Tech Memo 1- Overview of Current ARC Practice of Pedestrian/Bicycle Project Selection and Prioritization

I. Introduction

The Atlanta Regional Commission (ARC) is updating the 2040 Regional Transportation Plan and anticipates adoption of the updated plan in early 2014. As part of this technical update, the ARC is reviewing its current practices for selecting and prioritizing pedestrian and bicycle projects in the context of the overall transportation planning and implementation framework established by the RTP. The ARC has hired a consultant to review its current practices, research best practices for bicycle and pedestrian projects, make recommendations for improving bicycle and pedestrian project selection, and make recommendations for addressing safety through project design. The findings and recommendations of these tasks will be presented in a series of technical memorandums and vetted by ARC stakeholders prior to any inclusion into the update process. This technical memorandum provides an overview of current ARC practices for selecting and prioritizing pedestrian and bicycle projects organized by the plans or programs containing the relevant policies and processes.

II. Plan 2040 Regional Transportation Plan

A. Overview

Plan 2040 integrates the Regional Transportation Plan (RTP) and Regional Development Plan into a unified policy framework. The RTP examines the region's transportation needs through the year 2040 and provides a framework to address anticipated growth through systems and policies. The RTP provides a comprehensive statement of regional future transportation needs as identified by local jurisdictions, the State and other stakeholders. It contains strategies aimed at improving mobility and access, and defines both short- and long-term transportation strategies and investments to improve the region's transportation system. Projects identified in the RTP must be consistent with Plan 2040 objectives:

- Increase mobility options for people and goods.
- Foster a healthy, educated, well trained, safe, and secure population.
- Promote places to live with easy access to jobs and services.
- Improve energy efficiency while preserving the region's environment.
- Identify innovative approaches to economic recovery and long-term prosperity.

Each of the above objectives have been further refined into principles, which are the official land use policy that guides programs, decisions and investments within the Plan 2040 Implementation Strategy. The principles addressing the objective to increase mobility options for people and goods are:

- Assuring the preservation, maintenance and operation of the existing multimodal transportation system.
- Continuing to implement cost effective improvements such as sidewalks, multi-use trails, bicycle lanes, and roadway operational upgrades to expand transportation alternatives, improve safety, and maximize existing assets.
- Maintaining industrial and freight land uses at strategic locations with efficient access and mobility.
- Maintaining and expanding infrastructure to support air and rail travel and transport.
- Strategically targeting roadway capacity improvements to serve regionally significant corridors and centers.

The Plan 2040 RTP establishes three priority areas used to organize and present investment recommendations:

- Infrastructure Modernization
- Demand Management
- System Expansion

Bicycle and pedestrian projects generally fall within the Demand Management priority area. Projects that fall within the other two priority areas such as bridge replacements, road resurfacing, roadway widening etc. could also include bicycle and pedestrian infrastructure improvements, but the bicycle and pedestrian components are generally a small portion of the total project and are not prioritized separately.

B. Bicycle and Pedestrian Project Selection

All transportation projects were subjected to a performance framework (see Figure 3) consisting of a series of Key Decision Points (KDP), which are tied to Plan 2040 goals, objectives and principles. KDPs 2 and 4 are most pertinent to pedestrian and bicycle projects (KDP 1 addresses high level allocation of funding between system preservation and expansion and KDP 3 addresses transit and roadway expansion exclusively).

KDP 2

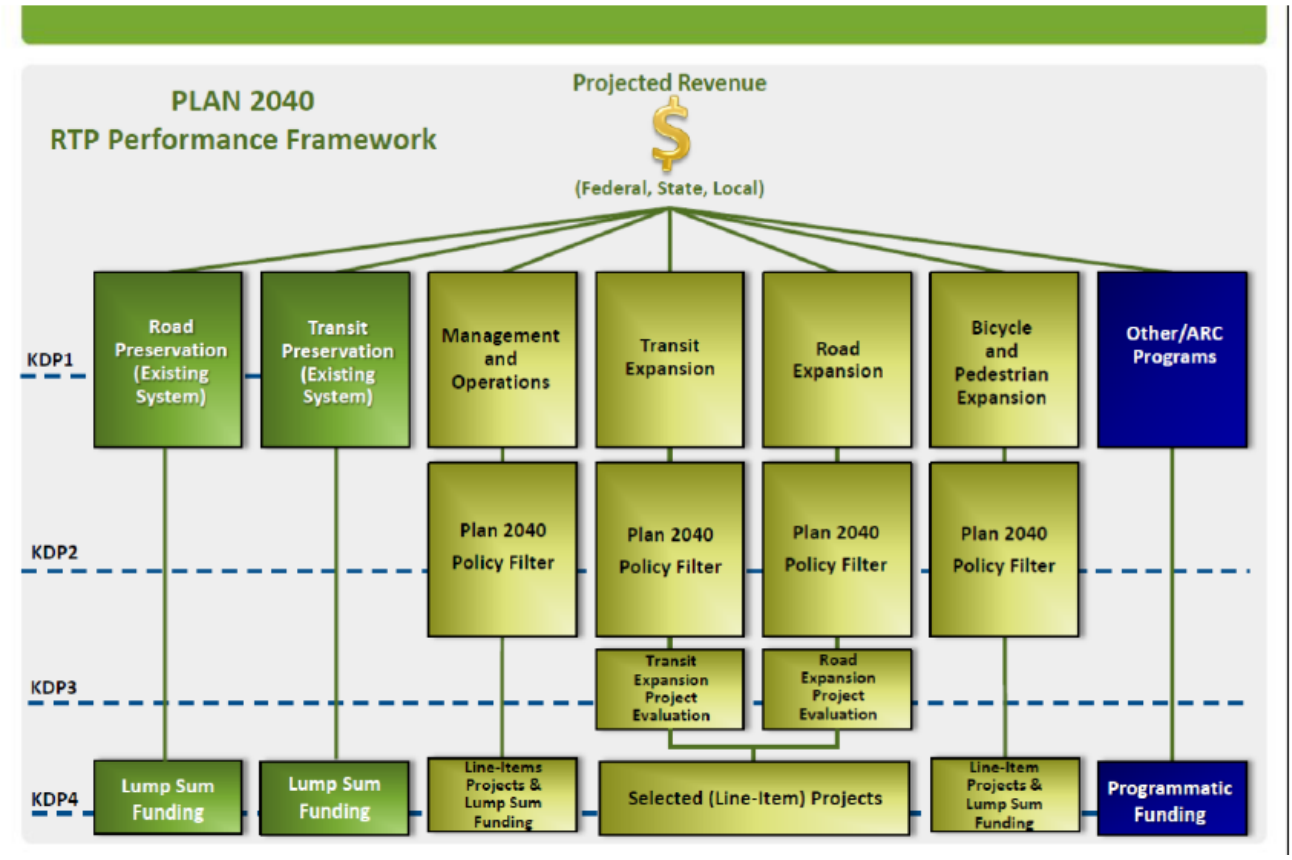
KDP 2 involved reviewing potential projects for consistency with Plan 2040 policy, with the intent to advance only those projects that support the direction of the plan. The policy filter was only applied to programs that yield line-item investments in the RTP (as opposed to general funding programs). Policy filters link specifically to four of the program areas: Management and Operations, Transit Expansion, Road Expansion, and Bicycle and Pedestrian Expansion. Policy filters align investment with strategic, priority transportation systems, which include the bicycle and pedestrian network, and accommodate additional considerations such as safety need, Statewide Strategic Transportation Plan priorities, projects already under development ("in the pipeline"), and project readiness.

KDP4

KDP 4 involved layering in additional criteria including Equitable Target Areas that are used to define transportation disadvantaged areas, lifelong community or LCI areas, and complementary investments (i.e. how project did or did not complement one another across program areas).

Bicycle and pedestrian projects were not subject to KDP 3 which entails evaluating projects based on RTP Emphasis Areas and benefit/cost calculations to identify the best performing and most cost effective projects within their respective program area, in the context of PLAN 2040 Goals and Objectives.

Figure 3: Plan 2040 RTP Performance Framework



While the KDP framework did not identify exact funding allocations for each program (e.g. Management and Operations, Transit Expansion, Road Expansion, and Bicycle and Pedestrian Expansion) it set general priorities that helped guide investment decisions. Projects that demonstrated positive performance impacts in a cost-effective manner, with complementary benefits across other program areas, were prioritized for funding in the RTP (given available funding revenue) and assembled into a Draft Plan. The

Draft Plan was then evaluated using plan-level performance measures that align with RTP emphasis areas (see Figure 4). The measures used were mode neutral to reflect the impact of proposed investment strategies for all system users. Total funding for bicycle and pedestrian infrastructure (across all programs) in PLAN 2040 is $1.6 billion through the year 2040.

Figure 4: Plan-level Performance Measures

RTP Emphasis Area	Plan-Level Measure	(A) Description (B) Data Source
Mobility	Average Commute Time	(A) Average travel time by auto and transit for HBW trip per commuter. (B) ARC travel model.
Connections/ Access	Activity/Employment Center Travel Shed	(A) Average number of workers reaching major activity/employment centers within 45-minute (autos and transit). (B) ARC travel model.
Safety	Injury/Fatal Crash Rate	(A) Number of injury and fatal crashes per 100M VMT. (B) Georgia CARE, ARC travel model.
Economic Growth	Jobs and Growth	(A) Change in GDP and jobs for the region resulting from travel time (delay) savings. (B) Georgia Heat equations. (A) Peak-Hour Freeway Speed: Managed lanes, HOV versus General Purpose. (B) ARC travel model.
	Cost Savings	(A) Annual congestion cost savings. (B) ARC travel model.
Community/ Environment	Emissions	(A) NO_x, VOC, $PM_{2.5}$, and GHG. (B) ARC travel model, emissions model.
State of Good Repair	Roadway and Transit Condition	(A) Percent pavement, bridge, and transit infrastructure in good condition. (B) HERS/NBIAS (trendlines), level of transit preservation funding.

C. Stakeholder Feedback

Stakeholders did not provide much direct feedback pertaining to Plan 2040 RTP. However, there were several comments and suggestions related to how bicycle and pedestrian projects are prioritized that could imply changes to the RTP project selection framework. These include:

- Establishing a regional strategic network for non-motorized travel similar to, but not necessarily aligned with the established Regional Strategic Thoroughfares. This network might be

established by identifying bike/ped focus areas (e.g. those areas that support walking/biking such as LCIs or *areas* or *places* identified on the Unified Growth Policy Map, major transit routes) and also high crash locations.

- Assessing needs by transportation mode and then assigning funding levels per mode based on identified needs (or proportion thereof) rather than establishing funding levels before knowing extent of needs.
- More explicit nexus between public health outcomes and transportation investments.

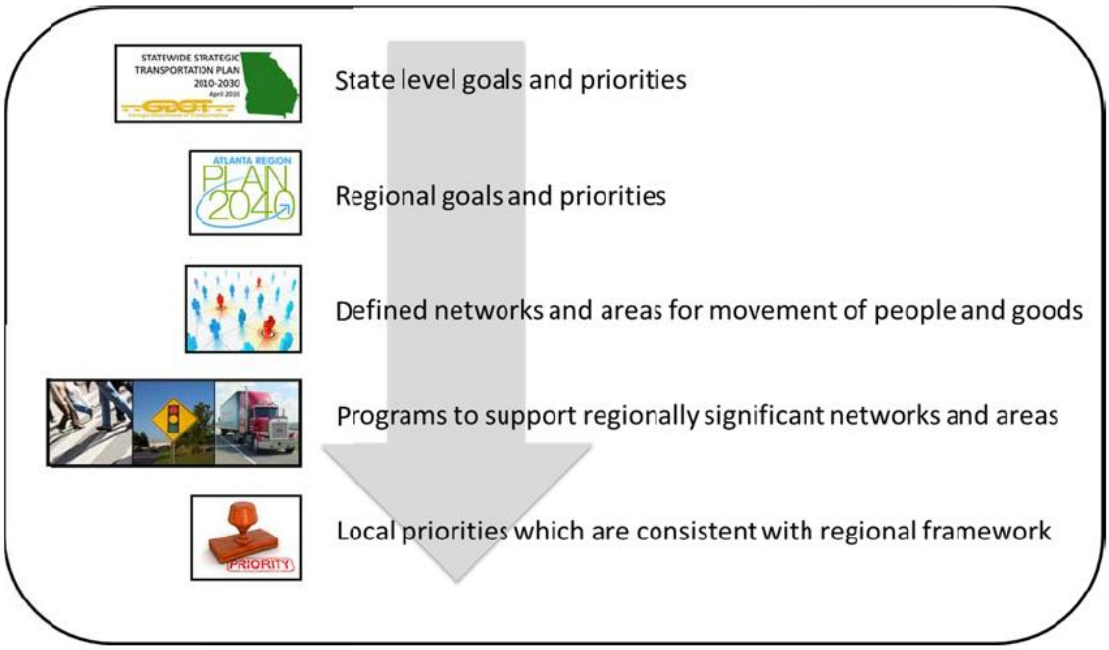
III. Transportation Improvement Program

A. Overview

The Transportation Improvement Program (TIP), a component of the Regional Transportation Plan (RTP), provides a financially constrained six year program of improvements (the current TIP covers 2012-2017). As required by federal law, the TIP document must list all projects that intend to use federal funds, along with regionally significant projects that do not necessarily receive federal funding. Projects of all surface transportation modes are included in a TIP – i.e. bicycle, pedestrian, freight-related, and innovative air quality projects, as well as the more traditional highway and transit projects. Regionally significant projects must be drawn from the region's long-range transportation plan, and all projects in the TIP must help implement the goals of the long-range plan.

The TIP consists of three programs: Last Mile Connectivity Program, General Roadway Operations and Safety Program, and Freight Operations and Safety Program. While many recommended projects within each program address the needs of multiple system users, and therefore may be considered complementary in nature, the Last Mile Connectivity and General Roadway Operations and Safety Program directly provide funding for bicycle and pedestrian project planning and implementation. These programs are described in more detail further below. Figure 5 below provides a schematic representation of how the three programs and recommended projects fit within well-established state and regional policies and priorities. Projects to be funded under these three programs have to be consistent with the regional priority networks to ensure that maximum regional impact can be achieved, even though the projects themselves may be relatively small in scope. Beyond this basic regional "framework", local governments within each county are vested with responsibility to work together to prioritize their own needs and suggest projects for funding consideration.

Figure 5: Regional Transportation Improvement Program Funding Framework



B. Last Mile Connectivity Program

The Last Mile Connectivity Program funds planning and capital improvements for safe bicycle and pedestrian travel in the region. Funded projects are consistent with regional goals and objectives that support the 2007 Atlanta Region Bicycle Transportation and Pedestrian Walkways Plan and PLAN 2040 (see sections II and IV, respectively). Emphasis areas for the current project solicitation are:

- Safe access to transit and schools
- Hazardous roadway crossings
- Regional bicycle mobility network
- Local pedestrian and bicyclist circulation within activity centers
- Bicycle and pedestrian planning assistance to local governments
- Bicycle and pedestrian safety education

The following are eligible project type examples. Other projects which are consistent with program goals and the recommended emphasis areas will be considered on a case-by-case basis.

- ADA-compatible sidewalks & crossings
- Bicycle and pedestrian friendly resurfacing projects
- Bike lanes and bikeable shoulders
- Curb ramp, crosswalk, signal upgrades
- Mid-block crossings along transit routes band other locations with high pedestrian traffic or documented safety issues
- Bike lanes on approach to transit stations and stops
- Bicycle stair channels at transit stations
- Safe bicycle parking
- Community-wide bicycle and pedestrian transportation plans
- ADA Transition Plans
- Signage programs
- Multi-use pathways (nonrecreational)

The 2012 solicitation cycle funded 22 projects and committed $23,671,850 of federal funding (24.9% of all funding committed for the Transportation Improvement Program).

C. General Purpose Roadway Operations and Safety Program

The General Purpose Roadway Operations and Safety Program supplements other operations and safety programs in the FY 2012-2017 TIP by implementing projects that improve traffic operations and safety along roadways and at key intersections. Potential projects include cost effective solutions such as intersection improvements and signal upgrades. The program objectives address congestion relief, safety, and support for economic development. Emphasis areas for the current project solicitation are:

- Address critical safety, congestion and maintenance- needs
- Small-scale projects requiring none or very limited right-of-way acquisition

- Projects that improve safety for all transportation users (including pedestrians, bicyclists, trucks, cars, and transit).
- Focus on regional thoroughfares, but consider other well-documented crash hot spots
- Consider needs of the transportation disadvantaged in the prioritization and design of projects

The following are eligible project type examples that may directly or indirectly address bicycling and walking conditions. Other projects which are consistent with program goals and the recommended emphasis areas will be considered on a case-by-case basis.

- Multimodal safety and accessibility improvements
- Intersection improvements
- Shoulder improvements
- Median construction

The 2012 project solicitation cycle funded 32 projects and committed $48, 108, 143 of funding (50.6% of all funding committed for the Transportation Improvement Program).

D. Stakeholder Feedback on TIP Project Selection Process

Generally, stakeholders attending the specially convened meetings in June 2013 were aware of the three TIP programs. Specific stakeholder comments and suggestions pertaining to TIP solicitations are as follows:

- There was general consensus that more clarity among all of ARC's transportation funding programs (e.g. the three TIP programs, Transportation Alternatives, CMAQ) would assist local jurisdictions in knowing which programs they should pursue for any given project proposal they may have. Several strategies were identified for providing better guidance and more clarity to the process, including:
    - Having a pre-proposal meeting with ARC staff to obtain guidance on what funding program best fits a proposed project.
    - Using a Letter of Intent or short-form application similar to the Transportation Alternatives solicitation as a way for ARC staff to provide feedback on which program is the best fit for a proposed project and at what funding level. This type of approach would also allow ARC to coordinate related projects being proposed by different entities.
    - More clear and frequently updated program information on the ARC's website.
    - A coordinated call for projects that would put the onus on ARC staff to decide what funding source is most appropriate for any given project proposal.
- Match requirement - More guidance or indication of likely grant amount would help project proponents better determine availability and commitment of match funds. This is particularly important for determining what level of overmatch a proponent can include in its proposal.
- Better coordination with GDOT. ARC could play a more active intermediary role between local jurisdictions and GDOT to identify barriers and possible solutions early on so that projects can move forward in a more expedient manner.

- Project selection criteria that are not currently considered, but should be include:

General

  - Retrofit projects (projects that can happen within existing curb lines) should be favored over projects that require right-of-way acquisition and/or major reconstruction.
  - Providing evidence of match.
  - It was generally acknowledged that many local governments do not have robust data resources that could be used to respond to additional quantitative criteria. For example, ped/bike volume data is generally lacking.
  - Before/after evaluation was identified as being important by stakeholders in both the bicycle-and pedestrian-focused meeting as a means to ensure projects are being implemented as proposed. However, there was some concern expressed that the data needs should not be overly burdensome.

Pedestrian Group

  - Locals should be required to provide better verification of available right-of-way, utilities and similar potential project constraints.
  - For pedestrian projects it was suggested LCIs, transit connections, areas with high aging/disabled populations, and schools are most important geographic criteria.
  - Providing more contexts for proposed project. For example, if the proposal is to construct a new sidewalk, information should be provided about the nearest crossing location and nearby destinations.

Bicycle Group

The following criteria were listed by the bicycle group:

  - Volume data
  - Land use and density
  - Education component
  - Level of service [Byron: something ARC has done in-house during proposal review]
  - Focus on creating strong core areas, and then connecting those cores
  - Intersection design
  - Congestion mitigation
  - Programmed roadway projects [Byron: ARC reviews to see planned roadway projects to identify overlap]
  - Quality of experience
  - Making sure other roadway projects ARC is funding are achieving safety/comfort goals
  - Several participants felt strongly that higher quality projects (those that are likely to attract the broadest range of bicyclists) are preferable to a large number of small projects, even if they take longer and cost more.

Health Group

There was much discussion about potential data that could be integrated into the project selection process and possible sources for that data. Among the criteria that were identified as being important and are likely to be available and scalable throughout the region are:

- Age (children, seniors)
- Populations with low or no car ownership
- Access to jobs
- Access to healthcare
- Access to healthy food
- Crashes/injuries
- Census data proxies such as were used by Nashville (e.g. income, age) are good fall backs, but in less densely populated areas they are less useful.

IV. 2007 Atlanta Region Bicycle Transportation and Pedestrian Walkways Plan

The Atlanta Region Bicycle Transportation and Pedestrian Walkways Plan (BikePed Plan) establishes a framework for evaluating bicycle and pedestrian projects based on how they contribute to the regional goal of "Providing safe and effective networks" for bicycle transportation and pedestrian walkways. The BikePed Plan established a bicycle study network based on bicycle level of service (suitability) analysis and then prioritized segments needing improvements in order to meet target Level of Service "B" or "C" based on the following criteria:

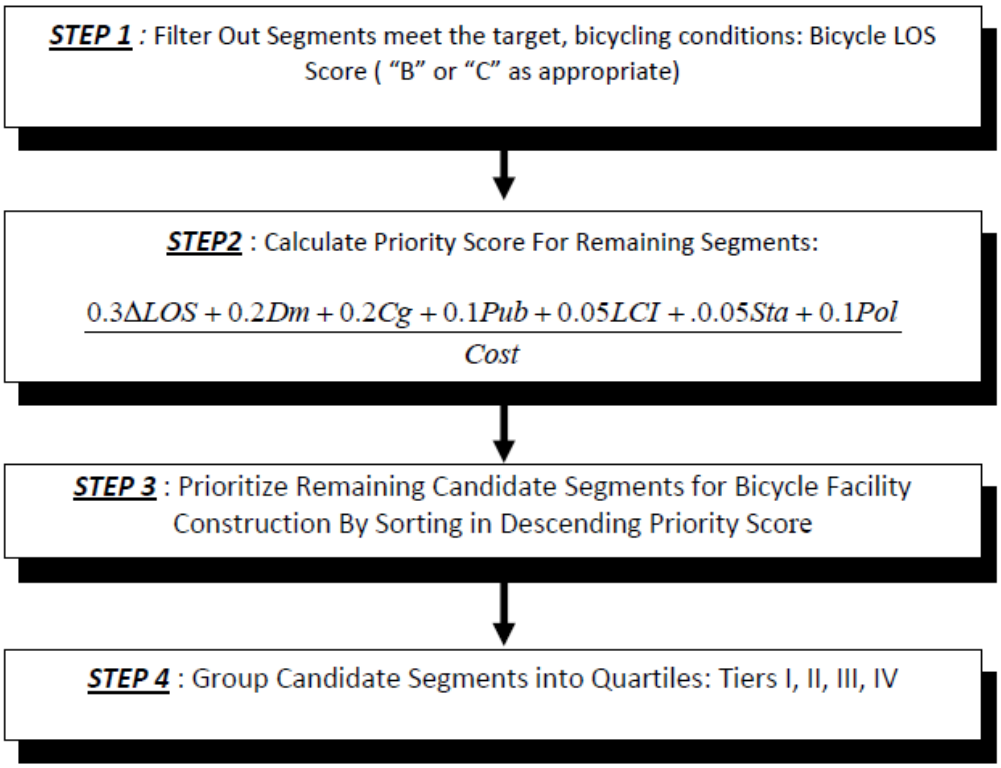
- Difference between existing bicycling conditions (Level of Service) and target condition (ΔLOS);
- potential bicycle travel demand (*Dm*);
- public input (*Pub*);
- severity of congestion (*Cg*);
- relative level of bicycle-friendly policies enacted by jurisdictions requesting assistance with a given project (*Pol*);
    - accommodation of bicyclists (according to this Plan's performance measures) in adopted roadway standards, and adherence, at least, to AASHTO's minimum dimensions when those accommodation strategies include designated bike lanes or shoulders;
    - requirements for accommodation of bicyclists in the local land development code;
    - bicycle parking requirements (both private sector and public facilities such as buildings and bus stops);
    - On-going bicycle programs (safety programs, bike rodeos, promotional events, etc.);
    - staffing commitments to bicycle and pedestrian planning and facilities development, such as the hiring of a bike-ped coordinator and training for traffic engineers and roadway designers

- The percentage of the jurisdiction's overall transportation funds invested into bicycle-related facilities and programs.

  Note: data on this criterion were unavailable for the computation of the Study Network priority list. It is being recommended for inclusion with the expectation that ARC will develop a checklist or certification process for jurisdictions who submit projects for consideration by ARC for funding assistance.

- whether or not a segment passes through an LCI site or a Station Community (LCI, Sta), and
- (unit) facility construction cost.

Figure 6: Project Prioritization Process from 2007 BikePed Plan



The " Δ LOS" score comprises 30% of the total benefit value. The bicycle latent demand score and the severity of congestion are weighted at 20% each. Public votes and local policy measures are weighted at 10% each. LCI and Station Community Status are weighted at 5% each. The cost portion of the priority score was the only factor in the denominator, and thus represents 100% of the denominator.

The procedures for calculating Priority Scores for pedestrian projects are similar to the process described for bicycle projects, with modifications. Prioritization criteria are:

- Difference between the project site's existing level of accommodation and the condition expected to be provided by the proposed improvement. (ΔLOS)
- Potential walking activity (Dm)
- Severity of congestion (Cg)

- Whether a project has been identified in an adopted local plan (Plan)
- Whether or not a segment passes through an LCI site or a Station Community, (LCI, Sta) and
- Relative level of pedestrian-friendly policies enacted by local jurisdictions, which may include such factors as development requirements for sidewalk construction, access management strategies and pedestrian connectivity between residential developments. (Pol)
- Cost

The " Δ LOS" score comprises 30% of the total benefit value. The pedestrian latent demand score and the severity of congestion are weighted at 20% each. Identification in a local plan and local policy measures are weighted at 10% each. LCI and Station Community Status are weighted at 5% each. The cost portion of the priority score was the only factor in the denominator, and thus represents 100% of the denominator.

$$priority = \frac{0.3\Delta LOA + 0.2Dm + 0.2Cg + 0.1Plan + 0.05LCI + .0.05Sta + 0.1Pol}{Cost}$$

Stakeholder Feedback

There was no direct discussion of the BikePed plan by any of the stakeholder groups. There was discussion about level of service and quality of experience, and LOS analysis that was conducted as part of the BikePed plan was mentioned as a good start.

V. Efforts Related to MAP-21

A. Transportation Alternatives Program

Administered by the Atlanta Regional Commission through a competitive selection process, the Transportation Alternatives Program (TAP) is focused on providing safe routes for non-motorized travel. The program is authorized as part of MAP-21 (23 U.S.C. 213(b)), and combines the former Transportation Enhancements (TE), Safe Routes to School (SRTS), and Recreational Trails into one comprehensive program. Anticipated funding is $14-15 million.

The first project solicitation for TAP occurred in late spring 2013 and consisted of a two-step process. The first step required qualified local governments interested in obtaining funding from the TAP to submit a short letter of interest. The letter was to include a short description of the proposed project, the funding requested, additional funding sources, identified partner agencies, and the focus area the project falls under (i.e. regional trail network, SRTS, transit access, activity center, or other) the among other information. The goal of this first step is to allow ARC staff to pre-screen projects and assess funding levels while not requiring a large level of effort from applicants.

Project Selection Criteria

Projects will be evaluated both on their ability to improve non-motorized transportation within the Atlanta metropolitan region, and on their degree of regional significance. Projects must meet the Federal eligibility requirements of MAP-21 (23 U.S.C. 213(b)), as well as the ARC criteria for projects of regional impact and alignment with goals of the PLAN 2040 Regional Transportation Plan (RTP). Among the criteria listed in the Letter of Interest guidance document are:

- Given the wide range of geographical and demographic areas within the Atlanta metropolitan region, TAP funds will be prioritized for projects which have a broad, regional impact to improve bicycle, pedestrian, and non-motorized users' safety, convenience, and mobility.
- "Regional impact" will be considered based on the needs of the region and the merits of the project to improve safety or provide access or mobility, not necessarily the geographic extent or funding amount of the project.
- The following Principles of Regional Impact have been developed to establish regional significance:
    - Needs Based - Funded projects should have a scope and limits which are based on overall trip patterns, not necessarily limited by political boundaries or facility ownership; successful projects will address overall trip pattern needs in an area and impact multiple jurisdictions.
    - Comprehensive - The outcome of a successful proposal should be a corridor which is safe and convenient for all existing and potential active transportation modes (pedestrians, bicyclists, and transit users), as well as automobile and freight traffic; a successful proposal will address mobility, access, and/or safety needs in a comprehensive manner.

    - Collaborative – successful proposals should include all public agencies and relevant stakeholder groups which can directly contribute to achieving the desired outcomes along the corridor; a successful proposal will demonstrate which partner agencies/organizations will need to be involved in delivering the project/program and what steps have been (and are currently being) taken to assemble these entities.
- Given the need to implement TAP projects in a timely and efficient manner, priority will be given to projects/programs that are included in a locally adopted plan (such as a CTP, LCI, etc).
- Proposals should include information about a plan that documents the need and purpose of this project as well as provide a link where the document can be found, including all applicable page/section numbers.

B. Stakeholder Feedback on TAP Solicitation

Among stakeholders there was general agreement that the Letter of Interest is a good approach to the solicitation process because it allows for a decision or feedback from ARC staff on how to make a proposal more competitive before an agency commits large amounts of staff time preparing the formal application.

There was general agreement among stakeholders that the time period for agencies to submit the LOI was too short and did not allow enough time to identify all potential partners and regional impacts.

C. 2013 Update Framework - TAQC Issue Summary and Resolution (April 11, 2013)

The MAP-21 transportation reauthorization bill requires the use of performance measures in 2015. ARC will adopt a new long-range transportation plan in the first quarter of 2016 and this Framework will lay the foundation for this Plan.

System wide Performance Measures

- Annual fatalities on the transportation network
- Percent of system adequately maintained
- Percent of reliable peak period trips within 45 minutes by car
- Percent of reliable peak-period trips within 45 minutes by transit (rail and bus)
- Recurring congestion costs in terms of wasted time and fuel
- Incident response time in metro Atlanta
- Truck delay measures

RTP/TIP Strategies

1. Optimize and Manage Existing Assets

- **Maximize person throughput and use of existing right-of-way for road, transit and non-motorized improvements**
- Optimize incident response and management
- Optimize Travel Demand Management:

    - Transportation System Operational Improvements and Demand Management - Identify lower-cost operational improvements and transportation demand management strategies, where possible, before proposing capital-intensive solutions.
    - Expand signal synchronization and operational improvement projects along corridors that will provide the greatest reduction in congestion/delay.
    - Support Intelligent Transportation Systems, including real time information for road and transit users and allowing for future technology in all modes of vehicles and roadways.
- Preserve and maintain existing assets to keep Georgia as a top tier state for system preservation.
- **Promote accessibility to (and within) major employment and activity centers existing and emerging activity and employment centers.**

2. Strategically Expand the System

- Promote accessibility to (and within) emerging employment and activity centers existing and emerging activity and employment centers.

3. Planning and Execution Considerations

- Measure, compare and report the expected and actual benefits of projects, including tracking the on-time and on-budget delivery of projects.
- Acquire new data and information for better resource allocation. Acknowledge that a limited number of projects may not yet have metrics that can fully capture the benefit of the project.
- Plan and scope region-shaping projects in coordination with PLAN 2040's Aspiration Plan element.

VI. Data Resources Assessment

Data is integral for any prioritization process that involves having to rank a large number of projects. Data that describes and measures existing and future conditions helps decision makers objectively identify where transportation investments are likely to have the greatest benefit in meeting regional and local transportation needs. The Atlanta Regional Commission and its members have robust data resources, many of which can be used for prioritizing bicycle and pedestrian projects.

A. Existing Data

The following is a list of existing data resources that could be particularly useful for selecting and prioritizing bicycle and pedestrian projects.

Available Data	Pedestrian	Bicycle	Both
Pedestrian crashes	*		
Roadway data (shoulder presence/width, number and width of general purpose lanes, total crossing distance, traffic volumes, speed)			*
Intersection density			*

Bicycle crashes		*	
Existing bicycle facilities		*	
Existing shared use path facilities			*
Functional classification			*
Population density			*
Employment density			*
Land use			*
Bus stops			*
Rail stations			*
Transit boardings			*
Transit access/ridership info			*
Household automobile ownership			*
Household income			*
Proportion of population over age 64			*
Proportion of population under age 18			*
Proportion of population with physical disabilities			*
Proportion of children receiving subsidized lunches			*
Proportion of population with asthma or diabetes			*
Proportion of population that is overweight or obese			*
Number of public comments about specific problem received by phone or online from citizens.			*
Presence of environmental or historic features that may create significant barriers to construction.			*

B. Additional Data

Additional data that is useful for prioritizing pedestrian and bicycle improvements is listed below. These datasets are either partially complete (i.e. not available for all areas) or are unavailable.

Data	Pedestrian	Bicycle	Both
Location of traffic signals			*
Pedestrian signals	*		
Curb ramp inventory	*		
Presence of on-street parking/utilization		*	
Roadway slope		*	
Planned roadway improvements			*

In addition to the data listed above, there may be other data useful for prioritizing projects based on non-traditional (yet emerging) factors such as public health and greenhouse gas emissions.