

Georgia Bicycle and Pedestrian Safety Action Plan



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I. INTRODUCTION & PLANNING PROCESS

Purpose

Passed in 2005, the federal transportation act, SAFETEA-LU, requires every state to develop Strategic Highway Safety Plans (SHSP) in order to continue to receive certain federal transportation funds. Georgia's SHSP was completed and adopted by Governor Perdue in October 2006, and updated again in October 2007. The plan identifies ten "key emphasis areas" and calls for the development of individual Safety Action Plans for each key emphasis area. Non-motorized transportation – or bicyclists and pedestrians – was one of these areas. A bicycle and pedestrian task team was convened, headed by Georgia Department of Transportation's State Bicycle and Pedestrian Coordinator, to develop the Bicycle and Pedestrian Safety Action Plan.

The purpose of the Safety Action Plans is to identify current conditions, safety problems and needs, and to determine future funding and programs. The Safety Action Plans must be comprehensive in scope and should address education, enforcement, engineering, emergency response, and evaluation. The bicycle and pedestrian plan will also address encouragement (i.e. programs that encourage more biking and walking). A multi-disciplinary team is working together to develop each of the plans. Once completed, the plans will be adopted by the SHSP Leadership Committee, comprised of high level management and leadership of various state agencies, who will use the plans to prioritize funding and programs.

In addition to this process, in 2005, the Federal Highway Administration (FHWA) identified Georgia as one of ten pedestrian "focus states". All states with more than 150 annual pedestrian fatalities were included in the multi-year focus state initiative which provides technical assistance to state DOTs to develop Pedestrian Safety Action Plans. Through this effort, FHWA has provided GDOT with four training workshops, monthly conference calls, a "How To" guide on developing Safety Action Plans, and technical reviews of crash data and draft planning documents.

Planning Process

The Georgia Department of Transportation (GDOT) formed a Bicycle and Pedestrian Task Team in December 2006 and began the development of the Georgia Bicycle and Pedestrian Safety Action Plan (GBPSAP).

The task team consists of members from 25 agencies and organizations involved in safety, transportation, public health, and biking and walking. The member organizations are listed below. The task team developed the vision, goals, objectives, recommendations and countermeasures, and will play in integral role in implementing the plan.

Georgia Bicycle and Pedestrian Task Team member organizations:

Agency/Organization		Agency/Organization	
1	Association County Commissioners of Georgia	18	GDOT, Office of Consultant Design
2	Atlanta Bicycle Campaign	19	GDOT, Office of Maintenance
3	Atlanta Regional Commission	20	GDOT, Office of Road Design
4	Center for Quality Growth & Reg'l Development (GA Tech)	21	GDOT, Office of Traffic Safety & Design
5	Chatham Co-Savannah Metro Planning Commission	22	GDOT, Office of Urban Design
6	City of Atlanta, Bureau of Planning	23	Georgia Bikes

7	City of Decatur	24	Georgia Department of Driver Services, Cust. Srvs, Licensing & Records Division
8	Clean Air Campaign	25	Georgia Environmental Protection Division
9	Dept. of Community Affairs, Office of Planning & Quality Growth	26	Georgia Municipal Association
10	Department of Education, Office of Pupil Transportation	27	Georgia Regional Transportation Authority
11	Dept. of Human Resources (DHR), Div. of Public Health (DPH), Office of EMS/Trauma	28	Governor's Office of Highway Safety (Law Enforcement & Planning Offices)
12	DHR, DPH, Office of Injury Prevention	29	Institute of Transportation Engineers/GA Section
13	DHR, DPH, Office of Chronic Disease (Physical Activity/Obesity initiative)	30	MARTA
14	FHWA - GA Division	31	North Georgia Regional Development Center
15	GA Tech - School of Civil & Environmental Engineering	32	PATH foundation
16	GDOT (Dept. of Transportation), Office of Planning (Bike/Ped/SRTS Programs)	33	PEDS
17	GDOT, District 7, Traffic Operations	34	Perimeter Transportation Coalition

Next Steps:

Once completed, the plan will be adopted by the Strategic Highway Safety Plan Leadership Committee and the Governor. The Leadership Committee will use this plan to prioritize the expenditure of federal safety funds. The Task Team will also seek to have the plan adopted by the State Transportation Board and thereby guiding future GDOT transportation decisions.

Following the completion of the plan, the Task Team will continue to meet to advise on plan implementation, and to advise the Department of Transportation on other bicycle and pedestrian related matters (policies, plans, accessibility or maintenance issues, maps and publications, etc).

II. GOALS & OBJECTIVES

The goal of the Georgia Strategic Highway Safety Plan is to “Strive for Zero Deaths”. All of the goals and objectives below reflect this overarching goal.

Vision

A safe and accessible environment that supports and encourages increased levels of bicycling and walking. All state, local, and regional transportation agencies provide a transportation system where walking and bicycling are viable transportation choices, and residents and visitors are able to walk and bike safely and conveniently to accomplish their daily activities while maintaining active and healthy lifestyles.

Goal 1: Improve Bicycle and Pedestrian Safety:

Objectives:

- Reduce pedestrian fatalities by 33% by 2013.
Statewide, the average number of annual pedestrian fatalities is 164 (2004 – 2006); a 33% reduction would result in about 110 fatalities per year by 2012.
- Reduce all pedestrian crashes and injuries by 20% by end of calendar year 2013.
Statewide, the average number of annual pedestrian crashes (2004-2006) was 2,582; a 20% reduction would result in 2,066 pedestrian crashes per year by 2012.
- Overall 20% reduction in bicycle crashes and injuries by the end of calendar year 2013.
Statewide, the average number of annual bicycle crashes (2004-2006) was 939; a 20% reduction would result in approximately 750 annual crashes.

Goal 2: Increase Trips Made by Bicycle and On Foot (including those using wheelchairs or other mobility assistance device):

Objectives:

- Increase bicycle and walking trips to school statewide by 20% by 2013. (Measured through the Georgia Safe Routes to School Program “before and after” parent surveys).
- Develop educational and promotional programs to encourage biking and walking.

Goal 3: Increase Funding for Bicycle and Pedestrian Programs and Infrastructure Improvements:

Objective:

- Base the percentage of total safety funds spent on bicycle/pedestrian safety projects on the percentage of bicycle/pedestrian fatalities statewide.
- Include bicycle and pedestrian facilities in all GDOT projects and all road projects with federal participation.

Goal 4: Improve Bicycle and Pedestrian Related Data Collection:

Objectives:

- Conduct inventory of sidewalk, bike lane, trail and shoulder mileage.
- Develop a data collection method for bicycle and pedestrian traffic counts, so that biking/walking rates can be measured.

III. EXISTING CONDITIONS REPORT

1. Bicycle and Pedestrian Laws

Georgia’s bicycle and pedestrian laws are found in the Georgia State Code. Below is a summary of key laws related to bicycles, pedestrians, and traffic safety, and a brief discussion of some emerging issues related to these laws. All traffic laws that impact bicycles and pedestrians can be found in the Appendix.



Figure 1: A cyclist riding legally in Athens, Georgia

Bicycle Laws:

Bicyclists are considered vehicles under Georgia Code, and therefore have the same rights and responsibilities as motor vehicles. Bicyclists can ride in the middle or left part of a lane if the lane is too narrow to share with a motor vehicle. Georgia Code does not include a specific provision prohibiting bicycles from operating on the sidewalk, however based on the definition of “vehicle,” it is illegal to operate a bicycle on the sidewalk regardless of the location or age of the bicyclist. All bikes operating at nighttime must use a front light and a rear red reflector. Any bicyclist under the age of 16 must wear a bicycle helmet.

The Georgia Code does not address operation or right-of-way assignment for bicycle lanes or multi-use paths. However it does allow for a local governing authority to require bicycles to use a path if it is adjacent to the roadway, regulated for the *exclusive* use of bicycles *and* designed according to American Association of State Highway Transportation Officials (AASHTO). Currently there are no paths in Georgia that meet all three of these requirements, therefore, bicyclists cannot be required to use a multi-use path adjacent to the roadway unless such paths are restricted for bicycle traffic only (i.e. no pedestrians, dog-walkers, joggers, etc) and upgraded to meet AASHTO standards.

Pedestrian Laws:

A crosswalk is legally defined as the part of an intersection that connects the sidewalks on either side of the street – whether marked with painted white stripes or not. Therefore, all laws that require drivers to stop for pedestrians in crosswalks apply to both those crosswalks marked with painted lines as well as to

“unmarked” crosswalks. Crosswalks must be marked at 3-way “T-intersections” and at mid-block locations in order for them to be considered “crosswalks” (the interpretation on T-intersections was established in Griffin v. Odum, Court of Appeals of Georgia, 1963).

The term “jay-walking” is misleading. Pedestrians can legally cross a road between intersections unless both adjacent intersections are signalized (generally only found in downtown areas). Pedestrians have the right of way when crossing unsignalized intersections even if the crosswalk is unmarked (except at T-intersections). Pedestrians can legally cross the street at a signalized T-intersection when the signal facing the pedestrian is green. However, pedestrians must yield to motor vehicles when crossing at an unmarked crosswalk at an unsignalized T-intersection, and when crossing between intersections at a non-crosswalk location. (See Figure 2).

Vehicles must stop and stay stopped for pedestrians in crosswalks. Georgia law requires turning cars to stop for pedestrians, even on green lights, if the pedestrian is approaching or within one lane of the half of the road onto which the driver will be turning. Drivers are allowed to turn right on red at most intersections, but pedestrians in crosswalks (marked or unmarked) still have right of way. Pedestrians can cross with the green light, except if there’s a walk/don’t walk symbol; then they can only start crossing during the walk phase, or finish walking during the flashing don’t walk phase.

(INSERT FIGURE21 – Diagram of legal pedestrian crossings)

Traffic Code Enforcement and Safety Laws:

Speeding is a major factor in pedestrian fatalities. The difference of 10 mph in vehicle speed is significant in increasing or decreasing the chances of the pedestrian’s survival in a pedestrian-vehicle crash. Currently police officers can only ticket drivers who exceed the speed limit by more than 10 mph (except in school zones one hour before, during, and after school hours, in marked historic districts, and in marked residential zones. Roads with speed limits of 35 mph + are not considered residential). However, urban districts cannot have a speed limit posted higher than 30mph – which few local governments seem to be aware of. Reducing the posted speed limit in these areas would remove some barriers to law enforcement, as well as open up additional areas to certain engineering treatments that are typically reserved for roads with a speed limit of 30mph or less (such as in-street crosswalk signs or speed humps). There is a need to define “urban district” and “marked residential zone” in the Georgia Code in order to help communities set proper speed limit and allow traffic enforcement.

2. Bicycle and Pedestrian Funding Sources

A. Transportation Enhancement:

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) established the Transportation Enhancement (TE) program, which was further refined under the Transportation Equity Act for the 21st Century (TEA-21) in 1998 and reauthorized under the Safe, Equitable, Transportation Efficiency Act – A Legacy for Users (SAFETEA-LU) in 2005. The TE program provides funds for non-traditional transportation projects such as sidewalks, multi-use trails, bicycle facilities, railroad depot and lighthouse renovations, and streetscape improvements.

<http://www.dot.ga.gov/localgovernment/FundingPrograms/TransportationEnhancement/>

B. Congressional Earmarks:

Congressional earmarks are funds inserted into legislation for specific projects, locations, or institutions that do not go through the normal budgetary review process. Access to these funds is generally obtained through lobbying a Congressman. There are 89 bicycle and pedestrian projects in the SAFETEA-LU authorization for Georgia. www.fas.org/sgp/crs/misc/m012606.pdf

C. CMAQ:

The Congestion Mitigation and Air Quality Improvement (CMAQ) program was created as part of ISTEA to support local efforts to meet the new federal guidelines set by the Clean Air Act Amendments (CAAA) of 1990 and provides funding assistance to regions designated as non-attainment areas by the EPA (i.e. areas in non-attainment of air quality standards established by the Clean Air Act). Areas failing to meet the National Ambient Air Quality Standards (NAAQS) receive funds to invest in projects that decrease transportation related air pollutants by reducing highway travel, encouraging more efficient use of existing facilities, and reducing vehicle emissions at the source. Eligible projects include ridesharing programs, intelligent transportation systems, and bicycle/pedestrian facilities.

In Georgia, projects are selected by the State Air Quality Partners: Georgia Department of Transportation, Georgia Division of Environmental Protection and the Georgia Regional Transportation Authority. The Atlanta Regional Commission (ARC) participates in project selection in the metropolitan Atlanta region. SAFTEA-LU appropriated \$50,115,972 to Georgia for FY05-FY09. <http://www.dot.ga.gov/DOT/plan-prog/planning/aq/CMAQ/index.shtml>. Historically, many of these funds were used for bicycle/pedestrian projects, however, since 2007, Georgia has focused these funds on projects that reduce Particulate Matter 2 – primarily diesel retrofits of bus and vehicle fleets.

D. Recreational Trails Program:

The Recreational Trails Program (RTP) was established under ISTEA. The RTP funds come from the Federal Highway Trust Fund, and represent a portion of the motor fuel excise tax collected from non-highway recreational fuel (i.e. tax on all-terrain vehicle fuel). Eligible projects include developing and maintaining recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses.

RTP funds are distributed to the States by legislative formula: half of the funds are distributed equally among all States, and half are distributed in proportion to the estimated amount of non-highway recreational fuel use in each State and a portion of these funds must be dedicated to motorized ATV trails projects. Georgia receives approximately \$2 Million annually and the funds are administered by the

E. Safe Routes to School:

Safe Routes to School (SRTS) is a new program created by SAFETEA-LU which provides Georgia with approximately \$16 Million for fiscal years 2005-2009. The Program's goal is to increase the number of children in grades K-8 bicycling and walking to school. The Program makes funding available for a wide variety of programs and projects, from building safer street crossings to establishing programs that encourage children and their parents to walk and bicycle to school. Benefits of the Program include: reduced congestion and increased safety near participating schools; reduced air pollution in route to and near participating schools; and increased physical activity of children. In Georgia, the program is administered by the Georgia Department of Transportation and the first round of funding is expected in 2009. <http://www.dot.ga.gov/srts/>

F. Safety Education (Sections 402 & 157):

The Governor's Office of Highway Safety administers funding for safety-related educational programs. Funding comes from the State and Community Highway Safety Grant Program (Section 402 of SAFETEA-LU) and some funding from the Safety Incentive Program (Section 157). Project selection is directed towards "National Priority Program areas" (i.e. program areas most effective in reducing crashes, injuries and fatalities) which include the Pedestrian and Bicycle Safety Program and the Community Traffic Safety Program (CTSP). Agencies at the state, county, city and private/non-profit levels are eligible to apply. State grants are available for up to three years with the first year of funding at 100% (no local match), the second year requiring a 20% local match, and the third year requiring a 40% local match. Funds are generally prioritized by crash frequency from the previous year's crash data. Examples of funded bicycle and pedestrian projects include a "Share the Road" awareness campaign and a bilingual pedestrian safety education initiative. (<http://www.gohs.state.ga.us/>).

G. Surface Transportation Program:

The Surface Transportation Program (STP) is funded by the Federal Highway Trust Fund, which is funded through gas taxes. The STP is the largest "pot" of money available for non-interstate highway construction, including bicycle and pedestrian facilities. Much of the bicycle and pedestrian facility network is constructed through this program as part of road widening and construction projects. In some instances, the Georgia DOT has used these general surface transportation funds to pay for pedestrian facilities as "stand alone" projects. Also, the larger MPOs with a population over 200,000 receive "attributable" funds which are a portion of STP that the MPO may program themselves, without the approval of GDOT. The Atlanta Regional Commission chooses to spend much of these "attributable" funds on bicycle and pedestrian projects (see Table 1). However, even MPOs which do not receive "attributable" funds can choose to fund bicycle and pedestrian projects through the STP – they just require GDOT approval. The Athens MPO (MACORTS) has funded a couple of bike lane projects, with the approval of GDOT, in this way. (www.fhwa.dot.gov/safetealu/factsheets/stp.htm).

H. Funding Amounts:

The following tables indicate the average amount of funding dedicated to bicycle and pedestrian programs and construction projects throughout the state. This tally does not include those facilities constructed as part of a road widening or new construction project, as those costs are not broken out separately in the project budget.

Table 1. Historic Bike/Ped Program Funding for Georgia

Program/Fund	Data Source	Years	Total amount	Per Year Average
Transportation Enhancement (TE)	Projects awarded for FY04-FY 07 (GDOT)	2004-2007	\$ 107,864,836	\$ 26,966,209
Congestion Mitigation Air Quality (CMAQ)	Projects approved FY05-FY10 (GDOT)	2005-2010	\$ 32,051,460	\$ 5,341,910
Safe Routes to School	GDOT – SAFETEA-LU	2005 - 2009	\$ 16,000,000	\$ 3,200,000
High Priority Projects	Projects listed in SAFETEA-LU	2005-2009	\$ 70,054,000	\$ 14,010,800
ARC Programmed Projects (Q23)	ARC Transp. Improv. Program FY03-FY05	2003-2005	\$ 48,823,200	\$ 16,274,400
Other Federal Funds (Q20, Q24, Fed'l Safety, bond)	GDOT - Transportation Explorer Database	2003-2006	\$ 9,431,105	\$ 2,357,776
DNR - Recreational Trails Program	Awarded project FY04 (DNR)	2004	\$ 1,441,722	\$ 1,441,722
DNR - Land & Water Conservation Program	Awarded project FY03-05 (DNR)	2003-2005	\$ 3,305,487	\$ 1,101,829
Governor's Office of Highway Safety - Safety/Education	Provided by GOHS (Section 402 & 157 funds)	2004-2006	\$ 498,704	\$ 166,235
TOTAL				\$ 67,660,881

Table 2. Projected Bike/Ped Funding*

Program/Fund	Data Source	Years	Total amount	Per Year Average
Transportation Enhancement (TE)	Projects awarded for FY04-FY 07 (GDOT)	2004-2007	\$ 107,864,836	\$ 26,966,209
ARC Programmed Projects (L230)	ARC 2008 – 2013 TIP	2008 - 2013	\$ 103,170,517	\$ 17,195,086
Other Federal Funds (L200, L240, Fed'l Safety)	ARC 2008 – 2013 TIP	2008 - 2013	\$ 18,656,400	\$ 3,109,400
State Bonds (GRSA)	ARC 2008 – 2013 TIP	2008 - 2013	\$ 7,715,053	\$ 1,285,842
DNR - Recreational Trails Program	Awarded project FY04 (DNR)	2004	\$ 1,441,722	\$ 1,441,722
DNR - Land & Water Conservation Program	Awarded project FY03-05 (DNR)	2003-2005	\$ 3,305,487	\$ 1,101,829
Governor's Office of Highway Safety - Safety/Education	Provided by GOHS (Section 402 & 157 funds)	2004-2006	\$ 498,704	\$ 166,235
TOTAL				\$ 51,266,323

*Projections for SRTS and HPP to be determined. No CMAQ funds are expected in the next funding cycle.

Transportation Enhancement Program:

The largest proportion of bicycle and pedestrian projects are funded through the TE program (See Figure 3). Of these projects, less than one-percent were spent on on-street bicycle facilities, and approximately 10% were spent on new sidewalks (where none had previously existed) and on pedestrian safety improvements (such as pedestrian overpasses or refuge islands). The majority of the funds went to multi-use trail facilities, and streetscape projects which generally include sidewalk upgrades, street furniture, new lighting, and landscaping (See Figure 4).

Figure 3.

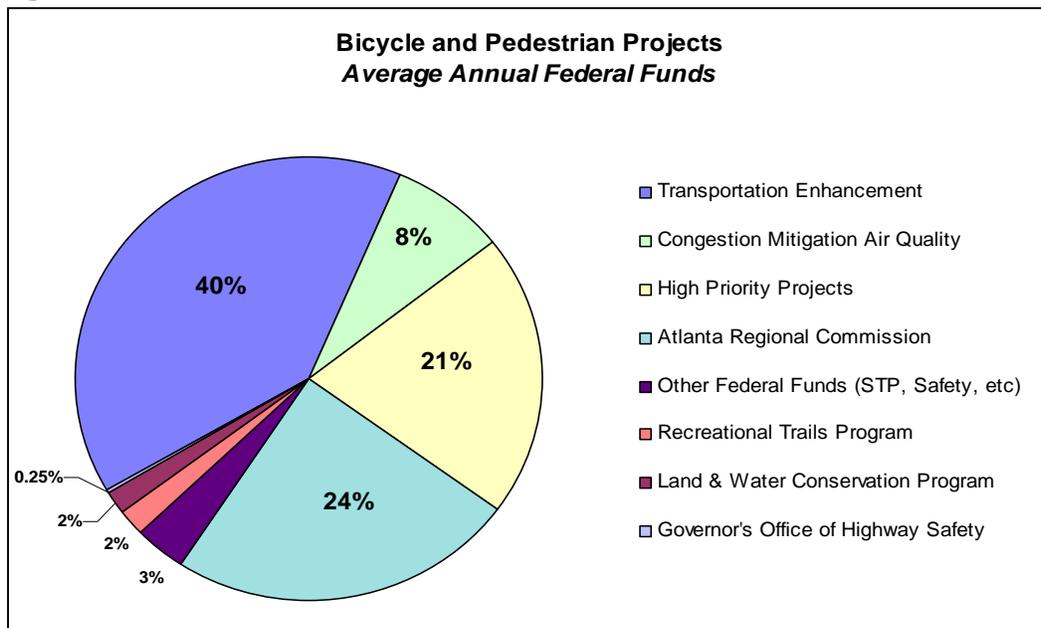
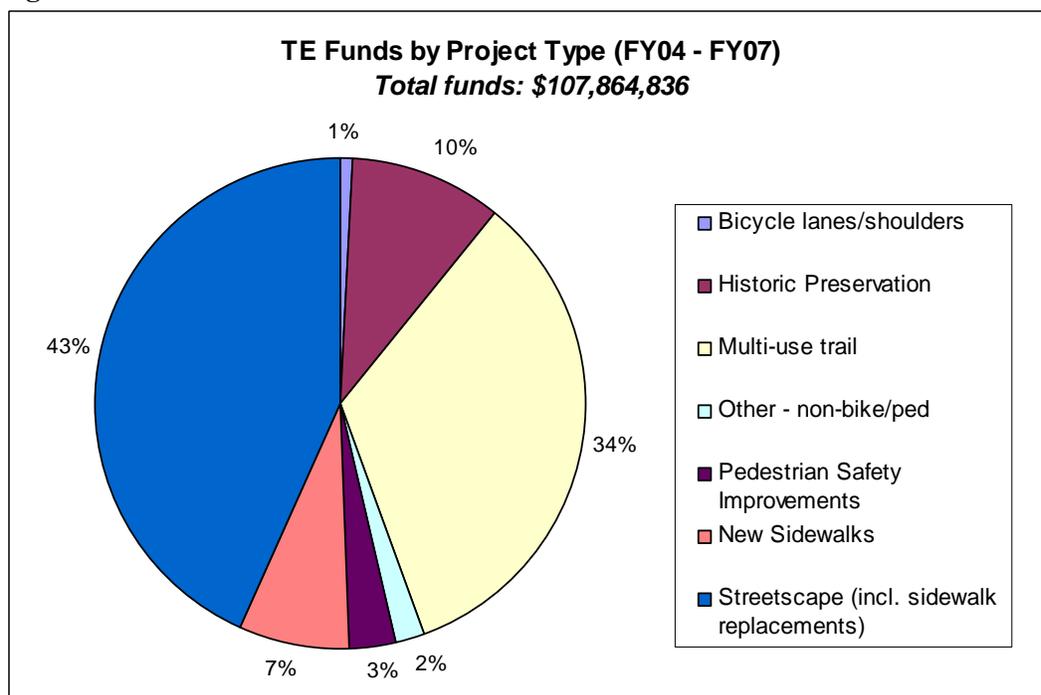


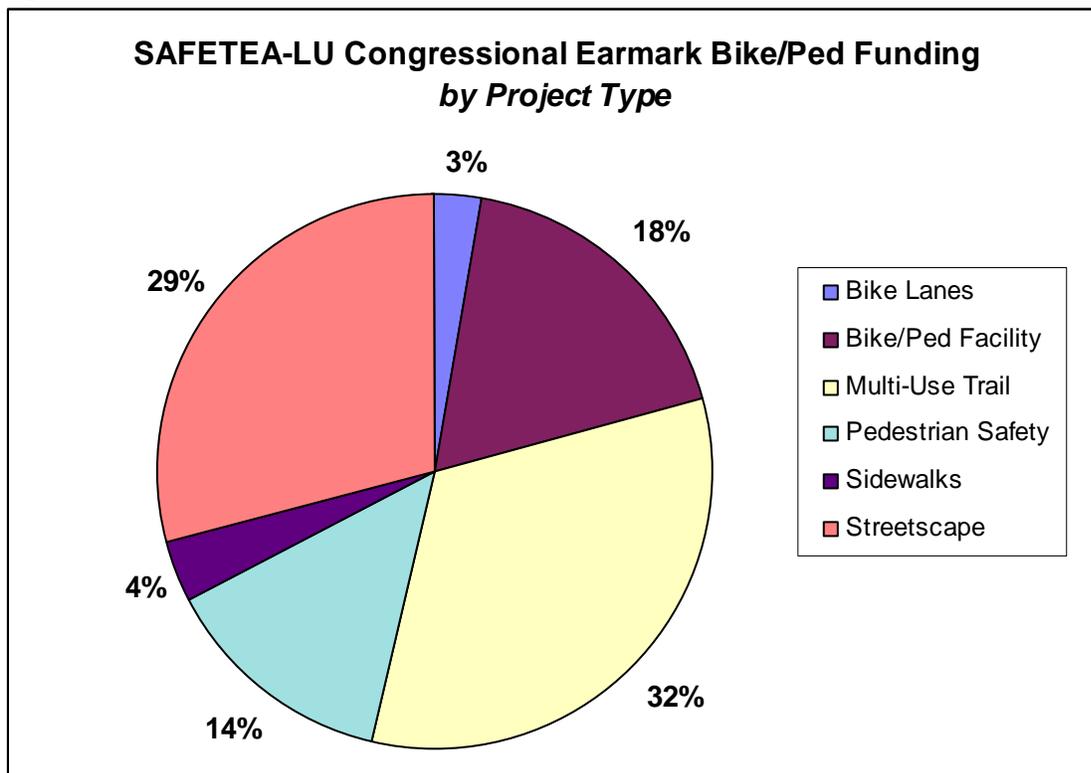
Figure 4.



Congressional Earmarks:

In addition to Transportation Enhancements, a large percentage of bicycle and pedestrian funding (21%) came from Congressional earmarks in the SAFETEA-LU legislation. Congressional earmarks, also referred to as “high priority projects”, are projects inserted into authorization bills by U.S. Senators and House Representatives for a particular project in their state. SAFETEA-LU dedicates over \$70 Million to bicycle and pedestrian projects in Georgia for the period of the authorization – FY2005-FY2009. Of these projects, like the Transportation Enhancement (TE) Program, most are streetscape and trail projects. However, a higher proportion of these funds are dedicated to pedestrian safety projects (such as median refuge islands), sidewalk construction, and bike lanes. (See Figure 5).

Figure 5.



Metropolitan Planning Organizations:

The Atlanta Regional Commission is the Metropolitan Planning Organization (MPO) that serves the Atlanta Region. There are 15 MPOs in Georgia which are charged with programming the federal transportation funds for their respective metropolitan regions. MPOs receive funds based on their population, and the larger MPOs with populations over 200,000 receive additional funding which can be spent at the discretion of the MPO (known as Q23 or LU230 or “attributable” funds). Most MPOs spend these funds on road projects, but the ARC spends much of its money on bicycle and pedestrian projects. Much of the ARC bike/ped projects are part of the Livable Centers Initiative which is a program aimed at coordinating land use and transportation, and developing compact, mixed-use developments that promote transit, bicycle and pedestrian access. The LCI Program funds both plans and construction projects. Most of the remaining ARC bike/ped projects are transportation or safety oriented, with fewer streetscape projects than TE or Congressional Earmarks.

3. Bicycle and Pedestrian Facilities

Sidewalks:

According to the Georgia Department of Transportation’s Road Characteristics (RC) database, there are a total of 7,754.44 miles of public roads that have sidewalks on one or both sides of the road. Of the 7,754.44 miles, 3,880.48 miles have sidewalks on both sides of the road. There are approximately 1,485.31 miles of state highway with sidewalks on at least one side of the road, of which, 944.66 miles have sidewalk on both sides and 550.65 miles have sidewalk on just one side.

Paved shoulders:

The RC database indicates that there are approximately 2,382 miles of public roads that have at the least one paved shoulder with a width greater than, or equal to 4 feet. Of these, 2141 miles are state highways.

All Public Roads		
	Miles	Percentage
All Public Roads (excluding interstates)	114,758	
Sidewalks (on at least one side of the road)	7,754	7%
Paved Shoulder \geq 4' (on at least one side of the road)	2,382	2%

State Highways		
	Miles	Percentage
State Highways (excluding interstates)	15,702	
Sidewalks (on at least one side of the road)	1,495	10%
Paved Shoulder \geq 4' (on at least one side of the road)	2,141	14%

Source: GDOT, Office of Transportation Data 2008



Figure 6: A Cyclist Riding on the Shoulder in Chamblee.

Georgia State Bicycle Route Signage:

In 1997, the Georgia Department of Transportation designated 14 state bicycle routes, and to date, has installed signage on four of these designated routes. Information on the four signed routes can be found in Table 3 below. In addition to the four state bicycle routes that are signed, there are many other local roads and some state highways that have bicycle signage, but there is no current inventory of these signed routes at this time.

Table 3. Signed State Bicycle Routes

State Bicycle Route (SBR) Name	Counties	Mileage
Southern Crossing (SBR 10)	Seminole, Decatur, Grady, Thomas, Brooks, Lowndes, Lanier, Clinch, Ware, Brantely, Glynn	246.3
Coastal Route (SBR 95)	Rabun, Habersham, Stephens, Franklin, Hart, Elbert, Wilkes, McDuffie, Warren, Jefferson, Burke, Jenkins, Screven, Effingham, Chatham	168.6
Savannah River Run (SBR 85)	Effingham, Chatham, Bryan, Liberty, McIntosh, Clynn, Camden	314.3
Augusta Link (SBR 50)	McDuffie, Columbia, Richmond	38.5
	<i>Total</i>	767.7

The signs along the state bicycle routes include various signs from the Manual on Uniform Traffic Control Devices (MUTCD). They are: the bicycle warning sign with the “Share the Road” placard (W11-1, W16-1), bicycle route markers (D11-1, M1-8), “right turn yield to bikes” regulatory sign (R4-4) and a variation of a warning sign which reads “watch for bicyclists on bridge”. The signs are installed in 5 mile intervals and at every intersection where the bike route makes a turn.

Figure 7: Bicycle Signage



4. Engineering, Planning and Design Policies

Design and Accommodation Policies

Georgia Department of Transportation Policies:

Pedestrian Signals:

Pedestrian countdown heads are being used on new traffic signal permits for new signals and signal upgrades.

Sidewalks:

From the *GDOT Design Policy Manual*: Sidewalks will be provided wherever curb and gutter is utilized along the outside edges of pavement of the mainline roadway, i.e., urban sections. Sidewalk may be omitted on side road tie-ins where there is no existing sidewalk and the additional widening of shoulders for sidewalk would result in excessive impacts as determined by the design team on a case by case basis. Sidewalk will not be required in rural areas where curb and gutter is placed at the back of the useable shoulder for the purpose of reducing construction limits. Refer to GDOT Construction Standards and Details and *GDOT Pedestrian and Streetscape Guide*. Sidewalks are to be placed 2' behind the curb (Typical), 6' behind the curb (Desirable). A 16' shoulder is recommended when there is sufficient space for the use of a 6' grass strip. (*GDOT Design Policy Manual, Chapter 6.6*).

Figure 8: Typical Sidewalk Placement Behind Curb



Crosswalks:

Pedestrian signals, crosswalks, landings, and curb ramps must be provided on all approaches to a signalized intersection except those exempted by the Office of Traffic Safety and Design (usually for safety reasons). (*Traffic Signal and Design Guidelines*)

Islands:

Islands should be considered for roads too wide for pedestrians to cross all at once. They must be large enough for drivers to see, cannot get in the way of turns, and should not make the intersection larger. (GDOT Design Policy Manual, Chapter 7)

Bicycle Facilities:

Bicycle lanes and related improvements shall be incorporated into all widening and reconstruction projects when there is an existing bikeway or if the project is on an approved Bicycle Route. The term “Bicycle Route” is defined as “any roadway where there is an existing bikeway or any location where a bicycle facility is identified for such roadway in a state, regional or local transportation plan” (GDOT Design Policy Manual, Chapter 6.12 and Glossary).

Medians at Pedestrian Crossings:

Locations where a significant number of pedestrians are likely to be crossing the roadway at mid-block, may warrant positive separation of opposing traffic using a median for pedestrian refuge. Signals are not typically warranted at these locations. Two phase pedestrian crossings may be required when the roadway width requires excessive pedestrian crossing time (i.e. 6-lane section with dual lefts and a right turn lane, etc). In the case of a two phase pedestrian crossing, the median must be wide enough to provide an ADA compliant pedestrian refuge area. (GDOT Design Policy Manual, Chapter 6.9.4)

Lane Widths:

The standard lane width is 12 feet. In Type A urban areas (characterized by speed limits of 35 or less, curbs and sidewalks, CBDs or historic districts, building face to curb generally 10 feet or less, low truck volumes) lane widths can be reduced to 11 feet. (GDOT Design Policy Manual, Chapter 6.2.1)

Bike Lane signs:

GDOT follows the FHWA Manual on Uniform Traffic Control Devices (MUTCD: mutcd.fhwa.dot.gov/pdfs/2003/Ch9.pdf). The “bike lane” sign must be used together with marked bicycle lanes. Sign spacing should be determined by engineering judgment based on prevailing speed of bicycle and other traffic, block length, distances from adjacent intersections, and other considerations. The “ahead” sign should be mounted directly below a bike lane sign in advance of the beginning of a marked bicycle lane. The “ends” sign should be mounted directly below a bike lane sign at the end of a marked bicycle lane. Where motor vehicles entering an exclusive right-turn lane must weave across bicycle traffic in bicycle lanes, the “begin right turn lane yield to bikes” sign may be used to inform both the motorist and the bicyclist of this weaving maneuver.

Figure 9: Marked bicycle lane near Georgia Tech in Atlanta



Share the Road signs:

GDOT’s guidelines state they should be placed on roads without bike lanes; within 500 feet of transitions between bike lanes or paved shoulders to shared roadways; in areas where the road curves continuously (at intervals of 5 miles in rural areas and 2 miles in urban areas or as needed); and along two-lane roads with paved shoulders less than 2 feet wide (same intervals as above). In practice, signs are typically installed at the request of a local government or concerned citizens. Often installation is done by the local government, even on state facilities. (*GDOT Signing and Marking Guidelines*)

Speed limits:

Georgia Code Article 9, beginning with Section 40-6-180 sets the basic standard of a “reasonable” speed limit. Transportation Online Policy & Procedure System (TOPPS) 6780-4 (www.dot.ga.gov/topps/op/tsd/6780-4.htm) states that “the speed limit will be set as a maximum speed limit under the best conditions...”.

Roundabouts:

GDOT requires approval by the Division Director of Preconstruction, the Division Director of Operations, and the Chief Engineer. To be eligible for roundabouts, roads must have single-lane approaches with ADT counts not to exceed 16,000.

Accel /Deceleration lanes:

Acceleration lanes are usually not built on low speed roads. They are required by GDOT as needed based on grade, sight distance and traffic. According to the Driveway Manual, at speeds over 55 mph, full-width acceleration lanes should be considered, and on driveways that include a deceleration lane, a tapered acceleration lane should be considered. Deceleration Lanes are considered to always be helpful and are required when projected traffic exceeds certain minimum standards.

From the Regulations for Driveway & Encroachment Control Driveway Manual used by site developers:

“4I-1 When Deceleration Lanes Are Required: The provisions of this section shall generally apply to auxiliary lanes installed on the approach to an intersection that provide for deceleration and storage of vehicles waiting to turn right or left. Such lanes are always beneficial and will be required in conjunction with commercial driveway permits when projected traffic volumes exceed minimum levels as provided in the sections below.

4I-1-1 Minimum Requirements for Right Turn Deceleration Lanes:

Right turn deceleration lanes must be constructed at no cost to the Department (Georgia Department of Transportation) if the daily site generated Right Turn Volumes (RTV) based on ITE Trip Generation (assuming a reasonable distribution of entry volumes) meet or exceed the values shown in <table below>. Passing lane sections fall under the criteria for two or more lanes.”

Table 4. GDOT Minimum Requirements for Deceleration Lanes

Posted Speed	2 Lane Routes		More than 2 Lanes on Main Road	
	AADT	AADT	AADT	AADT
	<6000	≥6000	<10,000	≥10,000
35mph or less	200 RTV/day	100 RTV/day	200 RTV/day	100 RTV/day
40 to 50 mph	150 RTV/day	75 RTV/day	150 RTV/day	75 RTV/day
55 to 60 mph	100 RTV/day	50RTV/day	100 RTV/day	50 RTV/day
≥ 65 mph	Always	Always	Always	Always

Multiple left turn lanes:

Dual left turn lanes are used on high traffic volume roads based on a capacity analysis (300 vehicles or more turning left per hour). Off-peak periods should be considered as dual left turn lanes usually do not allow turning at will. (*Regulations for Driveway and Encroachment Control*)

Design Speed:

AASHTO defines the design speed as "...the maximum safe speed that can be maintained over a specified section of highway when conditions are so favorable that the design features of the highway govern."

GDOT policy, according to GDOT Design Policy Manual, is to set design speeds such that they are consistent with the speed drivers are traveling. The manual further notes that on country roads or city streets, engineers should work with local jurisdictions to set speed limits and design speeds in order to encourage the local jurisdiction to post a speed less than or equal to the design speed. "It is desirable to select a design speed as high as practical to attain a desired degree of safety, mobility, and efficiency within the constraints of environmental quality, economics, aesthetics, and other social or political effects." (*GDOT Design Policy Manual, Chapter 3*).

Design vehicles are selected types of vehicles, with representative weight, dimensions, and operating characteristics used to set highway design controls (passenger cars, buses, trucks, and recreational vehicles). The Design Manual notes that the bicycle should be considered a design vehicle where it may be used on a road.

Sources:

- GDOT Design Guidance Policy Memo, January 7, 2003 from Frank Danchetz, Chief Engineer
- Repository for Online Access to Documentation and Standards (ROADS): www.dot.ga.gov/dot/preconstruction/R-O-A-D-S/index.shtml
- GDOT Design Policy Manual: www.dot.ga.gov/dot/preconstruction/R-O-A-D-S/DesignPolicies/index.shtml
- GDOT Transportation Online Policies and Procedures System (TOPPS): www.dot.ga.gov/topps
- Regulations for Driveway & Encroachment Control Driveway Manual: www.dot.ga.gov/dot/preconstruction/r-o-a-d-s/DesignPolicies/documents/pdf/DrivewayFull.pdf
- Office of Traffic Safety and Design: www.dot.ga.gov/dot/operations/traffic-safety-design/index.shtml
- Office of Road Design: www.dot.ga.gov/dot/preconstruction/roaddesign
- Traffic Signal and Design Guidelines: www.dot.ga.gov/dot/operations/traffic-safety-design/Documents/PDF/Traffic%20Signal%20Design%20Guidelines.pdf

5. Georgia Bicycle and Pedestrian Crash Analysis Report

The data used in this crash report is from the Georgia Department of Transportation crash database which is compiled from police crash reports. The Crash Analysis Reporting Environment (CARE) tool was also used.

Introduction

Bicycles and pedestrians comprise 10.5% of all fatalities in Georgia – more than other crash types and users (e.g. heavy trucks, motorcycles, train/car, work zone and run-off-the-road crashes).

Table 5: Percentage of Fatalities by User and Crash Type*

Alcohol related	31.5%
Bicycles	1.5%
Fatigue/Inattentive	3%
Head-on	15%
Heavy Trucks	9%
Intersections	46%
Motorcycles	7%
Not using seatbelt (passenger vehicles)	73%
Older drivers (over 64)	16%
Pedestrians	9%
Run-off the road	9%
Speeding & tailgating	21%
Vehicle/train	<1%
Work zones	1%
Young drivers (under 21)	19%

**Based on 1,023,293 crashes, and 4995 traffic fatalities between 2003-2005*

Bicycle Crashes

Bicycle crashes in Georgia comprise less than a quarter of 1% of the overall traffic related crashes, yet represent more than 5 times that percentage of the overall traffic fatalities. This points to the vulnerability of a bicyclist in a crash compared with motor vehicle drivers/passengers. Nationally, Georgia ranks 8th among the states with the most bicycle fatalities. This is somewhat alarming considering that, based on the 2000 Census journey to work data (the only exposure data available on bicycling), the Atlanta Metropolitan Statistical Area (MSA) has among the lowest rates of bicycling in the country.

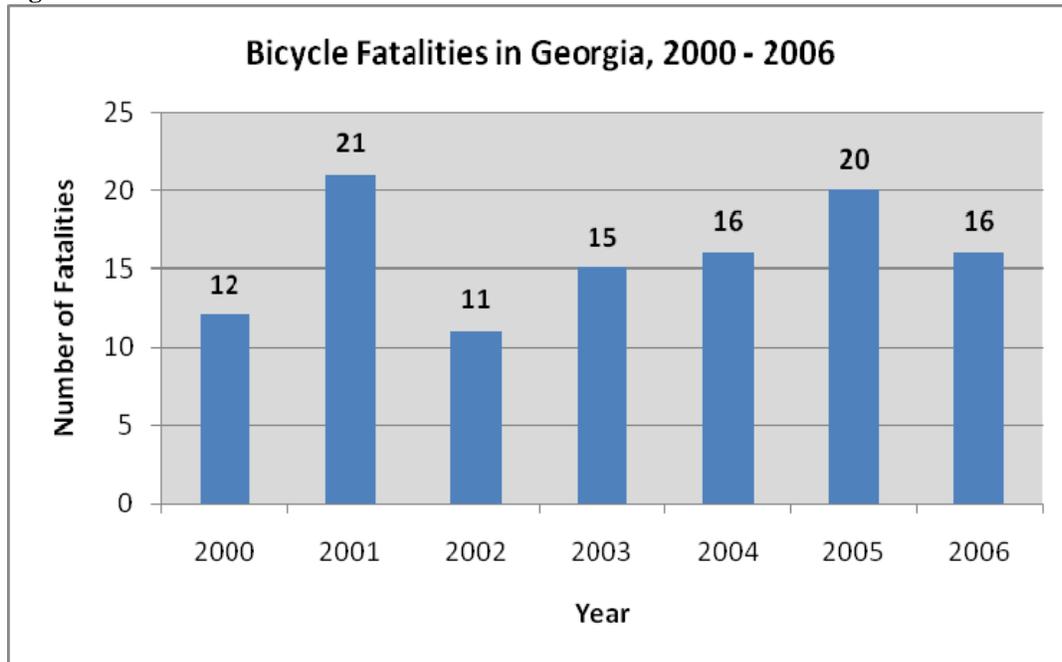
Table 6: Bicycle and Traffic Crashes in Georgia, 2000 - 2006

Year	All Traffic Crashes	All Bicycle Crashes	% of All Traffic Crashes that are Bicycles	All Traffic Fatalities	All Bicycle Fatalities	% of all Traffic Fatalities that are Bicycles
2000	310,122	803	0.26%	1,404	12	0.85%
2001	317,851	711	0.22%	1,475	21	1.42%
2002	327,710	788	0.24%	1,367	11	0.80%
2003	332,321	723	0.22%	1,469	15	1.02%
2004	342,307	718	0.21%	1,466	16	1.09%
2005	348,041	755	0.22%	1,595	20	1.25%
2006	342,158	932	0.27%	1,703	16	0.94%

Of all reported bicycle crashes from 2000 – 2005, 2.1% were fatalities, 76.5% were injury crashes, and 21.3% were non-injury or property damage only (PDO) crashes.

While the number of bicycle fatalities seems relatively low per year (generally under 20), they are on the rise in Georgia. The year 2001 stands out as a bit of an anomaly with highest number of fatalities in the 7 year period, while at the same time having the lowest number of crashes and injuries for the same period. The general trend line however shows a steady increase of fatalities since 2002.

Figure 10.



Shortfalls of Data

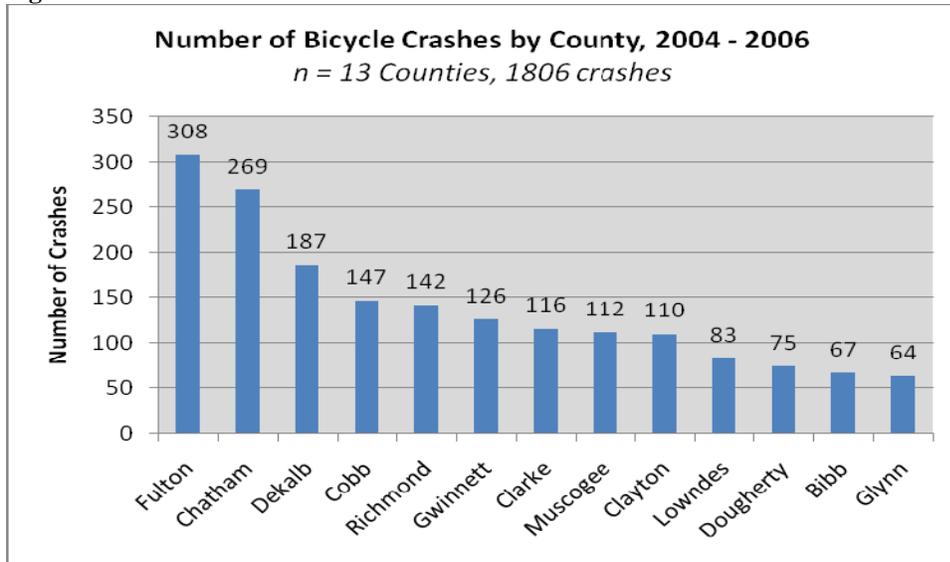
The biggest obstacle to analyzing bicycle crash data is the lack of “exposure” data. Unlike with motor-vehicles, we do not have traffic counts or bicycle-miles-traveled data. Therefore, while we know there is a moderate increase in bicycle fatalities, we do not know if the fatality rate for bicyclists is going up, down, or staying flat.

The crash database also does not include some critical information, such as the bicycle’s direction of travel (riding with or against traffic), the bicycle maneuver (was the bicyclist traveling straight or turning left or right?), the presence of a bike facility, and helmet use data is incomplete. In addition to analyzing the crash database, 198 police crash report forms where a bicyclist was injured or killed were reviewed. None of these reports indicated whether the bicyclist was using headlights or rear reflectors/lights, the helmet data was spotty, and nearly half of the reports did not indicate where the bicyclist was riding (i.e. with traffic, against the flow of traffic, in a bike lane, on a sidewalk, etc). This lack of data makes it difficult to understand the root causes of certain crashes.

Geographic Distribution of Crashes

The majority of bicycle crashes occur in a relatively small geographic area. There were 2,819 bicycle crashes from 2004 – 2006. Of these, 1,806 crashes (64% of the state’s total) occurred in just 13 counties. The remaining 1,013 crashes were spread among the remaining 146 counties, averaging about 7 crashes per county over the 3 year period.

Figure 11.



Characteristics of Bicycle Crashes

Beyond this clustering of crashes in metropolitan areas, there is no statistically significant pattern of bicycle crashes occurring along the same roadway or intersection. Therefore, it will be more fruitful to look at roadway type and crash characteristics to find trends or commonalities among the crashes. Countermeasures will be generally applicable to similar types of roadways or crashes across the state.

Bicycle Crashes by Speed Limit:

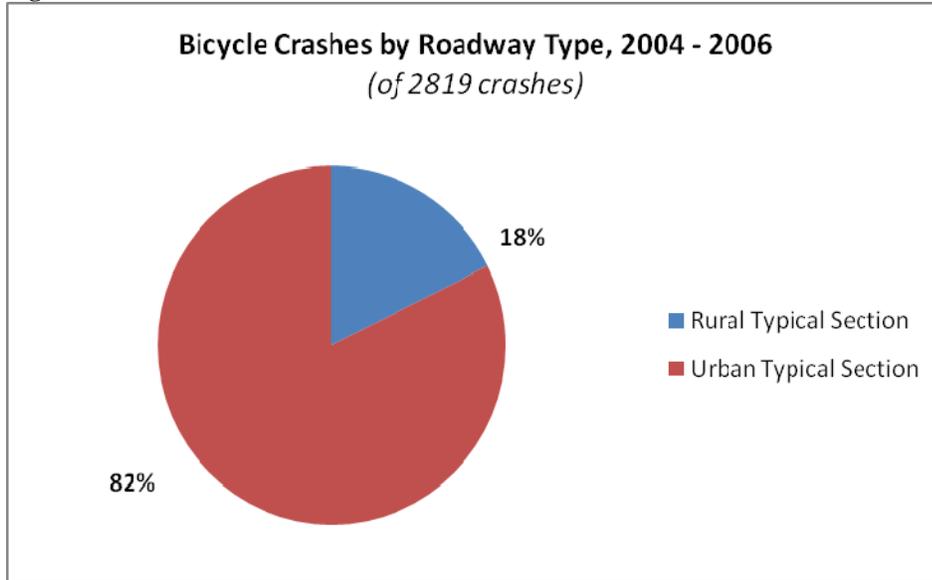
Nearly twice as many bicycle crashes occur on local streets with a posted speed limit of 35mph or less than on higher speed roads. However, the opposite is true for fatalities: from 2004 through 2006, 17 fatalities occurred on roads with a speed limit of 35mph or less, and 40 fatalities on roads with a 40mph speed limit or greater. This is not surprising – the roads with higher speed limits tend to be rural state highways or multi-lane suburban arterials which attract fewer bicyclists than lower speed streets in urban areas. However, when crashes do occur at these higher speeds, they are more likely to be fatalities.

Table 7: Bicycle Crashes and Fatalities by Speed Limit, 2004-2006

Speed Limit	Crashes	Fatalities	% of Crashes that are fatalities
Null	199	0	0.00%
15	6	0	0.00%
20	9	0	0.00%
25	415	2	0.48%
30	587	5	0.85%
35	690	10	1.45%
40	194	3	1.55%
45	477	19	3.98%
50	30	1	3.33%
55	192	16	8.33%
60	2	0	0.00%
65	15	1	6.67%
70	3	0	0.00%
Total	2819	57	2.02%

The following pie chart reiterates this pattern – that most bicycle crashes occur in urban areas on urban roadway types. These are generally roadways with a speed limit of 35mph or less (sometimes up to 45mph), have curb and gutter and usually sidewalks. There are generally more driveways and intersections on urban roadways than on rural typical sections.

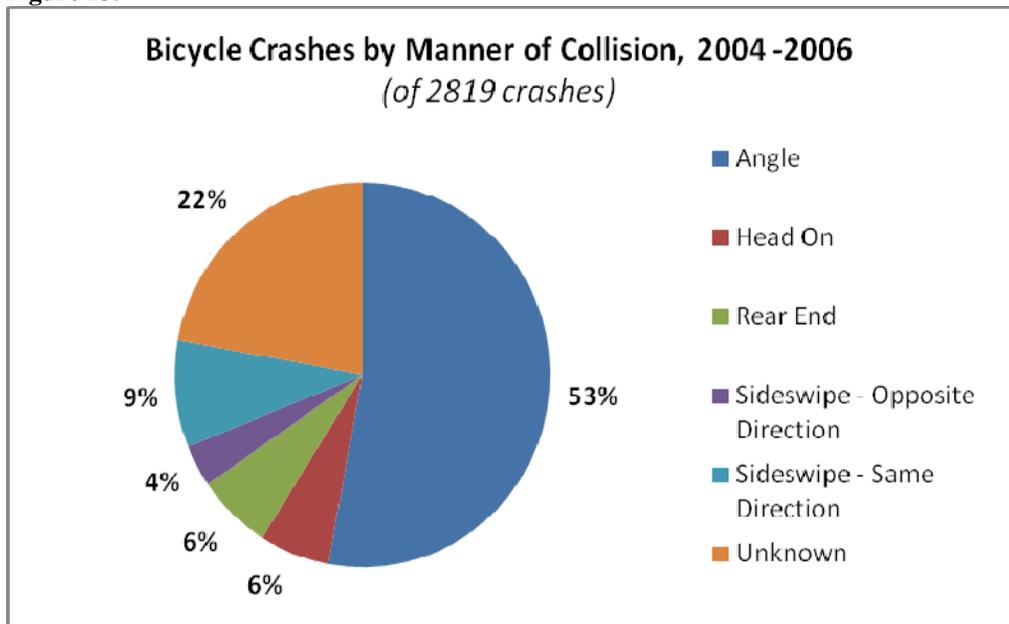
Figure 12.



Manner of Collision:

As shown in the chart below, approximately half of all bicycle crashes are at an angle, which indicates turning movements (possibly motor vehicles turning right or left in front of the bicyclist).

Figure 13.



Use of Bicycle Helmets:

Georgia's bicycle crash statistics from 2000 to 2006 (taken from GDOT's crash database) reveal that only 12 percent of bicyclists involved in crashes wore helmets. National statistics from the Insurance Institute for Highway Safety show that just 8.5 percent of bicyclists killed in crashes from 2000 to 2006 wore helmets. This may reflect the low usage of helmets, or may portray the effectiveness of helmet usage in preventing death.

Age is a significant factor affecting helmet use. Of the bicycle crash victims in Georgia, those aged 30 and older had a helmet use rate of 22 percent. This is more than three times greater than the helmet use rate among bicycle crash victims under 30 years old. This may explain why bicyclists under 18 years old comprise 30% of Georgia's bicycle fatalities (of these fatalities, only 11 percent wore helmets).

Figure 14.

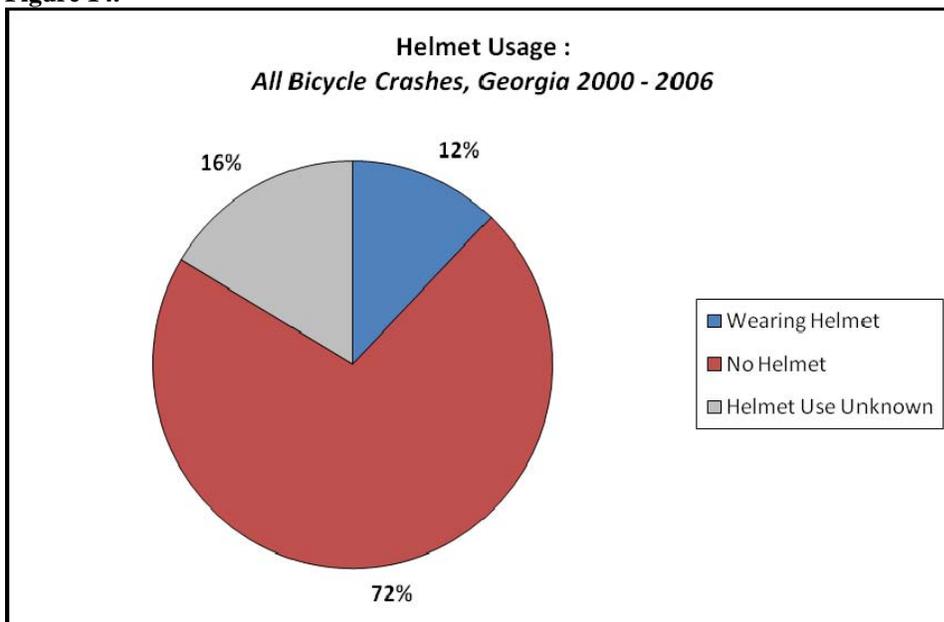
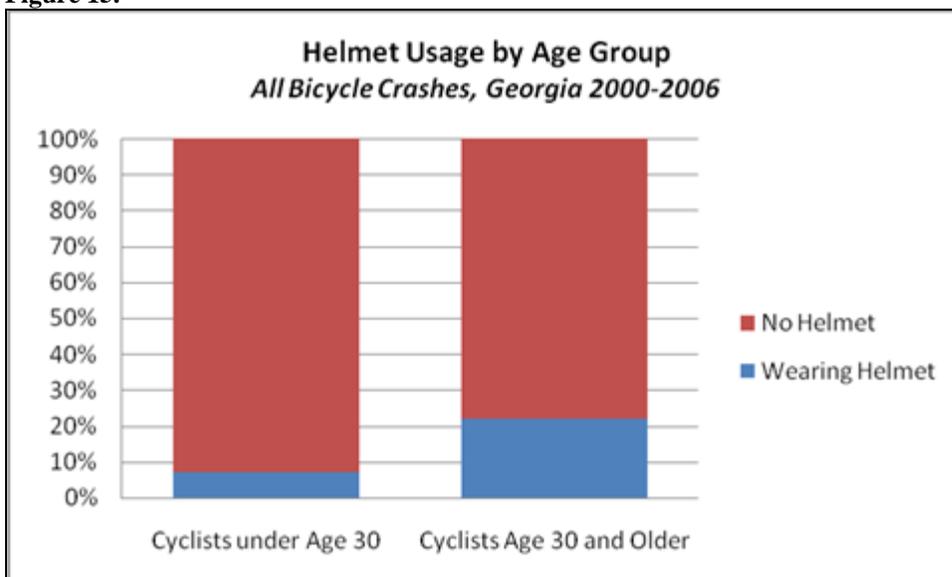


Figure 15.



High Bicycle Crash Locations:

While the majority of bicycle crashes are spread out randomly among a dozen counties, there are some corridors where crashes tend to cluster, and further evaluation of the crash reports for these areas may be warranted. The high crash corridors were determined by all 2 mile roadway segments with at least 4 crashes from 2004 – 2006.

Intersections were also analyzed, and no pattern was discovered in these crash locations. Over the 3-year period, *no intersection* in the entire state had more than 3 bicycle crashes recorded. During this same time period. Only 25 intersections in the state had 2 bicycle crashes occur at them, and only 4 intersections experienced 3 bicycle crashes (none of which were fatalities). Therefore, the intersection data will not be used in project prioritization, but the corridors will be (which are inclusive of intersection crashes as well).

Table 8: High Bicycle Crash Corridors, 2004 - 2006

County	Name	Start Point	End Point	Total Crashes	Fatal Crashes
Fulton	PONCE DE LEON AVE	8.41	9.9	11	
Fulton	HIGHLAND AVE	1.59	3.51	11	
Clarke	PRINCE AVE	3.09	4.25	9	1
Chatham	MONTGOMERY CROSS RD	0.3	1.22	8	
Clarke	BAXTER ST	0.17	1.81	8	
Fulton	NORTH AVE	7.49	8.04	7	
Richmond	WALTON WAY	0.27	1.27	7	
Chatham	DERENNE AVE	0.16	0.43	6	
Richmond	GREENE ST	3.91	4.63	6	
Richmond	LANEY WALKER BLVD	0.23	1.04	6	
Chatham	40TH ST	0.14	1.16	6	
Liberty	ELMAG MILES PKWY	17.92	18.97	6	
Lowndes	PATTERSON ST	15.24	16.49	6	1
Clarke	W BROAD ST	7.57	8.09	5	
Chatham	HENRY ST	0.9	1.79	5	
Clarke	OCONEE ST	8.79	8.96	4	
Bulloch	FAIR RD	18.49	18.91	4	
Clarke	BROAD ST	6.3	6.76	4	
Chatham	LINCOLN ST	1.08	1.57	4	
Cobb	S COBB DR	4.87	5.56	4	1
Fulton	MEMORIAL DR	31.8	32.56	4	
Clayton	UPPER RIVERDALE RD	0.49	1.49	4	
Dougherty	SLAPPEY BLVD	1.65	2.68	4	
Glynn	GLYNN AVE	13.53	14.59	4	1
Lowndes	N PATTERSON ST	0.08	1.24	4	
Houston	GREEN ST	0.89	2.51	4	
Richmond	FAIRINGTON DR	0.01	1.75	4	
Douglas	FAIRBURN RD	8.32	10.23	4	

Pedestrian Crashes

Introduction

As shown in the table below, pedestrians are over-represented in traffic fatality data, comprising of over 10% of all motor-vehicle related fatalities yet making up less than 1% of all crashes.

Table 9: Pedestrian and Traffic Crashes in Georgia, 2000 - 2006

Year	All Traffic Crashes	All Pedestrian Crashes	% of All Traffic Crashes that are Pedestrians	All Traffic Fatalities	All Pedestrian Fatalities	% of all Traffic Fatalities that are Pedestrians
2000	310,122	2490	0.80%	1,404	141	10.04%
2001	317,851	2552	0.80%	1,475	158	10.71%
2002	327,710	2561	0.78%	1,367	166	12.14%
2003	332,321	2530	0.76%	1,469	161	10.96%
2004	342,307	2435	0.71%	1,466	156	10.64%
2005	348,041	2574	0.74%	1,595	151	9.47%
2006	342,158	2738	0.80%	1,703	185	10.86%

Summary of Injuries and Fatalities

Pedestrian crashes, injuries and fatalities have generally remained level for the six year time period, however crashes are decreasing or leveling off in the City of Atlanta (down 3% from 2003 to 2006), but increasing in the suburban Atlanta – up over 30% in Gwinnett and Clayton Counties, and up 10% in Dekalb County over the same time period. This may indicate that as Atlanta is becoming more walkable and densely developed, crashes are going down, while suburban Atlanta has seen increased traffic and an influx in transit-dependent residents in recent years. The 10 counties below comprise almost 70% of all pedestrian crashes in the state.

Table 10: Counties with a Minimum 50 Annual Pedestrian Crashes, 2003 - 2006

County	2003	2004	2005	2006	Total
Fulton	587	555	551	569	2262
Dekalb	306	329	342	337	1314
Cobb	144	120	163	152	579
Chatham	138	146	142	160	586
Gwinnett	121	133	148	160	562
Clayton	102	107	113	139	461
Richmond	86	80	76	84	326
Bibb	94	76	67	104	341
Muscogee	72	73	87	78	310
Clarke	74	50	64	56	244

Pedestrian Crashes by Speed Limit

As with bicycle crashes, most pedestrian crashes occur on lower speed roads (25mph – 35mph), while most fatalities occur on roads with a 45mph speed limit. Fatalities are more likely to occur on higher speed roadways because reaction time and stopping distances are decreased. However, there are fewer

pedestrians on these high speed roadways (generally principal arterials and multi-lane suburban corridors), which would explain why fewer overall crashes occur on these roads than on local roads.

Figure 16.

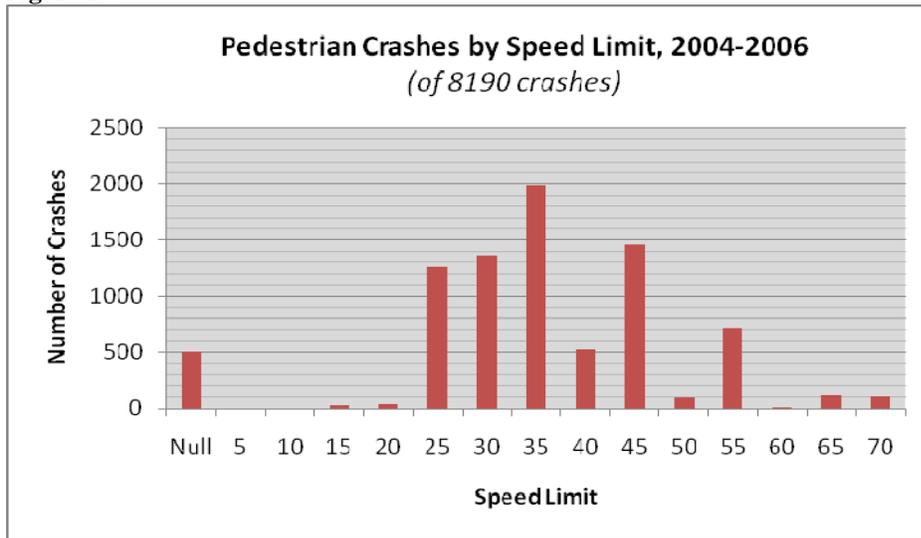
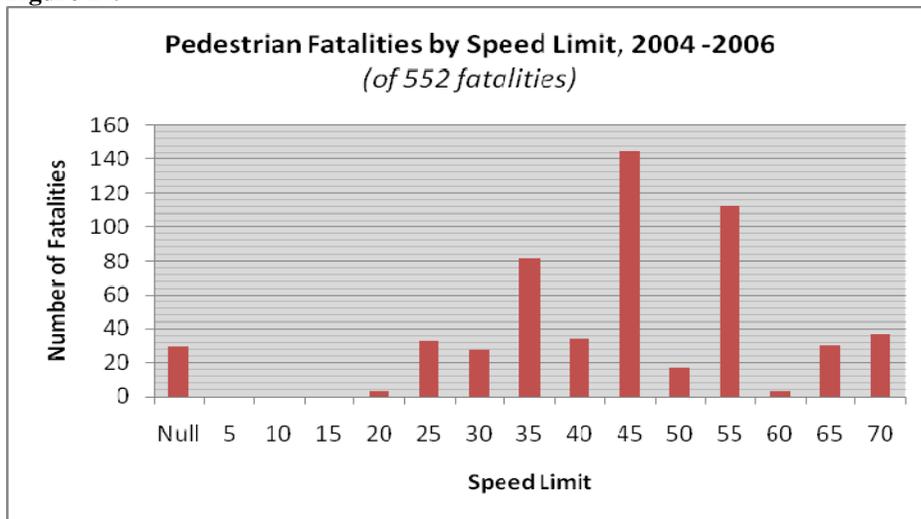


Figure 17.



Characteristics of the Pedestrian

There is a common misconception that the majority of pedestrian crashes are caused by a drunk or impaired pedestrian. The data indicates otherwise: only 3.4% of pedestrians involved in crashes in Georgia from 2004 – 2006 were listed as having been under the influence of drugs or alcohol.

Table 11: Condition of Pedestrians Involved in Crashes, 2004 - 2006

Pedestrian Condition	Not Injured	Injured	Fatal	Total
Not Drinking	855	5363	398	6616
Not Known if U.I.	167	934	123	1224
Drinking, not Impaired	7	45	1	53
U.I. Alcohol and/or Drugs	33	218	29	280

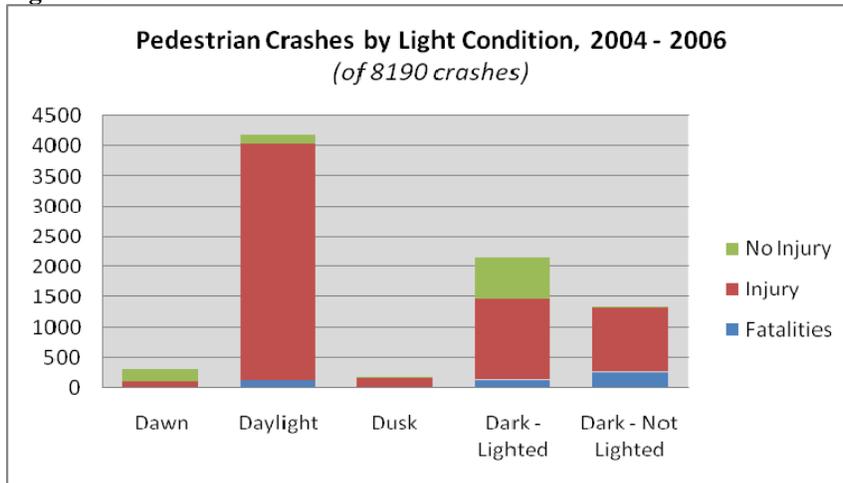
Physical Impairment	3	12	1	16
Apparently Fell Asleep	1	0	0	1

Source: 2004 – 2006 CARE database

Pedestrian Crashes by Light Condition

The vast majority of crashes occur during daylight hours; however three times as many fatalities occur at night (dark conditions) than during the day. This could indicate the need for better lighting; it also may suggest that motorists are travelling at greater speeds at night when there is less traffic (resulting in decreased reaction time and stopping distance).

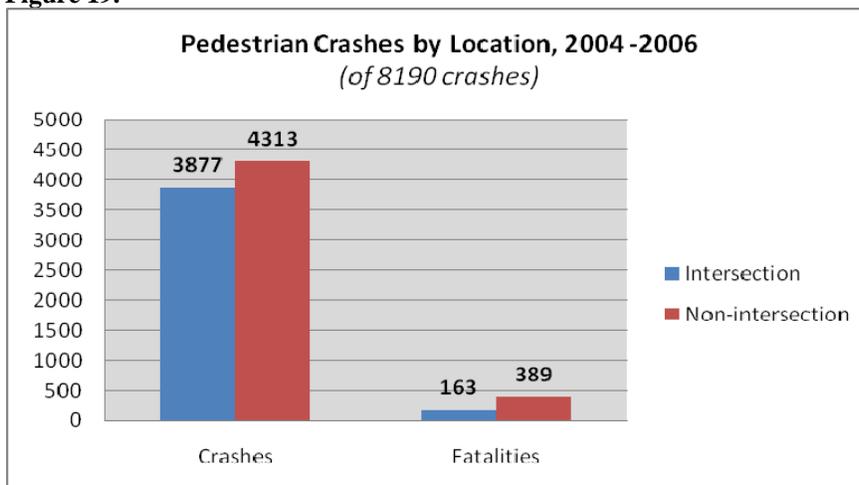
Figure 18.



Pedestrian Crash Location

There is a fairly even split between pedestrian crashes occurring at intersections and “mid-block”. However, more than twice as many fatalities happen at mid-block locations than at intersections. This is likely due to the higher speeds at mid-block where motorists are not slowing down to make a turn, and also because drivers are less likely to expect pedestrians at non-intersection locations.

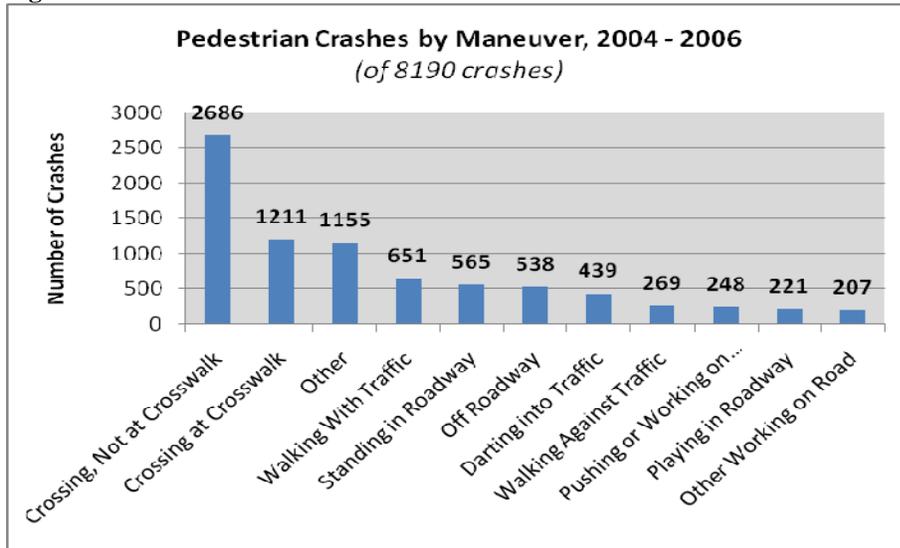
Figure 19.



Pedestrian Crashes by Maneuver

Almost half of all pedestrian crashes and fatalities occur while crossing the roadway. Only about 12% occur while walking along the roadway. For these types of crashes, twice as many crashes occur when walking on the right side of the road (i.e. with your back to traffic) rather than on the left side of the road facing oncoming traffic. These statistics reinforce the state law requiring pedestrians to walk on the left side of the road when walking in the street (when no sidewalk or shoulder is present). It is safer to walk facing traffic because the pedestrian can see a car coming and can get out of the way if necessary. Interestingly, it is the opposite for bicycles. Due to speed differentials and driver expectation, bicycles are safest riding with traffic on the right side of the road (which is also required by law).

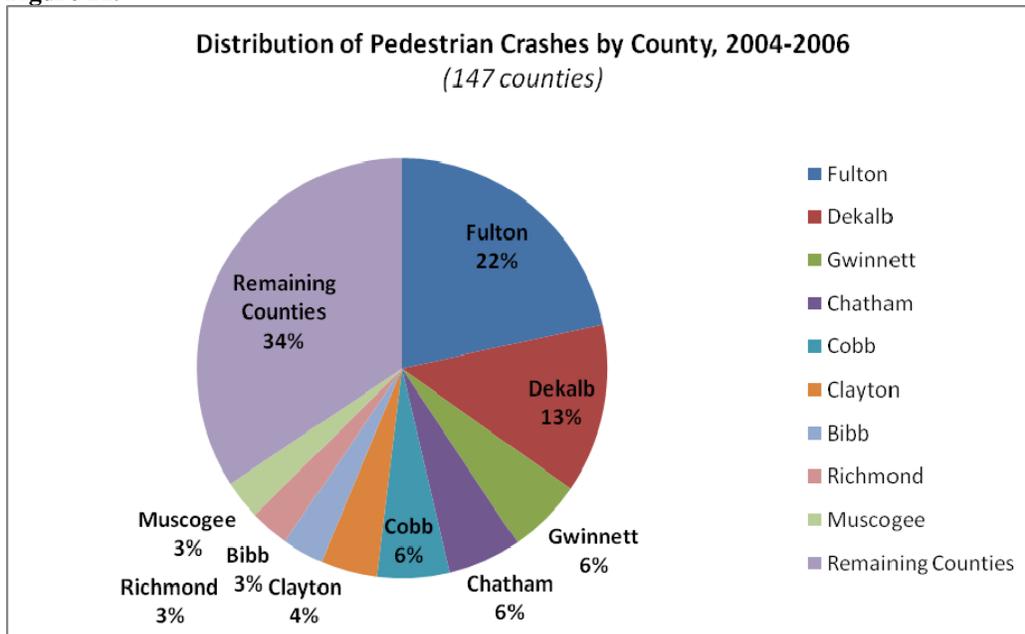
Figure 20.



High Crash Locations

Most pedestrian crashes (83% in Georgia) occur in areas defined as urban and suburban rather than rural. This is also reflected in the distribution of pedestrian crashes by county (see pie chart below). Nearly 65% of all pedestrian crashes happened in just 9 counties. All of these counties are predominantly urban or suburban and include the five core metro-Atlanta counties and the next five largest metropolitan areas in the state (Savannah, Augusta, Macon, Columbus and Athens). These same counties are also the only counties in the state that had at least 50 pedestrian crashes annually from 2004 to 2006.

Figure 21.



Corridors with the Highest Pedestrian Crashes:

The high crash corridors were determined by all 1 mile roadway segments with at least 5 crashes. This resulted in 199 segments. Where these 1 mile segments were contiguous on the same roadway, they were aggregated into one corridor. For example, there were three 1-mile contiguous segments on Ponce de Leon with approximately 20 crashes each. These were combined to create a three-mile corridor with 58 crashes). This process yielded 141 corridors which were further filtered by selecting only those with 15 or more crashes. This resulted in 28 “high pedestrian crash corridors”.

Table 12: High Pedestrian Crash Corridors, 2004-2006

County	Name	From	To	Total Crashes	Fatal Crashes
Fulton	ROSWELL RD	LAKELAND DR	DALRYMPLE RD	55	1
Dekalb	BUFORD HWY		SHALLOWFORD RD	42	2
Fulton	PONCE DE LEON AVE	DURANT PL		41	2
Fulton	PEACHTREE ST			39	1
Fulton	BANKHEAD HWY	MAYNARD CT	PIERCE AVE	38	0
Dekalb	GLENWOOD AVE	BROWNWOOD AVE	CLARKE LN	37	3
Dekalb	COVINGTON HWY	MOUNTAIN DR	GREENBRIAR WAY	34	3
Dekalb	CANDLER RD	FLAT SHOALS RD	GLENWOOD RD	33	0
Fulton	PEACHTREE RD	28TH ST	E ANDREWS DR	33	0
Clayton	RIVERDALE RD	WALKER RD	ON TO I-285 S	29	3
Dekalb	MORELAND AVE	GRACEWOOD AVE	ST LOUIS PL	29	0
Fulton	STEWART AVE	MORELAND WAY	CHRISTMAN ST	27	2
Fulton	BOULEVARD			27	0
Fulton	NORTH AVE	FOWLER ST	DURANT PL	24	0

Chatham	VICTORY DR	HOPKINS ST	SHUPTRINE AVE	23	1
Clayton	TARA BLVD	SOUTH AVE	MT. ZION RD	20	4
Fulton	MARTIN LUTHER KING JR DR	BARFIELD AVE	OLD GORDON RD	20	1
Fulton	Fulton SR 883			20	0
Fulton	NORTHSIDE DR	RALPH D ABERNATHY BLVD	NORTHSIDE CIR	19	1
Fulton	SIMPSON RD			19	0
Fulton	OLD NATIONAL HWY	FLAT SHOALS RD	GODBY RD	18	2
Clarke	BROAD ST	SYCAMORE DR	JACKSON ST	18	0
Chatham	ABERCORN ST	MIDDLEGROUND RD	MONTGOMERY CROSS RD	17	2
Dekalb	MEMORIAL DR	WYMAN ST		16	2
Fulton	CASCADE AVE			16	0
Gwinnett	BUFORD HWY	HILSIDE DR	CAMBRIDGE ST	15	2
Muscogee	VETERANS PKWY	14TH ST	35TH ST	15	2
Dekalb	CLAIRMONT RD	CLAIRMONT RUN	CENTURY PL	15	1

High Pedestrian Crash Intersections:

The following intersections were selected based on having at least 5 pedestrian crashes from 2004-2006. They are ranked according to the crash severity index which assigns weighted scores to crashes for fatalities, serious injuries, etc.

Table 13: High Pedestrian Crash Intersections, 2004- 2006

County	Route	Description	Total	Fatal	Injury	Severity	AADT
Fulton	Fulton SR 3	Stewart Ave @ Cleveland Ave	10	0	9	30	15628
Clayton	Clayton SR 139	Riverdale Rd at Garden Walk Blvd	7	1	5	37.14	35680
Dekalb	Dekalb SR 260	Glenwood Rd at Columbia Drive	6	0	6	33.33	22210
Fulton	Fulton CS 904-03	Martin Luther King Dr at Fulton CS 2003-03	6	0	6	26.67	21846
Fulton	Fulton CS 661-03	Peachtree St at Fulton CS 1828-03	6	0	6	23.33	18156
Fulton	Fulton CS 2001-03	International Blvd at Fulton CS 3695-03	6	0	4	20	10398
Fulton	Fulton SR 8	North Ave at W. Peachtree St	6	0	4	16.67	29345
Dekalb	Dekalb CS 693-05	Chamblee Dunwoody Rd at Cumberland Dr	5	1	4	60	11728
Dekalb	Dekalb SR 260	Glenwood Rd at E. Lake Blvd	5	0	5	36	18442
Fulton	Fulton SR 42-SP	McDonough Blvd at Henry Thomas Dr	5	0	5	36	13236
Fulton	Fulton CS 904-03	Martin Luther King Dr at Fulton CS 1868-03	5	0	5	28	21616
Dekalb	Dekalb SR 13	Buford Hwy at N. Cliff Valley Way	5	0	5	28	25234
Fulton	Fulton SR 883	Fulton SR 883 at Fulton CS 2051-03	5	0	4	32	11600
Fulton	Fulton SR 8	Ponce de Leon Ave at Kennesaw Ave	5	0	4	28	33390
Fulton	Fulton SR 8	Ponce de Leon Ave at Seminole Ave	5	0	4	28	36180
Fulton	Fulton SR 8	North Ave at Peachtree St	5	0	4	24	30590
Clarke	Clarke SR 10	Broad St at College Ave	5	0	4	24	30224

Figure 22: Woman and child attempting to cross Buford Highway



IV. POLICY & NON-ENGINEERING RECOMMENDATIONS

Acronym Directory:

GDOT	Georgia Department of Transportation
GOHS	Governor's Office of Highway Safety
DDS	(Georgia) Department of Driver Services
GDEC	Georgia Department of Economic Development
DCA	(Georgia) Department of Community Affairs
GDPH	Georgia Division of Public Health
DOE	(Georgia) Department of Education
MPOs	Metropolitan Planning Organizations
RDCs	Regional Development Centers
TMA	Transportation Management Associations
MARTA	Metropolitan Atlanta Regional Transit Authority
GRTA	Georgia Regional Transportation Authority
ARC	Atlanta Regional Commission
GMA	Georgia Municipal Association
ACCG	Association County Commissioners of Georgia
ABC	Atlanta Bicycle Campaign (non-profit/advocacy org.)
PEDS	Pedestrians Educating Drivers on Safety (non-profit/advocacy org.)
GA Bikes	Georgia Bikes! (non-profit/advocacy org.)

Education			
Priority	Task	Description	Responsible Agencies
1	State-wide public education campaign	<p>Modeled after GOHS's successful "Click it or Ticket" and "Zero Tolerance" programs. Messages should be tailored for each target audience (motorists, pedestrians & cyclists). Campaign to include the following:</p> <ul style="list-style-type: none"> • Drive-time radio PSAs, including some Spanish language messages • Messages placed inside transit vehicles, stations and stops, to reach cyclists and pedestrians; and on bus-backs and bus "wraps" to reach motorists. • Use new communication tools such as Facebook, Podcasts, etc • Below are some general concepts for safety messages: <ul style="list-style-type: none"> ○ Motorist oriented: Cyclists belong on road, pass with care, look for bike/peds at intersections, peds have right of way in crosswalk, don't speed, etc. ○ Cyclist oriented: wear helmet, use lights, ride with traffic, make eye contact/watch for cars at intersections, obey traffic rules ○ Pedestrian: Cross with signal not against it, look for turning cars even when you have the right-of-way, etc. 	GOHS, MARTA, GRTA, PEDS, GA Bikes, ABC, Community Improvement Districts, TMAs
2	Educate drivers on how to share the road with bikes/peds	Develop curriculum to be included in driver's education trainings, conduct bus driver's education trainings for transit agencies, and produce materials for schools, transit agencies, and Department of Driver Services.	Department of Driver Services, GOHS, PEDS, ABC, GA Bikes, MARTA, GRTA, ARC's Transit Operators Subcommittee, and other transit agencies
3	Educate transportation professionals and civil engineering students on bike/pedestrian design and safety throughout the state.	<ul style="list-style-type: none"> • Partner with professional organizations to develop and host trainings (such as ITE, GPA, ASCE, WTS, MPOs, TMAs, etc). • Educate GDOT staff through GDOT Trainee program, incorporate this into Plan Development Process (possibly part of ADA Compliance Officers duties...). • Incorporate bike/ped design into curricula of State engineering and planning schools (GA Tech, GA Southern, Southern Polytech , Savannah State, etc) 	GDOT, Planning and Engineering Professional Organizations, ARC, PEDS, Universities

4	Develop and Distribute Bicycle Safety Materials	<ul style="list-style-type: none"> Expand GOHS Bike Helmet Giveaway Program, distribute bicycle lights, and reflective gear. Update, print and distribute Georgia Bike Sense Guide, and develop additional educational materials as needed. Work with GOHS, Regional Development Centers (RDCs) and DDS to distribute. Translate Bike Sense into Spanish and distribute with assistance from the RDCs, Latin American Association, churches, etc. Continue to distribute Bike Sense guides and other educational materials to all bike shops, driver license and tag registration centers, state parks, visitor centers. Translate into Spanish. 	GDOT, GOHS, DDS, RDCs, Georgia Bikes, Atlanta Bicycle Campaign
5	Conduct Bicycle Safety Training	Work with colleges and universities, get bicycle police officers to assist with trainings, make trainings more accessible, mainstream to reach more riders, or potential riders.	ABC, GA Bikes, GOHS, TMAs, Universities, law enforcement
6	Continue “share the road” license plate program	Use this bike/ped task team to develop plan and identify educational programs to be funded with license plate revenue.	GOHS
7	Update the Driver’s Manual	Include more information about the rules of the road related to bicyclists. Provide materials for new drivers.	DDS, GDOT, PEDS
8	Educate elected and appointed officials on laws, innovative techniques and the needs of bicycles and pedestrians	Conduct regular trainings for elected officials in Atlanta and other parts of state. Present to State Transportation Board to encourage the allocation of more resources to bicycle and pedestrian facilities and safety programs. Incorporate into Georgia Municipal Association and Association County Commissioners training and the University of Georgia’s training for officials and judges.	GDOT, GOHS, ARC, GMA, ACCG, Universities
9	Research effectiveness on bike & ped educational programs	Conduct longitudinal studies on the effectiveness of Safe Routes to School (SRTS) program on driving habits, commute habits, etc.	GDPH, Universities, GDOT
10	Put bike/ped safety messages on Georgia Navigator signs	Messages could be posted on non-interstate signs, and interstate signs if permissible. This could be done for a targeted awareness campaign, for bike month (May), or walk to school day/week (October), etc.	GDOT, GOHS
11	Create PowerPoint presentation on bike/safety issues.	Put presentation on GDOT website, and distribute to neighborhood associations, professional associations (e.g. ITE, GPA, ASE, WTS, etc).	GDOT

Encouragement			
Priority	Task	Description	Responsible Agencies
1	Encourage Georgia's congressional members to support bike/ped	Agency leadership and advocacy organizations work with state legislators and Georgia's U.S. Congressional delegations to join bike/ped caucus and support bike/ped funding.	GDOT, DDS, GOHS, ABC, PEDS, GA Bikes
2	Encourage bicycle & pedestrian friendly development.	Develop handbook of bicycle and pedestrian friendly land use regulations for use by local government planning offices and neighborhood groups. Work with cities and counties to enact land use regulations that: require showers and secure bike parking for employees or create incentives for businesses that provide them; require bike and ped facilities as part of new developments and subdivisions; require pedestrian-oriented urban design (ped scale, parking in rear, etc); and driveway consolidation and access management.	GDOT, DCA, local city planning offices and planning boards, GA Tech (planning school and/or Center for Quality Growth)
3	Install secure, covered bicycle parking at MARTA and park & ride lots.	Also, evaluate possibility for a "bike station" pilot project (similar to Chicago's Millennium Park bike station).	MARTA, GRGA, CCT, C-trans, other transit agencies, ABC, GA Bikes
4	Create statewide Transportation Alternatives Campaign	Model after Clean Air Campaign's Commuter Awards program to expand statewide. Host an annual event and conduct year-round activities to encourage people to bike and walk to work/school, etc.	GDOT, GOHS, MPOs, RDCs, TMA's
5	Expand Safe Routes to School	Partner with other organizations or agencies to expand SRTS to more schools. Continue GDOT contracts with RDCs to develop SRTS plans.	GDOT, RDCs, MPOs, DOE, GOHS, bike/ped organizations,
6	Sunday/Holiday road closings	Fully or partially close roads to motor vehicle traffic on a Sunday and/or Holiday to encourage biking and walking and other activities, such as skating or jogging.	GDOT, Local City jurisdiction, GDED, GDPH, TMA's

Enforcement			
Priority	Task	Description	Responsible Agencies
1	Conduct Speed and crosswalk enforcement at pedestrian safety hot spots	Provide funding for sting operations and enforcement efforts	Georgia State Patrol, University police, GOHS
2	Train law enforcement officers in pedestrian and bicycle laws, crash reporting, and safety	Work through law enforcement training center and GOHS' monthly law enforcement meetings. Trainings will help improve crash reporting, driver/rider/walker behavior and	GOHS, State Law Enforcement Training Center in Forsyth, GA, PEDS

	issues	help prevent injuries.	
3	Improve the reporting of bicycle and pedestrian crashes	Revise state police crash reports form to include more information on bike/ped crashes.	GDOT, GOHS, law enforcement agencies.

Legislation/Laws			
Task	Description	Responsible Agencies	Priority (not assigned yet)
Pass new law to allow use of speed cameras in school zones	Pass new legislation to allow speed camera enforcement in school zones and construction zones. Revenue from fines, after operating costs, go to GDOT Georgia Safe Routes to School program and GOHS traffic/pedestrian/bicycle safety programs	GDOT, GOHS, DOE Agency leadership	
Pass “Stop for Bus” law and post signs on backs of buses	Pass new law requiring that motorists stop for buses that are loading/unloading passengers (like the stop for school buses law).	MARTA, GRTA, GOHS Agency leadership	
Change law (§40-14-8) to permit law enforcement to ticket motorists speeding within 10 mph over the speed limit.	This would allow for more enforcement in neighborhoods and on non-interstate locations. The difference of 5 or 10 mph in a bike or ped crash can mean the difference between surviving the crash or not.	GOHS and law enforcement Agency Leadership	
Change Super Speeder Law to include lower speed roads where bikes/peds are more prevalent.	Change law to include anyone driving more than 20 mph over speed limit on roads with 45mph speed limit or less.	GOHS and law enforcement Agency Leadership	
Define or refine definitions in the Georgia Code	Change “bicycle” to be a “vehicle”, not a “device”, including multi-wheeled bicycles, and bicycles with a wheel ≤ 13 ” in diameter. Include definitions for skaters, skateboards, etc. Change law to make it legal to ride a bicycle on the sidewalk under certain conditions, such as bicyclists under the age of 16. Change definition of Bicycle Path to “Shared use Path” (since paths are never exclusive to bicycle use)	DDS, GOHS Agency Leadership	
Delete sidepath law (§40-6-294 c and d)	Delete law replace with a law that prohibits jurisdictions from requiring bicyclists to use sidepaths. This law conflicts with other laws giving bicycles the same rights and responsibilities as motor vehicles.	DDS, GOHS Agency Leadership	

Change §40-6-21 meaning of the flashing don't walk signal	Change meaning of the flashing don't walk signal when displayed with a countdown timer to mean that pedestrians can start walking across the crosswalk at anytime during the countdown phase, as long as they are out of the crosswalk by the time the countdown gets to zero.	DDS, GOHS Agency Leadership	
Increase fines and penalties for injuring a person in hit and run crashes	Change §40-6-270(b) to read "If such accident is the proximate cause of death or a injury, any person knowingly failing to stop and comply with the requirements of subsection (a) of this Code section shall be guilty of a felony and, upon conviction thereof, shall be punished by imprisonment for not less than one nor more than five years." Change §40-6-270(c)(1) to read "If such accident resulted in damage to vehicle which is driven or attended by any person, any person knowingly failing to stop or comply with the requirements of this Code section shall be guilty of a misdemeanor..."	DDS, GOHS Agency Leadership	
Change law regarding requirement to use overcrossing or undercrossing (§40-6-92(b))	Include exceptions to law for ADA accessibility, personal security, or excessive walking distance to reach the over/underpass	DDS, GOHS Agency Leadership	
Develop new standard for bicycle brakes	Change law from current obsolete and confusing law (§40-6-296(b)) which measures brakes on skidding distance. Develop new standard for bicycle brakes.	DDS, GOHS Agency Leadership	
Remove §40-6-92(c) (pedestrian crossing between adjacent signalized intersections can only cross at crosswalks)	This law is very confusing and difficult to enforce, and does not necessarily improve safety or access. Eliminate this provision and replace it with one that prohibits crossing within 150 feet of a traffic signal unless using a marked crosswalk.	DDS, GOHS Agency Leadership	
Broaden definition of crosswalk to include unmarked crosswalks at T intersections	Currently pedestrians do not have the right-of-way or legal protection at unmarked crosswalks at T-intersections.	DDS, GOHS Agency Leadership	
Change law requiring that bikes be equipped with rear red reflectors (§40-6-296(a)) to allowing red lights instead of red reflector	Provision should be included to require that light functions as a reflector when the battery is dead.	DDS, GOHS Agency Leadership	
Remove or create exception to law requiring that all bikes sold be equipped with reflectors on pedals. (§40-6-297)	Many bicycles are designed with "clipless pedals" which requires that the cyclist clips his/her shoe into the clip. There are no pedals on these bicycles – the reflectors are on the shoes and other parts of the bicycle.	DDS, GOHS Agency Leadership	
Remove or make exception to law requiring that pedals	Changing this law would make recumbent bicycles street legal.	DDS, GOHS Agency	

to be no more than 12” off the ground (§40-6-296(d)).		Leadership	
Increase fines for excessive speeding in <35mph areas	Change §40-6-1 to increase fines for driving >5 to 10mph above the speed limit on streets with limits <35mph. The current fine of \$35 is not sufficient penalty to discourage the action.	DDS, GOHS Agency Leadership	

I. SYSTEMWIDE ENGINEERING RECOMMENDATIONS

Engineering Countermeasures

- **Integrate bicycle and pedestrian facility needs into all planning, design, construction and maintenance activities** of the Department of Transportation, local governments and other transportation providers (such as sidewalks, shoulders, crossing enhancements, pedestrian signals, etc.).
- **Create policy to fund crosswalk and curb ramp improvements as part of GDOT resurfacing projects.**
- **On federally-funded and state-funded projects, require counties and cities to meet or exceed GDOT standards** for medians, channelization islands, crosswalks, pedestrian signals, etc.
- **Expand the staff of state pedestrian and bicycle program** to include a planner or engineer whose primary role is to conduct project reviews of GDOT and state/federally funded projects for inclusion of bicycle and pedestrian safety and accessibility features.
- **Develop policy and criteria for using Leading Pedestrian Intervals.** Possible locations include T-intersections and intersections with significant right turn movements and pedestrians.
- **GDOT adopt policy to consider narrowing travel lanes as part of resurfacing projects to accommodate a bikeable shoulder.** Develop guidelines for travel lane widths according to speed, truck percentages, etc...
- **Develop a “safety audit” process** for all road improvement projects in the State Transportation Improvement Program and prioritize projects based on outcomes.
- **Identify high bicycle and pedestrian crash locations and develop countermeasures to improve safety.** Construct projects with federal Safety funds as well as opportunities to piggy-back these projects with other road improvement projects. Countermeasures that might be built through this program include but are not limited to:
 - Raised medians and crossing islands
 - Countdown pedestrian signals at intersections
 - Pedestrian signals at pedestrian crossings
 - Pedestrian beacon (HAWK) at pedestrian crossings
 - Protected only left turns
 - Flashing yellow arrow for protected-permissive phasing (GDOT needs to accept this first).
 - Leading Pedestrian Intervals
 - Changes to signal timing (cycle lengths, phasing)
- **Require access management plans as part of GDOT and local projects.**

- **Encourage land use policies that promote bikeable/walkable streets**, community design that promotes walking, biking and transit use, driveway consolidation/access management, and lower speeds.
- **Develop a program to review urban streets for opportunities for road diets.**
- **Evaluate GDOT driveway policy for possible improvements to pedestrian safety:**
 - Evaluate the possibility of increasing the warrants (i.e. minimum number of turning vehicles per hour) for a driveway deceleration/acceleration lane in urban areas, residential areas, school zones, and roads with speeds of 35 mph or less.
 - Develop new design standards for driveways and sidewalks through driveways to encourage slow speed turns and yielding to pedestrians.
- **Develop criteria for use of the Florida right turn slip lane design standard under certain conditions and include in GDOT design policy manual.**
- **Develop a policy to set pedestrian signals to automatically display the WALK signal whenever the concurrent traffic signal is circular green.**
- **GDOT adopt policy that when bridges are closed due to structural deficiency, they remain open for bicycle and pedestrian traffic if bridge conditions safely allow.** This could encourage bicycle and pedestrian traffic and allow a transportation facility to remain partially useful to the public.

II. SITE-SPECIFIC RECOMMENDATIONS FOR HIGH CRASH AREAS

Bicycle Safety Projects:

1. **Priority Area One:** Midtown/Poncey-Highland Area of Atlanta (North Ave., Ponce de Leon, N. Highland, and vicinity)

- a. Mark bike lanes on Virginia Ave as possible alternate route to Ponce
- b. Add “sharrows” (shared lane markings) to N. Highland due to not enough space for bike lanes and to encourage bicycles to stay out of the door zone
- c. Add bicycle signage to North Ave., Ponce de Leon, N. Highland, Virginia Avenues
- d. Do a road diet on North Ave west of Freedom Parkway and add bike lanes. This portion of North has excess capacity, and the bike lanes would also help to improve sight distance for vehicles entering from side streets, shorten the crossing distance and reduce speeds.
- e. Work with Ponce de Leon Pedestrian Safety Project to incorporate bicycle safety elements where possible

2. **Priority Area Two:** Athens/UGA area (Prince St., Baxter St., Broad St., Oconee St.):

- a. Evaluate the possibility of marking bike lanes or shoulders on Prince, Baxter, Broad, and Oconee Streets.
- b. Identify and mark alternative routes where necessary
- c. Use sharrows and signage where roads are too narrow for bike lanes

3. **Priority Area Three:** Savannah (Montgomery Cross Rd, Derenne Ave., 40th St., Henry St., Lincoln St.,)
 - a. Evaluate the possibility of marking bike lanes or shoulders on Montgomery Cross Rd., Derenne Ave., 40th Street, Henry St., Lincoln Street and surrounding principal streets.
 - b. Identify and mark alternative routes where necessary
 - c. Use sharrows and signage where roads are too narrow for bike lanes

4. Continue to review crash data and analysis crash reports to identify bicycle crash “hot spots” and develop safety projects.

Pedestrian Safety Projects:

1. **Priority Area One: Metropolitan Ave @ Cleveland Ave (intersection project)**
 - b. Restripe crosswalks and add accessible curb ramps and signals

2. Study turning movements and add protected left turn or eliminate right turns on red if needed
3. Evaluate signal timing and make adjustments as needed – is wait time for the walk light too long? Is walk phase too short? Does this intersection have many red light runners (can we add a camera here)?
4. Evaluate need for a Leading Pedestrian Interval
5. Evaluate need for medians
6. Tighten curb radii and create concrete raised crossing islands if warranted

Evaluate crash reports for the following to determine countermeasures (may include median refuge islands, signal improvements, signing and marking, etc):

1. **Priority Area Two:** Roswell Rd, Fulton County
2. **Priority Area Three:** Peachtree Street & Peachtree Rd, Fulton County
3. **Priority Area Four:** Bankhead Hwy, Fulton County
4. **Priority Area Five:** Glenwood Ave, Dekalb County
5. **Priority Area Six:** Covington Hwy, Dekalb County
6. **Priority Area Seven:** Candler Rd. Dekalb County
7. **Priority Area Eight:** Riverdale Rd., Clayton County
8. **Priority Area Nine:** Moreland Ave., Dekalb County
9. **Priority Area Ten:** Boulevard Dr., Fulton

10. Continue to review crash data and analysis crash reports to identify pedestrian crash “hot spots” and develop safety projects