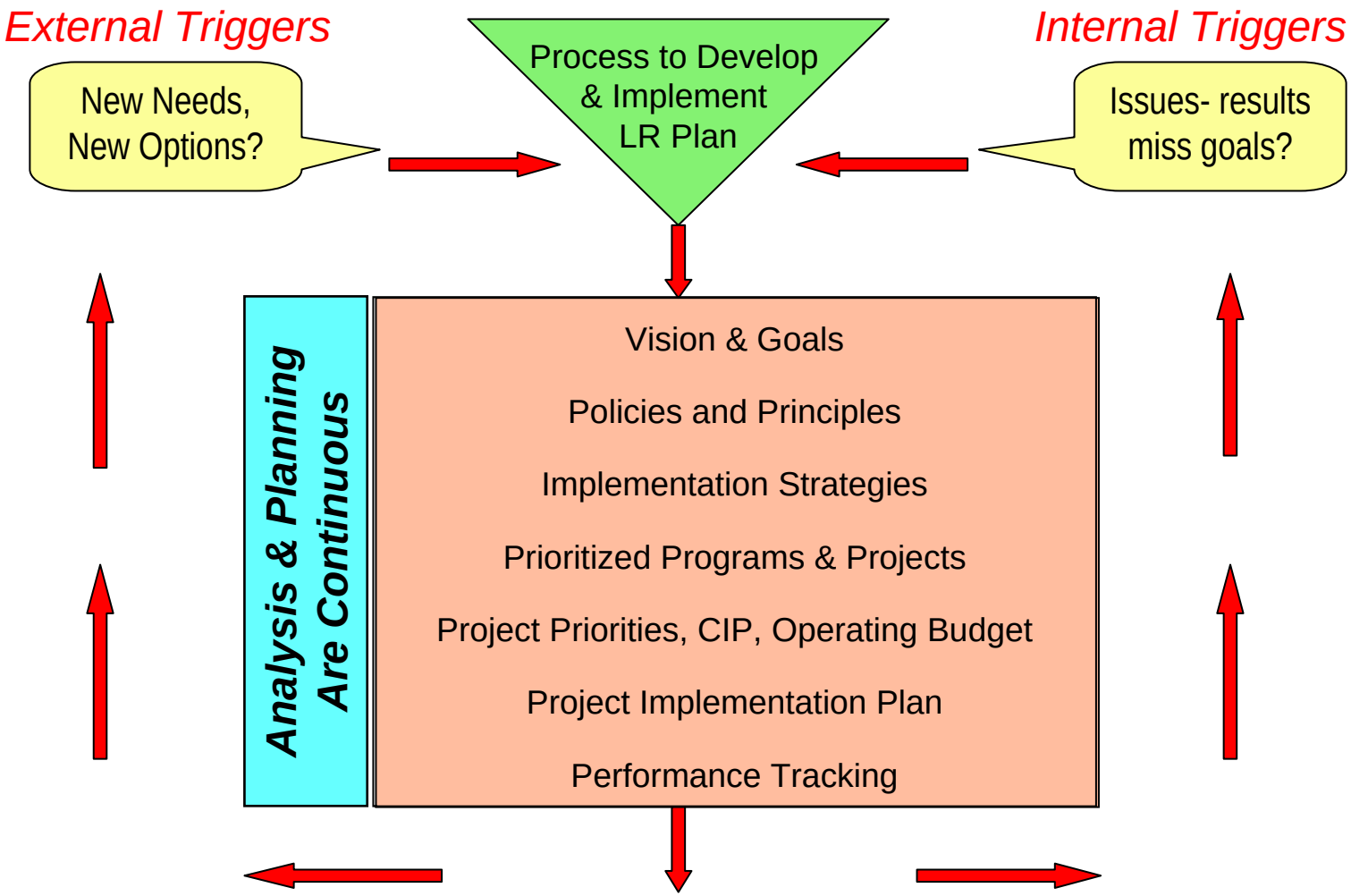
Transportation Workshop

April 6, 2009

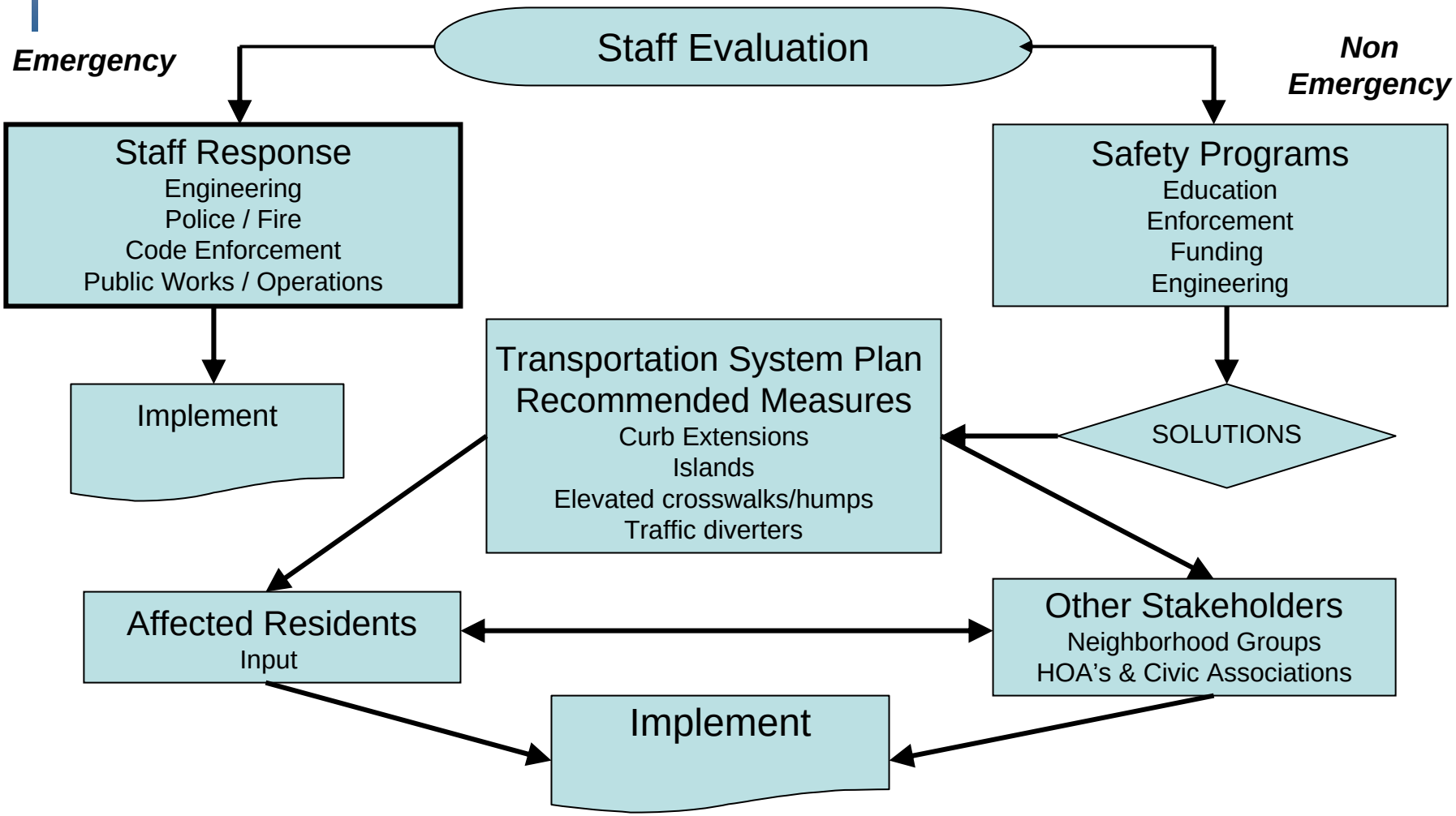
Agenda

- Transportation Project Team (Bob Palombo)
  - Planning process
  - Traffic data & analysis
  - Traffic management concepts & tools
  - Programs, projects, priorities
- Transportation Ordinance (Kevin Stroud)
  - Proposed ordinance on through traffic
  - Q&A with community discussion
- Proposed Road Projects (Joe Anlauf)
  - Proposed Design Poteskeet & Chicahauk Trail Rebuild
  - Q&A with community discussion
- Workshop Summary & Next Steps (Bob Palombo)

Transportation Planning Process



Responding to New Issues



LR Transportation Plan Goals

1. Private, commercial & emergency vehicles have well maintained paved access to every property in TOSS
2. Pedestrians & vehicles move within & through TOSS safely & efficiently
3. Evacuation routes are adequate to handle peak volumes in an emergency
4. Roads, bridges & pathways are well designed & enhance the character of TOSS
5. Transportation system design, road construction standards & traffic regulations are appropriate, consistent & enforceable

Transportation Principles

- Public Safety is first – ALWAYS
- Roads are for vehicles not pedestrians
- Separate pedestrians & vehicles (especially on narrow high volume roads)
- Different road designs for different purposes
- All stakeholder voices have input to planning

Road Classifications

- **Class I - Primary Collector Road**
  - Connects many connectors
  - Examples: E. Dogwood Trail and S. Dogwood Trail
- **Class II - Secondary Collector Road**
  - Connects 2 connectors
  - Examples: Hickory Trail and Sea Oats Trail
- **Class III - Local Access & No Outlet Roads**
  - Connects to 1 connector or to other local access roads only
  - Example: Poteskeet Trail

    OR
  - Has only 1 point of entry & exit (ends in cul-de-sac)
  - Example: Tall Pine, Beech Tree Trail

CLASS I – Primary Collector

- Main traffic distribution road through a neighborhood and/or between arterial roads (i.e., NC 12 and R158)
- Typical Traffic Volume ~ 2,000 vehicles/day
- Average vehicle ***volume*** (summer)
  - S. Dogwood Trail ~ 2,500 vehicles per day
  - E. Dogwood Trail ~ 1,600 vehicles per day
  - Juniper Trail ~2,100 vehicles per day
  - Chicahauk ~ 2,000 vehicles per day
- Average vehicle ***speed*** (Fri - Mon)
  - E. Dogwood Trail ~ 24 mph
  - Juniper Trail ~ 24 mph

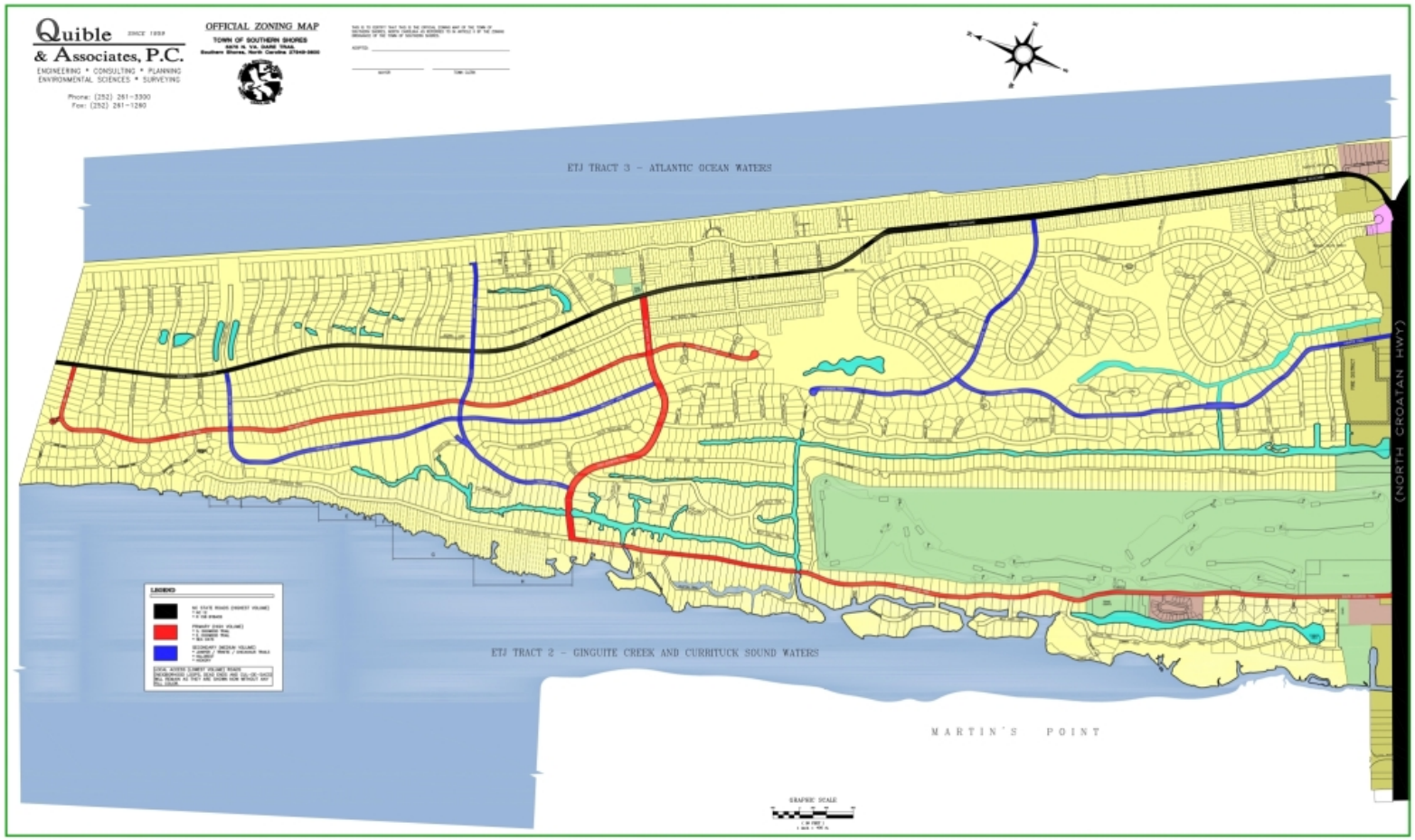
CLASS II – Secondary Collector

- Distributes traffic between neighborhoods and arterial roads
- Typical Traffic Volume < 2,000 vehicles/day
- Average vehicle ***volume*** (summer)
  - Hickory Trail ~ 1,700 vehicles per day
  - Sea Oats Trail ~ 1,500 vehicles per day
- Average vehicle ***speed*** (summer)
  - Hickory Trail ~ 24 mph
  - Sea Oats Trail ~ 24 mph
  - Hillcrest ~ 26 mph

Class III – Local Access Road

- Provides local access to properties
- All roads that are not Class I or Class II are Class III
- Traffic Volume < 1,000 vehicles/day
- Example A – local access road on a collector road
  - Road intersects with 1 Class II or other Class III roads only
  - Example: Poteskeet Trail
- Example B – local access road with “no outlet”
  - Road has a single point of entry & exit (dead ends & cul-de-sacs)
  - Example: Duck Woods Road, Tall Pine, Beech Tree Trail

Map of Class I, II & III Roads



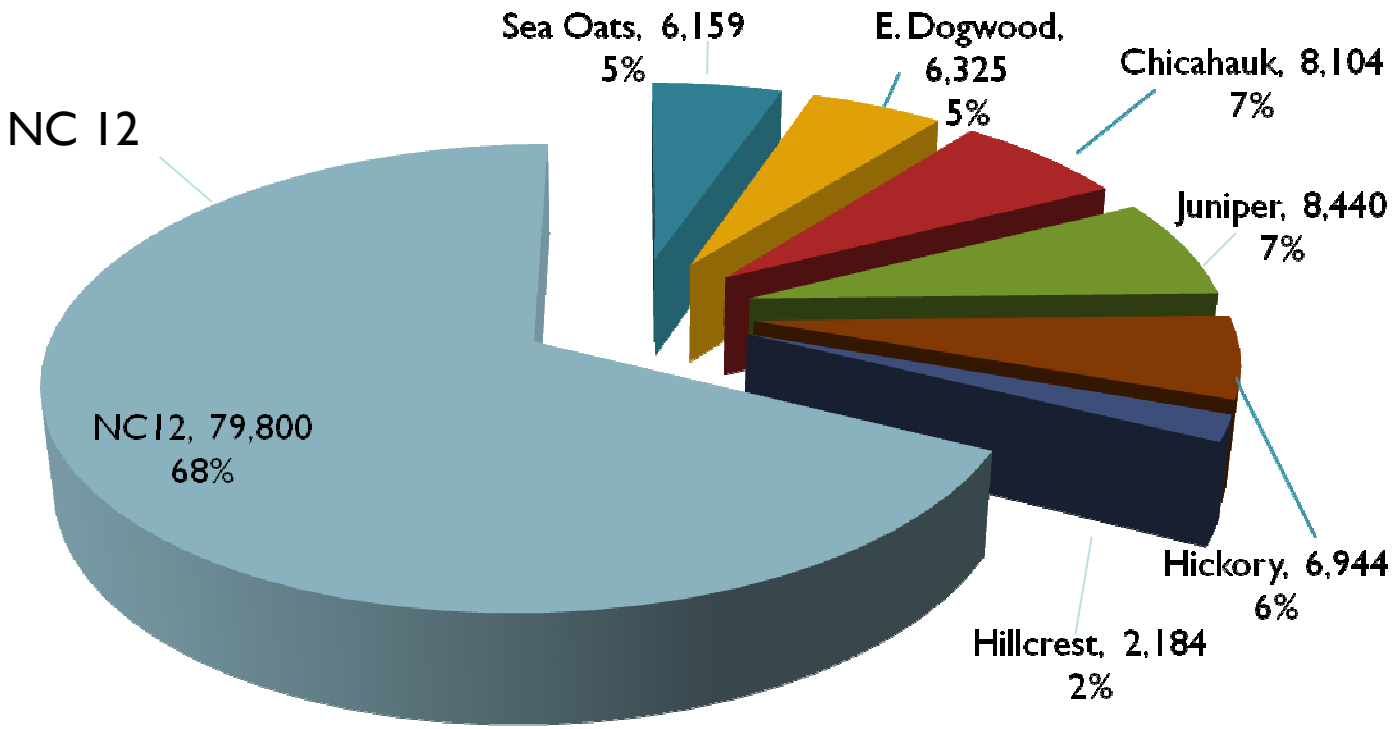
Factors that vary by road class

- Speed Limits
- Volume Control Measures
- Pedestrian & Bicycle Safety Requirements
- Access Restrictions
- EMS Response Time
- Noise/Pollution Reduction
- Stormwater Impact
- Aesthetic Improvement Options

Measuring Summer Vehicle Volume and Speed

- Vehicle volume count surveys were conducted for selected streets during June, July and August 2008.
  - Data was collected for each Friday – Monday period
  - An average of ~ 118,000 vehicles for each 4-day (Fri.-Mon.) period
  - 68% (79,800 vehicles) of traffic was on NC 12
- Vehicle speeds on the selected streets were measured for the same periods.
  - Average speed on TOSS streets was ~24 mph
  - Average speed on NC 12 was ~ 34 mph

Average Summer 2008 (June – Aug.) Vehicle Volume: Friday - Monday

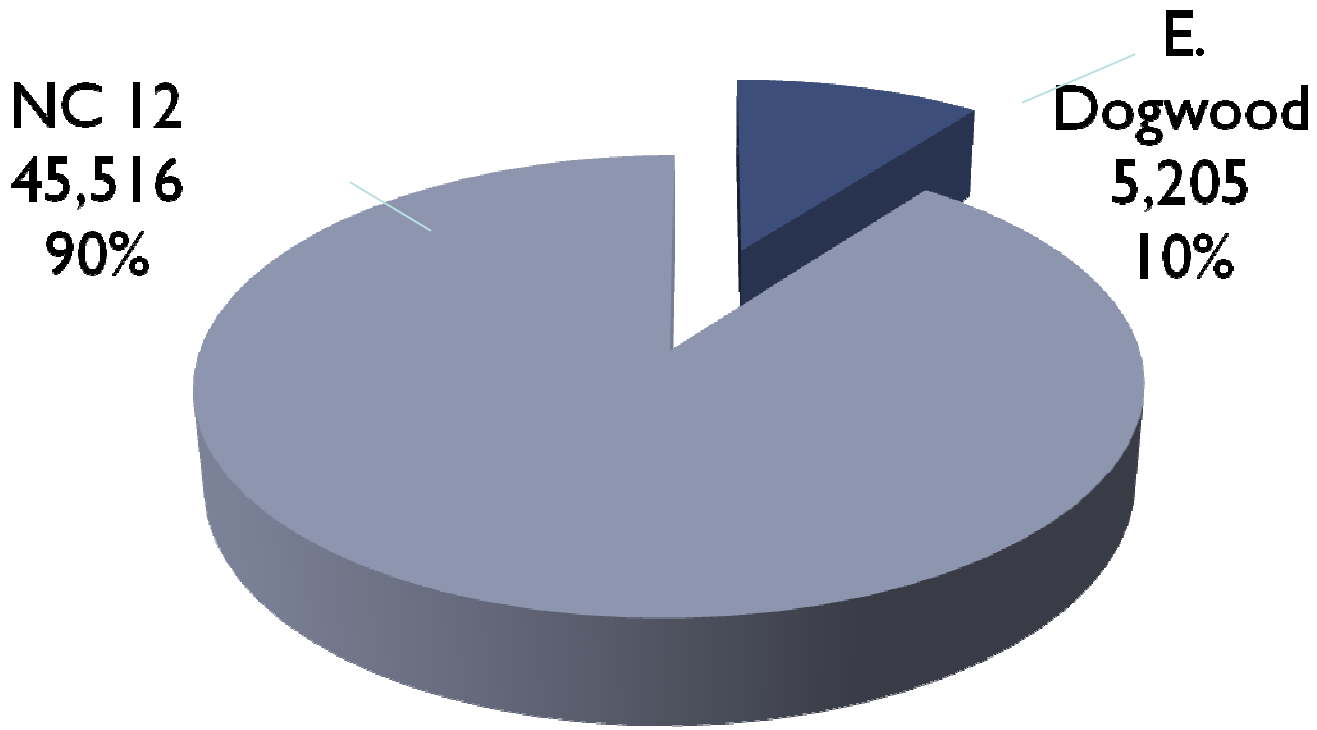


TOTAL AVERAGE VEHICLE VOLUME = 117,955

Measuring Off-Season Vehicle Volume and Speed

- Vehicle volume count surveys were conducted for E. Dogwood Trail and NC 12 during the last week of January and the first week of February 2009.
  - An average of ~ 51,000 vehicles per week
  - 90% (45,516 vehicles) of traffic was on NC 12
- Vehicle speeds on the selected streets were measured for the same periods.
  - Average speed on E. Dogwood was ~23 mph
  - Average speed on NC 12 was ~ 42 mph

Average Off-Season 2009 (Jan. – Feb.) Weekly Vehicle Volume



TOTAL AVERAGE WEEKLY VEHICLE VOLUME = 50,721

Summary of traffic data

- Peak summer traffic occurs on the Friday through Monday period.
  - Approx. 118,000 vehicles on average during each 4-day period
  - 32% of vehicle volume is on TOSS streets where speeds average 24 mph
  - Vehicle volume drops ~56% on Tuesdays – Thursdays
- Off-Season weekly traffic volume is less than 50% of average summer traffic volume.

Current Issues

1. Pedestrian safety
2. Speeding – in/off season
3. Cut through traffic – in/off season
4. Wear/Tear – weight limits local roads & bridges
5. Stormwater – high water areas

Pedestrian Safety Issues

- Limitations of local roads
  - Narrow pavement
  - Absence of shoulder lanes &/or sidewalks
- Walking on roads
  - Pedestrian rights & responsibilities
- Bike riding on roads
  - Rider rights & responsibilities
- Beach paths & pedestrian crossings
  - NC12 crosswalks
  - Other problem areas

NC Motor Vehicle Laws

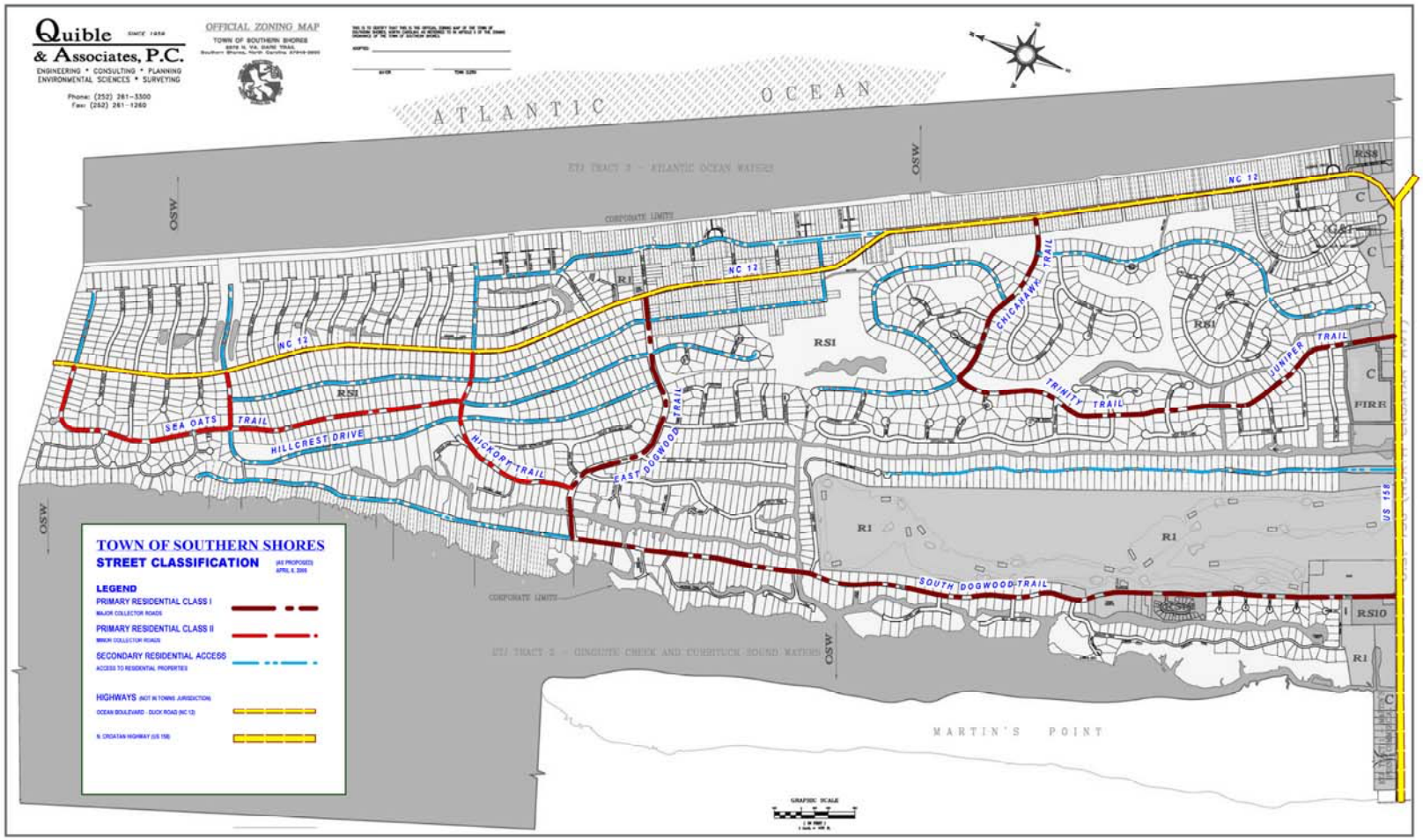
- Where sidewalks are provided, it shall be unlawful for any pedestrian to walk along and upon an adjacent roadway.
- Where sidewalks are not provided, any pedestrian walking along and upon a highway shall, when practicable, walk only on the extreme left of the roadway or its shoulder facing traffic which may approach from the opposite direction.
- Such pedestrian shall yield the right-of-way to approaching traffic.

Rights-of-Way TOSS Roads

- The Town ROW is defined *as any street or that area between two (2) or more property lines that is owned or maintained by the town and is regularly used wholly or in part for pedestrian or non-vehicular traffic* (including but not limited to multi-use path).
- Obstructions in street and highway right-of-way declared *public nuisance*
- Except for those obstructions listed below, no obstruction may be placed within *four (4) feet* of the improved surface of a public roadway
  - Commercially available newspaper and mailboxes
  - Garbage/recycling containers, branches/brush, and other items temporarily placed on the right-of-way for scheduled pickup at times designated by town
  - Temporary storage of town provided wood chips requested by owner for up to 30 days
  - Property numbers on posts as allowed by chapter 7, article III, section 7-38
  - Driveway aprons and any minimum necessary accessory structure
- Prohibited obstructions... defined as any *object building or sign, whether man made of natural, including, without limitation, vehicles and trailers, dirt and sand berms, fences, yard decorations, stakes, poles, posts, bulkheads, large stones/rocks and concrete or other masonry walls.*

Pedestrians Move to Side...

Classes of Town Roads



Traffic Calming Measures

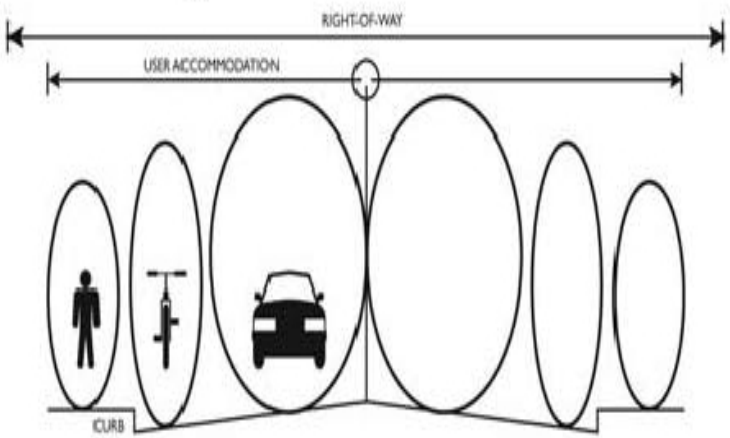
- Physical road design elements
- Reduce vehicle speeds
- Improve drive attentiveness.
- Objectives
  - Limit speed through design of the roadway
  - self-enforcing the desired speed
- Traffic Calming measures include
  - speed bumps and other vertical changes
  - narrow lane widths
  - short road segments
  - traffic circles or roundabouts
  - islands and other direction changing designs
- Streetscapes that impose the feeling of narrower lane widths by bringing trees, greenery, gates or other structures closer to the road.

Traffic Management Measures

- Application of turn restrictions and other measures to redirect or restrict traffic flows
- Traffic management measures include:
  - Regulatory signs (stop, yield, or reduced speed)
  - Turn restrictions
  - Road closures
  - Restricted lane use

Multi-modal Design Option 1

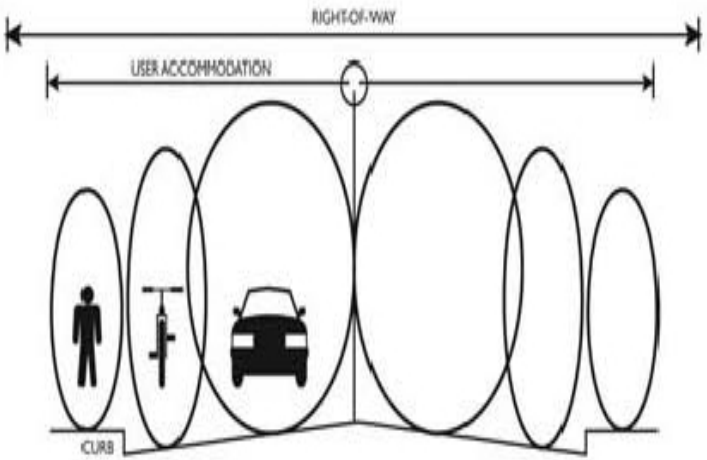
Case 1: Separate Accommodation for All Users



- Often the preferred option to provide safe, convenient, and comfortable travel for all users.
- Appropriate for areas with moderate to high levels of pedestrian and bicycle activity.
- Appropriate for roadways with moderate to high motor vehicle speeds.
- Appropriate in areas without substantial environmental or right-of-way constraints.

Multi-modal Design Option 2

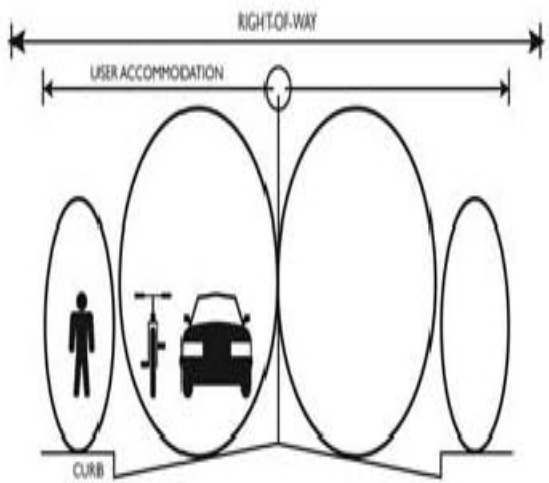
Case 2: Partial Sharing for Bicycles and Motor Vehicles



- Used in areas where the width necessary to provide Case 1 accommodation is not available.
- Under Case 2, pedestrians are provided with a sidewalk or separate path while space for bicyclists and drivers overlap somewhat.
- Appropriate in areas with low motor vehicle speeds and low to moderate motor vehicle volumes.

Multi-modal Design Option 3

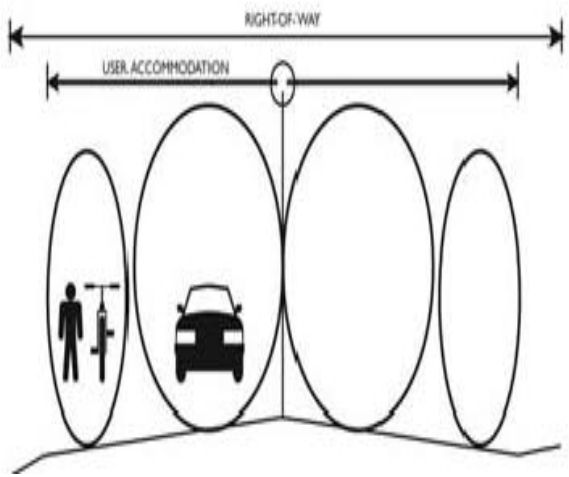
Case 3: Shared Bicycle/Motor Vehicle Accommodation



- Under Case 3, pedestrians remain separate but bicycle and motor vehicle space is shared.
- Used in densely developed areas where right-of-way is constrained.
- Also applicable to most residential/local streets where speeds and traffic volumes are low.

Multi-modal Design Option 4

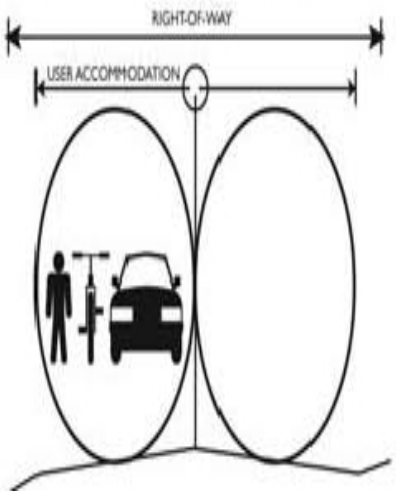
Case 4: Shared Bicycle/Pedestrian Accommodation



- Under Case 4, pedestrians and bicyclists share the shoulder.
- Common in rural or sparsely developed areas.
- Appropriate for areas with infrequent pedestrian and bicycle use.

Multi-modal Design Option 5

Case 5: Shared Accommodation for All Users



- Under Case 5, all users share the roadway.
- Appropriate where user demands and motor vehicle speeds are very low or when severe constraints limit the feasibility of providing separate accommodation.

Physical Constraints Toss Roads

DOGWOOD TO SEA OATS GOOGLE MAP JOURNEY

S DOGWOOD AT 158 | S DOGWOOD AT DUCK WOODS | S DOGWOOD AT E DOGWOOD

E DOGWOOD AT HICKORY TR | HICKORY TR AT DUCK ROAD

Projects & Priorities

- Traffic Management
  - No through traffic ordinance
  - Reduced weight limits
  - Improved signage (bridge letter board?)
- Beach paths & pedestrian crossings
  - Automatic Signs that flash when pedestrian in crosswalk
- Multi-Use Paths
- Maintenance projects roads
- Maintenance projects bridges

Examples Specific Improvements

- Proposed ordinance
- Proposed road rebuild projects based on new design concepts

Transportation Ordinance
Kevin Stroud

Ordinance Objectives

- Prohibit through traffic
- Provide a legal basis for fines
- Demonstrate to NC DOT that TOSS has implemented all measures available to it
- Set the stage to request NC DOT assistance with no left turns during peak hours during the tourist season

Proposed Ordinance

No person shall operate a motor vehicle within the corporate limits of the Town to travel or with the intent to travel through the Town from North Carolina Highway 158 to any location north of the northern border of the Town unless such travel is wholly upon North Carolina Highway 12. The same shall apply to travel from north of the Town's northern border to North Carolina Highway 158. This section shall not apply to any person who makes a bona fide stop at a residence or business while traveling within the corporate limits of the Town between North Carolina Highway 158 and the Town's northern border.

Proposed Ordinance

This section shall not be construed to limit the travel of (i) authorized emergency vehicles, including those driven by volunteer firefighters or EMS workers acting pursuant to their official duties; (ii) vehicles being operated by a Town employee acting with the scope of the employee's employment or official capacity; or (iii) commercial vehicles being operated in the normal course of the business with which the vehicle is associated.

Proposed Ordinance

This section shall only apply during the summer months between Memorial Day and Labor day of each calendar year.

Community Input

- State name and address
- Limit comments to 3 minutes
- Focus on topics addressed this evening
- Concentrate on improvements to the process
- Avoid repeat questions where possible

Proposed Road Projects
Joe Anlauf

Workshop Summary & Next Steps
Bob Palombo

Next Steps

- What additional planning goals, if any, should be considered?
- Are there any principles missing? If so, what are they?
- What additional factors should be considered by road class?
- Are there any current issues missing? If so, what are they?
- What additional projects and/or priorities should be considered?
- Is there anything else that needs to be included in the Transportation Plan?