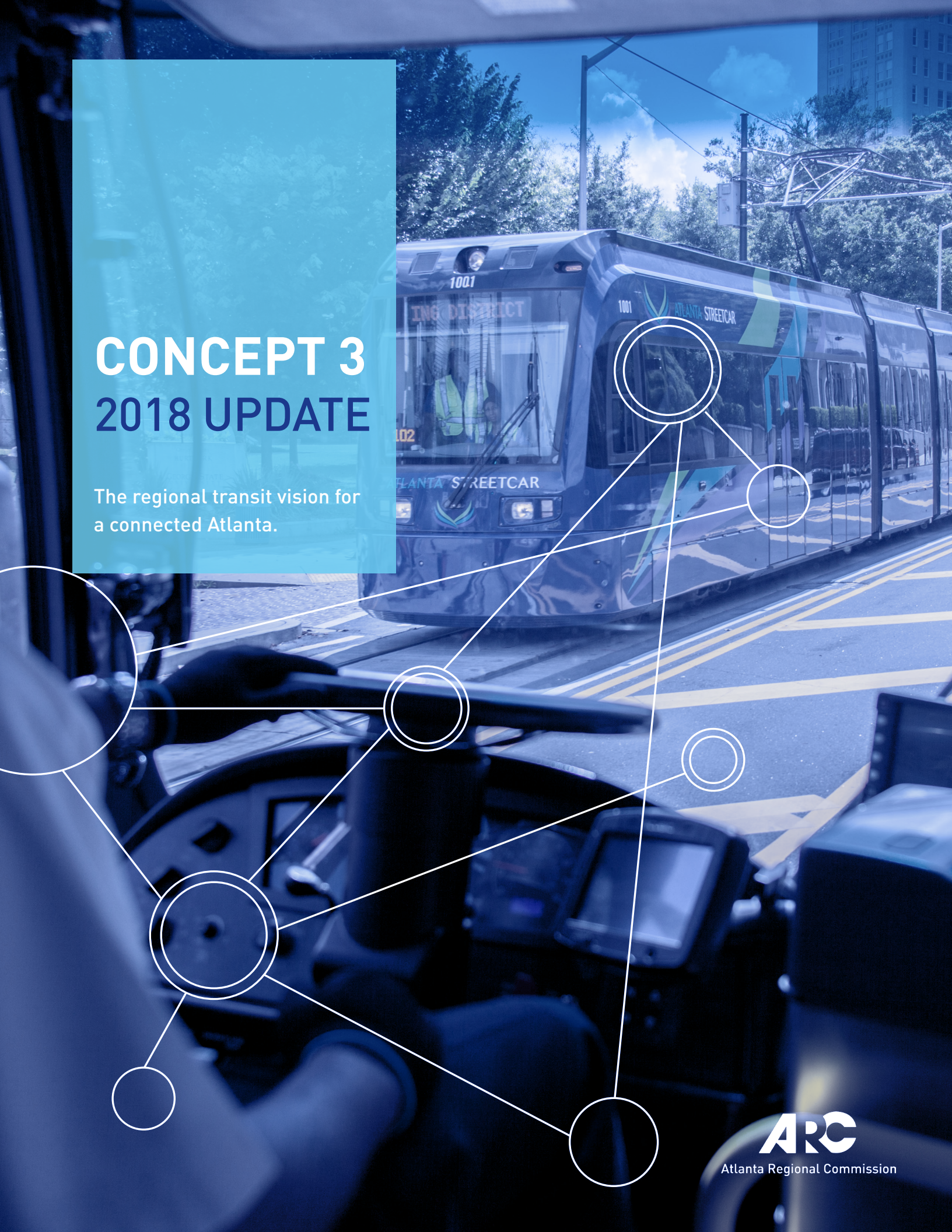

CONCEPT 3
2018 UPDATE

The regional transit vision for a connected Atlanta.

Atlanta Regional Commission

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EXECUTIVE SUMMARY

CONCEPT 3
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EXECUTIVE SUMMARY

The 2018 Concept 3 Update changes the planning and project evaluation process, with analysis tools and data-driven measures that correspond with previously identified regional priorities. This update includes a **new data-driven project evaluation process**. Each project is evaluated on seven measures that correspond with **regional planning priorities**.

Concept 3 lays the groundwork for a Regional Transit Plan and the work of the Atlanta-region Transit Link Authority.

CONCEPT 3 PROJECT EVALUATION MEASURES

Reliability // On-time performance expectation based on MARTA's current services by mode.

Social Equity // Population within 1/2 mile who are non-white or under the poverty line.

Connectivity // Number of connections between the project and existing high-frequency transit services.

Compatibility // Ratio of jobs and population within 1/2 mile.

Efficiency // Jobs and population within 1/2 mile of station areas divided by weekday service miles.

Job Accessibility // Built-in Conveyal measures weighted by total population and social equity factors.

Sensitivity // Intersections with culturally and environmentally sensitive land uses, weighted by project length.

Concept 3 includes 61 projects from across Atlanta, and the counties of Fulton, Cobb, Gwinnett, and DeKalb. The projects listed in Chapter 5 are grouped by regional area. Complete evaluation results for each project can be found in Appendix A: Detailed Project Information Sheets.

The 2018 Concept 3 Update also includes a supplemental Data Management Plan (Appendix B), which describes the needs, challenges, and opportunities for improved data management in the regional transit planning process, and details the current and potential data flow for different data sets and sources relevant to Concept 3 and related transit plans.

This plan recommends six next steps for the Atlanta region following the 2018 Concept 3 Update (see adjacent page).

NEXT STEPS

1 **Assess Support for Multi-Jurisdictional and Unassigned Projects**

Partners: ARC, the ATL, Concept 3 stakeholders

Time frame: 2018 - 2019

2 **Institute Annual Concept 3 Update Schedule**

Partners: ARC

Time frame: 2018 - 2019

3 **Incorporate Concept 3 into ATL Planning Framework**

Partners: ARC, the ATL

Time frame: 2019 - 2021

4 **Implement Data Management Plan**

Partners: ARC, the ATL, Concept 3 stakeholders

Time frame: 2018 - 2022

5 **Assess Regional and State Economic Benefits and Prioritize Corridors Based on Greatest Potential Economic Benefit and Smallest Environmental Impact, per HB 930**

Partners: ARC, the ATL, Concept 3 stakeholders

Time frame: Ongoing

6 **Formalize Regional Mode Definitions**

Partners: ARC, the ATL, Concept 3 stakeholders

Time frame: Ongoing

CHAPTER 1

AN OVERVIEW OF CONCEPT 3

In 2008 the Transit Planning Board, a predecessor to today's Regional Transit Committee, first adopted a comprehensive regional tranist vision called "Concept 3." The landmark document ushered in a new era of coordination of transit priorities to guide future investments in transit that would best serve the region as a whole.

The list contained in this edition of Concept 3 features priority transit projects from MARTA, SRTA, and county governments serving communities across Fulton, Gwinnett, DeKalb, Clayton, and Cobb counties, including potential express bus and commuter rail projects reaching well beyond the boundaries of the central counties.

2008
Transit Vision

Established a conceptual metro Atlanta regional transit vision, collecting and evaluating priority transit development projects from local and regional transit planning efforts.

2012
Transit Vision Update

Refined the project list, including new projects and changes to existing projects from regional planning efforts between 2009-2012.

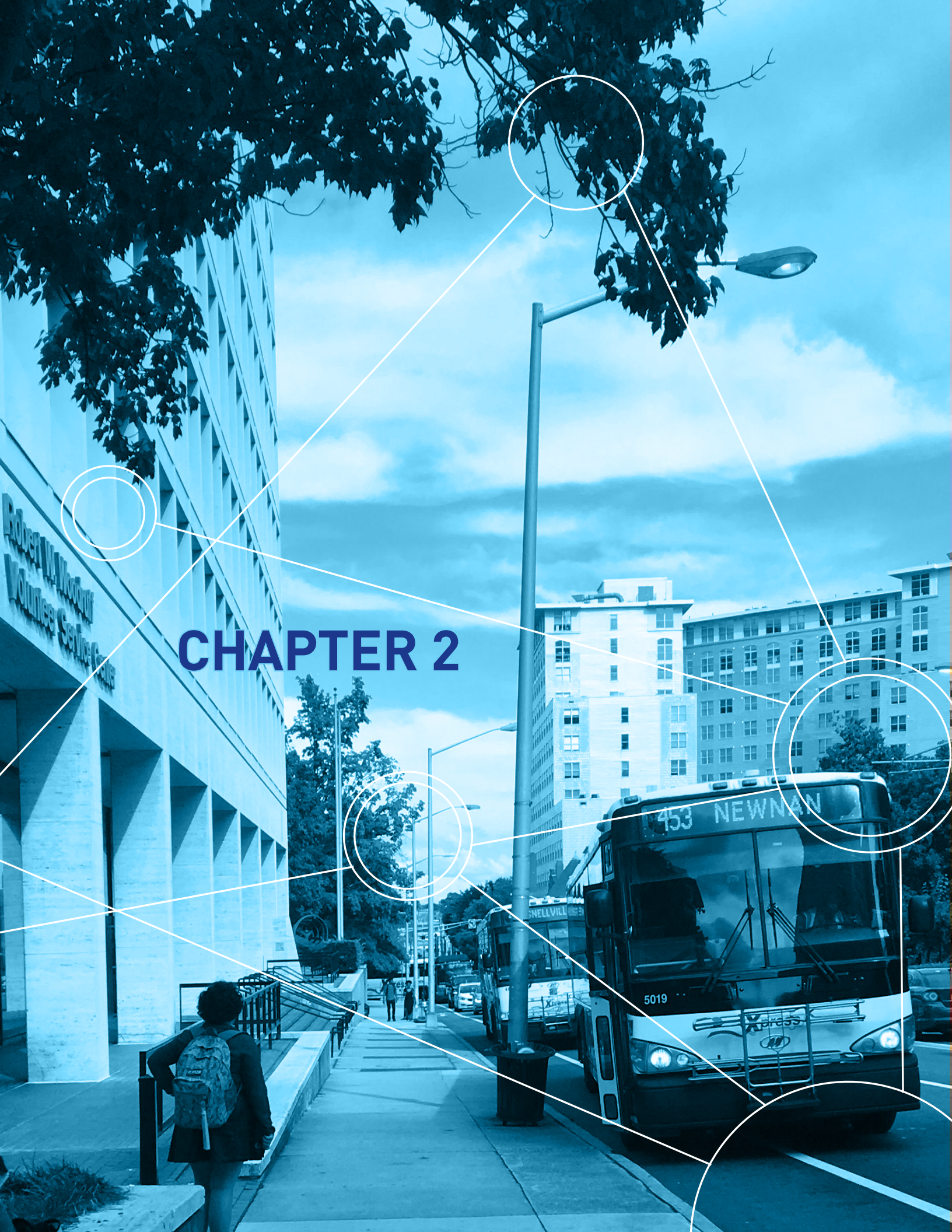
2018
Transit Vision Update

Introduces new data-driven evaluation framework using Remix and Conveyal Analysis software, and updates project list for inclusion in ATL Regional Transit Plan.

With each update, the list of future transit projects contained in Concept 3 has been added to and refined, but never evaluated beyond potential cost. Meanwhile, the transportation landscape is rapidly changing, with new mobility services making it easier than ever to choose not to drive, and new technologies helping to improve transit systems. At the same time, public support for transit that is frequent, timely, and integrated continues to grow.

This 2018 update represents a shift in the update process, with analysis tools and data-driven measures that correspond with previously identified regional priorities. The new evaluation framework - detailed in Chapter 4 - will allow ARC to continually update the list of projects included in Concept 3 as new priorities are identified out of planning efforts and initiatives throughout the region.

Importantly, this update to Concept 3 lays the groundwork for a future Regional Transit Plan for the 13-county region covering Cherokee, Clayton, Coweta, Cobb, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale counties. The creation, adoption, and oversight of a Regional Transit Plan fall under the purview of the Atlanta-region Transit Link Authority (the ATL), established by the Georgia General Assembly in 2018, though it still must be done in coordination with ARC and integrated into the MPO planning process.



CHAPTER 2

WHAT HAS CHANGED?

In this chapter, we review the myriad changes that have taken place in the Atlanta region in the 10 years since the Concept 3 process was adopted, including changing economic and cultural conditions, population and demographic shifts, policy changes, and the introduction of new mobility services.

A CHANGING ECONOMY AND CULTURE

It has been 10 years since Atlanta first adopted Concept 3, a comprehensive transit vision for the region. Since the first plan, the Atlanta region has seen drastic economic, geographic, and demographic changes.

The Great Recession and subsequent recovery reshaped large swaths of the regional economy and urban geography. Fortune 500 employers like The Home Depot, Delta Airlines, UPS, and Coca-Cola now compete for talent with new arrivals like Porsche North America and Athenahealth, as well as a thriving ecosystem of technology and design startups.

New development, particularly in and around the urban core, are changing age-old travel patterns by reshuffling the landscape of where people work, live, and play. Mixed-use landmarks like Ponce City Market and Atlantic Station have turned once quiet pockets into bustling 24-hour districts, which are augmented by an ongoing development boom in Midtown, West Midtown, and around the BeltLine. And the brand-new venues of Mercedes-Benz Stadium in Atlanta and SunTrust Park in Cobb County draw tens of thousands of visitors for concerts and sporting events.

As our cities and communities continue to change, so too do our preferred options for how we move around and between them. Transportation Network Companies like Uber and Lyft have exploded in popularity; microtransit services like Chariot and Via are causing cities to rethink dial-a-ride and underperforming fixed-route services; and a new crop of privately funded mobility startups are bringing dockless bicycles, e-bikes, and scooters to cities where bikeshare systems were once thought inviable.

This rise in new mobility services has been enabled largely by rapid adoption of new technologies by consumers and service providers alike. Nationwide, nearly 80% of adults are estimated to have access to a smartphone . Meanwhile, GPS-enabled vehicles and tablet-equipped operators allow for real-time location data for quicker scheduling and automatic route optimization. Finally, many cities and mobility service providers are already looking ahead to autonomous vehicles that could further transform our travel patterns.

The people of the Atlanta region are changing too. A 2017 report released by the Housing Justice League and the Research|Action Cooperative found that ongoing development around the BeltLine is rapidly gentrifying central neighborhoods, displacing many low-income residents and African-American communities. On a macro level, rising property values are a sign of a growing economy, but they can lead to dire consequences for low-income populations and communities of color without strong affordable-housing protections in place.

A 2016 report by the Partnership for Southern Equity highlights the powerful symbiotic relationship between transportation investments and land-use planning. Yet the tendency to pursue each independently often produces negative outcomes such as induced traffic and congestion, or displacement of low-income and marginalized communities. The report also presents examples of initiatives that are leading to more equitable outcomes in the San Francisco Bay area, Seattle, and Minneapolis-Saint Paul.

Attitudes and preferences about transportation are changing as well, both within the city and in the regional counties. In 2014 Clayton County overwhelmingly passed a referendum to join MARTA, with new bus services starting in 2015. In the 2017 Metro Atlanta Speaks public opinion survey, nearly half of all respondents, including a majority in each of the 13 Counties plus the city of Atlanta indicated that expanding public transit was the best solution to traffic problems in the region.

THE POLICY LANDSCAPE

The region's changing attitude towards transit is beginning to be reflected in the policy environment as well. The past year brought one of the most significant changes to public transit policy-making in the region's history, with House Bill 930 establishing the Atlanta-region Transit Link Authority (ATL). Moving forward, the ATL brings a legislation-backed structure to coordinate transit planning and funding across the region. This major shift follows a series of regional and local investments and actions in transit, including expansion and improvements to the Breeze smart card system, deployment of mobile ticketing, and MARTA and City of Atlanta sales tax referendums.

Federal guidelines have also seen significant changes in recent years, first with the MAP-21 transportation authorization bill in 2012, then by the FAST Act in 2015, which realigned several transit programs, increased funding for bus and bus facilities, and created several new discretionary programs. These myriad changes on the federal and state level have created new urgency for county and local governments to redefine their transit priorities, to identify service models and partnerships that can meet the changing needs of their constituencies.

THE PUBLIC TRANSPORTATION ECOSYSTEM

Planning for public transit in the Atlanta region involves integrating transit elements that may be separate or shared between the region's primary transit agencies: the Metropolitan Atlanta Rapid Transit Authority (MARTA), Cherokee Area Transit System (CATS), CobbLinc, Gwinnett County Transit (GCT), and the State Road & Tollway Authority (SRTA).

There are also a number of circulator systems operating in the region, such as The buc, Atlantic Station Shuttle, Cumberland Circulator, and those connected with the Georgia Institute of Technology, Georgia State University, Kennesaw State University, and Emory University. Additionally, a number of counties also have demand-response services, such as Henry and Douglas Counties.

Finally, there are a range of human service organizations such as the Center for Pan Asian Community Services, Department of Community Health, Department of Human Services, and Department of Veterans Affairs that provide specialized transit services for individuals with disabilities, individuals with limited English proficiency, individuals with low income, older adults, and veterans.

This vast network of public transportation services operates under guidance from a series of local and regional planning efforts, summarized in Table 2.1.

2.1 Related Regional Transit and Public Transportation Plans

Local / County Comprehensive Transportation Plans (CTP)	Identify specific needs, initiatives, and priority projects of local governments and transportation providers.
Human Services Transportation Plan (HSTP)	Identifies and prioritizes services that meet the transportation needs of individuals with disabilities, older adults, and people with low incomes.
Regional Transit Vision (Concept 3)	High-level data-driven evaluation of long-term priority projects from local, county, and regional plans and initiatives for inclusion in ATL planning.
Regional Transit Plan	Comprehensive regional transit plan that establishes goals, and desired outcomes to inform the Regional Transit Plan.
Regional Transportation Plan (RTP)	Multi-modal 20-year regional plan that includes any projects seeking federal funding, updated every 4-years.
Transportation Improvement Program (TIP)	Short-term fiscally-constrained list of projects to be funded and constructed over 6-years.

AVAILABLE TOOLS AND TECHNIQUES

New and increasingly affordable technology is changing the definition of what is possible for the many organizations that provide public transportation services. Increasing smartphone ubiquity along with GPS-enabled vehicles make "flexible" or deviated fixed route services more viable. Some transit agencies around the country are exploring partnerships with transportation network companies like Uber and Lyft, or microtransit providers like Via and Chariot to operate first-mile/last-mile services, ADA paratransit, or non-emergency medical transportation. Meanwhile, in cities around the country, private-sector dockless bikeshare and roaming carshare services are redefining the urban mobility landscape.

The speed of change now happening across the transportation industry demonstrates that quickly responding to new information must become the norm. Infrastructure - both physical and technological - must become more flexible than fixed as the region moves into the future. Regional collaborations, consortia, and public-private partnerships can expose untapped efficiencies and entirely new service delivery models, such as Mobility as a Service (MaaS) and Integrated Transportation Systems (ITS). This new landscape raises several questions for public transit providers, including:

- How can transit operators act as "integrators of mobility," facilitating connectivity between high-capacity fixed route services and non-single occupancy vehicle options?
- How can we improve the transit offering through a focus on the "total journey experience" (real-time information, wayfinding, seamless payment, transfers between providers)?
- How can transit agencies balance their role in the changing mobility landscape with broader societal needs for social equity, environmental protection, and economic development?
- How can transit operators invest funding most effectively, partner with others, and adopt technology in such a way that the region's overall mobility will be enhanced?
- How can transit agencies be active participants in shaping the mobility landscape in 5, 10, or 20 years?

Grappling with such questions and dealing with this degree of uncertainty will require ongoing coordination between transportation planning organizations like ARC and the newly created ATL as well as community organizations and advocacy groups. To better prepare the region, this update to Concept 3 introduces an entirely new evaluation framework, allowing ARC and regional stakeholders to more frequently adjust and improve long-term plans based on new information from partners and stakeholders and continuing analysis.

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CHAPTER 3

THE UPDATE PROCESS

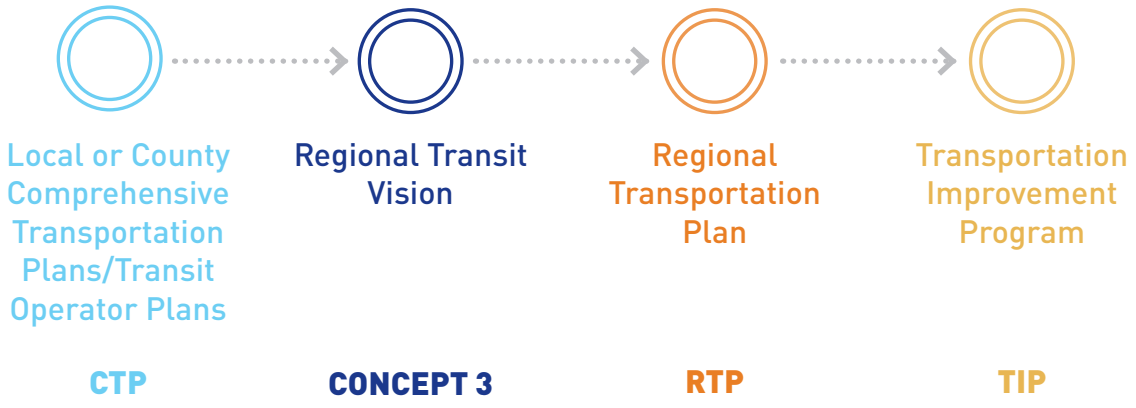
The first goal of this Concept 3 update is to develop a methodology for evaluating transit projects using web-based tools that provide insight into the impact that projects will have on the region. The second goal is to provide a consolidated list of priority transportation projects from all regional partners. Using the newly developed evaluation process, this project list provides insights into projects' potential regional impacts according to the priorities set forth in the Transportation Improvement Program (TIP). With a data-driven evaluation process this update lays the foundation for regional transit planning and implementation by ARC, regional partners, and the Atlanta-region Transit Link Authority (ATL), established by the Georgia General Assembly in 2018.

This Chapter documents the development of the evaluation framework that was used to evaluate the project list for the 2018 Concept 3 Update. It describes how Concept 3 relates to other documents in the transportation planning process, including the TIP evaluation framework.

ARC'S PLANNING PROCESS

ARC's transit planning process is shown in Figure 3.1. In the Transit Vision (Concept 3), potential long-term transit expansion projects receive a high-level evaluation. The transit evaluation is designed to feed into transit and transportation planning efforts, such as the Regional Transportation Plan (RTP) which details the region's multi-modal plan and vision for the next two decades and is updated every four years. Transportation projects seeking federal funding must be included in the RTP, along with any project that might impact air quality. The Transportation Improvement Program (TIP) is a short-term fiscally-constrained list of projects drawn from the long-range RTP that will be funded and constructed over the following six years.

3.1 Atlanta Region's Transit Planning Process



TIP PROJECT EVALUATION FRAMEWORK

The measures in this Concept 3 update were based on the three outcomes of the "winning the future" vision of the Regional Transportation Plan, and based on the twelve criteria described in the TIP Project Evaluation Framework. In that framework, ten of the twelve criteria in the TIP are used to evaluate transit expansion projects. The evaluation scheme for Transit Expansion Projects as presented in the TIP is reproduced in Table 3.2.

3.2 Evaluation Scheme for Transit Expansion Projects

OUTCOMES	CRITERIA	MEASURES	WEIGHTS
World Class Infrastructure	Mobility + Congestion	1. Project trips 2. Regional trips	13.5%
	Reliability	1. Dedicated right of way 2. Transit service frequency	12
	Network Connectivity	Connections to fixed guideway transit	13.5
	Multi-modalism	Multi-modal accommodations	10.2
	Asset Management + Resiliency	-	-
Healthy Livable Communities	Safety	Improved safety	8.5
	Air Quality + Climate Change	Project emissions	6.5
	Cultural + Environmental Resources	Impact on culturally and sensitive land uses	4.1
	Social Equity	Addressing social equity	9.5
	Land Use Compatibility	Supporting land use	10.5
Competitive Economy	Goods Movement	-	-
	Employment Accessibility	1. Supporting regionally significant Locations 2. Employment Center Accessibility	11.6

CONCEPT 3 PROJECT EVALUATION FRAMEWORK

The new Concept 3 process, as aforementioned, integrates previously established outcomes and criteria but adapts the measures to a long-range transit planning context.

When projects are evaluated for the TIP, the project parameters are more definitively known than is typical for a long-range planning effort like Concept 3. Elements such as station design, alignment, right-of-way, and specific vehicle technologies are important components of TIP criteria but may not yet be defined at this early stage. The high number of projects in the vision also requires a different approach for measuring projects than the RTP or TIP do, which primarily use metrics coming from the activity-based travel demand model (ABM). This necessitates some adaptation and modification of the criteria and corresponding measures supporting these three outcomes. The following sections walk through each of the criteria, describing both the criteria themselves and how their measures were adapted for Concept 3.

An important component of each project is its mode. The mode informs many of the assumptions made during the evaluation process. While there are no regionally agreed upon modes definitions, some basic definitions have been developed through the course of this update process. Modal characteristics and attributes are described on pages 26 and 27.

Mobility + Congestion

Under the TIP project evaluation framework, transit projects should improve mobility and decrease congestion principally by removing trips from highway facilities. Transit projects that attract high numbers of riders should receive priority.

The TIP uses ridership forecasts of the project and system from the ABM to establish the effect transit projects will have on mobility and congestion in the region. Rather than estimating ridership for long term projects, the Concept 3 evaluation framework instead focuses on accessibility measures, with the understanding that detailed alternatives analyses may be required in the future.

Reliability

The TIP proposes that transit service reliability is improved by dedicating right-of-way and increasing service frequency. Separated modes with high frequency, such as BRT and light rail, should receive priority over other modes.

The TIP measures reliability by valuing projects with more dedicated right-of-way and higher service frequency. Measures of service frequency are included in some accessibility statistics, so this measure is not considered under the Reliability criteria for Concept 3. And specific information on project alignments is not available for most projects beyond certain modal assumptions (heavy rail, commuter rail, bus rapid transit, streetcar). As a simple measure appropriate for a big-picture assessment like Concept 3, we assign the following expected on-time performance by mode, based on MARTA's self-reported on-time-performance for local buses and the MARTA rail system, interpolated for BRT and light rail.

Network Connectivity

The TIP suggests that new transit projects should improve the overall connectivity of the transit system in two ways: first, all projects should connect to an existing transit service; second, projects with more connections to existing services should be favored. In Concept 3 we use the number of connections between a project and MARTA Rail or other high-frequency transit as a measure of overall connectivity.

Asset Management + Resiliency

The TIP proposed no measures for Asset Management + Resiliency with regards to transit expansion projects, though we believe that there are potential measures in these two areas that could inform transit prioritization. We do recommend that Asset Management and Resiliency be separate criteria.

Asset Management. Riders per service mile is a common measure of organizational sustainability for transit operators in that it balances a measure of the capital and operating costs of a project against the project's effectiveness in delivering service. Because ridership statistics are not available for Concept 3 prioritization, we use a project's ½ mile catchment area jobs and household totals divided by weekday service miles.

Resiliency. ARC previously identified key issues related to infrastructure resiliency in the Atlanta region including autonomous vehicles, ride hailing/carsharing, and intelligent infrastructure and technology. These factors are all critically important for land use and transportation planning in the region, but their relationship to long-range transit planning varies. We recognize the relevance of these issues but do not use a resiliency measure to prioritize projects in Concept 3.

Safety

The TIP understands that specific safety improvements of transit expansion projects come from thoughtful station design and careful consideration of safe and effective access management strategies. Similar to the multimodal criterion, this measure is heavily dependent on specific design elements that are not known in a long-range plan context, and has therefore been removed from the Concept 3 evaluation.

Air Quality + Climate Change

The TIP considers both the CO2 and pollutant emissions added from operating a transit project as well as the avoided emissions from people switching to transit from automobile modes. All else equal, the TIP prioritizes projects with lower emissions impacts or greater emissions reductions. The Air Quality + Climate Change measure in the TIP is based on CMAQ calculations using data sets that are not available in a long-range plan context.

Cultural + Environmental Resources

The TIP counts the length of a project's alignment that lies near sensitive features including historical resources, wetlands, and existing greenspace. Projects that interfere with many of these layers, or that lie almost entirely within them, should not be prioritized. A full environmental impact study would be needed to determine the precise impact of a project on such resources. For Concept 3 we use a preliminary potential impact measure by calculating the share of a project's alignment that conflicts with cultural and environmental resource layers, such as neighborhoods and wetlands, or within 100 feet of point or line resources.

Equity

The TIP evaluates equity by considering how the project improves mobility or accessibility for Equitable Target Area (ETA) communities. ARC defines ETA communities as those that are non-white or low-income. For Concept 3 the evaluation tools use an accessibility calculator method to define the number of ETA residents that live within a given distance of the transit line.

Land Use Compatibility

Transit projects work best when they operate within supportive land uses; the TIP prioritizes projects with higher surrounding residential densities. Compatibility related to destinations, such as jobs, are addressed with the Employment Accessibility criteria. For Concept 3 the evaluation methods look at the number of residents and jobs within ½ mile of the project's stop facilities. The jobs and housing totals per service mile are already considered in the Asset Management criterion. To avoid double-counting the land use density around stops, this criterion instead considers the balance between jobs and population.

Employment Accessibility

The TIP prioritizes projects that connect to a regional activity center, or that improve the accessibility of these centers via transit for workers in the region. But Employment Accessibility can be measured different ways, depending on which job centers and populations are prioritized. For Concept 3 the evaluation methods use an accessibility calculator to identify the number of jobs that individuals can access via the transit system from different points in the region, then weight the results both by overall population and by ETA population. The method and tools are detailed in Chapter 4.

Goods Movement

The TIP does not use the Goods Movement criterion to evaluate transit expansion projects, and we do not feel that it is necessary to add any measures for the Transit Vision.

EVALUATION TOOLS AND METHODS

With the target measures in place the project team undertook a detailed survey of available scenario planning software and methods. Potential finalist tools, including Conveyal Analysis, Sugar Access, Remix, TBEST, and CityCast were compared for how they measure or model criteria. Finalist tools were then evaluated for speed, ease of use, legibility of results, usefulness for other planning purposes, and specific methodological approaches. A combination of Remix and Conveyal Analysis best fit ARC's needs during this update.

Chapter 5 presents the evaluation tools selected for Concept 3 projects, as well as the final evaluation criteria and corresponding measures.

3.3 Primary Evaluation Tools

TOOL NAME	DESCRIPTION
Remix	Remix is a web-based transit schedule planning application that allows transit operators to plan adjustments to schedules and routes, visualize catchment areas, estimate revenue hours, and evaluate route-level accessibility to residents and jobs.
Conveyal Analysis	Conveyal Analysis is a web-based accessibility calculator that measures opportunities (destinations) such as jobs, workers/households, or other features. Conveyal Analysis is pre-loaded with block-level information from the Census Bureau LEHD Origin-Destination Employment Statistics (LODES) data. Users may also submit their own opportunities as a shapefile.
R Package (tvmeasures)	An open-source R package called *tvmeasures* developed specifically for Concept 3 to aid in calculating measures from Remix and Conveyal. The R package is available on Github.

EVALUATION CRITERIA

The evaluation metrics used in Concept 3 are based on the goals, criteria, and measures outlined in the TIP Project Evaluation Framework. Given the long-range and visionary nature of Concept 3, some of the measures used for the TIP are not applicable to this planning process. Ultimately, Concept 3 evaluated projects along seven of the TIP criteria. To align planning outcomes, these seven criteria—while operationalized through different measures—aim to support a shared vision. Table 3.4 below compares the TIP measures and the Concept 3 measures across each of the criteria.

3.4 Concept 3's Seven Evaluation Criteria

CRITERIA	TIP MEASURE	CONCEPT 3 MEASURE
Reliability	Percent of a route with dedicated right-of-way	On-time performance expectation based on MARTA's current services by mode. A higher number indicates better reliability.
Network Connectivity	Count intersections between project and existing system	Number of connections between the project and existing high-frequency transit services. A higher number indicates better connectivity.
Asset Management	Not proposed for transit projects in TIP	Jobs and population within a half-mile of station areas divided by weekday service miles. A higher number indicates more efficient service.
Cultural & Environmental Uses	Intersection analysis on culturally and environmentally sensitive land use layers	Intersections with culturally and environmentally sensitive land uses, weighted by the project length.
Equity	Access to transit for ETA communities and/ or transit mobility for ETA communities	Population within half-mile who are non-white, or are under the poverty line (whichever is greater).
Land Use Compatibility	Residential density within 1/4 miles of transit system	Compatibility. Ratio of jobs and population within half-mile. A number closer to 1 indicates a balance in land use and likely reduction in transfers.
Employment Accessibility	Population within 45 transit minutes of regionally significant employment centers	Job Accessibility. Multiple measures from Conveyal Analysis weighted both by total population and by low-income and non-white population.

Reliability: Expected on-time performance

Service frequency is accounted for within the Employment Accessibility measures, so the Reliability measure addresses dedicated right-of-way only. As specific information on project alignments is often unavailable at this early stage, the evaluation tools use an expected on-time performance rate by mode based on MARTA's self-reported on-time-performance information interpolated for BRT and light rail, as indicated in Table 3.6.

Connectivity: Links to high-frequency service

Connectivity is defined as the number of connections between the proposed project and an existing high-frequency transit service. High-frequency is defined as mid-day headways of 15 minutes or less. Each connection is counted using Remix software, which allows a user to easily filter specific routes.

Asset Management: Efficiency

Riders per service mile is a common measure of organizational sustainability for transit operators in that it balances a measure of the capital and operating costs of a project against the project's effectiveness in delivering service. Within Concept 3 this measure is estimated from a project's job and household totals within a half-mile catchment area divided by weekday service miles as determined by Remix.

Compatibility: Balanced and efficient land uses

This criterion considers the balance between jobs and population. The jobs/population balance is defined as the smaller number of people or jobs within a ½ mile catchment divided by the larger number. This provides an elementary assessment of the land use mix along the corridor with more diverse corridors measuring closer to 1. The number of jobs and people in the catchment areas are taken from Remix.

Sensitivity: Potential conflicts with resources

This measure results from a GIS overlay analysis, which summarizes potential conflict points between the project alignment and cultural and environmental resources, including wetlands and historical structures. The value represents the average number of conflict points across different layers, weighted by the project area. A larger number indicates greater potential conflict.

Equity: Proximity to low-income and non-white populations

This criteria uses Remix to integrate the greater of either 1) the percent of people with an income under the poverty line within a ½ mile radius of project stations or 2) the percent of the non-white population within a ½ mile radius of project stations. A larger number implies more support for disadvantaged communities.

Job Accessibility: Improving job opportunities through access to transit

Conveyal Analysis provides a number of ways to measure job accessibility, factoring in variables such as the level of transit service, target population characteristics, and types of jobs. The evaluation tools are able to assess the ways that a project can improve job accessibility for different populations using these variables. This makes it possible to prioritize projects based on different regional initiatives and priorities.

In order to provide this rich information, Conveyal Analysis splits the region into a grid where each cell measures about 300m x 300m, or roughly the footprint of a large stadium. Conveyal Analysis estimates the number of jobs reachable from each cell within 45 minutes using existing transit service. Conveyal Analysis is run with each Concept 3 project added to the existing transit network individually. This allows us to estimate the percent increase in job accessibility resulting from each project, not only for the region at large but for individuals in different parts of the region.

Out of all cells in the Conveyal Analysis grid of greater Atlanta, only about 10% have relatively good transit access today (the 90th through 100th percentile), and another 20% have at least poor to adequate access (the 70th to the 89th percentile). The rest of the grid cells that make up the region are areas with little or no transit access (70% or the 1st to the 69th percentile).

By measuring the increase in transit-accessible jobs at the 70th percentile, the tools determine if a given project is helping to expand transit access to areas where it is currently poor or just adequate. By measuring at the 90th percentile, the analysis determines if a project is improving the level of service from good to great. Each measure is also weighted by population, first by the total population in a given cell or cells, then by the total low-income and non-white population (Equitable Target Area or ETA population).

3.5 Concept 3 Employment Accessibility Measures

	Weighted by cell total population	Weighted by cell low-income and non-white populations
Percent increase over existing service across the region.	Regional Job Access	Regional ETA Job Access
Percent increase over existing service for a 70th percentile grid cell, a measure for providing transit service to areas with minimal service today.	70th Percentile Job Access	70th Percentile ETA Job Access
Percent increase over existing service for a 90th percentile grid cell, a measure for improving existing service in areas with some transit service today.	90th Percentile Job Access	90th Percentile ETA Job Access

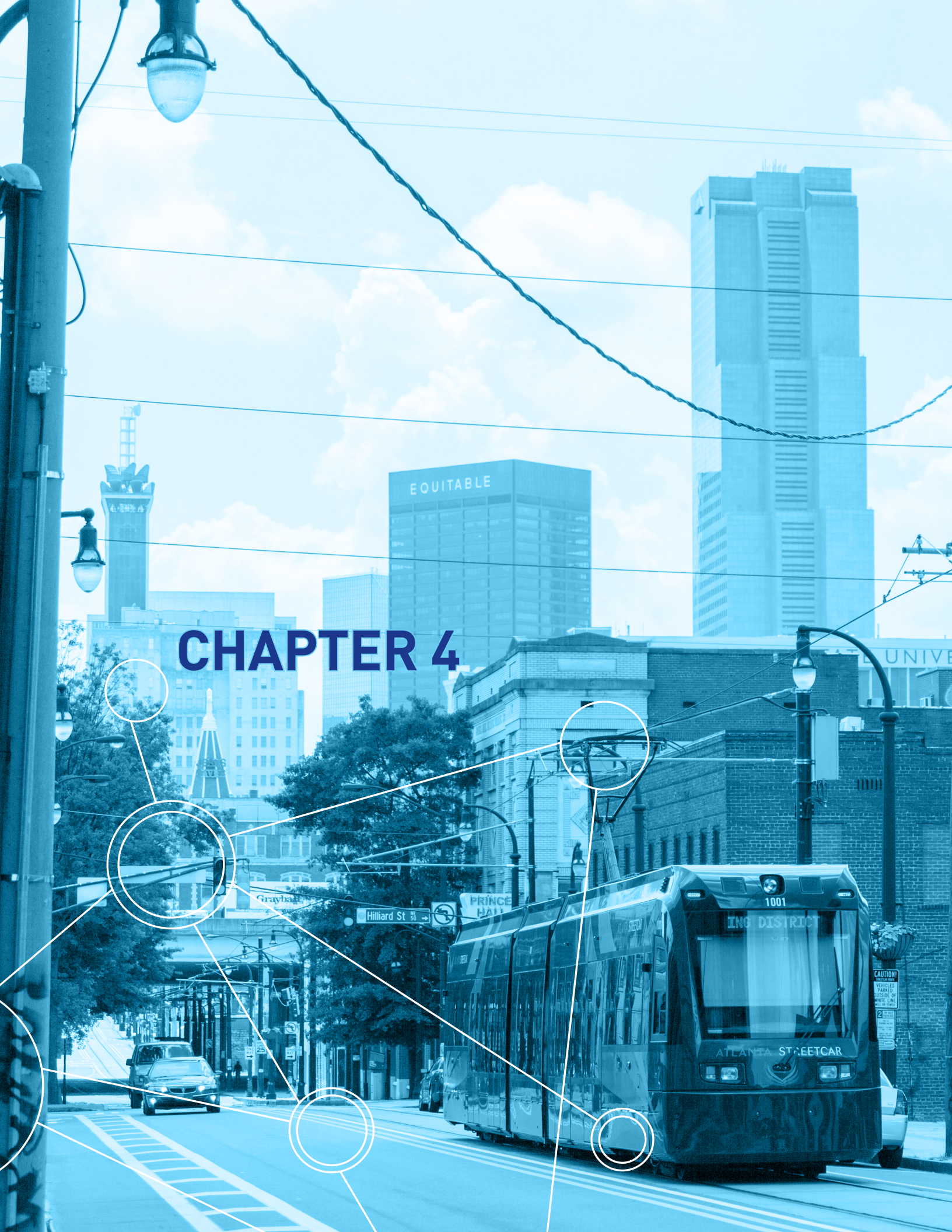
MODAL CHARACTERISTICS

Each project in Concept 3 is categorized as one of seven different modes. Each mode has a number of service characteristics that are used in the analysis in Remix and Conveyal Analysis, as outlined in Table 3.6 on the following page. As an aside, all heavy rail transit pojects in Concept 3 are extensions of existing MARTA services, and associated values are based on the performance of each service.

These values are based on the judgment of the project team with participation from ARC and considering comparable systems in other cities. They may not represent actual values used in planning or designing the specific projects. Many projects include specific information on stop location, which will override the stop spacing defaults. Streetcar and bus projects will follow existing highway facilities unless specifically indicated in the project definition. Light rail and commuter rail projects will use non-highway alignments.

3.6 Attributes of the Project Modes

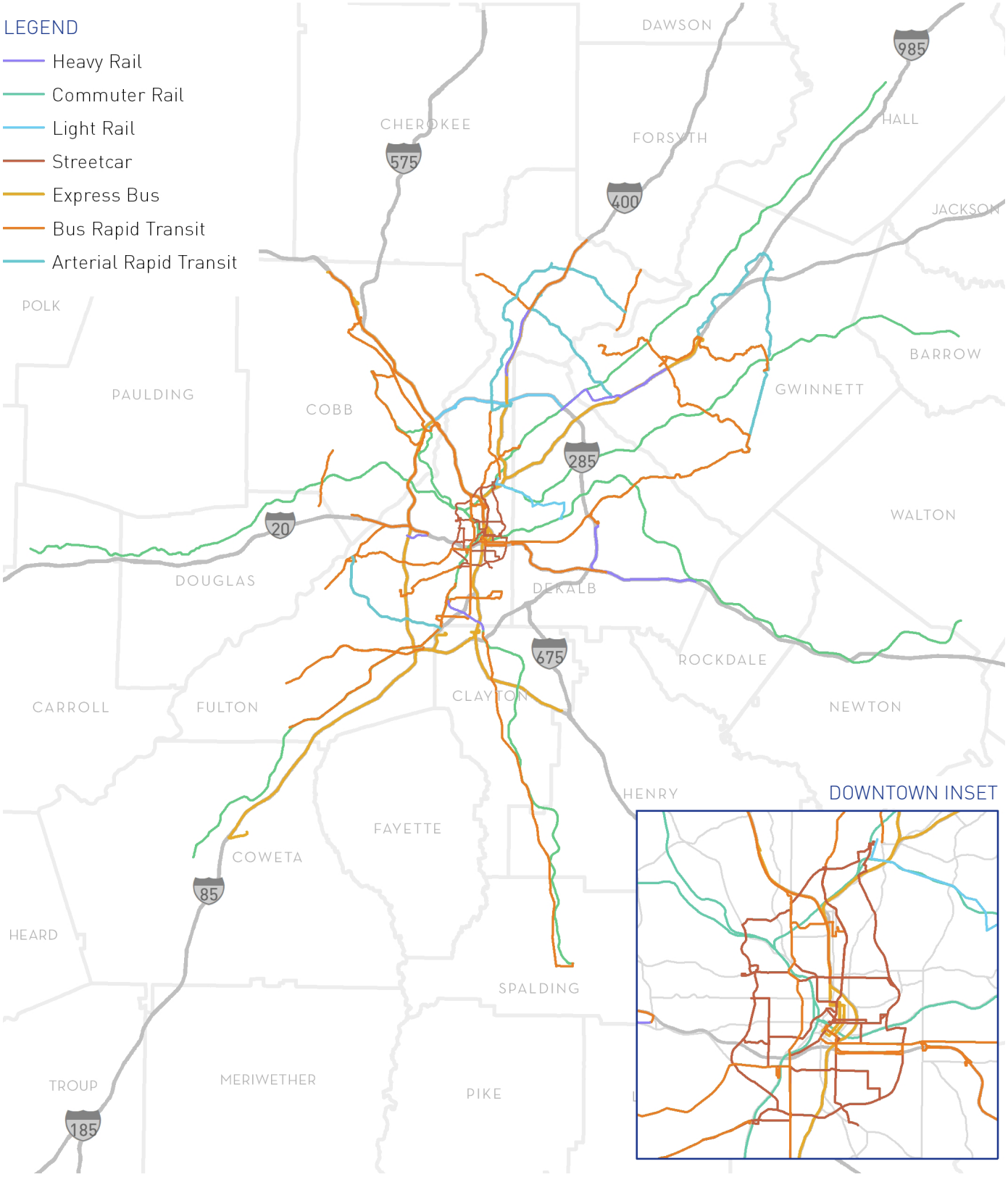
	Heavy Rail	Commuter Rail	Light Rail	Streetcar	Express Bus	Bus Rapid Transit	Arterial Rapid Transit
							
Capacity	High	High	High to medium	High to medium	Medium	Medium	Medium
ROW	Dedicated	Dedicated	Dedicated	Primarily mixed-traffic	Managed, express, or dedicated lanes	Primarily dedicated	Mixed-traffic with technology and station design to increase dependability
Service	High frequency	Peak hours	High frequency	High frequency	Peak hours	High frequency	Peak hours
Power	Third rail	Electric or diesel propelled	Overhead cable system	Overhead cable system	Diesel propelled	Diesel propelled	Diesel propelled
Reliability	95%	95%	90%	75%	80%	85%	75%
Peak Headway	10 min	30 min	10 min	7 min	30 min	10 min	10 min
Off-Peak Headway	15 min	n/a	15 min	15 min	n/a	15 min	n/a
Speed (mph)	30	60	25	15	50 - freeway	50 - freeway 20 - surface	50 - freeway 20 - surface
Stop Spacing	< 1 mile	Specific	3/4 mile	1/4 mile	Specific	1/2 mile	1/2 mile
Dwell Time (seconds)	30	60	30	15	30	30	30



CHAPTER 4

SUMMARY OF CONCEPT 3 PROJECTS

In this chapter, projects are summarized from the 2018 Concept 3 Transit Vision, including projects sponsored by MARTA, SRTA, Fulton County, Gwinnett County, and Cobb County. The Transit Vision also includes Commuter Rail projects carried over from the prior plan and a new multi-jurisdictional light rail line along I-285.



REGIONAL PRIORITY TRANSIT PROJECTS

The projects evaluated in this edition of Concept 3 are listed below. Projects are grouped according to seven main georgraphic areas. Detailed results of the evaluation process for each project are included in Appendix A.

4.1 North Fulton Area Projects

Project #	PROJECT NAME	SPONSOR (lead)	MODE	LENGTH (miles)
RTV-002	Old Milton Parkway ART	Fulton Co.	ART	8.01
RTV-001	Roswell Road ART	Fulton Co.	ART	3.93
RTV-003	Holcomb Bridge Road BRT	Fulton Co.	BRT	11.04
RTV-004	Medlock Bridge Road BRT	Fulton Co.	BRT	5.38
RTV-005	Piedmont Rd / Roswell Rd BRT	MARTA	BRT	14.84
RTV-006	GA-400 MARTA Extension	MARTA	HRT	11.46
RTV-056	Multimodal Hub/N Fulton Multimodal Hub/ Mansell Park and Ride	Gwinnett Co.	ART	12.2
RTV-007	Roswell to Downtown Express	SRTA	Express	22.5
RTV-008	I-285 Combined LRT*	TBD	LRT	14.06

*This multi-jurisdictional project combines four segments proposed by different entities into a single project serving the Atlanta region.

4.2 Gwinnett Area Projects

Project #	PROJECT NAME	SPONSOR (LEAD)	MODE	LENGTH (miles)
RTV-053	Infinite Energy/Mall of Georgia	Gwinnett Co.	ART	12.3
RTV-054	Peachtree Corners to Snellville	Gwinnett Co.	ART	20.3
RTV-055	SR 124/I-985 Park 'n' Ride/Snellville	Gwinnett Co.	ART	17.8
RTV-057	Doraville to Gwinnett Place Mall	Gwinnett Co.	HRT	11.5
RTV-058	Gwinnett Place Mall to Sugarloaf Mills	Gwinnett Co	BRT	11
RTV-059	Peachtree Corners to Lawrenceville	Gwinnett Co	BRT	22
RTV-060	Memorial Drive BRT - Snellville Extension	MARTA	BRT	10.21
RTV-011	Sugarloaf Mills to Airport Express	SRTA	Express	35.44

4.3 Dekalb Area Projects

Project #	PROJECT NAME	SPONSOR (LEAD)	MODE	LENGTH (miles)
RTV-012	I-20 East Transit Initiative	MARTA	BRT	17.97
RTV-013	Memorial Drive BRT	MARTA	BRT	7.53
RTV-014	I-20 East Corridor	MARTA	HRT	12.65
RTV-015	Clifton Corridor LRT	MARTA	LRT	8.59

4.4 Clayton Area Projects

Project #	PROJECT NAME	SPONSOR (LEAD)	MODE	LENGTH (miles)
RTV-017	SR-41 BRT	MARTA	BRT	30.67
RTV-020	Stockbridge to Airport Express	SRTA	Express	11.47
RTV-018	Griffin - East Point Commuter Rail	MARTA	CRT	20.44

4.5 South Fulton Area Projects

Project #	PROJECT NAME	SPONSOR (LEAD)	MODE	LENGTH (miles)
RTV-021	Camp Creek Parkway BRT	Fulton Co.	ART	11.3
RTV-023	Roosevelt Highway BRT	Fulton Co.	BRT	19.45
RTV-022	South Fulton Industrial Parkway BRT	Fulton Co.	BRT	7.37
RTV-024	South Fulton Parkway BRT - FCTP	Fulton Co.	BRT	7.63
RTV-025	Hapeville MARTA Extension	Fulton Co.	HRT	4.35
RTV-027	571 Cascade BRT	MARTA	BRT	12.91
RTV-026	583 Campbelton BRT	MARTA	BRT	6.54
RTV-028	South Fulton Parkway BRT - MARTA	MARTA	BRT	12.55
RTV-029	MARTA West Line Extension	MARTA	HRT	1.67
RTV-030	Peachtree Streetcar	MARTA	Streetcar	14.89
RTV-032	Newnan Park 'n' Ride to Airport Express	SRTA	Express	29.62

4.6 Cobb Area Projects

Project #	PROJECT NAME	SPONSOR (LEAD)	MODE	LENGTH (miles)
RTV-033	Atlanta Road BRT	Cobb Co.	BRT	10.21
RTV-034	Austell Road BRT	Cobb Co.	BRT	4.72
RTV-035	Connect Cobb	Cobb Co.	BRT	23.26
RTV-036	I-75 Managed Lane BRT	Cobb Co.	BRT	25.03
RTV-037	South Cobb Managed Lane BRT	Cobb Co.	BRT	14.22
RTV-038	Marietta Commuter Rail	Cobb Co.	CRT	19.91
RTV-039	I-20 West / Fulton Industrial Blvd BRT	MARTA	BRT	7.62
RTV-041	Hickory Grove to Downtown Express	SRTA	Express	28.81
RTV-042	Town Center to Airport Express	SRTA	Express	37.16

4.7 Atlanta Area Projects

Project #	PROJECT NAME	SPONSOR (LEAD)	MODE	LENGTH (miles)
RTV-044	5595 Metropolitan Parkway BRT	MARTA	BRT	10.95
RTV-043	578 Cleveland BRT	MARTA	BRT	7.13
RTV-045	Northside Drive BRT	MARTA	BRT	6.43
RTV-046	Peachtree Buckhead BRT	MARTA	BRT	10.51
RTV-047	BeltLine Streetcar	MARTA	Streetcar	24.73
RTV-048	Crosstown Capitol Line	MARTA	Streetcar	6.97
RTV-049	Crosstown Crescent Line	MARTA	Streetcar	5.83
RTV-050	Crosstown Downtown Line	MARTA	Streetcar	6.39
RTV-051	Crosstown Midtown Line	MARTA	Streetcar	4.53
RTV-052	Big Shanty to Downtown Express	SRTA	Express	8.34

CONTINUED EVALUATION AREAS

When looked at together, the 61 projects in Concept 3 highlight a number of key areas where additional analysis is needed. In particular, Concept 3 raises questions about sponsorship and coordination of overlapping and multi-jurisdictional projects, including:

- Overlapping projects proposed by MARTA (BRT and CRT in Clayton County, as well as BRT and Peachtree Streetcar), MARTA and Fulton County, and MARTA and Cobb County;
- The multi-jurisdictional LRT project along I-285 which combines segments proposed by Cobb County, Fulton County, and MARTA;

Additionally, the Concept 3 project list is extensive but not exhaustive. ARC intends to re-evaluate projects annually and at that time incorporate new projects submitted to ARC into the list or drop projects no longer supported. These projects would come from locally generated CTPs or Transit Master Plans, or from operators through their planning processes, such as the More MARTA projects.


CHAPTER 5
marta

NEXT STEPS

1. Assess Support for Multi-Jurisdictional and Unassigned Projects

Much has changed since the last Concept 3 update in 2012, including some policies and priorities on the state, regional, and local level that shape the project list. This update includes Commuter Rail projects that were carried over from the prior plan, despite no longer having an identified sponsoring agency. ARC will need to work with their partner agencies to determine if any of these projects are still regional priorities.

In advance of the 2019 Concept 3 update, ARC will work with regional partners, including the Atlanta-region Transit Authority to determine the future of the currently unsponsored regional commuter rail projects and identify sponsorship for critical multi-jurisdictional projects like the I-285 Light Rail..

2. Institute Annual Concept 3 Update Scheduling

Beginning in 2018 ARC will update the Concept 3 project list and reevaluate included projects in the 3rd quarter of each year.

Historically, ARC has updated the Regional Transit Vision (Concept 3) every five years. This schedule is due in part to the level of time and effort required for each update. Now, with the new evaluation framework in place, ARC can modify the project list and reevaluate projects on a more frequent schedule.

3. Incorporate Concept 3 into ATL Planning Framework

Pending the creation of the Atlanta-region Transit Link Authority, Concept 3 will serve as the primary source for high-capacity regional transit projects for inclusion in the Atlanta Regional Transit Plan.

The more frequent update schedule also repositions Concept 3 as the primary inputs for a an all new Regional Transit Plan process, which will be led by the Atlanta-region Transit Link Authority (ATL).

4. Implement Data Management Plan

ARC will work with regional partners to identify an appropriate implementation timeline for the data management plan included in Appendix B, potentially in tandem with the ATL Regional Transit Plan.

One of two primary goals of this Concept 3 update is to ensure that all future updates are easier and faster, enabling faster decision-making. The selected evaluation tools (see Chapter 3) support this goal, but improvements to the data workflow, both institutional and technical, are necessary to fully realize a planning process with less friction.

ARC will require complete and consistent regional transit data, including baseline data that is used in customer-facing applications such as GTFS feeds, as well as project-level planning data, to ensure that Concept 3 can be updated each year quickly and accurately. During the course of this project, assembling an accurate, up-to-date representation of the current network and proposed projects required significant effort.

5. 2019 Update

ARC will do an update in 2019 that will include an assessment of potential economic benefit to the region and state, and prioritization of corridors based on highest potential economic benefit and lowest environmental impact, per HB 930.

6. Develop Regional Mode Standards and Definitions

As new modes are introduced into the Atlanta Region, it will become increasingly important to have consistent standards across the region and across operators for modes such as BRT and ART. These minimum standards and mode definitions will play an important role in consistent project evaluation.

NEXT STEPS TIMELINE

2018 | 2019 | 2020 | 2021 | 2022

Step 1 - Assess Support for Multi-Jurisdictional and Unassigned Projects

Partners: ARC, the ATL, Concept 3 Stakeholders

Step 2 - Institute Annual Concept 3 Update Schedule

Partners: ARC

Step 3 - Incorporate Concept 3 into ATL Planning Framework

Partners: ARC, the ATL

Step 4 - Implement Data Mangement Plan

Partners: ARC, the ATL, Concept 3 Stakeholders

Step 5 - 2019 Update

Partners: ARC, the ATL, Concept 3 Stakeholders

Ongoing

Step 6 - Develop Regional Mode Standards and Definitions

Partners: ARC, the ATL, Concept 3 Stakeholders

Ongoing

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APPENDIX A
DETAILED PROJECT INFORMATION SHEET

HOW TO READ A PROJECT SHEET:

PROJECT # // PROJECT NAME

MODE CHOICE

Start:
End:
Length:
Estimated Stops:
Lead Agency:

This space provides a brief description of the project.

COLOR CODED EVALUATION MEASURES

POORER PROJECT PERFORMANCE — BETTER PROJECT PERFORMANCE

EXAMPLE RTV EVALUATION MEASURES

Reliability:
VERY HIGH

Connectivity:
HIGH

Efficiency:
MODERATE

Sensitivity:
HIGH IMPACT

Social Equity:
VERY LOW IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-001 // ROSWELL ROAD

ARTERIAL RAPID TRANSIT

Start: Crossville Road
End: Old Milton Parkway
Length: 3.93 miles
Estimated Stops: 7
Lead Agency: Fulton County

This project provides enhanced bus service along Roswell Road in North Fulton County.

RTV EVALUATION MEASURES

Reliability:
VERY LOW

Connectivity:
VERY LOW

Efficiency:
LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
VERY LOW IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-002 // OLD MILTON PKWY *ARTERIAL RAPID TRANSIT*

Start: SR-9
End: Medlock Bridge Road
Length: 8.01 miles
Estimated Stops: 16
Lead Agency: Fulton County

This project provides enhanced bus service along Old Milton Parkway in North Fulton County.

RTV EVALUATION MEASURES

Reliability:
VERY LOW

Connectivity:
VERY LOW

Efficiency:
LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
VERY LOW IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-003 // HOLCOMB BRIDGE RD

BUS RAPID TRANSIT

Start: Spalding Drive
End: Mountain Park Drive
Length: 11.04 miles
Estimated Stops: 22
Lead Agency: Fulton County

This project provides BRT service along Holcomb Bridge Road in North Fulton County.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
LOW IMPACT

Social Equity:
VERY LOW IMPACT

Compatibility:
MODERATE

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-004 // MEDLOCK BRIDGE RD

BUS RAPID TRANSIT

Start: McGinnis Ferry Rd
End: Chattahoochee Rd
Length: 14.84 miles
Estimated Stops: 10
Lead Agency: Fulton County

This project provides BRT service along Medlock Bridge Road in North Fulton County.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
LOW IMPACT

Compatibility:
MODERATE

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-005 // PIEDMONT + ROSWELL *BUS RAPID TRANSIT*

Start: Lindbergh MARTA Station
End: Roswell
Length: 14.84 miles
Estimated Stops: 29
Lead Agency: Fulton County

This project provides BRT service to Roswell from Lindbergh MARTA Station.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
MODERATE

Efficiency:
LOW

Sensitivity:
LOW IMPACT

Social Equity:
VERY LOW IMPACT

Compatibility:
HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-006 // GA 400

HEAVY RAIL TRANSIT

Start: North Springs MARTA Station
End: Windward Parkway
Length: 11.46 miles
Estimated Stops: TBD
Lead Agency: MARTA

This project extends MARTA Red Line service North through Alpharetta along GA 400. This project was proposed by both MARTA and Fulton County.

RTV EVALUATION MEASURES

Reliability:
VERY HIGH

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
LOW IMPACT

Social Equity:
LOW IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-007 // ROSWELL TO DOWNTOWN

EXPRESS BUS

Start: Roswell Park 'n' Ride
End: Downtown Atlanta
Length: 22.5 miles
Estimated Stops: TBD
Lead Agency: SRTA

This project provides new Express Bus service along GA-400 from Roswell to Downtown Atlanta.

RTV EVALUATION MEASURES

Reliability:
LOW

Connectivity:
HIGH

Efficiency:
HIGH

Sensitivity:
MODERATE IMPACT

Social Equity:
LOW IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-008 // 285 LRT (COMBINED)

LIGHT RAIL

Start: Paces Ferry Road
End: Doraville
Length: 14.06 miles
Estimated Stops: 18
Lead Agency: TBD

This multi-jurisdictional project combines four LRT segments proposed by different entities into a single project reaching from Vinnings in Cobb County to Doraville in DeKalb County.

RTV EVALUATION MEASURES

Reliability:
HIGH

Connectivity:
MODERATE

Efficiency:
LOW

Sensitivity:
MODERATE IMPACT

Social Equity:
LOW IMPACT

Compatibility:
HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-011 // SUGARLOAF MILL TO AIRPORT

EXPRESS

Start: Sugarloaf Mill
End: Airport
Length: 35.44 miles
Estimated Stops: TBD
Lead Agency: SRTA

This project provides express service to the Airport from Sugarloaf Mills in Lawrenceville.

RTV EVALUATION MEASURES

Reliability:
LOW

Connectivity:
HIGH

Efficiency:
HIGH

Sensitivity:
MODERATE IMPACT

Social Equity:
LOW IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-012 // I-20 EAST

BUS RAPID TRANSIT

Start: Five Points MARTA Station
End: Wesley Chapel Road
Length: 17.97 miles
Estimated Stops: 35
Lead Agency: MARTA

This project provides BRT service along I-20 from Five Points to Wesley Chapel Road.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
LOW

Efficiency:
LOW

Sensitivity:
LOW IMPACT

Social Equity:
MODERATE IMPACT

Compatibility:
MODERATE

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-013 // MEMORIAL DRIVE

BUS RAPID TRANSIT

Start: Stone Mountain Park 'n' Ride
End: Snellville
Length: 10.21 miles
Estimated Stops: 20
Lead Agency: MARTA

This project extends BRT service on Memorial Drive to Snellville in Gwinnett County.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
LOW

Efficiency:
LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
LOW IMPACT

Compatibility:
MODERATE

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-014 // I-20 EAST

HEAVY RAIL

Start: Indian Creek MARTA Station
End: Mall at Stonecrest
Length: 12.65 miles
Estimated Stops: TBD
Lead Agency: MARTA

This project extends MARTA Blue Line service east to The Mall at Stonecrest in DeKalb County.

RTV EVALUATION MEASURES

Reliability:
VERY HIGH

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
VERY HIGH IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-015 // CLIFTON RD

LIGHT RAIL TRANSIT

Start: Lindbergh MARTA Station
End: Avondale MARTA Station
Length: 8.59 miles
Estimated Stops: 11
Lead Agency: MARTA

This project establishes new LRT service from Lindbergh MARTA Station to Avondale MARTA Station, serving Emory University and North Decatur.

RTV EVALUATION MEASURES

Reliability:
HIGH

Connectivity:
LOW

Efficiency:
LOW

Sensitivity:
LOW IMPACT

Social Equity:
VERY LOW IMPACT

Compatibility:
HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-017 // US 41

BUS RAPID TRANSIT

Start: Southern Crescent Transit Center
End: Griffin
Length: 30.67 miles
Estimated Stops: 61
Lead Agency: MARTA

This project provides BRT service along US 41 to Griffin in Spalding County. The proposed route overlaps significantly with the combined Griffin - East Point and Griffin Corridor Commuter Rail projects.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
LOW IMPACT

Social Equity:
MODERATE IMPACT

Compatibility:
MODERATE

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-018 // GRIFFIN - EAST POINT

COMMUTER RAIL

Start: Lovejoy
End: East Point MARTA Station
Length: 20.44 miles
Estimated Stops: TBD
Lead Agency: MARTA

This project provides Commuter Rail service to Lovejoy in Clayton County. There is a proposed second leg that will continue the service South to Griffin. This project overlaps somewhat with the proposed Hapeville MARTA Extension.

RTV EVALUATION MEASURES

Reliability:
VERY HIGH

Connectivity:
LOW

Efficiency:
VERY LOW

Sensitivity:
MODERATE IMPACT

Social Equity:
MODERATE IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-020 // STOCKBRIDGE TO AIRPORT

EXPRESS BUS

Start: Stockbridge Park 'n' Ride
End: Hartsfield Jackson Airport
Length: 11.47 miles
Estimated Stops: TBD
Lead Agency: SRTA

This project provides express service to the Airport from Stockbridge in Henry County.

RTV EVALUATION MEASURES

Reliability:
LOW

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
LOW IMPACT

Social Equity:
VERY HIGH IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-021 // CAMP CREEK

ARTERIAL RAPID TRANSIT

Start: Fulton Industrial Blvd
End: Roosevelt Highway
Length: 11.3 miles
Estimated Stops: 22
Lead Agency: Fulton County

This project provides enhanced bus service along Camp Creek Parkway in South Fulton County.

RTV EVALUATION MEASURES

Reliability:
VERY LOW

Connectivity:
LOW

Efficiency:
VERY LOW

Sensitivity:
LOW IMPACT

Social Equity:
VERY HIGH IMPACT

Compatibility:
HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-022 // FULTON INDUSTRIAL

BUS RAPID TRANSIT

Start: Campbellton Road
End: I-20
Length: 7.37 miles
Estimated Stops: 14
Lead Agency: Fulton County

This project provides BRT bus service along Fulton Industrial Boulevard.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
LOW

Efficiency:
VERY LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
VERY HIGH IMPACT

Compatibility:
MODERATE

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-023 // ROOSEVELT HIGHWAY

BUS RAPID TRANSIT

Start: Palmetto Cascade Highway
End: Langford Parkway
Length: 19.45 miles
Estimated Stops: 38
Lead Agency: Fulton County

This project provides BRT service along Roosevelt Highway to Palmetto in South Fulton County. The project overlaps with the proposed Newnan Corridor Commuter Rail.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
LOW

Efficiency:
VERY LOW

Sensitivity:
MODERATE IMPACT

Social Equity:
HIGH IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-024 // S. FULTON PARKWAY

BUS RAPID TRANSIT

Start: Campbellton Fairburn Road
End: I-85/I-285 Interchange
Length: 7.63 miles
Estimated Stops: 15
Lead Agency: Fulton County

This project provides service along South Fulton Parkway in South Fulton County. The project overlaps with the South Fulton Parkway BRT proposed by MARTA.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
LOW IMPACT

Social Equity:
VERY HIGH IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-025 // HAPEVILLE EXTENSION

HEAVY RAIL

Start: East Point MARTA Station
End: Mountain View
Length: 4.35 miles
Estimated Stops: 5
Lead Agency: Fulton County

This project branches MARTA Red/Gold service at East Point to create a new fork to Hapeville in South Fulton County. The project overlaps with the Griffin - East Point Commuter Rail proposed by MARTA.

RTV EVALUATION MEASURES

Reliability:
VERY HIGH

Connectivity:
LOW

Efficiency:
VERY LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
MODERATE IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-026 // CAMPBELLTON RD

BUS RAPID TRANSIT

Start: Oakland City
End: Barge Road
Length: 6.54 miles
Estimated Stops: 13
Lead Agency: MARTA

This project provides BRT service to the Barge Road Park 'n' Ride in southwest Atlanta. The proposed route overlaps with the proposed Peachtree Streetcar.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
LOW

Efficiency:
VERY LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
VERY HIGH IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-027 // CASCADE RD

BUS RAPID TRANSIT

Start: Fulton Industrial Blvd
End: West End
Length: 12.91 miles
Estimated Stops: 25
Lead Agency: MARTA

This project provides BRT service along Cascade Road West to Fulton Industrial Boulevard.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
MODERATE

Efficiency:
VERY LOW

Sensitivity:
LOW IMPACT

Social Equity:
VERY HIGH IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-028 // S. FULTON PKWY

BUS RAPID TRANSIT

Start: Old National Hwy
End: Palmetto Cascade Hwy
Length: 12.55 miles
Estimated Stops: 25
Lead Agency: MARTA

This project provides service along South Fulton Parkway in South Fulton County. The project overlaps with the South Fulton Parkway BRT proposed by Fulton County.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
LOW

Efficiency:
VERY LOW

Sensitivity:
MODERATE IMPACT

Social Equity:
VERY HIGH IMPACT

Compatibility:
MODERATE

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-029 // WEST LINE EXTENSION

HEAVY RAIL

Start: H.E. Holmes MARTA Station
End: I-285
Length: 1.67 miles
Estimated Stops: TBD
Lead Agency: MARTA

This project extends MARTA Blue Line service West to I-285.

RTV EVALUATION MEASURES

Reliability:
VERY HIGH

Connectivity:
LOW

Efficiency:
VERY LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
VERY HIGH IMPACT

Compatibility:
VERY LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-030 // PEACHTREE ST

STREETCAR

Start: I-285 at Langford Parkway
End: Beltline at Peachtree Road
Length: 14.89 miles
Estimated Stops: 59
Lead Agency: MARTA

This project extends streetcar service south to the Barge Road Park 'n' Ride in Southwest Atlanta. The proposed route overlaps with the proposed Campbellton BRT service.

RTV EVALUATION MEASURES

Reliability:
VERY LOW

Connectivity:
VERY HIGH

Efficiency:
LOW

Sensitivity:
LOW IMPACT

Social Equity:
MODERATE IMPACT

Compatibility:
MODERATE

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-032 // NEWNAN TO AIRPORT

EXPRESS BUS

Start: Newnan
End: Hartsfield Jackson Airport
Length: 29.62 miles
Estimated Stops: TBD
Lead Agency: SRTA

This project provides express bus service to the Airport from Newnan in Coweta County.

RTV EVALUATION MEASURES

Reliability:
LOW

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
HIGH IMPACT

Social Equity:
HIGH IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-033 // ATLANTA RD

BUS RAPID TRANSIT

Start: Paces Ferry
End: Cobb Parkway and Roswell Road
Length: 10.21 miles
Estimated Stops: 20
Lead Agency: Cobb County

This project provides new frequent service between Marietta and Vinings, passing through Fair Oaks and Smyrna.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
VERY LOW

Efficiency:
LOW

Sensitivity:
LOW IMPACT

Social Equity:
LOW IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-034 // AUSTELL RD

BUS RAPID TRANSIT

Start: East-West Connector
End: Thornton Road
Length: 4.72 miles
Estimated Stops: 9
Lead Agency: Cobb County

This project provides new service along the southern portion of Austell Road in Cobb County.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
MODERATE IMPACT

Compatibility:
HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-035 // COBB TOWN CENTER

BUS RAPID TRANSIT

Start: Town Center
End: Arts Center MARTA Station
Length: 23.26 miles
Estimated Stops: 46
Lead Agency: Cobb County

This project crosses Cobb County to connect Cobb Town Center with MARTA and Central Atlanta at the Arts Center.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
LOW

Efficiency:
LOW

Sensitivity:
HIGH IMPACT

Social Equity:
LOW IMPACT

Compatibility:
MODERATE

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-036 // I-75 MANAGED LANES

BUS RAPID TRANSIT

Start: Hickory Grove Park 'n' Ride
End: Arts Center MARTA Station
Length: 25.03 miles
Estimated Stops: 50
Lead Agency: Cobb County

This project provides service from northern Cobb County to central Atlanta. The proposed alignment mostly follows the same route as the Hickory Grove to Downtown Express route proposed by SRTA.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
HIGH IMPACT

Social Equity:
LOW IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-037 // S. COBB MANAGED LANES *BUS RAPID TRANSIT*

Start: Factory Shoals Road
End: Cumberland Mall Station
Length: 14.22 miles
Estimated Stops: 28
Lead Agency: Cobb County

This project provides service between two regions of Cobb County, from Cumberland down to Factory Shoals Road and Riverside Parkway.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
LOW

Efficiency:
VERY LOW

Sensitivity:
LOW IMPACT

Social Equity:
MODERATE IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-038 // MARIETTA

COMMUTER RAIL

Start: Five Points MARTA Station
End: South Marietta Parkway
Length: 19.91 miles
Estimated Stops: TBD
Lead Agency: Cobb County

This proposed rail line provides service between South Marietta and MARTA at Five Points. The northern segment of the proposed alignment follows the Atlanta Road BRT proposed by Cobb County.

RTV EVALUATION MEASURES

Reliability:
VERY HIGH

Connectivity:
MODERATE

Efficiency:
MODERATE

Sensitivity:
MODERATE IMPACT

Social Equity:
LOW IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-039 // I-20 WEST/FULTON INDUS. *BUS RAPID TRANSIT*

Start: H.E. Holmes MARTA Station
End: Camp Creek Parkway
Length: 7.62 miles
Estimated Stops: 15
Lead Agency: MARTA

This project provides access to MARTA from southwest Fulton County via a new BRT line.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
MODERATE

Efficiency:
VERY LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
VERY HIGH IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-041 // HICKORY GROVE TO DOWNTOWN

BRT

Start: Hickory Grove Park 'n' Ride
End: Downtown
Length: 28.81 miles
Estimated Stops: TBD
Lead Agency: SRTA

This project provides express service from northern Cobb County to central Atlanta. The proposed alignment mostly follows the same route as the Cobb County-proposed I-75 Managed Lane BRT.

RTV EVALUATION MEASURES

Reliability:
LOW

Connectivity:
MODERATE

Efficiency:
MODERATE

Sensitivity:
HIGH IMPACT

Social Equity:
LOW IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-042 // TOWN CENTER TO AIRPORT

EXPRESS BUS

Start: Town Center Park 'n' Ride
End: Airport
Length: 37.16 miles
Estimated Stops: TBD
Lead Agency: SRTA

This project provides Express bus service to the Airport from Kennesaw Town Center at Cobb in Cobb County.

RTV EVALUATION MEASURES

Reliability:
LOW

Connectivity:
HIGH

Efficiency:
LOW

Sensitivity:
HIGH IMPACT

Social Equity:
MODERATE IMPACT

Compatibility:
HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-043 // 578 CLEVELAND

BUS RAPID TRANSIT

Start: Jonesboro Road
End: East Point MARTA Station
Length: 7.13 miles
Estimated Stops: 14
Lead Agency: MARTA

This project provides BRT service along Cleveland Avenue from Jonesboro Road to East Point MARTA Station.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
LOW

Efficiency:
VERY LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
VERY HIGH IMPACT

Compatibility:
MODERATE

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-044 // 5595 METROPOLITAN

BUS RAPID TRANSIT

Start: West End MARTA Station
End: College Park
Length: 10.95 miles
Estimated Stops: 21
Lead Agency: MARTA

This project provides BRT service from West End MARTA Station to College Park. The Northern stretch overlaps with the proposed Northside Drive BRT.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
MODERATE

Efficiency:
LOW

Sensitivity:
HIGH IMPACT

Social Equity:
HIGH IMPACT

Compatibility:
HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-045 // NORTHSIDE DRIVE

BUS RAPID TRANSIT

Start: Atlanta Metropolitan State College
End: Bellemeade Ave
Length: 6.43 miles
Estimated Stops: 12
Lead Agency: MARTA

This project provides BRT service along Northside Drive from West Midtown to Atlanta Metropolitan State College. The Southern stretch overlaps with the proposed Metropolitan Parkway BRT.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
MODERATE

Efficiency:
LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
MODERATE IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-046 // PEACHTREE BUCKHEAD *BUS RAPID TRANSIT*

Start: Brookhaven MARTA Station
End: Five Points MARTA Station
Length: 10.51 miles
Estimated Stops: 21
Lead Agency: MARTA

This project provides BRT service along Peachtree Road to Brookhaven - Oglethorpe University Transit Station.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
HIGH

Efficiency:
MODERATE

Sensitivity:
LOW IMPACT

Social Equity:
VERY LOW IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-047 // BELTLINE

STREETCAR

Start: Lindbergh MARTA Station
End: Lindbergh MARTA Station
Length: 24.73 miles
Estimated Stops: 98
Lead Agency: MARTA

This projects establishes a new streetcar loop along the completed Beltline.

RTV EVALUATION MEASURES

Reliability:
VERY LOW

Connectivity:
VERY HIGH

Efficiency:
LOW

Sensitivity:
MODERATE IMPACT

Social Equity:
LOW IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-048 // CROSSTOWN CAPITOL

STREETCAR

Start: Beltline at McDonough Blvd
End: Beltline at Northside Drive
Length: 6.97 miles
Estimated Stops: 27
Lead Agency: MARTA

This project provides a new streetcar line serving South Atlanta to Atlantic Station.

RTV EVALUATION MEASURES

Reliability:
VERY LOW

Connectivity:
MODERATE

Efficiency:
MODERATE

Sensitivity:
VERY LOW IMPACT

Social Equity:
MODERATE IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-049 // CROSSTOWN CRESCENT

STREETCAR

Start: Beltline at Joseph E. Boone Blvd
End: Beltline at Boulevard Southeast
Length: 5.83 miles
Estimated Stops: 23
Lead Agency: MARTA

This project proposes a new crosstown streetcar line serving South Atlanta to Atlantic Station serving South Atlanta to Vine City.

RTV EVALUATION MEASURES

Reliability:
VERY LOW

Connectivity:
MODERATE

Efficiency:
LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
HIGH IMPACT

Compatibility:
MODERATE

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-050 // CROSSTOWN DOWNTOWN

STREETCAR

Start: Beltline at Westview Drive
End: Beltline at Inman Park
Length: 6.39 miles
Estimated Stops: 25
Lead Agency: MARTA

This project provides a new streetcar line through downtown from Westview Drive to Inman Park.

RTV EVALUATION MEASURES

Reliability:
VERY LOW

Connectivity:
MODERATE

Efficiency:
MODERATE

Sensitivity:
VERY LOW IMPACT

Social Equity:
MODERATE IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-051 // CROSSTOWN MIDTOWN

STREETCAR

Start: Bankhead MARTA Station
End: Beltline at North Avenue
Length: 4.53 miles
Estimated Stops: 18
Lead Agency: MARTA

This project provides a new streetcar line through midtown from Bankhead MARTA Station to the Beltline at North Avenue.

RTV EVALUATION MEASURES

Reliability:
VERY LOW

Connectivity:
LOW

Efficiency:
MODERATE

Sensitivity:
VERY LOW IMPACT

Social Equity:
LOW

Compatibility:
HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-052 // BIG SHANTY TO DOWNTOWN

EXPRESS BUS

Start: Big Shanty Park 'n' Ride
End: Downtown
Length: 8.34 miles
Estimated Stops: TBD
Lead Agency: SRTA

This project provides express bus service along I-75 to Downtown from Big Shanty.

RTV EVALUATION MEASURES

Reliability:
LOW

Connectivity:
MODERATE

Efficiency:
VERY HIGH

Sensitivity:
VERY LOW IMPACT

Social Equity:
LOW IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-053 // ROUTE 202

ARTERIAL RAPID TRANSIT

Start: Infinite Energy Transit Center
End: Mall of Georgia
Length: 12.3 miles
Estimated Stops: TBD
Lead Agency: Gwinnett County

This project provides service from Infinite Energy Transit Center to Mall of Georgia.

RTV EVALUATION MEASURES

Reliability:
VERY LOW

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
LOW IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-054 // ROUTE 203

ARTERIAL RAPID TRANSIT

Start: Peachtree Corners
End: Snellville
Length: 20.3 miles
Estimated Stops: TBD
Lead Agency: Gwinnett County

This project provides service from Peachtree Corners to Snellville.

RTV EVALUATION MEASURES

Reliability:
VERY LOW

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
MODERATE IMPACT

Social Equity:
MODERATE IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-055 // ROUTE 204

ARTERIAL RAPID TRANSIT

Start: I-985/Mall of Georgia Park 'n' Ride
End: Snellville
Length: 17.8 miles
Estimated Stops: TBD
Lead Agency: Gwinnett County

This project provides provides service from the I-985/ Mall of Georgia Park 'n' Ride to Snellville.

RTV EVALUATION MEASURES

Reliability:
VERY LOW

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
LOW IMPACT

Social Equity:
LOW IMPACT

Compatibility:
HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-056 // ROUTE 205

ARTERIAL RAPID TRANSIT

Start: Multimodal Hub
End: North Fulton County
Length: 12.2 miles
Estimated Stops: TBD
Lead Agency: Gwinnett County

This project provides service from the multimodal hub in western Gwinnett County to Alpharetta in North Fulton County.

RTV EVALUATION MEASURES

Reliability:
VERY LOW

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
LOW IMPACT

Social Equity:
LOW IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-057 // DORAVILLE TO GWINNETT MALL *HEAVY RAIL*

Start: Doraville MARTA Station
End: Gwinnett Place Mall
Length: 11.5 miles
Estimated Stops: TBD
Lead Agency: Gwinnett County

Delivered in two phases, this project will run heavy rail from Doraville to the new multi-modal Center to Gwinnett Place Mall.

RTV EVALUATION MEASURES

Reliability:
VERY HIGH

Connectivity:
VERY LOW

Efficiency:
LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
HIGH IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-058 // ROUTE 700

BUS RAPID TRANSIT

Start: Gwinnett Place Mall
End: Sugarloaf Mills
Length: 11 miles
Estimated Stops: TBD
Lead Agency: Gwinnett County

This project covers the connection between Gwinnett Place Mall and Sugarloaf Mills.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
VERY LOW IMPACT

Social Equity:
HIGH IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-059 // ROUTE 701

BUS RAPID TRANSIT

Start: Peachtree Corners
End: Downtown Lawrenceville
Length: 22 miles
Estimated Stops: TBD
Lead Agency: Gwinnett County

This project provides service between Peachtree Corners and downtown Lawrenceville.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
MODERATE IMPACT

Social Equity:
MODERATE IMPACT

Compatibility:
VERY HIGH

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

RTV-060 // ROUTE 702

BUS RAPID TRANSIT

Start: Snellville
End: Indian Creek MARTA Station
Length: 16.5 miles
Estimated Stops: TBD
Lead Agency: Gwinnett County

This project provides service between downtown Snellville and Indian Creek MARTA Station.

RTV EVALUATION MEASURES

Reliability:
MODERATE

Connectivity:
VERY LOW

Efficiency:
VERY LOW

Sensitivity:
LOW IMPACT

Social Equity:
HIGH IMPACT

Compatibility:
LOW

Job Accessibility:

- Regional Job Accessibility (RJA)
- 70th Percentile of RJA
- 90th Percentile of RJA
- RJA for Low-Income and Non-White People
- 70th Percentile of RJA for Low-Income and Non-White People
- 90th Percentile of RJA for Low-Income and Non-White People

APPENDIX B
DATA MANAGEMENT PLAN

APPENDIX B: DATA MANAGEMENT PLAN

This Data Management Plan is a supplemental document to the 2018 Concept 3 Update for ARC. This document inventories the data required for various transit planning processes in Atlanta, and outlines opportunities to improve the data warehousing and pipelines that feed analysis.

THE NEED FOR BETTER DATA MANAGEMENT

Transit and transportation needs in the Atlanta region are continually evolving as populations shift and new priorities emerge. With this Concept 3 update, ARC has adjusted the planning process to allow for more frequent analysis and iterations of transportation plans. These iterations come in the form of advancing projects from one planning phase to the next (see Chapter 3), as well as updating existing plans and reevaluating projects.

Moving forward, the projects outlined and evaluated in Concept 3 will be added to a new Regional Transit Plan from the Atlanta-region Transit Link Authority (ATL). ARC also plans to re-run project evaluations every year in the third quarter to ensure that values are representative of the quickly changing surroundings.

The updated project evaluation schedule as well as the overall smooth transfer between planning efforts each fundamentally depend on good data management. Managing and evaluating transit project involves hundreds of data attributes of various types and which are stored and maintained by differing agencies. Streamlining the evaluation process therefore must include solutions for more direct and consistent data storage, transfer, and access.

HOW DATA IS USED

Planning for transit projects involves many datasets spanning different time scales, plans, departments, and agencies. A transit project may take decades from when it was first conceived until it is finally implemented. It may go through many changes during that time because of demographic shifts, land use, technology upgrades, safety standards, etc. Other projects may be implemented only a few years after their conception. Projects may first appear as part of Concept 3, and then make their way into the RTP and TIP, or they may be introduced at the RTP stage directly.

Project data can be useful for several purposes. As a project migrates between regional plans, both the initial data used to evaluate the project and, at times, some output data from the evaluation processes can be reused. This type of data portability can support efficient workflows for transit agencies and for ARC.

Transit agencies, planners, and advocates could also use the data for many other purposes. With project scores and details available, transit planners could draw lessons from projects that score well on performance metrics of interest, and avoid the pitfalls of projects that do not meet expectations. The data may offer some examples to think through the best way to approach potential trade-offs between priorities like mobility, social equity, preservation, etc. Transit agencies may even use the data to alter a specific project to improve its anticipated performance. These opportunities are all promising since projects that score better also better align with the criteria of the regional vision.

TYPES OF DATA

Data for project evaluation and ranking can be divided into four main categories:

1. Project details includes attributes such as specific project alignment, mode type, cost, stop location, design features, etc.

2. Population and land use data includes attributes such as population density, demographic data, population projections, job density, environmental and historical resources, etc.

3. Network data includes attributes such as the location, type, and quality of existing transit and street networks, as well as crash data, traffic and congestion data, transit ridership, etc.

4. Travel behavior data includes attributes such as origin and destination tables, projected transit ridership, mode splits, and congestion.

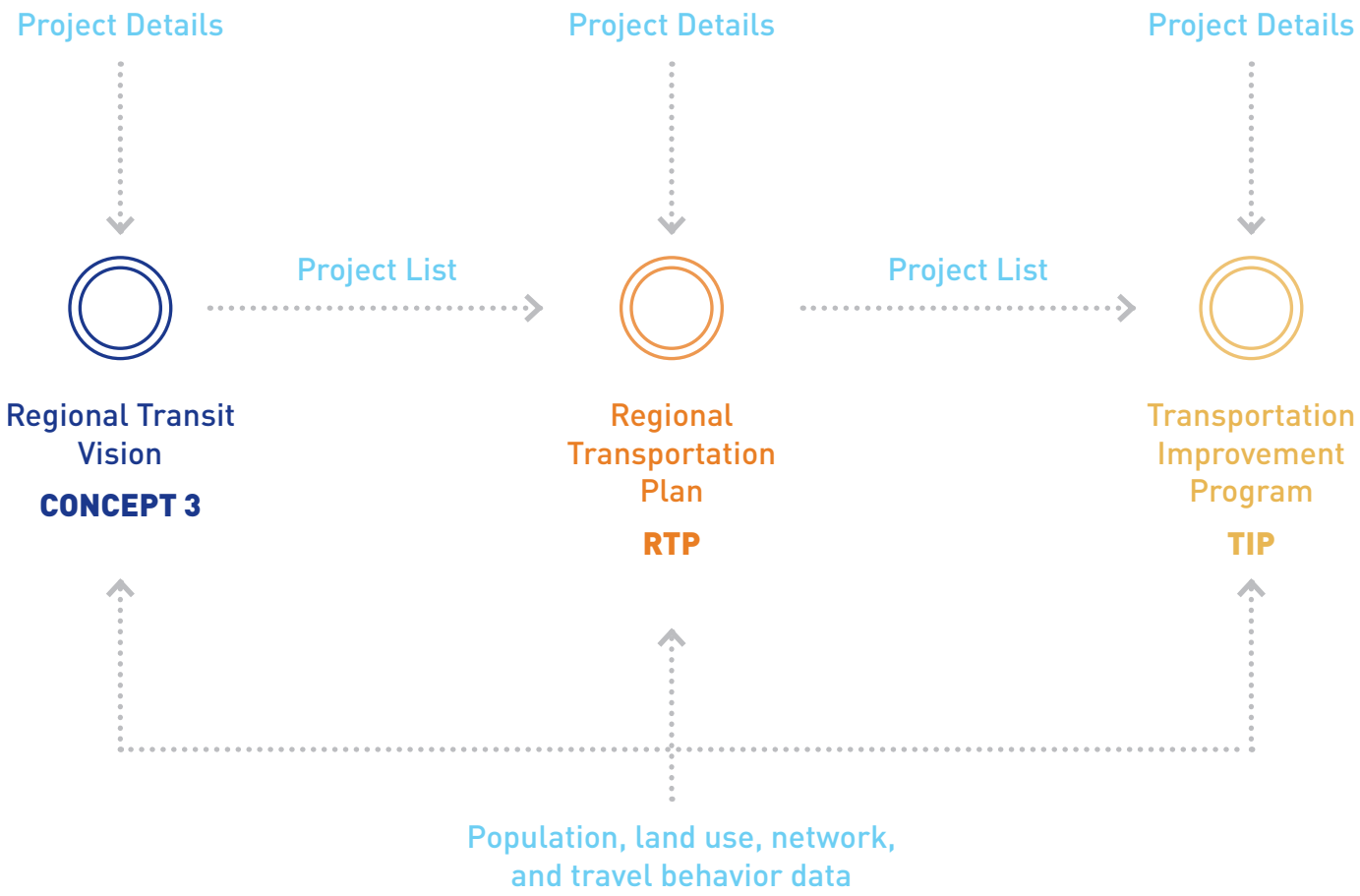
No single evaluation measure requires all data attributes. Some data attributes such as design features are unavailable in earlier planning stages. Travel behavior projections were not used for this Concept 3 document.

HOW DATA FLOWS

In the existing data pipeline, project and regional data is recollected for each planning effort. Project evaluation outputs and the data collected to calculate it are all stored in ARCs servers. However, access restrictions make it difficult for this data to smoothly transition between planning efforts. Some of the information is sensitive, such that access is even restricted within ARC. In most cases, planning efforts and updates have to request the specific data sets needed from different individuals across multiple organizations.

The access issue also means that as project information is updated, the versions available to ARC's planning team are often not up to date. Therefore, the most recent data must be individually verified for each data set and project for each planning effort. The only datasets that regularly transition fairly smoothly between planning efforts are the project lists. See B.1.

B.1: Current Data Flow



B.2 Evaluation Tools Currently Used in Regional Planning

Evaluation Tool	Primary Purpose	Current Planning Use
Remix	Aggregate population and land use data in proximity to projects	Concept 3
Conveyal Analysis	Accessibility indicators	Concept 3
PTV Visum	Ridership and vehicles travel forecasts	RTP and TIP

Data is collected to evaluate transit projects. Various software tools are used to project evaluation. Table B.2 highlights a few of those tools, although many others exist, including qualitative rankings based on project design, GIS overlays, and internal pollution mitigation calculators.

The tools require a variety of data inputs and offer a wealth of data that can be further refined into the desired evaluation measures. See Figure B.6 for other software evaluation tools that were studied for this Concept 3 update.

The vision for a more efficient data pipeline looks very similar to the existing structure but allows for much more the of the data to transition efficiently between projects (See Figure B.3 on the following page).

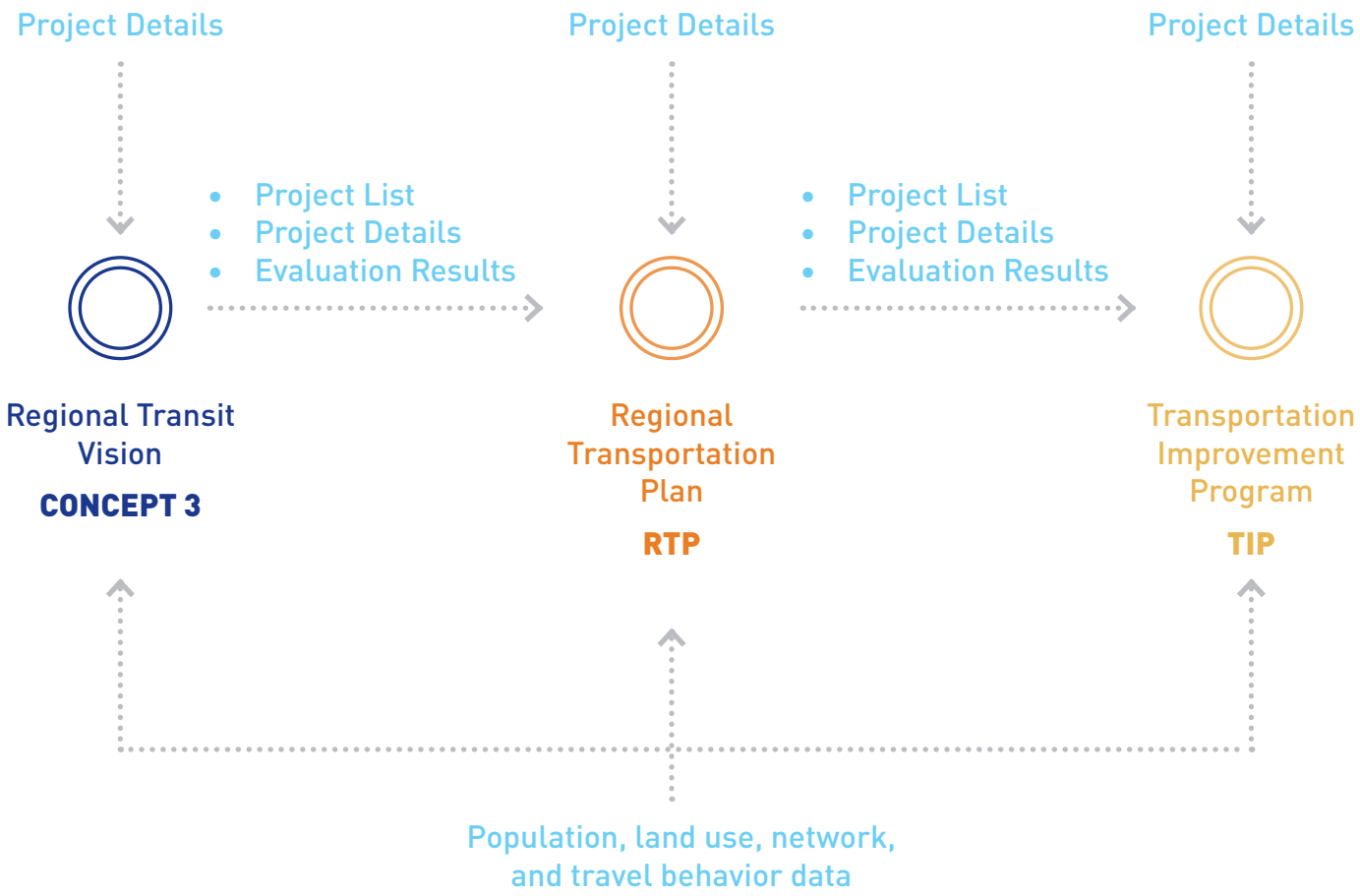
In new planning efforts, there will be new projects, updates to old project materials, and new project details that only become relevant when a project is closer to implementation. For example, safety criteria rely on specific design features that are often defined in later planning efforts, while stop placement may alter evaluation outcomes but may only be decided in later planning stages as well. This sort of new data must be acquired directly.

Similarly, population, land use, network, and travel behavior data may change significantly over time. Certain datasets, such as air pollution concentrations only become relevant at later planning stages when air pollution and greenhouse gas emission offsets can be calculated.

However, there are significant data categories that often stay the same. Project details like route alignment, length, and mode will often stay the same. They can therefore be transferred from one planning effort to the next without creating additional work of tracking down project files. Furthermore, even if the information is updated, if the updates happen in a central repository the most updated file will still be clearly available and easily accessible.

Furthermore, evaluation results may be able to carry over directly. For example, project scores from Remix and Conveyal Analysis could be used in the RTP or TIP without rerunning the tools if not too much time has elapsed and the specific projects have not changed.

B.3: Potential Data Flow



B.4: Data Flow for Concept 3

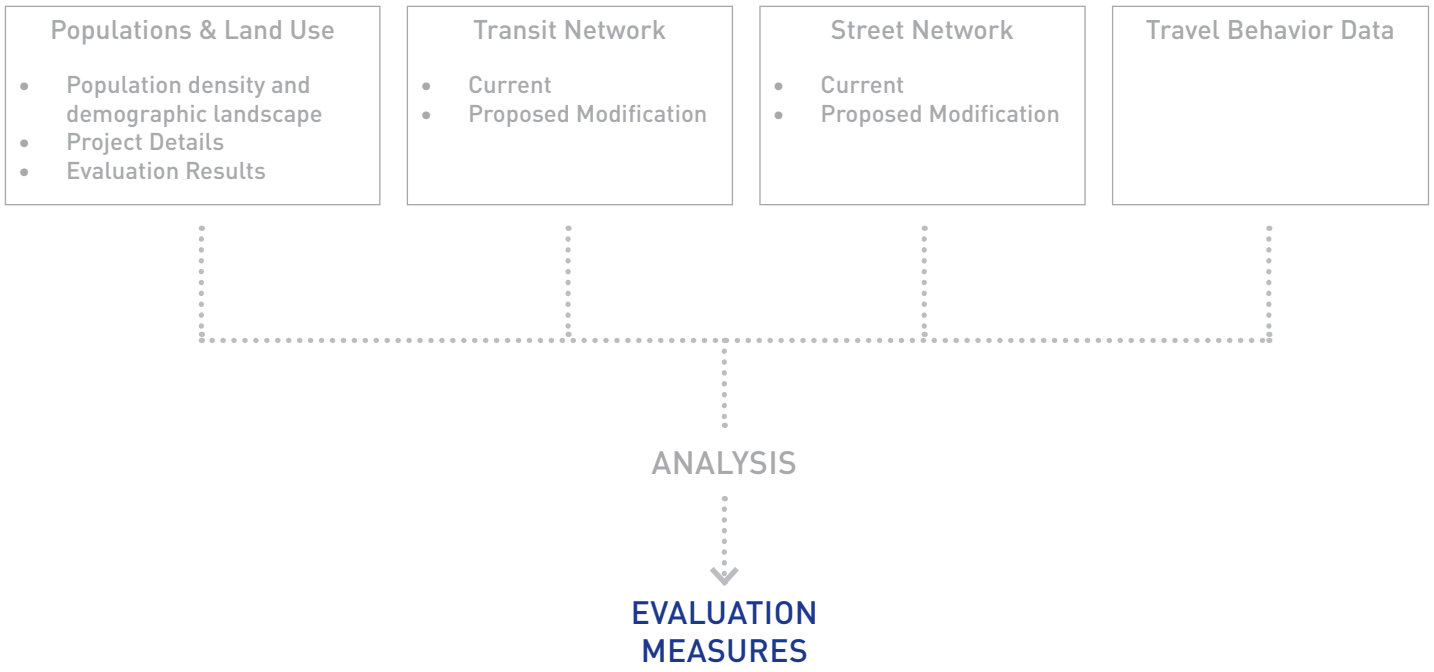


Figure B.4 represents a simplified description of the data inputs and process necessary to produce evaluation measures of proposed projects in Concept 3. This could represent a workflow involving destination access calculation software, travel demand models, or other software used in the "Analysis" step. If the requisite data is available and in a usable format, it will make producing evaluation measures faster, easier, and less expensive. With the right tools, stakeholders and project sponsors can use the evaluation tools as they are developing projects.

By streamlining the data pipeline, analysis tools will allow for quick updates to current plans. The only steps necessary are substituting updated or new projects and project details. This way transit plans can keep up with the quickly changing urban environment and transportation landscape.

DATA MANAGEMENT CHALLENGES

The primary challenges to good data management can be summarized under the following four categories:

Data availability // There is often no clear or ready "source of truth" for proposed project descriptions. Gathering the right ESRI Shapefile datasets for this document required more than 100 hours. Extracting the needed information and cleaning the datasets took many more hours. GTFS data for current service was more readily available for most but not all transit service operating in the region, though of varying levels of quality and accuracy. There are often multiple versions distributed across ARC and transit provider web-servers, and it is not always clear which are current.

Managing access // Creating universal access to all data may also pose some barriers. Some sets of data that ARC receives from individual counties or transit agencies may be sensitive, and thus cannot be shared even internally. Meanwhile, ARC does not have written guidelines for which elements of the data it produces can be shared with the public at large and which cannot. For

example, sharing individual project scores may create confusion if low scoring projects are funded before high scoring projects, something that may happen for a number of reasons that are not reflected in the evaluation criteria.

Data maintenance // Because circumstances may inspire projects to change mode or technology, adopt a different alignment, or something else entirely, the project version published in Concept 3, in the RTP, and maintained by the transit agency that is planning it, could all be different. The many departments and agencies complicate adoption of any single standard or method that everyone will approve of and follow. To ensure the main data warehouse is always updated with the most recent version will also require person hours and quality control.

Data formats and network coding // Various software require different formats for project descriptions. Both evaluation tools used in this project, Conveyal Analysis and Remix, acquire the current transit network via GTFS and use OpenStreetMap for the road network. However, the software has different requirements for importing proposed projects, and, further, because many proposed projects will use existing infrastructure, the connections between existing infrastructure and service and proposed infrastructure and service need to be manually inputted. Interoperable data formats (which can be utilized by many software packages) will enable a streamlined workflow.

DATA MANAGEMENT OPPORTUNITIES

There are a number of opportunities for ARC and their regional partners to overcome the challenges listed above, thereby enabling the ideal data management flow detailed in Figure B.4.

Improving data availability // The ARC server creates a number of barriers to access that can result in file dispersion. The ESRI Geodatabase maintained by ARC has emerged as a possible solution to advance on some of these issues. The geodatabase provides a broader base of access, and project data that should be shared can be added as attribute columns for project shapes inside of layers. The ESRI Geodatabase in its current form cannot house all project data because it does not allow for differentiated levels of access.

Managing access // Some project data is highly sensitive and can only be shared with certain people at ARC, while other project elements can be accessible to everyone at ARC, to partner counties and transit agencies, or to the public at large. Increasing access provides greater opportunities for optimizing workflows and forging collaborations. It is important to establish clear guidelines for access for various project elements, and to strive for the greatest level of access possible within those guidelines. The central warehouse for project data would have to be adapted to allow for differentiated access so that all project data can be stored in the same place but data elements would only be accessible to the appropriate parties.

Data maintenance // Ensuring a single source of truth requires clear protocols and practices that will be used to ensure that the data warehouse always has the most up-to-date project information and that whenever two different project files exist, it can be clear which one is the

most recent. This can include naming conventions, granting editing access to partner transit agencies so that they can directly upload new project data into the warehouse, using version control systems (i.e. GitHub), and assigning person hours to review, manage, and maintain data.

Data formats and network coding // To account for various data input and output formats of different tools, ARC can require that tools used in the workflow utilize standard data formats if they are available. In cases where there are not standards, ARC can require documentation for tool-specific data formats, which may later become a basis for standardized interoperable data. For example, most tools support GTFS. However, this data format is designed around use cases involving operating services where parameters such as the precise location of stops is known. This attribute is not available in earlier planning processes (see Chapter 4). Conveyal Analysis exports GeoJSON files that describe transit network scenarios where fewer parameters may be known. Data format standardization can also be supported by tracking and engaging with existing efforts, such as Zephyr Foundation's (currently notional) General Travel Network Specification.

Some proposed transit projects are modifications to existing lines (e.g. extensions) while others are new lines. Modifications to existing lines need to be applied to an existing baseline scenario. During the 2018 Concept 3 update process, transit network modifications were separately and manually applied in the selected evaluation software. In the future, there is opportunity to streamline this process by developing, purchasing, or commissioning software to re-apply proposed projects (e.g. modifications such as added trips or route changes) to updated baseline samples.

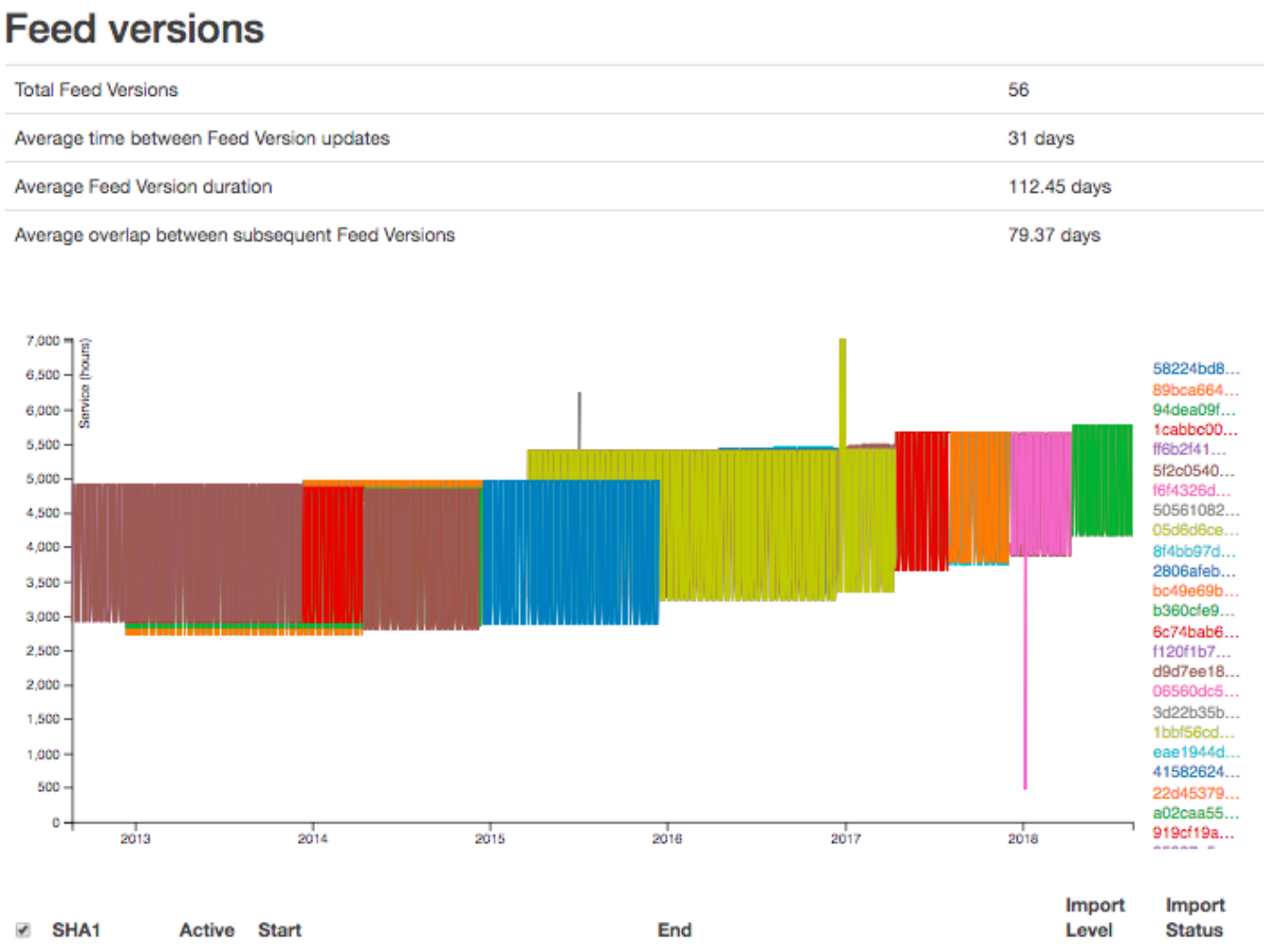
Sampling the baseline network // During this update process, baseline street and transit network datasets were combined with proposed projects to create and evaluate hypothetical network scenarios. This requires baseline data that accurately describes the current transportation network. A sample of General Transit Feed Specification (GTFS) data used in traveler-facing applications established the baseline transit scenario for the plan update. In future updates, a new transit baseline sample will need to be established (Figure B.5).

The plan update's baseline street network sample came from OpenStreetMap, which is the default source of street network information for the selected evaluation tools and is also used by many traveler-facing applications. By contributing to OpenStreetMap, regional organizations can maintain a shared, public street network that is used in planning processes and in journey planners and other traveler-facing tools.

For the 2018 Concept 3 update, the baseline transit network was sampled from the region's available GTFS feeds. This baseline scenario needs to accurately describe how transit service is delivered on a typical service day. The selected sample service day needs to best express the typical operations of the network. When determining dates for baseline transit network data, there are certain considerations that should be taken into account to remove possible variability in results. Common factors that can cause unwanted variation in datasets include seasonal services, recent or upcoming service changes, or large scale temporary service adjustments.

Figure B.5 below is a screenshot of the Transitland dispatcher, which can be used to quickly check GTFS data, indicated by total transit service hours. These and other tracked factors can help refine results to determine periods of flux and identify an accurate baseline period.

B.5: GTFS Sampling Methodology for Baseline Transit Network



SOFTWARE

Various Evaluation Tool candidate software were studied and assessed for the Concept 3 Update. Tools were selected based on their present features, but as new software emerges, existing software evolves, and process are reassessed, different tools may be better suited for the needs of future. Utilizing and insisting on standardized data will make it possible to more flexibly add new analysis tools to the workflow. Below is a description of two primary categories of tools for destination access analysis and travel modeling and a list of some example tools researched during the 2018 Concept 3 update process.

Destination access analysis // A new generation of tools richly quantifies access to jobs, services, and amenities provided by transit. One commonly used measure of access, for example, is the number of destinations (e.g. jobs) accessible by transit from a single point in 45 minutes. Aggregate measures can be formed by many of these single-point measurements across a transit service area. In an access analysis, travel time can be computed for:

- Trips people could make for all households, to all jobs, and/or other selected destination categories.
- Trips that people want to make, indicated by queries entered into a trip planner.
- Trips that people actually do make, gathered from survey or farecard-derived origin-destination data or other datasets such as LEHD Origin-Destination Employment Statistics (LODES).

Aggregate access to destinations using the above listed approaches can be calculated for the current transit network (baseline scenario) and for network changes under consideration to understand the implications for trips people can, want to, and/or actually do make.

Fast-adapting, data-driven travel demand and behavior models // A new category of fast-adapting travel demand models make it easier to consider demand for all modes in the transit planning process and uncover latent demand. Data-driven models are updated more frequently (e.g. quarterly) than traditional regional travel demand models. This is accomplished by using datasets such as consumer marketing datasets and passive datasets such as cell phone data.

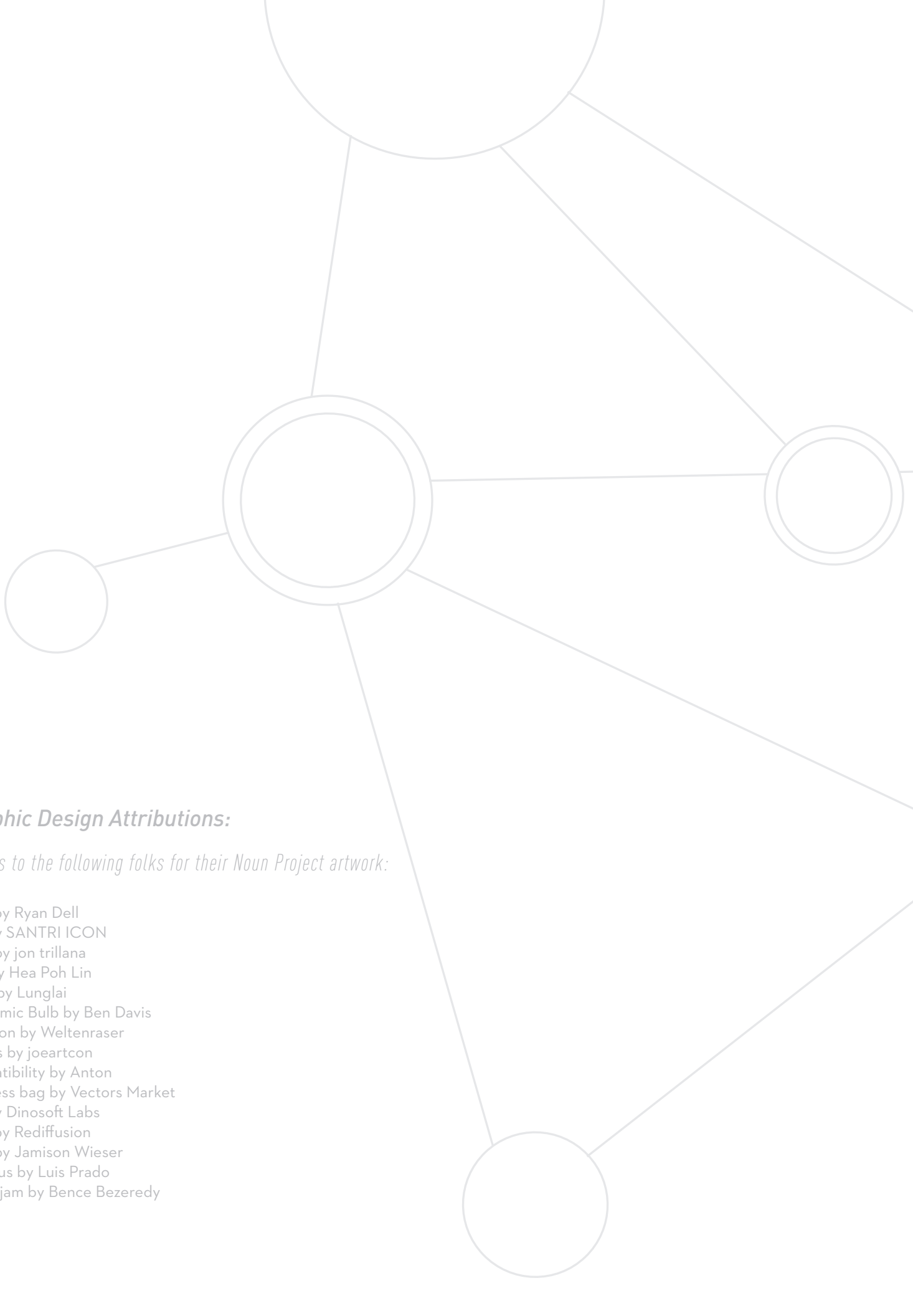
Table B.6 on the following page lists various Evaluation Tools that were studied for this Concept 3 update. The tools vary along multiple dimensions, including the amount of input required, the types of evaluation measures they offer, the modes of transit they can evaluate, runtime and processing intensity, ease of use and technical support, methodology, and more. For Concept 3, Conveyal Analysis and Remix were deemed to best serve the evaluation needs while meeting the time, budget, and data availability restrictions.

Planning processes should periodically study tool options. On the one hand, there is value in continuing to use the same tools for a longer interval. This way project evaluation measures can be compared over time as well. However, new tools may emerge that better meet the constraints and aims of the planning process, or existing tools that are relatively new and appear promising but require further development may mature and and become top contenders. The tools in Figure B.6 can serve as a starting list for future studies.

In order to be available, useful, and transparent to all stakeholders, the outputs of analysis processes need to be clearly presented. This is one of the functions of documents such as Concept 3. There is also opportunity to develop report templates and data dashboards that automate presentation of analysis outputs. For example, during this Concept 3 update process, R was used to post-process some of the outputs of evaluation tools. Various tools could be employed to post-process, consolidate, and present such outputs in a reproducible methodology.

B.6 Evaluation Tools Currently Used in Regional Planning

Vendor/ Supporting Firm	Offering/ Products	Service Delivery Model/License	Travel Modeling	Destination Access	Network Editing
Conveyal	Analysis	SaaS/ open-source		X	Transit
Citilabs	Sugar Access	Saas/proprietary		X	
	Network Editor	Saas/proprietary			Transit and roads
	Cube	Saas/proprietary	X		
Sidewalk Labs	Replica	Saas/proprietary	X		
Transport Foundry	CityCast	Saas/hybrid open-source and proprietary	X		Transit and roads
Inro	EMME	Proprietary	X		
Remix	Remix Planning	Saas/proprietary		Single point only, as-the-crow-flies for "last-mile"	Transit
TBEST	FDOT	SaaS/ open-source	Project from regression	X	
PTV Visum	PTV Group	Proprietary	X		
FTA STOPS	FTA	Download/unknown	Project from regression for fixed route rail		



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