ARC TIP PROJECT EVALUATION FRAMEWORK

"The Project Evaluation Cookbook"

Atlanta Regional Commission

Revised
Winter 2024

The ARC Title VI Program & Plan was adopted September 2022 –

The Atlanta Regional Commission (ARC), as a federal grant recipient, conforms to Title VI of the Civil Rights Act of 1964 and its amendments.

Title VI of the Civil Rights Act of 1964 requires that no person in the United States shall, on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. Presidential Executive Order 12898, as amended by Executive Order 14008, addresses environmental justice in minority and low-income populations, as well as disadvantaged communities. Presidential Executive Order 13166 addresses services to those individuals with limited English proficiency.

ARC is committed to enforcing the provisions of Title VI and to taking positive and realistic affirmative steps to ensure the protection of rights and opportunities for all persons affected by its programs.

For questions contact:
https://atlantaregional.org/contact-arc/

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Glossary of Acronyms

AADT	Average Annual Daily Traffic
ABM	Activity-Based Travel Demand Model
ARC	Atlanta Regional Commission
ARFMP	Atlanta Regional Freight Mobility Plan
ASTRoMaP	Atlanta Strategic Truck Route Master Plan
ATMS	Advanced Traffic Management Systems
B/C	Benefit-Cost Ratio; sum of project's expected benefits divided by the sum of its expected costs
CE	Categorical Exclusion
CFI	Continuous Flow Intersection
CMAQ	Congestion Mitigation & Air Quality Improvement Program; funding category
CMF	Crash Modification Factor
$CO_2(e)$	Carbon dioxide equivalent; a measure of the total amount of greenhouse gases emitted from automobile tailpipes
CST	Construction; phase of project funding
CID	Community Improvement District
DCA	Department of Community Affairs
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GDOT	Georgia Department of Transportation
GHG	Greenhouse gas
GRTA	Georgia Regional Transportation Authority
KDP	Key decision point; framework for technical evaluation used by ARC
LCI	Livable Centers Initiative
MS4	Municipal Separate Storm Sewer System permits
MTP	Metropolitan Transportation Plan
MPO	Metropolitan Planning Organization; part of ARC's duties is to serve as the Atlanta region's MPO with key transportation and air quality responsibilities
NBI	National Bridge Inventory
NO_x	Nitrogen Oxides; a tailpipe emission that contributes to the formation of ozone
PDP	Plan Development Process; GDOT's procedure to move projects from planning to construction
$PM_{2.5}$	Particulate matter less than 2.5 micrometer in diameter; a tailpipe emission
QLG	Qualified Local Government; status given to local governments by the DCA
ROW	Right-of-way; phase of project funding
STBG	Surface Transportation Block Grant Program; funding category
TIP	Transportation Improvement Program
TAP	Transportation Alternatives Program; funding category
TAQC	Transportation and Air Quality Committee; the policy board for the MPO work at ARC made up of local elected officials, citizen representatives and planning partners required by USDOT
TCC	Transportation Coordinating Committee
TERM	Transit Economic Requirements Model; FTA scale to rate a transit facility's condition rating
TOD	Transit-Oriented Development
TSM&O	Transportation System Management & Operations

TSP	Transit Signal Priority; technology that gives transit vehicles priority at red lights
TTI	Travel Time Index; a metric to determine how long it takes to travel a congested corridor
USDOT	United States Department of Transportation
UTL	Utility; phase of project funding
VHD	Vehicle Hours of Delay; a metric to determine how many vehicles are impacted by congestion on a corridor. This metric can be turned into person hours of delay by multiplying by the occupancy rate of the vehicles.
VOC	Volatile organic compounds; a tailpipe emission that contributes to the formation of ozone

Glossary of Planning Terms

Asset Management	KDP2 project type & criterion; the process of operating, maintaining and upgrading infrastructure to ensure a state of good repair.
Atlanta Region's Plan	Regional plan that focuses on the vision of world class infrastructure, healthy livable communities and a competitive economy. The Atlanta Region's Plan guides regional policy and is the cornerstone of ARC's programs.
Benefit-Cost Ratio	Monetized sum of project's expected benefits divided by the sum of its costs.
CMAQ Calculator	Tool developed by ARC to determine emissions and congestion benefits of CMAQ funding eligible projects.
Complete Street	Allows for safe travel by those walking, bicycling, driving and riding transit along the same corridor.
Cost-Effectiveness	Measure of how well a project achieves certain goals for the cost. For example, the number of transit trips a project generates per dollar spent to build and maintain the project.
Employment Accessibility	KDP2 prioritization criterion; extent to which a transportation system provides access to important destination and opportunities, such as employment, that support economic development and quality of life. Measures/metrics related to this criterion focus on improving access to key centers in the region.
FAST Act	Current federal transportation authorization bill; codified additional need for performance-driven planning into decision-making.
MAP-21	Previous federal transportation authorization bill; initiated efforts to incorporate a higher level of performance-driven planning into decision-making.
Mobility	KDP2 prioritization criterion; the ability to move people or goods from place to place. Measures/metrics related to this criterion ask the questions 'how do you get somewhere' and 'how fast can you travel there.'
Multimodalism	KDP2 prioritization criterion; The extent to which multiple modes of transportation are accommodated along a single corridor. For example, a 2-lane road with bicycle lanes, sidewalks and regular transit service is a good multimodal corridor in that it accommodates trips for people driving, walking, bicycling and riding transit.
Network Connectivity	KDP2 prioritization criterion; The extent to which a transportation system can work as a contiguous network, including an adequate number of connections and an appropriate level of redundancy. Ensuring transportation projects connect to existing infrastructure, fill in network gaps, or build redundancy ensures travel alternatives and improves access to key centers.
Reliability	KDP2 prioritization criterion; the ability to reach destinations in a predictable amount of time, even if that trip is on congested roadways.
Resiliency	The capacity to recover quickly from stressors; a factor incorporated into the FAST Act and linked to extreme weather and climate adaptation planning
Social Equity	KDP2 prioritization criterion; The extent to which all people are granted fair and equitable access to the benefits of the transportation system and transportation improvements.

Glossary of Links

ARC TIP Solicitation Website	https://atlantaregional.org/what-we-do/transportation-planning/transportation-improvement-program/tip-project-solicitations/
Atlanta Regional Freight Mobility Plan	http://www.atlantaregional.org/transportation/freight#plan-update
Atlanta Region's Plan Website	http://www.atlantaregionsplan.org
CMAQ Calculator	https://atlantaregional.org/natural-resources/air-quality/air-quality/
Crash Modification Factors Clearinghouse	http://www.cmfclearinghouse.org/index.cfm
Environmental Justice (EJ) Map	https://garc.maps.arcgis.com/apps/mapviewer/index.html?webmap=753af643a35a44fb978c34842e36fd77
FTA Transit Densities Guidelines	https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/Land_Use_and_EconDev_Guidelines_August_2013.pdf
GDOT Traffic Counts	https://gdottrafficdata.drakewell.com/
Livable Centers Initiative Program	https://atlantaregional.org/community-development/livable-centers-initiative
Regional Safety Strategy	https://atlantaregional.org/resources/2022-regional-safety-strategy/
Safe Streets Action Plan	http://www.atlantaregional.org/transportation/bicycle--pedestrian
Unified Growth Policy map	https://atlantaregionsplan.org/regional-development-guide-unified-growth-policy-map/
USDOT Proven Safety Countermeasures	https://safety.fhwa.dot.gov/provencountermeasures/
Walk. Bike. Thrive!	http://www.atlantaregional.org/transportation/bicycle--pedestrian

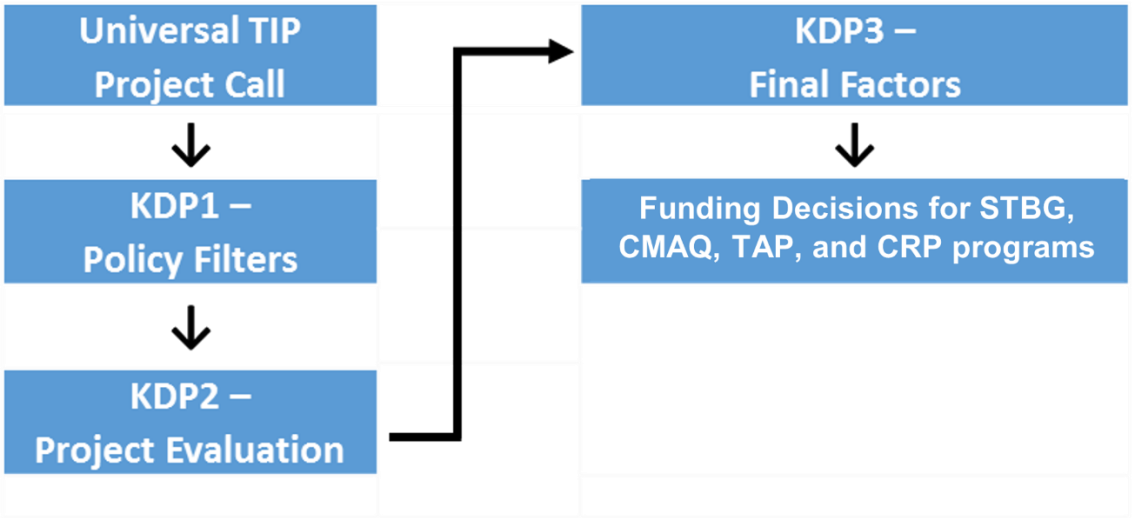
Overview

The Atlanta Regional Commission (ARC) has a rich history of data-informed planning and decision-making. This multi-step process that combines policy goals and data analysis reflects both the values of the federal governments and ARC strategic goals related to operational excellence, project delivery, and effective use of regional funds.

Key Decision Point Framework

ARC staff have developed a three-tiered KDP flowchart for evaluating all transportation projects seeking funding in the TIP. Figure O1 outlines the steps of the process.

Figure O1 – KDP Flowchart



First, ARC will initiate a call for projects. This call does not focus on a single funding category, but instead is universal. In KDP1, ARC staff will use a set of filters to remove projects that do not match regional policy. After applying these policy filters, ARC staff will evaluate the remaining projects technically in KDP2. After projects are evaluated and scored, ARC staff, project sponsors and policymakers will consider any final factors that cannot be accounted for in a technical exercise. This process, KDP3, is meant to recognize that solely performance-driven decision-making can sometimes overlook important factors that could lead to vital projects being left out of the TIP. Finally, ARC staff will allocate funding to the selected projects. The bulk of this document is dedicated to the KDP2 process. Information on the filters in KDP1 and the decision-making in KDP3 are also included.

An exception to the flow proposed In the KDP process are Congressional earmarks and GDOT's projects that are funded fully using a mix of state and GDOT's share of federal funds. These projects are not evaluated through ARC's KDP framework. It is the goal of ARC to gradually incorporate and provide a KDP2 score for all GDOT funded projects in the Atlanta TIP. Federal planning regulations require MPOs to demonstrate how the TIP is helping move the needle on performance measures and metrics. To determine how GDOT funded projects are impacting regional performance, ARC must evaluate these projects for technical merit. All GDOT sponsored projects that are seeking funding from ARC's share of federal obligation authority will pass through the full KDP process.

KDP1 – Policy Filters

The first step in the evaluation process focuses on removing project submittals that are not supported by state and federal regulations or regional policy. Project submittals that do not meet the policy filter criteria outlined in KDP1 will not advance to the KDP2 process for technical evaluation and will not be considered for funding. Policy filters are broken into three categories: general, roadway capacity specific, and transit capacity specific. Roadway capacity filters apply to lane widenings, road extensions, and other projects that significantly alter the roadbed or require additional right-of-way. Transit capacity filters only apply to right-of-way (ROW), utility (UTL) and construction (CST) funding requests and do not apply to planning, design or environmental activity. Table O1 outlines the policy filters ARC staff utilize in TIP project solicitations.

Table O1 – KDP1 Policy Filters

	Policy Filter Language
General Filters for Infrastructure Expansion or Maintenance	Project must originate from a locally adopted plan or an official transit agency plan
	Sponsors must have Qualified Local Government (QLG) status current or pending
	Projects on the state system or right-of-way will not be considered without a letter of support from GDOT[1]
	Project must be federal aid eligible
Roadway Capacity Filters	Roads that are four or more lanes must include a median to adhere to the Regional Safety Strategy and GDOT safety standards
	Projects must comply with FHWA's and GDOT's Complete Streets policies and be consistent with ARC's Regional Workbook for Complete Streets, by accommodating all modes in a safe and context sensitive manner; this includes incorporation of Proven Safety Countermeasures that reduce risks for all roadway users.
	Roadway expansions in rural-only areas as designated by the UGPM[2] will not be considered. Instead applicants will be encouraged to consider operational and access management solutions.
Transit Capacity Filters	Rail and BRT capacity projects must be a part of the MTP and/or the most recent ATL Regional Transit Plan[3]
	Project must demonstrate a firm financial package
	Project must connect to an existing public transit service or regional center

[1] Send letter of support request to ARCTIPSolicitation@dot.ga.gov
[2] https://garc.maps.arcgis.com/apps/View/index.html?appid=99e925148079456c8455eeed7fe9aab4
[3] https://atltransit.ga.gov/wp-content/uploads/2021/07/ARTP_2020.pdf

KDP2 Project Evaluation & the TIP Prioritization Task Force

To develop the KDP2 process, ARC convened a working group of staff from local governments, state agencies, transit providers, non-profit organizations and private consultants. This group, called the TIP Prioritization Task Force, met in the spring and summer of 2016 to develop a master performance matrix that guided the development of individual metrics used for project evaluation. This group also weighed in on the development of KDP1 policy filters and KDP3 final factors. The bulk of the committee's time was spent considering elements relevant to KDP2. ARC staff reconvened a subcommittee of the group and reached out to new stakeholders for revisions to the TIP Project Evaluation Framework in 2018.

Updates to the KDP2 process were established in from fall 2020–- summer 2021 through staff consultation, discussion, and guidance from the Transportation & Air Quality Committee (TAQC) Policy Sub-Committee. Input from partner agencies was also solicited and considered. These updates are meant iterate on the KDP2 process and develop more accurate and faithful results while also addressing shortcomings and data gaps present in the previous solicitations. They will also streamline the evaluation process and provide more clarity in the final scores.

Project sponsors will identify the most appropriate project type for their project based on its project type will be based on the primary purpose of the project and elements within its design. Nine project types represent the wide variety of projects the Atlanta region implements:

- Bicycle & Pedestrian
- Multiuse Trails
- Roadway Expansions
- Roadway Asset Management
- Transportation System Management & Operations – Built Environment
- Transportation System Management & Operations – Technology
- Transit Expansions
- Transit Asset Management
- Miscellaneous Emissions Projects

ARC recognizes that some projects submitted may not clearly fit into any of the nine project type categories identified above. Staff will work with sponsors to identify how best to evaluate these projects and will ensure that all applications receive a fair chance to state their merit.

Table O2 – TIP Key Scoring Criteria

Healthy Livable Communities	World-Class Infrastructure	Competitive Economy	Score Criteria	Components
			Mobility & Access	Evaluates whether the project relieves congestion, how many people it serves, can efficiently improve travel times and reliability, and connects people to destinations, including those with disabilities.
			Equity	Evaluates if the project serves historically underserved populations based on where the project physically is located, who the project serves, whether is negatively impacts these populations, and the kinds of outreach the sponsor has conducted.
			Safety	Evaluates if the addition of this project addresses systemic and project-area specific transportation safety issues
			Resiliency	Evaluates how much the project will reduce emissions, greenhouse gases, and if it addresses stormwater management issues present in the project area.

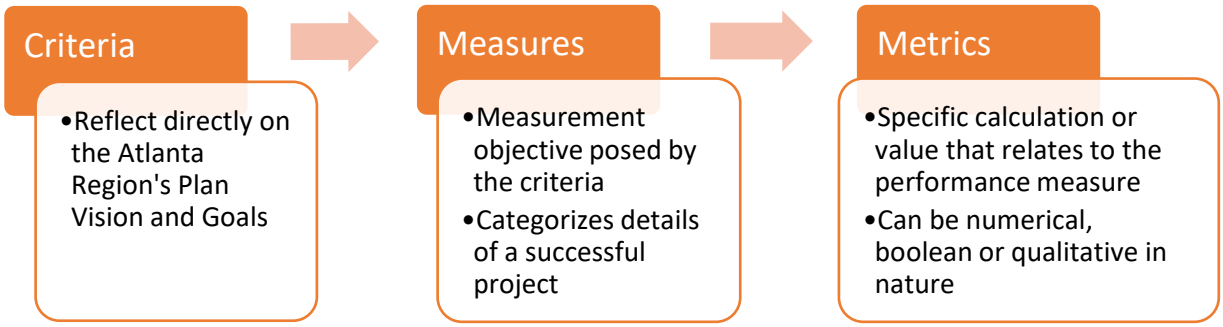
For TIP project evaluation, all submittals will be weighted with the four main score categories of Mobility & Access, Equity, Safety, and Resiliency. These project types all reflect the core visions of the Atlanta Region's Plan of creating Healthy Livable Communities, World-Class Infrastructure, and a Competitive Economy. There will be different sub-scores and specific components based on project type, but projects will ultimately be evaluated on how they perform in these four main categories.

Many projects are multimodal in nature and serve different kinds of users and trip purposes. Additional project elements will be considered for their merits and performance. For example, if a sponsor is planning to widen a road and adding bicycle lanes the project will be evaluated on the performance of both the road widening and the bike lane. Extra information will be collected to assess the benefits of the bicycle lanes in addition to the roadway widening.

Criteria, Performance Measures and Metrics

After the TIP Prioritization Task force identified project types and criteria they worked on developing performance measures and metrics. Figure O2 outlines how criteria, measures, and metrics all nest.

Figure O2 – Nesting of Criteria, Measures and Metrics



KDP3 – Final Factors

The performance measures and metrics evaluated in KDP2 are not meant to be the only deciding factors in project selection. Other pieces of information help inform the selection of projects and align decisions with policy. These extra pieces of information are a critical part of the KDP3 process.
KDP3 is designed to account for factors in project selection that cannot be easily quantified or that account for local decision-making and regional equity. The key factors ARC staff and stakeholders will assess before finalizing decisions on project selection are:

- Sponsor Priority
- Benefit-Cost or Cost-Effectiveness
- Regional Equity
- Deliverability

These four items reflect on long-standing practice at ARC and were used in previous MTP and TIP project evaluations. Taken together along with KDP2 scores, these KDP3 final factors help inform decisions that lead to project selection and funding awards. The four factors are outlined in more detail below:

Sponsor priority reflects on local politics and the choices communities have reached through outreach and collective decision-making. ARC staff will seek information from project sponsors on local priorities and share results from the KDP2 process to help determine sponsor priority.

In the Atlanta Region's Plan Policy Framework the ARC Board determined that *regional equity* is an important consideration. Ensuring a fair distribution of transportation projects throughout the region provides opportunities for growth, access to jobs, and robust investment in regional transportation systems. ARC staff work with partner agencies and project sponsors to ensure that all places in the region receive equitable investment.

ARC has employed *benefit-cost* and *cost-effectiveness* measures in the past to tier project results. Looking at a component of a project's benefits compared to its costs helps compare big and small projects on equal footing. ARC and our planning partners strive to select projects that are cost-effective to ensure the best use of limited transportation funds. If a transportation project scores very well in KDP2, but is not cost-effective compared to similar projects, it may not be in the region's best interest to advance into the TIP. Cost-effectiveness scores are used to help tier projects along with performance scores. More details on the cost-effectiveness and benefit-cost methods are provided in the Transportation Project Scoring section of this document.

Roadway projects will see additional analysis on to determine a safety benefit-cost to monetize their potential to decrease or increase regional deaths and serious injuries. This adheres to the Regional Safety Strategy (RSS) and the ARC's Vizion Zero goals. The analysis will consider the project's design

features, use of Proven Safety Countermeasures, and use Crash Modification Factors and the Benefit-Cost Analysis within the RSS (Appendix D and Appendix E).
All projects will see additional analysis to consider the social benefits or damage costs from reduced or increased pollutants in a monetized from. Pollutants will include NOX, SOX, PM2.5, and CO2 over a 30-year period. Existing methods using the CMAQ calculator or the Visum model are sufficient tools to estimate the pollutants that will be avoided or emitted by projects, and these will be paired with US DOT guidance on the costs of these pollutants.

Deliverability is key to the development of a successful TIP. Implementing promised projects on time improves public trust in government and ensures good stewardship of available resources. ARC staff have developed a comprehensive deliverability assessment as part of the TIP project solicitation application. This assessment is discussed in greater detail in the following section.

Project Deliverability

Project deliverability has been identified by policymakers as a key concern for all projects incorporated into the TIP and MTP. Deliverability is considered as one of the KDP3 final factors in project selection and is based on information provided by sponsors in the TIP solicitation. Following is a list of information the TIP solicitation application will require sponsors to provide. This information is used by ARC staff to determine deliverability of submitted TIP projects.

1. Environmental Screening & Impact Analysis
    a. Alternatives considered: Describe alternatives considered and why this alternative is preferred.
    b. Coordination with other Projects: List any transportation project (local, state, federal funds) scheduled within the constrained MTP which overlaps, intersects or extends the limits of this project.
    c. Railroad Involvement: Does the project involve construction on railroad property or crossing railroad tracks? If yes, please describe coordination to date.
    d. Inter-jurisdictional: Does project involve multiple jurisdictions? Describe any coordination to date.
    e. Environmental Impacts/Level of Analysis:
        i. What is the level of analysis anticipated: Programmatic Categorical Exclusion (PCE), Categorical Exclusion (CE), Environmental Assessments (EA) or Environmental Impact Statements (EIS)?
        ii. Historic resources: Does the project require Right-of-Way (ROW) acquisition, including construction easements, from a potential historic property or National Register listed property? Is the project located in a National Register Historic District?
        iii. Archaeology: Do you anticipate disturbance of any archaeological resources, including historic streetcar tracks that may be only 4 inches beneath the existing pavement surface?
        iv. Section 4(f): Does the project require ROW acquisition, including construction easements, from a cemetery, park or recreation area?
        v. Hazardous waste sites: Does the project require ROW acquisition or construction easement from a property containing underground storage tanks or other hazardous waste site?
        vi. Anticipated impacts to wetlands, streams or endangered species: Do you anticipate needing a Nationwide, Section 404 and/or other permits from USACE? Will a Section 401 Water Quality Certification be needed from the state? Have you determined if a stream buffer variance will be needed? Does this project require wetlands and/or stream mitigation? Is this project located adjacent or is hydrologically connected to an impaired waterbody? Have you conducted any desktop analysis for the potential Endangered Species Act considerations?
        vii. Air and Noise Impact: Will project reduce or increase number of traffic lanes, requiring more advanced air quality and noise impact modeling?
        viii. Social Equity: Where is the project located on the ARC's Environmental Justice equity analysis map? Explain how this project addresses social equity.
    f. Utility Involvement or Impacts (Communications, Power, Gas, Water, etc.):
        i. List known utilities in the project area.

ii. Do you plan to move the utility poles?
iii. Do you plan to bury above-ground utilities?
iv. Do you plan to use federal funds for utility relocation?
v. Do you understand that federal funds do not permit sole sourcing for purchase and installation of lighting (in other words, you cannot just hire GA Power, you must bid the work).

g. Public Engagement:
i. List any public outreach held to date (may include planning study or project level).
ii. Identify major stakeholders
iii. Describe any organized opposition to the project (if any)
iv. List additional public outreach anticipated for the project

2. Design Information
a. Existing design features:
i. Typical Section: (Describe number & width of lanes, turn lanes, bike lanes, curb, gutter, sidewalks, medians, etc.)
ii. Width of ROW (in feet):
b. Proposed Design Features:
i. Proposed typical section(s): Describe number & width of lanes, turn lanes, curb & gutter, sidewalks, median, etc.
ii. Proposed ROW
1. Width
2. Easements: Temporary, Permanent, Utility, Other
3. Number of parcels
4. Number of displacements (estimated): Business, Residences, Other
5. Number of driveways to be removed
6. Number of private off-street parking spaces to be removed
7. Do you understand that the federal Uniform Relocation Act requires that fair market value must be offered for all property acquisition, even for temporary easements?
8. Does the jurisdiction have a policy or practice against using condemnation as a last resort ROW acquisition tool?
iii. Logical Termini: Does project meet the following criteria: sufficient length to address broad environmental concerns, independent utility, and allowing consideration of alternatives for other improvements, which are reasonably foreseeable?
iv. Describe any changes to existing, or new bridges, culverts, retaining walls or other major structures.
c. Capacity Projects, i.e. adding or removing through travel lanes, and one-way to two-way conversions:
i. Does the project do any of the following: Add through travel lane, remove through travel lane, convert one-way to two-way operations, and/or convert two-way to one-way operations?
ii. Has a traffic study been completed? If yes, please summarize the findings related to the project's impact on traffic volumes and LOS.
iii. Is the project on a U.S. or State Route? If yes, describe coordination with GDOT to date. Has GDOT approved the proposed lane configuration (attach documentation)?
d. Design Policy
i. Explain how project complies with GDOT and ARC's Complete Streets policy.

ii. Do you anticipated any design exceptions to FHWA/AASHTO controlling criteria or variances from GDOT standards criteria (insert tables)?

3. Budget and Schedule
    a. Do you plan to "flex" the funds to Federal Transit Administration (FTA)? If yes, what agency will serve as the grantee? Please provide a letter of support from the FTA grantee, if not the applicant.
    b. Project Delays: Does the Sponsor have a delayed project(s) in the TIP? What actions will the Sponsor take to ensure the new project is not significantly delayed, and what will the Sponsor do to advance its existing delayed project(s)?
    c. Complete schedule and budget Table PD1 below:

Table PD1 – Solicitation Deliverability Assessment Schedule and Budget Table

Phase	Fiscal Year Proposed	Federal Funds (Max. 80%)	Matching Funds (Min. 20%)			Total Cost
			State	Local	CID/Other	
PE						
ROW						
CST						
Utilities						
Environmental Mitigation						
CST Oversight						

4. Attachments and Required Documents
    a. Proposed GDOT/PDP milestone project schedule
    b. Project location map and shapefiles
    c. Typical cross section
    d. Concept layout
    e. Resolutions/Signatures: Local governing body AND CID or other agency involved (if applicable) committing to the local matching funds and implementation of the project
    f. Support letters of impacted agencies (if applicable), e.g. CSX, GDOT, FTA, etc.
        i. For flex projects, letter of support from FTA grantee, if not the applicant. If applicant is a local government, a joint letter between the local government and FTA grantee will be accepted. However, the letter must outline commitments to sponsorship, local match, and project management responsibilities.

Deliverability Assessment Evaluation Criteria

Eligible for PE/ROW/CST funding now:

1. Approved Concept Report or Scoping Report, or
2. Project to be flexed to FTA and Categorical Exclusion (CE) is anticipated, or
3. Deliverability section is fully completed, including all attachments for project milestone schedule and detailed budget, concept layout and typical section, commitment letter or resolution. Clear understanding of potential right-of-way, social and environmental impacts is evident, and some public outreach has occurred (which may have been through a planning study resulting in this project application).

ARC will seek input from GDOT to assess project readiness based on the information provided by the sponsor. For projects requesting to be flexed, ARC will consult FTA regarding the project's "transit nexus" and anticipated level of environmental analysis.

Eligible for Scoping Funds:
Projects that score well under funding criteria, but do not pass the deliverability test above.

Not Eligible for funding at this time:
Project scores poorly on KDP2 and LCI/KDP3 (if applicable) funding criteria, regardless of deliverability assessment outcome.

LCI Projects

The ARC Board created the Livable Centers Initiative (LCI) in 1999 to provide funding for studies and transportation projects located in activity and town centers that promote increased density, a mix of land uses, housing for people of all income levels, and multi-modal transportation options. Through the adoption of every MTP since then, ARC has committed $1.1 Billion through the year 2050 for the projects identified in LCI plans. The program is unique in that priority for LCI transportation project funding is given to those communities that have shown continued support for creating multi-modal, livable centers through their on-going efforts to implement their adopted LCI plan, including making land use and zoning changes.

Only certain projects are eligible to be considered for LCI funding. These projects are a subset of those that pass through the entire KDP process. Eligibility for LCI funding is determined by the following criteria:

1) At least 50% of the project limits are within an LCI study area
2) The LCI plan has been adopted by a local governing body by resolution
3) The project is listed in the LCI 5-year Implementation or Action Plan

If a project meets the LCI eligibility criteria, an additional evaluation will occur to determine projects that are the best fit for the program. This evaluation reflects established practice and ARC Board-adopted policy that are unique to the goals of the LCI program. LCI project selection will therefore be based on a combination of the KDP2 technical performance score, and the LCI assessment score, and a deliverability assessment.

LCI Evaluation Score

1. **LCI Plan Implementation (25 possible points total) :**
   The primary goal of the LCI program is to create and enhance well-connected, dense, mixed-use centers that promote walking, bicycling and transit, which serve people of all ages and incomes. This section is intended to assess the commitment and progress made towards these goals.

   Do the codes/regulations covering the LCI area permit the following (check all that apply):
   - 10pts: Inclusionary housing ordinance, or incentives or requirements for workforce or affordable housing
   - 10pts: Mixed-use zoning districts or provision allowing mix of uses, and multi-family residential permitted.
   - 5 pts: Walkable street and parking regulations, such as parking maximums and placement of parking behind buildings, code requires street connectivity in new developments or subdivisions, adoption of design overlay or streetscape standards, or locally adopted historic district.

2. **Creates a complete street & promotes walkability (30 possible pts)**:
   a. Bicycle and pedestrian facilities (15 possible points):
   Facility design is a critical factor in encouraging new users and trips, and improving safety. Therefore, points should be distributed based on the following factors:

i. Separation from traffic/travel lanes (vertical, horizontal, width) and quality of separation (e.g. flexible posts, planters, curb, green infrastructure, on-street parking)
ii. Width of the bicycle and/or pedestrian facility (i.e. sidewalk, path, bike lane)
iii. Travel modes accommodated (e.g. just pedestrian, or does project accommodate cyclists or transit passengers too?)
iv. Intersection treatments that take bicycle and pedestrian safety into account (e.g. LPIs, curb extensions, bike boxes, queue jumping, etc), and minimal driveway crossings
v. "Bicycle Boulevard" projects should include all eight bicycle boulevard design elements identified in the NACTO Urban Bikeway Design Guide, **and** at a minimum, to get any points, shall include speed and volume management.
vi. No points awarded if project *only* includes replacement of existing sidewalks without widening or adding a buffer. Also, no points for shared lane markings (aka sharrows).

b. Safety Features (15 possible points):
   i. May include raised median or islands, enhanced crossing (e.g. Pedestrian Hybrid Beacon or Rectangular Rapid Flashing Beacon), lane reductions, roundabout or speed reduction measures. Points determined based on how well the countermeasures address the safety risk.

3. **LCI goal alignment (5 pts each – 15 possible pts):**
   a. 10 pts: Project includes green stormwater management infrastructure or climate adaptation or resiliency elements.
   b. 5 pts: Project includes innovative or "smart" design elements or creative placemaking. For example, infrastructure for shared mobility devices, electric car charging stations .

4. **Provides access to transit[4] or supports Transit-Oriented Development (TOD) (max. 15 pts – select <u>ONE</u> below)**:
   a. 15 pts: TOD project
   b. 15 pts: Bike/ped/transit infrastructure within 1/4 mile of transit station or bus stop
   c. 12 pts: Bike/ped/transit infrastructure within 1/2 mile of transit station or bus stop
   d. 8 pts: Bike/ped/transit infrastructure within 1 mile of transit station or bus stop
   e. 5 pts: Bike/ped/transit infrastructure within 1/4 mile of funded or programmed transit station or bus stop
   f. 0 pts: No existing or future transit

[4] Transit includes MARTA rail, streetcar, any local bus route/stop, and GRTA Xpress park and ride

5. **Social Equity (15 possible points):**
   Projects that are located in or connect to census tracks with the highest concentrations of racial and ethnic minorities and low-income populations (using ARC's equity analysis tool), or which serve residents of public or subsidized housing, will receive priority. Connecting people and communities to economic and educational opportunities, with safe, reliable and affordable transportation, is a key goal of the Atlanta Region's Plan, ARC's Transportation Equity Advisory Group, the Atlanta Regional Workforce Development Board, and ARC's Regional Housing Strategy..

   To receive maximum points, the project must support and benefit these historically underserved populations, not displace them or adversely affect them. Guidance on points:

   - 15 pts: Highest concentration of racial/ethnic minorities and low-income populations
   - 12.5 pts: High concentration of racial/ethnic minorities and low-income populations
   - 10 pts: Moderate concentration of racial/ethnic minorities and low-income populations
   - 10 Pts: Project is outside of three highest concentrations of equity analysis factors above, but serves public or low-income housing (or households). See housing HUD subsidy property database: https://resources.hud.gov/#.
   - 0 Points: Outside of three highest concentrations of equity analysis factors (race, ethnicity, income) and does not serve low-income housing..

Studies

Applications of study funding are also evaluated based on performance criteriaIn order to be eligible for study funding, the following criteria must be met:

1) Non-local government applicants (such as a CID or non-profit organization):
    a. Must provide a letter of support from the local government jurisdiction.
    b. The study sponsor must be certified to contract with ARC. All local governments are eligible, but certain CIDs or non-profit organizations may not be – sponsors should conform their status with ARC's contract officer.
    c.
2) For scoping, concept development or feasibility studies on state routes, applicants must provide a support letter from GDOT.
3) Sponsors must provide a Board/Council/Commission resolution, or a letter from the chief elected officer or authorized staff, that commits to managing the study and providing the local matching funds.

Below are the evaluation criteria for study applications. These criteria are based broadly on the study's need, its attention to regional and social equity, its consistency with the Atlanta Region's Plan and the sponsor's commitment and ability to implement the study.

Study Evaluation Score

Study Need (45%)

The application should include an issue statement that clearly identifies the need and purpose of the study along with the desired outcomes. Points are divided into two categories that cover both the general needs of the study and the specific goals the study aims to accomplish:

All Studies: Up to 15 points

- The study supports the implementation of one or more regional plans, e.g. Atlanta Region's Plan, *Walk. Bike. Thrive!,* Regional Trails Plan, Regional Freight Mobility Plan, LCI program, Regional Safety Strategy, ATL Regional Transit Plan, Regional TSMO or Electrification Plan.
- The study area or corridor has not been studied within the past five years. If the area has been studied with the past five years, justify the need to study it again.

The remaining points are broken out by study type:

Freight Cluster Studies: Up to 30 points

- Area must be identified on Regional Freight Cluster Map from the Regional Freight Mobility Plan

- If the proposed study area is not in an identified freight cluster, it must meet one of the following criteria:
    - Emerging Cluster: There is existing industrial development, there are plans for additional industrial development, and existing zoning/future land use supports industrial development
    - Urban Delivery: Study area is a central business district or other high density, urbanized activity center experiencing curb management challenges with retail, restaurant, and parcel deliveries

Project Concept Development, Feasibility or Scoping Studies: Up to 30 points
The project must be identified in a locally-adopted plan and a priority within that plan.

- *Complete Streets, Bicycle, Pedestrian, Trails and/or Safety Projects (0-30 Pts):*
    - 0 – 12 pts: Project improves multi-modal accessibility and safety for all modes.
    - 0 – 12 pts: Demand for facility/improvement is documented in the application, e.g. proximity to schools, employment center, connection to existing facilities, lack of existing sidewalks or bike infrastructure, crash history, etc.
    - 0 – 8 pts: Study scope includes environmental/NEPA screening and public involvement.

- *Congestion Mitigation Projects (widenings, traffic ops, ITS, etc.) (0-30 pts):*
    - 0 – 7.5 pts: Project improves multi-modal accessibility and safety for all modes.
    - 0 – 7.5 Pts: Scope includes alternatives analysis for traffic operations, ITS/TSMO and/or access management.
    - 0 – 7.5 Pts: Documentation of current traffic congestion is provided (e.g. a volume-to-capacity ratio of greater than 1.0, or intersections operating at LOS E or F).
    - 0 – 7.5 Pts: Study scope includes environmental/NEPA screening and public involvement.

General Transportation Planning studies: Up to 30 points
Includes sub-area or citywide transportation plans, trail master plans, corridor plans, parking studies, connected or autonomous vehicle studies, or other transportation studies that result in a list of recommended projects.

- 0 – 10 pts: The need for this study was identified in a Comprehensive Transportation Plan (CTP) work program or other locally-adopted plan
- 0 – 10 pts: The application provides documentation that the study is responding to local or regional priority or transportation need, e.g. new large-scale developments or multiple DRIs in the study area, new transit service is beginning or recently began, new interchange opened, safety concerns, etc.
- 0 – 10 pts: The goals of the plan or study include reducing single-occupancy vehicle trips and increasing multi-modal access and mobility throughout the study area.

Transit Studies (new service, local bus, circulators/shuttles, etc): Up to 30 points

- 0 – 7.5 pts: The need for this study was identified in a Comprehensive Transportation Plan (CTP) work program or other locally-adopted plan or transit initiative.

- 0 – 7.5 pts: The study area or transit corridor currently has transit-supportive density, or if not, the application documents the demand for transit (e.g. serves large senior population or zero-car households, or current zoning allows for transit-supportive densities, etc.).

0 – 7.5 pts: The study Project must cross 2+ counties or connect 2+ operators, connect 1+ regional activity centers, leverage regional capacity improvements, is or connects to transportation terminal, or provides high capacity, improves transit reliability, high frequency or dedicated facility.

- 0 – 7.5 pts: All applications must include a letter of support from the transit agency. Additionally, county applications must include support letters from the municipalities within the county, and city applications must include a support letter from its county(ies).

Equity (25%)

Studies that are located in or connect to census tracks with the highest concentrations of racial and ethnic minorities and low-income populations (using ARC's equity analysis tool), or studies which serve residents of public or subsidized housing, will receive priority. Connecting people and communities to economic and educational opportunities with safe, reliable and affordable transportation is a key goal of the Atlanta Region's Plan, ARC's Transportation Equity Advisory Group, The Atlanta Regional Workforce Development Board, ARC's Regional Housing Strategy and ARC's regional economic competitiveness strategy, known as CATLYST. Points are allocated as outlined below[5]:

- 25 pts: Highest concentration of racial/ethnic minorities and low-income populations
- 20 pts: High concentration of racial/ethnic minorities and low-income populations
- 10 pts: Moderate concentration of racial/ethnic minorities and low-income populations
- 10 – 15 Pts: Outside of three highest concentrations of equity analysis factors (race, ethnicity, income), but serves public or low-income housing (or households). See housing HUD subsidy property database: https://resources.hud.gov/#.
- 0 Points: Outside of three highest concentrations of equity analysis factors (race, ethnicity, income) and does not serve a low-income housing or households.

Commitment and Ability to Implement (20%)

ARC staff aim to minimize the risk of project delays and avoid wasting resources on unimplementable plans due to lack of political or public support, poor agency coordination, or for other reasons.

[5] To receive maximum points, the plan or project must support and benefit these historically underserved populations, not displace them or adversely affect them.

Therefore, past performance on plan and project implementation will be considered in the study evaluation.

For Scoping/Concept Development/Feasibility Studies ONLY:

- 5 pts: Sponsor is LAP certified
- 5 pts: Sponsor does not currently have any "projects of concern" in the TIP, i.e. project phases that have been delayed more than 2 fiscal years
- 10 pts: Sponsor has history of successfully implementing transportation projects identified in its plans (CTPs, LCIs, Comp Plans, corridor studies, etc).

For all other study types:

- 10 pts: Sponsor has history of successfully implementing transportation projects identified in its plans (CTPs, LCIs, Comp Plans, corridor studies, etc).
- 10 pts: A substantial number of programs, policies and non-infrastructure recommendations from the sponsor's previous plan have been implemented (e.g. zoning code updates, adoption of complete streets policies, TDM programs, etc).

Consistency with the Atlanta Region's Plan (10%)

The Atlanta Region's Plan is focused on a vision of creating and maintaining World Class Infrastructure, a Competitive Economy and Healthy, Livable Communities. There are dozens of policies and objectives identified in the policy framework document[6]. Studies that are consistent with these policies will receive full credit for consistency. Points will be assigned based on the applicant's response on how the study addresses The Atlanta Region's Plan policies:

- 10 pts: Strongly supports regional policies
- 7 pts: Supports regional policies
- 4 pts: Somewhat supports regional policies
- 0 pts: Does not support regional policies

[6] http://documents.atlantaregional.com/The-Atlanta-Region-s-Plan/policy-framework.pdf

Transportation Project Scoring

All projects are scored and ranked based on the primary project type selected by ARC staff. Although final evaluation criteria are held constant across project types, performance measures and metrics vary too much to allow for normalized scoring across different project types. As a result, projects are scored only against similar projects.

After staff distribute scores, it is then possible to compare across project types to help identify projects of any type that contribute towards the goals of a specific criterion. For example, trail projects are scored only against other trail project for their performance. After scores are tallied for all projects across all types, staff could compare trail safety projects to roadway expansion safety projects with a goal of selecting a subset of projects that have the potential to contribute the most to improved safety in the region.

Each criterion can receive a maximum of 100 points. After weights are applied across all the criteria, projects are scaled based on the applied weights for a final KDP2 project score between 0-100.

The following subsections outline how points will be allocated across the three principal types of metrics identified by the TIP Prioritization Task Force: numerical, boolean (yes/no), and written responses.

Numerical Response Scoring

Data for numerical scores comes from a variety of sources such as: the CMAQ Calculator, ARC's VISSUM model, real-world observations, GIS calculations, sponsor-provided, etc. Projects are scored on a mix of a normalized basis, with the highest scoring project receiving maximum points, or a tiered score method with projects receiving a set number of points based on design or purpose aspects. ARC staff will account for outliers[7] in determining the distribution of scores.

Boolean (Yes/No) Response Scoring

Some metrics are answered using a boolean-type response. These are typically yes/no questions for project sponsors or ARC staff to determine. Depending on the criteria, these metrics are scored with either full credit or no credit.

Written Response Scoring

Sponsors will be required to provide a written response for some criteria. These criteria often will give sponsors an opportunity to provide a list of project elements that address the performance measure associated with the criterion. Where possible, ARC staff will identify check lists and information to help project sponsors identify noteworthy characteristics of their project. Credit for these written projects will be determined based on the responses received. ARC staff will determine similar project characteristics and reward points based on the pool of submitted responses.

[7] Outliers are determined using the Median Absolute Deviation (MAD) methodology

Criteria & Metric Weights

Weights are a necessity in dealing with frameworks that host numerous multi-faceted performance measures, design elements, and project purposes. While there are only four main scoring criteria, the weighting among them is important to reflect regional values.
To determine the division of weights between Mobility & Access, Equity, Safety, and Resiliency, a survey was sent to members of the TAQC, TCC, and ARC staff asking how much each criterion should be weighted for each project type. This yielded 38 responses.

Table S1 – Survey Respondents' Preference for Criteria by Project Type

	Mobility & Access	Equity	Safety	Resiliency
Bike & Pedestrian	30%	20%	30%	20%
Multiuse Trails	30%	20%	35%	15%
Roadway Asset Management	25%	15%	40%	20%
Roadway Expansion	30%	20%	30%	20%
TSM&O- Built Environment	30%	15%	40%	15%
TSM&O- Technology	25%	15%	40%	20%
Transit Expansion	35%	25%	20%	20%
Transit Asset Management	30%	20%	30%	20%

Benefit-Cost Ratio and Cost-Effectiveness Scores

Project performance scores are combined with Benefit-Cost (B/C) ratios or cost-effectiveness scores to produce project evaluation tiers (see the following sub-section for more detail on tiering). Historically, ARC has applied a very rigorous B/C ratio for roadway widening projects evaluated as part of the MTP. The B/C ratio is a sum of a project's expected benefits and disbenefits divided by the sum of its expected costs.[8] ARC's B/C ratio includes monetized values for people's time, fuel usage, greenhouse gas (GHG) emissions and criteria air pollutant emissions. The B/C ratio is an imperfect, but useful, way of assessing whether a project's benefits to society outweigh the cost incurred by construction and maintenance of the facility.
Unfortunately, ARC does not have the tools available to develop a traditional B/C ratio using the same variables for all project types. The preexisting methodology for B/C ratios will continue to be used for roadway expansion projects, but a new cost-effectiveness measure is introduced for the other project types evaluated during the TIP project solicitation. This information will help tier projects to inform the KDP3 final decision-making process.

There are multiple ways to assess cost-effectiveness. Any numerical value generated by the KDP2 process can generate a cost-effectiveness associated with that criterion. Table S3 outlines the key cost-effectiveness measure that ARC staff plan to use to tier projects for KDP3 review. The chosen cost-effectiveness measure reflects the project's impact on mobility and congestion. Mobility and congestion metrics were selected because they were the top criterion identified across most categories in the 2016 preference survey and have universally numerical values to compare to cost. ARC will continue to study methods to shift other project types towards more traditional B/C ratios and to consider the actual and potential disbenefits of projects.

[8] Due to the addition of disbenefits in the numerator, it is possible to receive a negative B/C ratio

Table S3 – Cost-Effectiveness & B/C Methods by Project Type

Project Type	Cost-Effectiveness & B/C Methods	Units
Bicycle/Pedestrian/Trail	Users per lifecycle cost per year	Users/$/yr
Roadway Asset Management & Resiliency	Annual average daily traffic (AADT) per lifecycle cost per year	AADT/$/yr
Roadway Expansion	Traditional B/C Ratio	-
Roadway TSM&O	Change in vehicle hours of delay (ΔVHD) per lifecycle cost per year	ΔVHD/$/day
Transit Expansion	Boardings per lifecycle cost per day	Boardings/$/day
Transit Asset Management & System Upgrades	Passenger trips per lifecycle cost per year	Passenger trips/$/yr

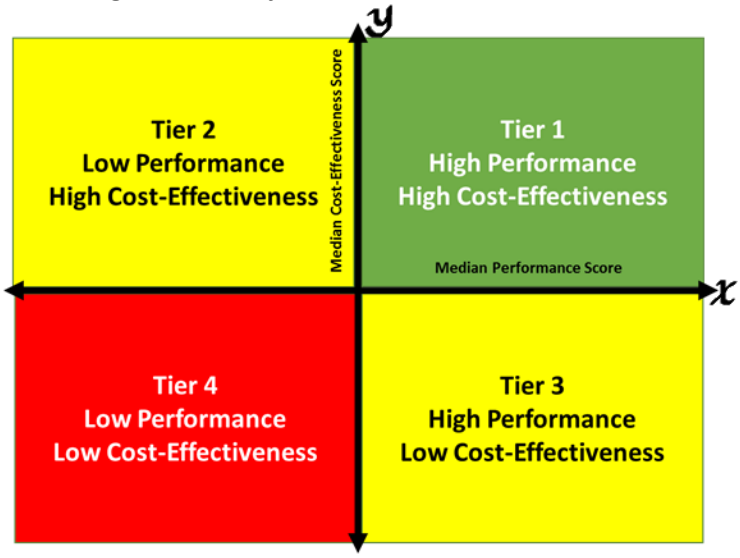
The cost-effectiveness data can help compare projects across project types in ways the selected performance measures and metrics do not allow. For example, if decision makers want to know the most cost-effective projects to improve air quality regardless of project mode, data can be queried to provide that information. Looking at the data from this perspective could be helpful in allocated Congestion Mitigation and Air Quality (CMAQ) money.

The ATL Authority calculates a relative cost to impact value using 14 performance measures for transit projects. This value will be considered for any project that has previously been analyzed by the ATL. Additional safety and emissions benefit-cost analysis will be conducted on Roadway Expansions and Roadway TSM&O projects to consider the long-term impact of these projects on the region's Vision Zero goals and on regional air quality.

Project Tiers

In the past few regional plans ARC staff used a tiering system to succinctly summarize project performance and benefit-cost/cost-effectiveness. This method simplifies a series of numbers into a relativistic score of four tiers. Figure S1 illustrates the tiers planned to evaluate TIP project solicitations.

Figure S1 – Project Tiers for Final Evaluations



The x and y-axes in Figure S1 are based on the median performance and cost-effectiveness or benefit-cost score. Roadway expansion projects will continue to be tiered based on their B/C ratio. All other projects will be tiered based on the cost-effectiveness scores outlined in Table S3, above.

After median scores are determined, projects are then plotted on the chart and assigned a tier. The key benefit of using a tiering system is that it gives policymakers the ability to quickly reference how all scored projects relatively compare to each other as well as providing a staff recommendation based on project performance. More specifics about tiering are outlined in Table S4.

Table S4 – Project Tiers and Final KDP2 Recommendations

Tier	Performance	Cost-Effectiveness or B/C	KDP2 Recommendation
1	High	High	High
2	Low	High	Medium
3	High	Low	Medium
4	Low	Low	Low

Project Bundling

MAP-21 and the FAST Act encourage performance-driven decision-making of all transportation projects. To accurately and thoroughly assess the impacts of all submitted projects, it is necessary for project sponsors to submit discreet project applications with logical termini. ARC staff will work with project sponsors on a case-by-case basis in situations when bundling multiple project segments or project locations into one application makes sense. However, in general, project bundling is discouraged.

After individual project evaluation in KDP2 is complete, ARC staff will work with project sponsors to determine if bundling some discrete projects into a program for funding makes sense. These decisions will be reserved for the KDP3 process.

The balance of this document outlines the methodologies and scoring rubric ARC staff will use to evaluate TIP project submittals. For each primary project type there is a description of the process to evaluate projects and an outline of the data ARC staff will require from project sponsors. These data requirements match what project sponsors will be required to submit through the project solicitation application form.

Exempt and Non-Exempt Projects

Certain projects have the potential to significantly affect regional air quality and therefore require additional documentation when they are submitted to ARC and additional transportation modelling efforts if they are accepted into the TIP. These requirements are based on the project's type and design regardless of which phase applicants are seeking funding for.

Non-Exempt projects are typically expansions to road capacity like widenings and new alignments or transit expansions like new routes or significant frequency changes.

Exempt Projects

40 CFR 93.126 (Table 2) and 93.127 define what **projects** are exempt from a regional air quality analysis.

Road diets in particular can be exempt projects if the project is part of Georgia's Highway Safety Improvement Program or if it is a project that aims to "correct, improve, or eliminate a hazardous location or feature." This language must be incorporated in project descriptions or justifications. Lastly, ARC in consultation with regional partners can identify a road diet project to be Non-Exempt if it has an adverse impact to regional emissions.

Bicycle & Pedestrian

Table BP1 outlines the scheme for evaluating bicycle and pedestrian projects. These projects include sidewalks, bike lanes, cycle tracks, and sidepath trails, which are multi-use paths adjacent to a roadway or located within an existing road right-of-way. Projects received in the solicitation that focus on adding bicycle or pedestrian infrastructure will be evaluated using the performance measures indicated in the table. Further information on the exact metrics and scoring follows in the subsections.

Paths, trails, or greenways that run on an alignment independent of a roadway (e.g., along rail corridor, stream/river, utility corridor) will be assessed under the Trail project criteria, not Bicycle & Pedestrian.

Table BP1 – Bicycle & Pedestrian Project Evaluation Scheme

Mobility & Access		
Design Standards	25%	30%
Transit Connectivity	25%	
Improves Access to Destinations	50%	
Equity		
Addresses Equity	70%	20%
Promotes Housing Affordability	30%	
Safety		
Improves Safety	100%	30%
Resiliency		
Green Infrastructure	30%	20%
Reduction of Air Pollutants	70%	

Mobility & Access

Design Standards

Fills an active mode gap or creates a crucial network where none currently exists. Building out local and regional networks for bicycle and pedestrian facilities is vital in promoting these modes of travel. See Table BP2 and BP3 for details.

Table BP2 – Metric for Evaluating the Bicycle & Pedestrian Access & Connectivity

Measure	Metric	Nature of Metric	Sponsor Provided
Improves bicycle and pedestrian access and safety	Width, separation from traffic and quality of the proposed facility	Numerical; Based on Table BP3	Yes (based on concept or typical section provided by applicant)

Table BP3 - Scoring Scheme for Bicycle & Pedestrian Design Standards Metric

Bicycle Facility Design	Points Awarded
None/Sharrow	0
Painted on-street bike Lane/Bike Boulevard	50
Protected Bike Lane or Cycle Track*	100

Pedestrian Facility Design	Points Awarded
None	0
5'-6' sidewalk, no buffer	25
5'-8' sidewalk, with buffer	50
10+' sidewalk, or 8'+ sidewalk with buffer	100

*Protected bike infrastructure must include barriers built with concrete, asphalt, metal, hard rubber, or have grade separation from the roadway. Buffered bike lanes will be considered for points based on the ability to keep bike riders safe. Paint-only or flex post-only barriers will be awarded zero points.

Transit Connectivity

A regionally interconnected bicycle and pedestrian system encourages its usage and the usage of transit systems. Table BP4 outlines the metric and scoring associated with the two performance measures for network connectivity. Project sponsors will not need to provide any additional information to determine these metrics.

Table BP4 – Metrics for Evaluating the Bicycle & Pedestrian Transit Connectivity Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Creates a connection to transit	If the new facility connects directly to a transit stop/station or can use the existing bike or pedestrian network to creates a transit connection.	Numerical; based on Table BP5	No

Table BP5 – Point Distribution for Transit Connection

Distance to Transit	Points
¼-mile	100
½-mile	75
1-mile	50
Within ¼-mile of planned or funded transit	25
No connection	0

Improves Access to Destinations

Transportation infrastructure should be able to provide access to a variety of destinations and job opportunities for all types of trips and lifestyles.

Table BP6 – Metrics for Evaluating the Bicycle & Pedestrian Access to Destinations Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Access to Destinations	The number of destinations along the route of the project based on a GIS analysis of the project area.	Numerical; Based on Table BP7	No

The high-density propensity heat map developed in ARC's bike and pedestrians plan W*alk. Bike. Thrive!* analyzes street intersection density, employment and housing mix, transit propensity and access to a variety of destinations. This heat map will be used to assess the Access to Destinations metric.

Table BP7 – Scoring Scheme for Access to Destinations Score

High Density Propensity Classification	Average Raster Value Score	Points Awarded
Low	≤ 8	0
Medium-Low	9 – 10	25
Medium	11 – 13	50
Medium-High	14 – 17	75
High	18 – 27	100

Equity

Ensuring a fair and equitable transportation system is a key goal associated with the Atlanta Region's Plan. The demographic criteria analyzed – racial minority, ethnic minority, and low-income – were considered indicators of the greatest potential inequality in the Atlanta region. These criteria also align with federal guidance, including Title VI of the Civil Rights Act and the Executive Order on Environmental Justice. Our region's transportation assets need to equitably benefit communities of color and low-income communities, while also avoiding disproportionately burdening these same communities. To meet the social equity criterion, project sponsors will be required to provide information on how projects serve these populations and how projects do not cause undue hardships for these communities. For projects that are determined to be beneficial, points will be awarded based on the community's relative concentration of equity indicators, as mapped by ARC. A project's ability to

connect people to affordable and subsidized housing will also be considered for those projects outside of Environmental Justice census tracts.

Table BP8 – Metric for Evaluating the Bicycle & Pedestrian Environmental Justice Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Addresses Equity	Does project serve a minority or low-income community?	Numerical. An Environmental Justice analysis of Census data measuring minority and low-income populations. Written. Sponsor provides details on whether the project serves/connects to HUD-subsidized low-income housing or households, or ARC staff will compare project with HUD database. Point distribution in Table BP9.	Yes; the sponsor must provide details on previous and planned community engagement, and mitigation of potential negative externalities. Numerical evaluation will be done by ARC staff.

Table BP9 – Scoring Scheme for the Bicycle & Pedestrian Equity Metric

Social Equity Scoring	Points Awarded
Low/None	0
Medium-Low	25
Medium	50
Medium-High OR Serves subsidized housing	75
High	100

Projects located in lowering-scoring Environmental Justice areas are still able to gain points for this metric if they connect to subsidized housing. The sponsor must provide details on their project serves housing subsidized by programs run by the U.S. Department of Housing and Urban Development. ARC staff may independently verify these details using internal data or checking the HUD Subsidized Property Database.

Housing Affordability

Promoting housing affordability throughout the region is a goal of the ARC. Transportation projects that connect existing and potential affordable housing options can help lower the total costs of transportation and housing. The Metro Atlanta Housing Strategy provides guidance to local governments on a variety of methods to boost housing supply and affordability. Zoning codes that allow, require, or incentivize affordable housing are an important part of connecting transportation and land use policies.

Table BP10 – Metric for Evaluating the Bicycle & Pedestrian Housing Affordability Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Promotes Housing Affordability	ADOPTED/ENACTED Zoning or Development codes that require or provide incentives for affordable to workforce housing development	Yes/No	Yes; ARC staff may consult ARC's Inventory of Zoning/Development Codes

These zoning codes could include inclusionary housing ordinances, or incentives or requirements that support or permit affordable housing.

Safety

All projects should strive to correct existing safety issues while maximizing safe design for all modes along a corridor. The measures and metrics associated with the safety criterion were selected to encourage good design and prioritize safety-enhancing projects in areas with prevalent risks to roadway users. See Table BP11 for the metrics used to evaluate the bicycle and pedestrian safety criterion.

The relatively safety of a project will be based on safety elements included in the design of project such as bike lane protection, grade separation, intersection treatments, and other elements to reduce severe crashes between active mode users and vehicles. The inclusion of features that increase safety risks will also be considered (e.g. wide turn radii and free flow right turn lanes in heavy pedestrian areas or near schools)

Table BP11 – Metrics for Evaluating the Bicycle & Pedestrian Safety Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Improves Safety	Properly addresses safety concerns in project area	Numerical	No

Table BP12 - Scoring Scheme for the Bicycle & Pedestrian Safety Score

Effectiveness of Safety Measures	Points Awarded
None	0
Low	25
Medium-Low	50
Medium-High	75
High	100

USDOT has compiled research on the effectiveness of certain safety countermeasures at reducing crashes. ARC is promoting the use of the following 15 measures for reducing crashes in bicycle and pedestrian projects:

- Corridor Access Management
- Reduced Left-turn Conflict Intersections
- Systemic, Low-cost Countermeasures at Intersections
- Leading pedestrian intervals (LPI)
- Median & Pedestrian Crossing Islands
- Pedestrian Hybrid Beacon
- Road Diets
- Walkways
- Separated Bike Lanes
- Neighborhood Greenways/Bike Boulevards
- Crosswalk Visibility Elements
- Street Lighting
- Local Road Safety Action Plan
- Road Safety Audits
- USLIMITS2

A full list of proven safety countermeasures can be found in Appendix A. Project sponsors will also be able to provide safety countermeasure details from the lists available on USDOT's website (see the Glossary of Links). This website provides a searchable database; searches by mode or other element can identify possible countermeasures for transportation projects. ARC staff will consider whether the safety measures proposed will adequately address the safety risks on the project corridor; projects which do not include appropriate safety measures will be given zero points for Safety.

Resiliency

Addresses Flood Risk

Our region is at risk of flooding from heavy rainfall and rising rivers. Bicycle and Pedestrian projects present opportunities to add green infrastructure to roadways that can help mitigate or adapt to flood risk. These projects are often small scale and built on or adjacent to existing roadways, but green infrastructure can still be part of the project scope to help manage existing flood risk. Projects are scored based on the point scheme identified in Table BP14.

Table BP13 – Metrics for Evaluating the Bicycle & Pedestrian Flood Risk Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Addresses Flood Risk	Does the project effectively mitigate or adapt to flood risks?	Numerical; Based on points distribution in Table BP14	No; Sponsors may provide relevant local plan, but it is not necessary

Table BP14- Scoring Scheme for Green Infrastructure

Effectiveness of Green Infrastructure	Points Awarded
None	0
Low	25
Medium-Low	50
Medium-High	75
High	100

GDOT's Drainage Design for Highways Manual encourages the following low impact design and green infrastructure elements:

- Reduced roadway footprint
- Porous pavements
- Landscaping areas outside of clear-zones with trees
- Minimize siting on porous soils, erodible soils, or steep slopes (>15%)
- Fitting the design to the terrain
- Following Better Site Design principles as presented in the Georgia Stormwater Management Manual to reduce post-construction stormwater runoff*

This is a small subset of recommended green infrastructure elements, and other design techniques and elements that manage stormwater runoff will be considered for points as well.

*The Georgia Stormwater Manual, Volume II can be referenced for a comprehensive guide to green infrastructure Best Management Practices that can address flood risk. Examples of this include, but are not limited to, the following:

- Bioslopes
- Permeable Paver Systems
- Permeable Concrete
- Porous Asphalt
- Stormwater Planters/Tree Boxes
- Vegetated Filter Strips

ARC staff will consider if the green infrastructure elements adequately address flood risk in the project area. Projects which do not adequately address flood risk will be given zero points for this metric.

Project Emissions

Encouraging people to switch from automobile to active transportation modes reduces vehicle emissions that cause bad air quality and contribute to climate change. All bicycle and pedestrian projects help improve air quality. ARC's CMAQ Calculator produces an estimate of the amount of emissions offset by the development of new bicycle or pedestrian projects. Table BP15 outlines the metrics associated with the air quality and climate change criterion. Values include emission offsets from all modes of multimodal projects.

Table BP15 – Metrics for Evaluating the Bicycle & Pedestrian Air Quality & Climate Change Criterion

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Project Emissions	Change in NO_x, emissions	Numerical; in kg/year	Yes	25%
	Change in VOC emissions	Numerical; in kg/year	Yes	25%
	Change $PM_{2.5}$ emissions	Numerical; in kg/year	Yes	25%
	Change in greenhouse gas emissions $CO_2(e)$	Numerical; in kg/year	Yes	25%

The amount of emissions offset will be scored on a distribution to assign a range of scores from 0-100. The project with the most emissions reduced will receive the highest score, the project with the least will receive the lowest. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

To quantify this metric, ARC will rely on the CMAQ Calculator. The CMAQ Calculator takes inputs related to a bicycle or pedestrian project such as the number of adjacent amenities, the amount of traffic on a parallel route and project details to estimate annual trips generated by the new project. While the numbers of trips themselves are not scored, it is necessary to estimate them to use in emissions calculations.

Sponsors may provide estimated bicycle and pedestrian demand for their projects based on studies they have conducted, or they can provide the necessary information for ARC to estimate the demand. Table BP16 outlines the required sponsor inputs for bicycle and pedestrian projects.

Table BP16 – Sponsor Required Inputs for the Bicycle & Pedestrian Emissions Reductions

	Required Input	Nature of Metric	Sponsor Provided
1)	Predicted total daily bicycle demand for facility	Numerical; from a valid study	Yes
2)	Predicted total daily pedestrian demand for facility	Numerical; from a valid study	Yes
~ OR ~			
1)	Area Type	Written; Urban very high density / Urban high density / Urban medium density / Urban low density / Suburban / Exurban / Rural	No
2)	Parallel Facility Type	Written; Freeways & Expressways/ Principal	No

		Arterial/ Minor Arterial/ Major Collector / Minor Collector/ Local Road	
3)	Number of Lanes of Parallel Facility (both directions)	Numerical	Yes
4)	Posted Speed on parallel arterial (mph)	Numerical; miles per hour	Yes
5)	AADT on the parallel arterial (both directions)	Numerical; vehicles/day; average weekday passenger vehicle traffic on nearest parallel facility; the sum of volumes in both directions for the entire day	Yes
6)	Hourly volume (both directions)	Numerical; Morning Peak, Evening Peak; hourly volume in both directions of the parallel arterial in vehicles/hour	Yes
7)	Length of project	Numerical; Miles; total length of the bike/pedestrian project	Yes
8)	Number of activity centers within ½ mile of project	Numerical; 0-7 Select appropriate number of activity centers within the length of the project; Activity center examples include banks, churches, hospitals, park-and-ride, office parks, library, shopping, and schools.	Yes
9)	College or University within 2 miles Range of Project?	Select “Yes” if any segment of project is within 2 miles of a university or college, select “No” otherwise	Yes
10)	Does this Project Have a Bicycle Component?	Select “Yes” if the project provides bicycle infrastructure; otherwise select “No.”	Yes
11)	Average Length of one-way Bicycle Trips	Numerical; miles; Enter estimated average length of bicycle trips in the area; leave blank if a pedestrian project only. Default value (2.0 mi) is based on 2022 NHTS statistics	No
12)	Does this Project Have a Pedestrian Component?	Select “Yes” if the project provides pedestrian infrastructure; otherwise select “No.”	Yes

13)	Average Length of one-way Pedestrian Trips (miles)	Enter estimated average length of pedestrian trips in the area; leave blank if bike project only. Default value (1.1 mi) is based on 2022 NHTS statistics	No
14)	Does this Project Provide Direct Access to Transit?	Select "Yes" if any segment of project provides direct access to transit (station or bus stop). Otherwise select "No."	No
15)	Average Length of Transit Trips	Numerical; miles; Enter estimated average length of transit trips in the area. Default values based on 2018-2022 regional averages from the NTD. Bus = 5.7 mi; Commuter Bus = 24.9 mi; Heavy Rail = 7.0 mi	No
16)	Transit Boardings in Project Corridor	Numerical; Enter the estimated transit boardings of each period (Morning Peak, Evening Peak, Off-Peak)	Yes
17)	Pedestrian/Bicycle Access to Fixed Guideway Transit?	Yes / No	No

After the CMAQ Calculator estimates the number of emissions, all project scores are compared. A distribution of these data is used to assign scores from 0-100. The projects with greatest emissions reduction will receive the highest score, the project with the least will receive the lowest. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

Trail

Table T1 outlines the scheme for evaluating trail projects. Trail projects are defined as multi-use paths within an independent right-of-way or connections that serve as part of the regional trail network. Projects received in the solicitation that focus on adding trail infrastructure will be evaluated using the performance measures indicated in the table. Further information on the exact metrics and scoring follows in the subsections.

Table T1 – Trail Project Evaluation Scheme

Mobility & Access		
Network Connectivity	80%	30%
Transit Connectivity	20%	
Equity		
Addresses Equity	70%	20%
Promotes Housing Affordability	30%	
Safety		
Improves Safety	100%	35%
Resiliency		
Green Infrastructure	30%	15%
Reduction of Air Pollutants	70%	

Mobility & Access

Network Connectivity

The long-term goal of our trail program is to develop a parallel transportation network to our roadways that allows people to walk and bike around and across the region. Completing the Regional Trail Vision and connecting to trails with quality bicycle and pedestrian facilities are key needs to for achieving this goal. See Table T2 and T3 for details.

Table T2 – Metric for Evaluating the Trail Mobility & Congestion Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Expands Network	Connection to other trails or other bicycle & pedestrian facilities	Numerical; Based on Table T3	No

Table T3 - Scoring Scheme for Trail Network Connectivity Metric

Trail Connecting Infrastructure	Points Awarded
None	0
Sidewalk or Bike Lane	25
Sidepath, Cycle Track, or Trail	50
Part of Regional Trail Vision	100

Connections are expected to be relatively seamless connections at trailheads or safe intersection crossings.

ARC will work with sponsors to ensure that trail design features meet high quality standards. This will include appropriate width, ADA accessibility, lighting, 24/7 access, orientation to current or future developments, and areas for bike parking.

Transit Connectivity

A regionally interconnected trail system encourages its usage and the usage of transit systems. Table T4 outlines the metric and scoring associated with the two performance measures for network connectivity. Project sponsors will not need to provide any additional information to determine these metrics.

Table T4 – Metrics for Evaluating the Trail Transit Connectivity Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Creates a connection transit	If the new facility connects directly to a transit stop/station or creates a transit connection with the existing bike, pedestrian, or trail network.	Numerical; based on Table T5	No

Table T5 – Point Distribution for Transit Connection

Distance to Transit	Points
¼-mile	100
½-mile	75
1-mile	50
Within ¼-mile of planned or funded transit	25
No Connection	0

Equity

Ensuring a fair and equitable transportation system is a key goal associated with the Atlanta Region's Plan. The demographic criteria analyzed – racial minority, ethnic minority, and low-income – were considered indicators of the greatest potential inequality in the Atlanta region. These criteria also align with federal guidance, including Title VI of the Civil Rights Act and the Executive Order on Environmental Justice. Our region's transportation assets need to equitably benefit communities of color and low-income communities, while also avoiding disproportionately burdening these same communities. To meet the social equity criterion, project sponsors will be required to provide information on how projects serve these populations and how projects do not cause undue hardships for these communities. For projects that are determined to be beneficial, points will be awarded based on the community's relative concentration of equity indicators, as mapped by ARC. A project's ability to connect people to affordable and subsidized housing will also be considered for those projects outside of Environmental Justice census tracts.

Table T6 – Metric for Evaluating the Trail Environmental Justice Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Addresses Equity	Does project serve a minority or low-income community?	Numerical. An Environmental Justice analysis of Census data measuring minority and low-income populations. Written. Sponsor provides details on whether the project serves/connects to HUD-subsidized low-income housing or households, or ARC staff will compare project with HUD database. Point distribution in Table T7.	Yes; the sponsor must provide details on whether their project connects to subsidized housing Numerical evaluation will be done by ARC staff.

Table T7 – Scoring Scheme for the Trail Equity Metric

Social Equity Scoring	Points Awarded
Low/None	0
Medium-Low	25
Medium	50
Medium-High OR Serves subsidized housing	75
High	100

Projects located in lowering-scoring Environmental Justice areas are still able to gain points for this metric if they connect to subsidized housing. The sponsor must provide details on their project serves housing subsidized by programs run by the U.S. Department of Housing and Urban Development. ARC staff may independently verify these details using internal data or checking the HUD Subsidized Property Database.

Housing Affordability

Promoting housing affordability throughout the region is a goal of the ARC. Transportation projects that connect existing and potential affordable housing options can help lower the total costs of transportation and housing. The Metro Atlanta Housing Strategy provides guidance to local governments on a variety of methods to boost housing supply and affordability. Zoning codes that allow, require, or incentivize affordable housing are an important part of connecting transportation and land use policies.

Table T8 – Metric for Evaluating the Trail Housing Affordability Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Promotes Housing Affordability	ADOPTED/ENACTED Zoning or Development codes that require or provide incentives for affordable to workforce housing development	Yes/No	Yes; ARC staff may consult ARC's Inventory of Zoning/Development Codes

These zoning codes could include inclusionary housing ordinances, or incentives or requirements that support or permit affordable housing.

Safety

All projects should strive to correct existing safety issues while maximizing safe design for all modes along a corridor. The measures and metrics associated with the safety criterion were selected to encourage good design and prioritize safety-enhancing projects in areas with prevalent risks to roadway users.

Table T9 – Metrics for Evaluating the Trail Safety Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Improves Safety	Properly addresses safety concerns in project area	Numerical	Yes

USDOT has compiled research on the effectiveness of certain safety countermeasures at reducing crashes. ARC is promoting the use of the following 14 measures for reducing crashes in trail projects

- Corridor Access Management
- Reduced Left-turn Conflict Intersections
- Leading pedestrian intervals (LPI)
- Median & Pedestrian Crossing Islands
- Pedestrian Hybrid Beacon
- Road Diets
- Walkways
- Separated Bike Lanes
- Neighborhood Greenways/Bike Boulevards
- Crosswalk Visibility Elements
- Street Lighting

- Local Road Safety Action Plan
- Road Safety Audits
- USLIMITS2

A full list of countermeasures can be found in Appendix A. Project sponsors will also be able to provide safety countermeasure details from the lists available on USDOT's website (see the Glossary of Links). This website provides a searchable database; searches by mode or other element can identify possible countermeasures for transportation projects. ARC staff will consider the effectiveness of the safety measures proposed to address safety needs based on the Crash Modification Factors and ability to improve safety for vulnerable road users.

Trail projects will be evaluated on their potential to separate cyclists and pedestrians from roadways, and on how they manage safety at roadway crossings. Intersection treatments to ensure safe crossing will be a significant consideration as those areas tend to be the highest risk segments of trail design. The point distribution is in Table T10.

Table T10 - Scoring Scheme for Trail Safety Measures Metric

Effectiveness of Safety Measures	Points Awarded
None	0
Low	25
Medium-Low	50
Medium-High	75
High	100

ARC staff will consider whether the safety measures proposed will adequately address the safety risks on the project corridor; projects which do not include appropriate safety measures will be given zero points for Safety.

Resiliency

Addresses Flood Risk

Our region is at risk of flooding from heavy rainfall and rising rivers. Trail projects present opportunities to add green infrastructure to greenfield areas, unused rail corridors, and adjacent to roadways that can help mitigate or adapt to flood risk. Their potential to affect existing flood risk will be considered based on the green infrastructure elements that could effectively mitigation or adaptation elements. Projects are scored based on the point scheme identified in Table T12.

Table T11 – Metrics for Evaluating the Trail Flood Risk Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Addresses Flood Risk	Does the project effectively mitigate or adapt to flood risks?	Numerical; Based on points distribution in Table T12	No; Sponsors may provide relevant local plan, but it is not necessary

Table T12- Scoring Scheme for Green Infrastructure

Effectiveness of Green Infrastructure	Points Awarded
None	0
Low	25
Medium-Low	50
Medium-High	75
High	100

GDOT's Drainage Design for Highways Manual encourages the following low impact design and green infrastructure elements:

- Reduced roadway footprint
- Porous pavements
- Landscaping areas outside of clear-zones with trees
- Minimize siting on porous soils, erodible soils, or steep slopes (>15%)
- Fitting the design to the terrain
- Following Better Site Design principles as presented in the Georgia Stormwater Management Manual to reduce post-construction stormwater runoff*

This is a small subset of recommended green infrastructure elements, and other design techniques and elements that manage stormwater runoff will be considered for points as well.

*The Georgia Stormwater Manual, Volume II can be referenced for a comprehensive guide to green infrastructure Best Management Practices that can address flood risk. Examples of this include, but are not limited to, the following:

- Bioslopes
- Permeable Paver Systems
- Permeable Concrete
- Porous Asphalt
- Stormwater Planters/Tree Boxes
- Vegetated Filter Strips

ARC staff will consider if the green infrastructure elements adequately address flood risk in the project area. Projects which do not adequately address flood risk will be given zero points for this metric.

Project Emissions

Encouraging people to switch from car to active transportation modes reduces vehicle emissions that cause bad air quality and contribute to climate change. All trail projects help improve air quality. ARC's CMAQ Calculator is able to produce an estimate of the amount of emissions offset by the development of new trail projects. Project sponsors will not need to provide any additional information for this calculation. Table T13 outlines the metrics associated with the air quality and climate change criterion.

Table T13 – Metrics for Evaluating the Trail Air Quality & Climate Change Criterion

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Project Emissions	Change in NO_x, emissions	Numerical; in kg/year	Yes	25%
	Change in VOC emissions	Numerical; in kg/year	Yes	25%
	Change $PM_{2.5}$ emissions	Numerical; in kg/year	Yes	25%
	Change in greenhouse gas emissions $CO_2(e)$	Numerical; in kg/year	Yes	25%

The amount of emissions offset will be scored on a distribution to assign a range of scores from 0-100. The project with the most emissions reduced will receive the highest score, the project with the least will receive the lowest. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

To quantify this metric, ARC will rely on the CMAQ Calculator. The CMAQ Calculator takes inputs related to trail project such as the number of adjacent amenities, the amount of traffic on a parallel route and project details to estimate annual trips generated by the new project. While the numbers of trips themselves are not scored, it is necessary to estimate them to use in emissions calculations.

Sponsors may provide estimated trip demand for their projects based on studies they have conducted, or they can provide the necessary information for ARC to estimate the demand. Table T14 outlines the required sponsor inputs for trail projects.

Table T14 – Sponsor Required Inputs for the Trail Emissions Reductions

	Required Input	Nature of Metric	Sponsor Provided
1)	Predicted total daily bicycle demand for facility	Numerical; from a valid study	Yes
2)	Predicted total daily pedestrian demand for facility	Numerical; from a valid study	Yes
~ OR ~			
1)	Area Type	Written; Urban very high density / Urban high density / Urban medium density / Urban low density / Suburban / Exurban / Rural	No
2)	Parallel Facility Type	Written; Freeways & Expressways/ Principal Arterial/ Minor Arterial/ Major Collector / Minor Collector/ Local Road	No
3)	Number of Lanes of Parallel Facility (both directions)	Numerical	Yes
4)	Posted Speed on parallel arterial (mph)	Numerical; miles per hour	Yes
5)	AADT on the parallel arterial (both directions)	Numerical; vehicles/day; average weekday passenger vehicle traffic on nearest parallel facility; the sum of volumes in both directions for the entire day	Yes
6)	Hourly volume (both directions)	Numerical; Morning Peak, Evening Peak; hourly volume in both directions of the parallel arterial in vehicles/hour	Yes

7)	Length of project	Numerical; Miles; total length of the bike/pedestrian project	Yes
8)	Number of activity centers within ½ mile of project	Numerical; 0-7 Select appropriate number of activity centers within the length of the project; Activity center examples include banks, churches, hospitals, park-and-ride, office parks, library, shopping, and schools.	Yes
9)	College or University within 2 miles Range of Project?	Select "Yes" if any segment of project is within 2 miles of a university or college, select "No" otherwise	Yes
10)	Does this Project Have a Bicycle Component?	Select "Yes" if the project provides bicycle infrastructure; otherwise select "No."	Yes
11)	Average Length of one-way Bicycle Trips	Numerical; miles; Enter estimated average length of bicycle trips in the area; leave blank if a pedestrian project only. Default value (2.0 mi) is based on 2022 NHTS statistics	No
12)	Does this Project Have a Pedestrian Component?	Select "Yes" if the project provides pedestrian infrastructure; otherwise select "No."	Yes
13)	Average Length of one-way Pedestrian Trips (miles)	Enter estimated average length of pedestrian trips in the area; leave blank if bike project only. Default value (1.1 mi) is based on 2022 NHTS statistics	No
14)	Does this Project Provide Direct Access to Transit?	Select "Yes" if any segment of project provides direct access to transit (station or bus stop). Otherwise select "No."	No
15)	Average Length of Transit Trips	Numerical; miles; Enter estimated average length of transit trips in the area. Default values based on 2018-2022 regional averages from the NTD. Bus = 5.7 mi; Commuter Bus = 24.9 mi; Heavy Rail = 7.0 mi	No

16)	Transit Boardings in Project Corridor	Numerical; Enter the estimated transit boardings of each period (Morning Peak, Evening Peak, Off-Peak)	Yes
17)	Pedestrian/Bicycle Access to Fixed Guideway Transit?	Yes / No	No

After the CMAQ Calculator estimates the number of emissions, all project scores are compared. A distribution of these data is used to assign scores from 0-100. The projects with greatest emissions reduction will receive the highest score, the project with the least will receive the lowest. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

Roadway Asset Management

Table RA1 outlines the scheme for evaluating roadway asset management and resiliency projects. Projects received in the solicitation that focus on maintaining a state of good repair or increasing system resiliency will be evaluated using the performance measures indicated in the table. Further information on the exact metrics and scoring follows in the subsections.

Table RA1 – Roadway Asset Management Project Evaluation Scheme

Mobility & Access		
Facility Throughput	40%	25%
Improves Access to Destinations	20%	
Regional Significance	30%	
Improves Active Transportation	10%	
Equity		
Addresses Equity	70%	15%
Promotes Housing Affordability	30%	
Safety		
Improves Safety	100%	40%
Resiliency		
Condition of Asset	35%/0%*	20%
Age of Asset	35%/70%*	
Addresses Flood Risk	30%	

*Assets that do not have a standard condition rating system will have their age weighted more highly.

Mobility & Access

Facility Throughput

Ensuring resources are provided to facilities that experience a large amount of traffic was identified as a key outcome for the mobility and congestion criterion. Therefore, the annual average daily traffic (AADT) on a facility will serve as the metric for the facility throughput performance measure.

GDOT traffic counts will be the primary source of traffic data. In areas where no GDOT traffic counts are available, ARC staff may request sponsors provide count data, or staff may use travel demand model data. Table RA2 outlines the metric and scoring for the mobility and congestion criterion. Projects with higher AADT will receive a higher score so we can prioritize high-use roadways.

Table RA2 – Metric for Evaluating the Roadway Asset Management Facility Throughput Metric

Measure	Metric	Nature of Metric	Sponsor Provided
Facility Throughput	Average Annual Daily Traffic (AADT)	Numerical; provided by GDOT traffic counts	No; ARC may request counts from project sponsors if GDOT counts are not available

After AADT values for all roadway asset management and resiliency projects are determined, project scores are compared. A distribution of these data is used to assign scores from 0-100. The project with the most AADT will receive the highest score, the project with the least will receive the lowest. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

Improves Access to Destinations

Regional roadways should provide access to job and destinations for all trip purposes. Maintaining the road network for these trips is crucial to ensuring efficient journeys for commute trips, general purpose trips, recreation, and goods movement. Connections to or within Activity Centers and Freight Clusters will serve as the metric for whether a roadway asset management project is improving access to destinations.

Table RA3 – Metric for Evaluating the Roadway Asset Management Access to Destinations Metric

Measure	Metric	Nature of Metric	Sponsor Provided
Access to Destinations	Connection to or within an Activity Center or Freight Cluster	Yes/No	No

Regional Significance

Repairing and maintaining routes of regional significance is a priority for ARC. These are routes that connect communities across large distances, carry high volumes of traffic, and/or are important for

moving freight and commerce across and in our region. Regionally significant routes will be part of one or more of the following networks:

- National Highway System
- National Freight Network
- Regional Thoroughfare Network
- GDOT's State Freight Network
- Atlanta Strategic Truck Route Master Plan (ASTRoMaP)

Table RA4 – Metric for Evaluating the Roadway Asset Management Regional Significance Metric

Measure	Metric	Nature of Metric	Sponsor Provided
Regional Significance	Project is on a regionally significant route	Yes/No	No

Improves Active Transportation

Roadway projects should be designed and maintained for multimodal use that considers the needs of bicyclists and pedestrians. Roadway projects provide opportunities to add new active transportation infrastructure, improve existing infrastructure, or provide maintenance to existing infrastructure.

Table RA5 – Metric for Evaluating the Roadway Asset Management Active Transportation Metric

Measure	Metric	Nature of Metric	Sponsor Provided
Improves Active Transportation	A bicycle or pedestrian element is included in the project	Numerical; Based on Table RS6	Yes

Table RA6 - Scoring Scheme for Roadway Asset Management Active Transportation Metric

Trail Connecting Infrastructure	Points Awarded
None	0
Sidewalk or Bike Lane	25
Sidepath, Cycle Track, or Trail	50
Part of Regional Trail Vision	100

Equity

Ensuring a fair and equitable transportation system is a key goal associated with the Atlanta Region's Plan. The demographic criteria analyzed – racial minority, ethnic minority, and low-income – were considered indicators of the greatest potential inequality in the Atlanta region. These criteria also align with federal guidance, including Title VI of the Civil Rights Act and the Executive Order on Environmental Justice. Our region's transportation assets need to equitably benefit communities of color and low-income communities, while also avoiding disproportionately burdening these same communities. To meet the social equity criterion, project sponsors will be required to provide information on how projects serve these populations and how projects do not cause undue hardships for these

communities. For projects that are determined to be beneficial, points will be awarded based on the community's relative concentration of equity indicators, as mapped by ARC. A project's ability to connect people to affordable and subsidized housing will also be considered for those projects outside of Environmental Justice census tracts.

Table RA7 – Metric for Evaluating the Roadway Asset Management Environmental Justice Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Addresses Equity	Does project serve a minority or low-income community?	Numerical. An Environmental Justice analysis of Census data measuring minority and low-income populations and NHTS data. Written. Sponsor provides details on whether the project serves/connects to HUD-subsidized low-income housing or households, or ARC staff will compare project with HUD database. Point distribution in Table RA8.	Yes; the sponsor must provide details on previous and planned community engagement, and mitigation of potential negative externalities. Numerical evaluation will be done by ARC staff.

Table RA8 – Scoring Scheme for the Roadway Asset Management Equity Metric

Social Equity Scoring	Points Awarded
Low/None	0
Medium-Low	25
Medium	50
Medium-High OR Serves subsidized housing	75
High	100

Projects located in lower-scoring Environmental Justice areas are still able to gain points for this metric if they connect to subsidized housing. The sponsor must provide details on their project serves housing subsidized by programs run by the U.S. Department of Housing and Urban Development. ARC staff may independently verify these details using internal data or checking the HUD Subsidized Property Database.

Housing Affordability

Promoting housing affordability throughout the region is a goal of the ARC. Transportation projects that connect existing and potential affordable housing options can help lower the total costs of transportation and housing. The Metro Atlanta Housing Strategy provides guidance to local governments on a variety of methods to boost housing supply and affordability. Zoning codes that allow, require, or incentivize affordable housing are an important part of connecting transportation and land use policies.

Table RA9 – Metric for Evaluating the Roadway Asset Management Housing Affordability Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Promotes Housing Affordability	ADOPTED/ENACTED Zoning or Development codes that require or provide incentives for affordable to workforce housing development	Yes/No	Yes; ARC staff may consult ARC's Inventory of Zoning/Development Codes

These zoning codes could include inclusionary housing ordinances, or incentives or requirements that support or permit affordable housing.

Safety

All projects should strive to correct existing safety issues while maximizing safe design for all modes along a corridor. Asset management and maintenance projects present opportunities to add safety improvements and retrofits to roadways. The measures and metrics associated with the safety criterion were selected to encourage good design and prioritize safety-enhancing projects in areas with prevalent risks to roadway users. See Table RA10 for the metrics used to evaluate roadway asset management safety criterion.

Table RA10 – Metric for Evaluating the Roadway Asset Management Safety Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Improves Safety	Properly addresses safety concerns in project area	Numerical	No

Roadway design, crash rates and history, and safety countermeasures will be considered in determining this score. The Numetric tool will be used to determine crash history, crash rate, and potential causes for crashes. The proposed countermeasures must address the safety issues present in the project area. The point distribution is in Table RA11.

Table RA11 - Scoring Scheme for the Roadway Asset Management Safety Score

Effectiveness of Safety Measures	Points Awarded
None	0
Low	25
Medium-Low	50
Medium-High	75
High	100

USDOT has compiled research on the effectiveness of certain safety countermeasures at reducing crashes. ARC is promoting the use of the following 19 measures for reducing crashes in roadway asset management projects in the region:

- Backplates with Retroreflective Borders
- Corridor Access Management
- Dedicated Lanes at Intersections
- Reduced Left-turn Conflict Intersections
- Roundabouts
- Systemic, Low-cost Countermeasures at Intersections
- Yellow Change Intervals
- Median & Pedestrian Crossing Islands
- Road Diets
- Walkways
- Crosswalk Visibility Elements
- Street Lighting
- Enhanced Delineation and Friction for Curves
- Rumble strips
- Safety Edge
- Median Barrier

- Local Road Safety Action Plan
- Road Safety Audits
- USLIMITS2

A full list of proven safety countermeasures can be found in Appendix A. Project sponsors will also be able to provide other safety countermeasures from the lists available on USDOT's website (see the Glossary of Links). This website provides a searchable database; searches by mode or other element can identify possible countermeasures for transportation projects. ARC staff will consider the effectiveness of the safety measures proposed to address safety needs based on the Crash Modification Factors and ability to improve safety for vulnerable road users. Projects which do not include appropriate safety measures will be given zero points for Safety.

Resiliency

Condition of Asset

The condition of roadways and bridges assets can be measured on numerical scales through using advanced scanning technology or the assessment of professional engineers. Low pavement/sufficiency scores will receive a higher score for the asset management criterion. Scores will be normalized between 0-100.

Table RA12 – Metrics for Evaluating the Roadway Asset Management Age of Asset Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Condition of Asset	Pavement rating in PCI, IRI, COPACES, or similar standard scale. Bridge rating from NBI database.	Numerical	Yes

Age of Asset

Considering the age of an asset is a clear, straightforward method to evaluate its need for replacement, repair, or rehabilitation as infrastructure. The age of the asset should be the year it was built or the last year substantial repair or rehabilitation was conducted.

Table RA13 – Metrics for Evaluating the Roadway Asset Management Age of Asset Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Age of Asset	Age of asset compared to its average Useful Service Life	Numerical	Yes

Table RA14 lists the average Useful Service Life for several typical assets from the NCHRP: Report 713 study. Bridges are estimated at 50 years per guidance from GDOT. State, federal, or other national guidance will be referenced for assets not listed here or in the NCHRP report.

Table RA14 – Average Useful Service Life for Select Assets

Asset	Average Useful Service Life
Pavement	30 years
Bridges	50 years
Sidewalks	25 years

Asset	Average Useful Service Life
Traffic Signals	12 years
Roadway Lights	13 years

Addresses Flood Risk

Our region is at risk of flooding from heavy rainfall and rising rivers. Roadway asset management projects present opportunities to add green infrastructure that can help mitigate or adapt to flood risk. Their potential to affect existing flood risk will be considered based on the green infrastructure elements that could effectively mitigation or adaptation elements. Projects are scored based on the point scheme identified in Table RA15.

Table RA15 – Metrics for Evaluating the Roadway Asset Management Flood Risk Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Addresses Flood Risk	Does the project effectively mitigate or adapt to flood risks?	Numerical; Based on points distribution in Table RA16	No; Sponsors may provide relevant local plan, but it is not necessary

Table RA16- Scoring Scheme for Green Infrastructure

Effectiveness of Green Infrastructure	Points Awarded
None	0
Low	25
Medium-Low	50
Medium-High	75
High	100

GDOT's Drainage Design for Highways Manual encourages the following low impact design and green infrastructure elements:

- Reduced roadway footprint
- Porous pavements
- Landscaping areas outside of clear-zones with trees
- Minimize siting on porous soils, erodible soils, or steep slopes (>15%)
- Fitting the design to the terrain
- Following Better Site Design principles as presented in the Georgia Stormwater Management Manual to reduce post-construction stormwater runoff*

This is a small subset of recommended green infrastructure elements, and other design techniques and elements that manage stormwater runoff will be considered for points as well.

*The Georgia Stormwater Manual, Volume II can be referenced for a comprehensive guide to green infrastructure Best Management Practices that can address flood risk. Examples of this include, but are not limited to, the following:

- Bioslopes
- Permeable Paver Systems
- Permeable Concrete
- Porous Asphalt
- Stormwater Planters/Tree Boxes
- Vegetated Filter Strips

ARC staff will consider if the green infrastructure elements adequately address flood risk in the project area. Projects which do not adequately address flood risk will be given zero points for this metric.

Roadway Expansion

Table RE1 outlines the scheme for evaluating roadway expansion projects. No measures were identified for the land use compatibility criterion. Projects received in the solicitation that focus on increasing roadway expansion, either through widening existing facilities or adding new facilities or connections, will be evaluated using the performance measures indicated in the table. Further information on the exact metrics and scoring follows in the subsections.

Table RE1 – Roadway Expansion Project Evaluation Scheme

Mobility & Access		
Improves Congestion	40%	30%
Improves Access to Destinations	25%	
Regional Significance	20%	
Improves Active Transportation	15%	
Equity		
Addresses Equity	70%	20%
Promotes Housing Affordability	30%	
Safety		
Improves Safety	100%	30%
Resiliency		
Reduction of Air Pollutants	70%	20%
Green Infrastructure	30%	

Mobility & Access

Improves Congestion

These measures aim to assess the reduction in congestion and improvement in travel time along a project corridor and align with those proposed by USDOT. Travel time index (TTI) and vehicle hours of delay (VHD). These metrics quantify the intensity and extent of congestion by determining how severely congested a facility is and how many people are impacted. Small roadways that are severely congested but have very little traffic will receive a high intensity score but low extent score. The scheme seeks to balance the severity of congestion with the impact it has on the users. Table RE2 outlines the metrics and scoring for the mobility and congestion criterion.

Table RE2 – Metrics for Evaluating the Roadway Expansion Congestion Criterion

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Congestion Intensity	Absolute change in the link-level travel time index (TTI) in the build vs no build scenario for the worst traffic time period	Numerical; derived from ARC's modeling	No	50%
Reduces Vehicle Delay	Absolute change in regional vehicle hours of delay (VHD) in the build vs no build scenario for the worst traffic time period	Numerical; derived from ARC's modeling	No	50%

After TTI and VHD values for all roadway expansion projects are determined, project scores are compared. A distribution of these data is used to assign scores from 0-100. The project that reduces the most VHD and TTI will receive the highest scores, the project with the least reduction will receive the lowest score. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

Improves Access to Destinations

Regional roadways should provide access to job and destinations for all trip purposes. Improving the road network for these trips is crucial to ensuring efficient journeys for commute trips, general purpose trips, recreation, and goods movement. Connections to or within Activity Centers and Freight Clusters will serve as the metric for whether a roadway expansion project is improving access to destinations.

Table RE3 – Metric for Evaluating the Roadway Expansion Access to Destinations Metric

Measure	Metric	Nature of Metric	Sponsor Provided
Access to Destinations	Connection to or within an Activity Center or Freight Cluster	Yes/No	No

Regional Significance

Table RE4 – Metric for Evaluating the Roadway Expansion Regional Significance Metric

Measure	Metric	Nature of Metric	Sponsor Provided
Regional Significance	Project is on a regionally significant route	Yes/No	No

Improving routes of regional significance is a priority for ARC. These are routes that connect communities across large distances, carry high volumes of traffic, and/or are important for moving freight and commerce across and in our region. Regionally significant routes will be part of one or more of the following networks:

- National Highway System
- National Freight Network
- Regional Thoroughfare Network
- GDOT's State Freight Network
- Atlanta Strategic Truck Route Master Plan (ASTRoMaP)

Improves Active Transportation

Roadway expansion projects should be designed for multimodal use that considers the needs of bicyclists and pedestrians. The construction of new roadway capacity also provides opportunities to add new active transportation infrastructure, improve existing infrastructure, or provide maintenance to existing infrastructure.

Table RE5 – Metric for Evaluating the Roadway Expansion Active Transportation Metric

Measure	Metric	Nature of Metric	Sponsor Provided
Improves Active Transportation	A bicycle or pedestrian element is included in the project	Numerical; Based on Table RS6	Yes

Table RE6 - Scoring Scheme for Roadway Expansion Active Transportation Metric

Active Transportation Infrastructure	Points Awarded
None	0
Sidewalk or Bike Lane	25
Sidepath, Cycle Track, or Trail	50
Part of Regional Trail Vision	100

Equity

Ensuring a fair and equitable transportation system is a key goal associated with the Atlanta Region's Plan. The demographic criteria analyzed – racial minority, ethnic minority, and low-income – were considered indicators of the greatest potential inequality in the Atlanta region. These criteria also align with federal guidance, including Title VI of the Civil Rights Act and the Executive Order on Environmental Justice. Our region's transportation assets need to equitably benefit communities of color and low-income communities, while also avoiding disproportionately burdening these same communities. To meet the social equity criterion, project sponsors will be required to provide information on how projects serve these populations and how projects do not cause undue hardships for these communities. For projects that are determined to be beneficial, points will be awarded based on the community's relative concentration of equity indicators, as mapped by ARC. A project's ability to connect people to affordable and subsidized housing will also be considered for those projects outside of Environmental Justice census tracts.

Table RE7 – Metric for Evaluating the Roadway Expansion Environmental Justice Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Addresses Equity	Does project serve a minority or low-income community?	Numerical. An Environmental Justice analysis of Census data measuring minority and low-income populations and NHTS data. Written. Sponsor provides details on whether the project serves/connects to HUD-subsidized low-income housing or households, or ARC staff will compare project with HUD database. Point distribution in Table RE8.	Yes; the sponsor must provide details on previous and planned community engagement, and mitigation of potential negative externalities. Numerical evaluation will be done by ARC staff.

Table RE8 – Scoring Scheme for the Roadway Expansion Equity Metric

Social Equity Scoring	Points Awarded
Low/None	0
Medium-Low	25
Medium	50
Medium-High OR Serves subsidized housing	75
High	100

Projects located in lower-scoring Environmental Justice areas are still able to gain points for this metric if they connect to subsidized housing. The sponsor must provide details on their project serves housing subsidized by programs run by the U.S. Department of Housing and Urban Development. ARC staff may independently verify these details using internal data or checking the HUD Subsidized Property Database.

Housing Affordability

Promoting housing affordability throughout the region is a goal of the ARC. Transportation projects that connect existing and potential affordable housing options can help lower the total costs of transportation and housing. The Metro Atlanta Housing Strategy provides guidance to local governments on a variety of methods to boost housing supply and affordability. Zoning codes that allow, require, or incentivize affordable housing are an important part of connecting transportation and land use policies.

Table RE9 – Metric for Evaluating the Roadway Expansions Housing Affordability Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Promotes Housing Affordability	ADOPTED/ENACTED Zoning or Development codes that require or provide incentives for affordable to workforce housing development	Yes/No	Yes; ARC staff may consult ARC's Inventory of Zoning/Development Codes

These zoning codes could include inclusionary housing ordinances, or incentives or requirements that support or permit affordable housing.

Safety

All projects should strive to correct existing safety issues while maximizing safe design for all modes along a corridor. The measures and metrics associated with the safety criterion were selected to encourage good design and prioritize safety-enhancing projects in areas with prevalent risks to roadway users. See Table RE10 for the metrics used to evaluate the roadway expansion safety criterion.

Table RE10 – Metric for Evaluating the Roadway Expansion Safety Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Improves Safety	Properly addresses safety concerns in project area	Numerical	No

Roadway design, crash rates and history, and safety countermeasures will be considered in determining this score. The Numetric tool will be used to determine crash history, crash rate, and potential causes for crashes. The proposed countermeasures must address the safety issues present in the project area. The point distribution is in Table RE11.

Table RE11 - Scoring Scheme for Roadway Expansion Safety Score

Effectiveness of Safety Measures	Points Awarded
None	0
Low	25
Medium-Low	50
Medium-High	75
High	100

USDOT has compiled research on the effectiveness of certain safety countermeasures at reducing crashes. ARC is promoting the use of the following 23 measures for reducing crashes in roadway expansion projects:

- Backplates with Retroreflective Borders
- Corridor Access Management
- Dedicated Lanes at Intersections
- Reduced Left-turn Conflict Intersections
- Roundabouts
- Systemic, Low-cost Countermeasures at Intersections
- Yellow Change Intervals
- Leading Pedestrian Interval
- Median & Pedestrian Crossing Islands
- Pedestrian Hybrid Beacon
- Walkways
- Separated Bike Lanes
- Neighborhood Greenway/Bike Boulevard
- Crosswalk Visibility Elements
- Street Lighting
- Enhanced Delineation and Friction for Curves
- Design Improvements at Curves
- Rumble strips
- Safety Edge
- Median Barrier

- Local Road Safety Action Plan
- Road Safety Audits
- USLIMITS2

A full list of proven safety countermeasures can be found in Appendix A. Project sponsors will also be able to provide other safety countermeasures from the lists available on USDOT's website (see the Glossary of Links). This website provides a searchable database; searches by mode or other element can identify possible countermeasures for transportation projects. ARC staff will consider the effectiveness of the safety measures proposed to address safety needs based on the Crash Modification Factors and ability to improve safety for vulnerable road users. Projects which do not include appropriate safety measures will be given zero points for Safety.

Resiliency

Project Emissions

Automobile travel is a primary source of pollutants that cause bad air quality and climate change. Congested roadways with very slow speeds and start-and-stop traffic flow create increased emissions and worsened air quality. Well-designed transportation projects can help decrease emissions by reducing congestion and improving traffic flow. That said, many projects can also induce traffic demand and can lead to worsened air quality. Therefore, it is not uncommon for roadway expansion projects to either improve or worsen air quality depending on the project specific details.

Table RE12 outlines the metrics associated with the roadway expansion air quality and climate change criterion. Project emissions are calculated from the mobility metric modeling. Regional emissions from a build and no build scenario are compared. The sponsor must provide necessary information for ARC to run models for each project. Any emissions benefits from active mode elements will also be included.

ARC's Atlanta Roadside Emissions Exposure Study (AREES) model can determine the $PM_{2.5}$ Hotspots and NOx Hotspot in the region where automobile use causes high amounts of particulate matter or NOx to be released into the air. Particulate matter is a leading cause of bad quality and can cause adverse health effects for people who travel through or live in these hot spots. NOx are a main contributor to ozone generation, which the Atlanta must reduce in order to comply with federal regulations. Projects within these hotspots must reduce the relevant emission to get points for those criteria.

Where roadway expansion projects include elements of other modes, values reported include emission changes from all modes of those multimodal projects.

Table RE12 – Metrics for Evaluating the Roadway Expansion Air Quality & Climate Change Criterion

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Project Emissions	Change in NO_x, emissions	Numerical; in kg/year	Yes	25%
	Change in VOC emissions	Numerical; in kg/year	Yes	25%
	Change $PM_{2.5}$ emissions	Numerical; in kg/year	Yes	25%

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
	Change in greenhouse gas emissions $CO_2(e)$	Numerical; in kg/year	Yes	25%

Addresses Flood Risk

Our region is at risk of flooding from heavy rainfall and rising rivers. Roadway expansion projects present opportunities to add green infrastructure that can help mitigate or adapt to flood risk. The location and design of roadway expansion projects have the most potential to affect flood risk by removing natural mitigation sources like trees and permeable soils, or by adding in green infrastructure that can substantially manage flood risk. Projects will be evaluated on whether they are in flood risk zones and if they contain green infrastructure elements that effectively mitigation or adaptation elements.

Flood risk zones can be identified through a local plan (e.g., Comprehensive Transportation Plan, local flood risk assessment), a FEMA Flood Insurance Rate Map (FIRM), or ARC's City Simulator model. ARC staff will consider the flood mitigation and adaptation elements of the project to determine their effectiveness. Projects are scored based on the point scheme identified in Table RE14. Expansions projects that are within a 100-year flood risk zone will receive zero points.

Table RE13 – Metrics for Evaluating the Roadway Expansion Flood Risk Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Addresses Flood Risk	Is the project in a flood risk zone? Does the project effectively mitigate or adapt to flood risks?	Numerical; Based on points distribution in Table RE14	No; Sponsors may provide relevant local plan, but it is not necessary

Table RE14- Scoring Scheme for Green Infrastructure

Effectiveness of Green Infrastructure	Points Awarded
None	0
Low	25
Medium-Low	50
Medium-High	75
High	100

GDOT's Drainage Design for Highways Manual encourages the following low impact design and green infrastructure elements:

- Reduced roadway footprint
- Porous pavements
- Landscaping areas outside of clear-zones with trees
- Minimize siting on porous soils, erodible soils, or steep slopes (>15%)

- Fitting the design to the terrain
- Following Better Site Design principles as presented in the Georgia Stormwater Management Manual to reduce post-construction stormwater runoff*

This is a small subset of recommended green infrastructure elements, and other design techniques and elements that manage stormwater runoff will be considered for points as well.

*The Georgia Stormwater Manual, Volume II can be referenced for a comprehensive guide to green infrastructure Best Management Practices that can address flood risk. Examples of this include, but are not limited to, the following:

- Bioslopes
- Permeable Paver Systems
- Permeable Concrete
- Porous Asphalt
- Stormwater Planters/Tree Boxes
- Vegetated Filter Strips

ARC staff will consider if the green infrastructure elements adequately address flood risk in the project area. Projects which do not adequately address flood risk will be given zero points for this metric.

Roadway Transportation System Management & Operations – Built Environment

Table RTB1 outlines the scheme for evaluating roadway transportation system management and operations (TSM&O) projects that make changes to the built environment. Projects could include diverging diamond intersections, adding dedicated turn lanes, roundabouts, or any other significant change to the physical environment.

Sponsors must submit engineering reports with typical sections of the improvements being made. These are necessary to model the mobility and emissions impacts of the projects for use in scoring and other evaluation.

Project will be evaluated using the performance measures indicated in Table RTB1. Further information on the exact metrics and scoring follows in the subsections.

Table RTB1 – Roadway TSM&O-Built Environment Project Evaluation Scheme

Mobility & Access		
Improves Congestion	40%	30%
Improves Access to Destinations	25%	
Regional Significance	20%	
Improves Active Transportation	15%	
Equity		
Addresses Equity	70%	15%
Promotes Housing Affordability	30%	
Safety		
Improves Safety	100%	40%
Resiliency		
Reduction of Air Pollutants	70%	15%
Green Infrastructure	30%	

Mobility & Access

Congestion & Vehicle Delay

These measures aim to assess the reduction in congestion and improvement in travel time along a project corridor and align with those proposed by USDOT. Change in Intersection Delay and vehicle hours of delay (VHD). These metrics quantify the intensity and extent of congestion by determining how severely congested a facility is and how many people are impacted. Intersections that are severely congested but have very little traffic will receive a high intensity score but low extent score. The scheme seeks to balance the severity of congestion with the impact it has on the users. Table RTB2 outlines the metrics and scoring for the roadway transportation system management and operations mobility and congestion criterion.

Table RTB2 – Metrics for Evaluating the Roadway TSM&O Congestion Criterion

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Congestion Intensity	Change in Intersection Delay for the project area in the build vs no build scenario for the worst traffic time period	Numerical; derived from ARC's modeling	No	50%
Reduces Vehicle Delay	Absolute change in regional vehicle hours of delay (VHD) in the build vs no build scenario for the worst traffic time period	Numerical; derived from ARC's modeling	No	50%

After Intersection Delay and VHD values for all roadway TSMO projects are determined, project scores are compared. A distribution of these data is used to assign scores from 0-100. The project that reduces the most VHD and TTI will receive the highest scores, the project with the least reduction will receive the lowest score. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

Improves Access to Destinations

Regional roadways should provide access to job and destinations for all trip purposes. Improving the road network for these trips is crucial to ensuring efficient journeys for commute trips, general purpose trips, recreation, and goods movement. Connections to or within Activity Centers and Freight Clusters will serve as the metric for whether a roadway transportation system management and operations is improving access to destinations.

Table RTB3 – Metric for Evaluating the Roadway TSM&O Access to Destinations Metric

Measure	Metric	Nature of Metric	Sponsor Provided
Access to Destinations	Connection to or within an Activity Center or Freight Cluster	Yes/No	No

Regional Significance

Table RTB4 – Metric for Evaluating the Roadway TSM&O Regional Significance Metric

Measure	Metric	Nature of Metric	Sponsor Provided
Regional Significance	Project is on a regionally significant route	Yes/No	No

Improving routes of regional significance is a priority for ARC. These are routes that connect communities across large distances, carry high volumes of traffic, and/or are important for moving freight and commerce across and in our region. Regionally significant routes will be part of one or more of the following networks:

- National Highway System
- National Freight Network
- Regional Thoroughfare Network
- GDOT's State Freight Network
- Atlanta Strategic Truck Route Master Plan (ASTRoMaP)

Improves Active Transportation

Roadway projects should be designed for multimodal use that considers the needs of bicyclists and pedestrians. Any construction or rehabilitation along roadways also provides opportunities to add new active transportation infrastructure, improve existing infrastructure, or provide maintenance to existing infrastructure.

Table RTB5 – Metric for Evaluating the Roadway TSM&O Active Transportation Metric

Measure	Metric	Nature of Metric	Sponsor Provided
Improves Active Transportation	A bicycle or pedestrian element is included in the project	Numerical; Based on Table RS6	Yes

Table RTB6 - Scoring Scheme for Roadway TSM&O Active Transportation Metric

Active Transportation Infrastructure	Points Awarded
None	0
Sidewalk or Bike Lane	25

Active Transportation Infrastructure	Points Awarded
Sidepath, Cycle Track, or Trail	50
Part of Regional Trail Vision	100

Equity

Ensuring a fair and equitable transportation system is a key goal associated with the Atlanta Region's Plan. The demographic criteria analyzed – racial minority, ethnic minority, and low-income – were considered indicators of the greatest potential inequality in the Atlanta region. These criteria also align with federal guidance, including Title VI of the Civil Rights Act and the Executive Order on Environmental Justice. Our region's transportation assets need to equitably benefit communities of color and low-income communities, while also avoiding disproportionately burdening these same communities. To meet the social equity criterion, project sponsors will be required to provide information on how projects serve these populations and how projects do not cause undue hardships for these communities. For projects that are determined to be beneficial, points will be awarded based on the community's relative concentration of equity indicators, as mapped by ARC. A project's ability to connect people to affordable and subsidized housing will also be considered for those projects outside of Environmental Justice census tracts.

Table RTB7 – Metric for Evaluating the Roadway TSM&O Environmental Justice Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Addresses Equity	Does project serve a minority or low-income community?	Numerical. An Environmental Justice analysis of Census data measuring minority and low-income populations and NHTS data. Written. Sponsor provides details on whether the project serves/connects to HUD-subsidized low-income housing or households, or ARC staff will compare project with HUD database. Point distribution in Table RTB9.	Yes; the sponsor must provide details on previous and planned community engagement, and mitigation of potential negative externalities. Numerical evaluation will be done by ARC staff.

Table RTB8 – Scoring Scheme for the Roadway TSM&O Equity Metric

Social Equity Scoring	Points Awarded
Low/None	0
Medium-Low	25
Medium	50

Social Equity Scoring	Points Awarded
Medium-High OR Serves subsidized housing	75
High	100

Projects located in lower-scoring Environmental Justice areas are still able to gain points for this metric if they connect to subsidized housing. The sponsor must provide details on their project serves housing subsidized by programs run by the U.S. Department of Housing and Urban Development. ARC staff may independently verify these details using internal data or checking the HUD Subsidized Property Database.

Housing Affordability

Promoting housing affordability throughout the region is a goal of the ARC. Transportation projects that connect existing and potential affordable housing options can help lower the total costs of transportation and housing. The Metro Atlanta Housing Strategy provides guidance to local governments on a variety of methods to boost housing supply and affordability. Zoning codes that allow, require, or incentivize affordable housing are an important part of connecting transportation and land use policies.

Table RTB9 – Metric for Evaluating the Roadway TSM&O Housing Affordability Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Promotes Housing Affordability	ADOPTED/ENACTED Zoning or Development codes that require or provide incentives for affordable to workforce housing development	Yes/No	Yes; ARC staff may consult ARC's Inventory of Zoning/Development Codes

These zoning codes could include inclusionary housing ordinances, or incentives or requirements that support or permit affordable housing.

Safety

All projects should strive to correct existing safety issues while maximizing safe design for all modes along a corridor. The measures and metrics associated with the safety criterion were selected to encourage good design and prioritize safety-enhancing projects in areas with prevalent risks to roadway users. See Table RTB10 for the metrics used to evaluate the roadway transportation system management and operations safety criterion.

Table RTB10 – Metric for Evaluating the Roadway TSM&O Safety Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Improves Safety	Properly addresses safety concerns in project area	Numerical	No

Roadway design, crash rates and history, and safety countermeasures will be considered in determining this score. The Numetric tool will be used to determine crash history, crash rate, and potential causes for crashes. The proposed countermeasures must address the safety issues present in the project area. The point distribution is in Table RTB11.

Table RTB11 - Scoring Scheme for Roadway TSM&O Safety Score

Effectiveness of Safety Measures	Points Awarded
None	0
Low	25
Medium-Low	50
Medium-High	75
High	100

USDOT has compiled research on the effectiveness of certain safety countermeasures at reducing crashes. ARC is promoting the use of the following 16 measures for reducing crashes in roadway TSM&O projects:

- Backplates with Retroreflective Borders
- Corridor Access Management
- Dedicated Lanes at Intersections
- Reduced Left-turn Conflict Intersections
- Roundabouts
- Systemic, Low-cost Countermeasures at Intersections
- Yellow Change Intervals
- Leading Pedestrian Intervals
- Pedestrian Hybrid Beacons
- Crosswalk Visibility Elements
- Street Lighting
- Design Improvements at Curves
- Median Barrier

- Local Road Safety Action Plan
- Road Safety Audits
- USLIMITS2

A full list of proven safety countermeasures can be found in Appendix A. Project sponsors will also be able to provide other safety countermeasures from the lists available on USDOT's website (see the Glossary of Links). This website provides a searchable database; searches by mode or other element can identify possible countermeasures for transportation projects. ARC staff will consider the effectiveness of the safety measures proposed to address safety needs based on the Crash Modification Factors and ability to improve safety for vulnerable road users. Projects which do not include appropriate safety measures will be given zero points for Safety.

Resiliency

Project Emissions

Automobile travel is a primary source of pollutants that cause bad air quality and climate change. Congested roadways with very slow speeds and start-and-stop traffic flow create increased emissions

and worsened air quality. Well-designed transportation projects can help decrease emissions by reducing congestion and improving traffic flow. That said, many projects can also induce traffic demand and can lead to worsened air quality. Therefore, it is not uncommon for roadway expansion projects to either improve or worsen air quality depending on the project specific details.

Table RTB12 outlines the metrics associated with the roadway expansion air quality and climate change criterion. Project emissions are calculated from ARC's in-house Visum model

Table RTB12 – Metrics for Evaluating the TSM&O Air Quality & Climate Change Criterion

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Project Emissions	Change in NO_x, emissions	Numerical; in kg/year	Yes	25%
	Change in VOC emissions	Numerical; in kg/year	Yes	25%
	Change $PM_{2.5}$ emissions	Numerical; in kg/year	Yes	25%
	Change in greenhouse gas emissions $CO_2(e)$	Numerical; in kg/year	Yes	25%

Addresses Flood Risk

Our region is at risk of flooding from heavy rainfall and rising rivers. Roadway TSM&O projects that built on new right of way present opportunities to add green infrastructure that can help mitigate or adapt to flood risk. The location and design of roadway projects have the most potential to impact flood risk by removing natural mitigation sources like trees and permeable soils, or by adding in green infrastructure that can substantially manage flood risk. Projects will be evaluated on whether they are in flood risk zones or if they contain green infrastructure elements that effectively mitigation or adaptation elements.

Flood risk zones can be identified through a local plan (e.g., Comprehensive Transportation Plan, local flood risk assessment), a FEMA Flood Insurance Rate Map (FIRM), or ARC's City Simulator model. ARC staff will consider the flood mitigation and adaptation elements of the project to determine their effectiveness. Projects are scored based on the point scheme identified in Table RTB18. Projects that are within a 100-year flood risk zone will receive zero points.

Table RTB17 – Metrics for Evaluating the TSM&O Flood Risk Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Addresses Flood Risk	Is the project in a flood risk zone? Does it effectively mitigate or adapt to flood risks?	Numerical; Based on points distribution in Table RTB18	No; Sponsors may provide relevant local plan, but it is not necessary

Table RTB18- Scoring Scheme for Green Infrastructure

Effectiveness of Green Infrastructure	Points Awarded
None	0
Low	25
Medium-Low	50
Medium-High	75
High	100

The Georgia Stormwater Manual, Volume II can be referenced for a comprehensive guide to green infrastructure elements that can address flood risk. Examples of this include, but are not limited to, the following:

- Bioslopes
- Permeable Paver Systems
- Permeable Concrete
- Porous Asphalt
- Grass Channels
- Soil Restoration
- Tree Boxes
- Vegetated Filter Strips

ARC staff will consider if the green infrastructure elements adequately address flood risk in the project area. Projects which do not adequately address flood risk will be given zero points for this metric.

Roadway Transportation System Management & Operations – Technology

Table RTT1 outlines the scheme for evaluating roadway transportation system management and operations (TSM&O) projects that make technology-based upgrades or changes. Projects could include Advanced Traffic Management Systems, signal synchronization, autonomous or connected vehicle technology, or other technologies that can aid operations.

Sponsors must submit the current and proposed traffic signal timings for any project that reconfigures signal timings or adopted adaptive or connected signal technology. Location data for the targeted intersections must also be provided.

Projects will be evaluated using the performance measures indicated in Table RTT1. Further information on the exact metrics and scoring follows in the subsections.

Table RTT1 – Roadway TSM&O-Technology Project Evaluation Scheme

Mobility & Access		
Improves Congestion	45%	25%
Improves Access to Destinations	25%	
Regional Significance	20%	
Improves Active Transportation	10%	
Equity		
Addresses Equity	70%	15%
Promotes Housing Affordability	30%	
Safety		
Improves Safety	100%	40%
Resiliency		
Reduction of Air Pollutants	100%	20%

Mobility & Access

Congestion & Vehicle Delay

These measures aim to assess the reduction in congestion and improvement in travel time along a project corridor and align with those proposed by USDOT. Change in Intersection Delay and vehicle hours of delay (VHD). These metrics quantify the intensity and extent of congestion by determining how severely congested a facility is and how many people are impacted. Intersections that are severely congested but have very little traffic will receive a high intensity score but low extent score. The scheme seeks to balance the severity of congestion with the impact it has on the users. Table RTT2 outlines the metrics and scoring for the roadway transportation system management and operations mobility and congestion criterion.

Table RTT2 – Metrics for Evaluating the Roadway TSM&O Congestion Criterion

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Congestion Intensity	Change in Intersection Delay for the project area in the build vs no build scenario for the worst traffic time period	Numerical; derived from ARC's modeling	No	50%
Reduces Vehicle Delay	Absolute change in regional vehicle hours of delay (VHD) in the build vs no build scenario for the worst traffic time period	Numerical; derived from ARC's modeling	No	50%

After Intersection Delay and VHD values for all roadway TSMO projects are determined, project scores are compared. A distribution of these data is used to assign scores from 0-100. The project that reduces the most VHD and TTI will receive the highest scores, the project with the least reduction will receive the lowest score. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

Improves Access to Destinations

Regional roadways should provide access to job and destinations for all trip purposes. Improving the road network for these trips is crucial to ensuring efficient journeys for commute trips, general purpose trips, recreation, and goods movement. Connections to or within Activity Centers and Freight Clusters will serve as the metric for whether a roadway transportation system management and operations is improving access to destinations.

Table RTT3 – Metric for Evaluating the Roadway TSM&O Access to Destinations Metric

Measure	Metric	Nature of Metric	Sponsor Provided
Access to Destinations	Connection to or within an Activity Center or Freight Cluster	Yes/No	No

Regional Significance

Table RTT4 – Metric for Evaluating the Roadway TSM&O Regional Significance Metric

Measure	Metric	Nature of Metric	Sponsor Provided
Regional Significance	Project is on a regionally significant route	Yes/No	No

Improving routes of regional significance is a priority for ARC. These are routes that connect communities across large distances, carry high volumes of traffic, and/or are important for moving freight and commerce across and in our region. Regionally significant routes will be part of one or more of the following networks:

- National Highway System
- National Freight Network
- Regional Thoroughfare Network
- GDOT's State Freight Network
- Atlanta Strategic Truck Route Master Plan (ASTRoMaP)

Improves Active Transportation

Roadway projects should be designed for multimodal use that considers the needs of bicyclists and pedestrians. Any technological or physical infrastructure geared towards active mode users that are incorporated into the project can gain points towards making the project more multimodal and effective.

Table RTT5 – Metric for Evaluating the Roadway TSM&O Active Transportation Metric

Measure	Metric	Nature of Metric	Sponsor Provided
Improves Active Transportation	A bicycle or pedestrian element is included in the project	Numerical; Based on Table RS6	Yes

Table RTT6 has the scoring scheme for the Active Transportation Metric. No specific infrastructure techniques or elements are suggested, but ARC staff review proposed project elements and evaluate their potential effectiveness.

Table RTT6 - Scoring Scheme for Roadway TSM&O Active Transportation Metric

Effectiveness of Active Transportation Infrastructure	Points Awarded
None/Not effective	0
Low	25
Medium	50
High	100

Equity

Ensuring a fair and equitable transportation system is a key goal associated with the Atlanta Region's Plan. The demographic criteria analyzed – racial minority, ethnic minority, and low-income – were considered indicators of the greatest potential inequality in the Atlanta region. These criteria also align with federal guidance, including Title VI of the Civil Rights Act and the Executive Order on Environmental Justice. Our region's transportation assets need to equitably benefit communities of color and low-income communities, while also avoiding disproportionately burdening these same communities. To meet the social equity criterion, project sponsors will be required to provide information on how projects serve these populations and how projects do not cause undue hardships for these communities. For projects that are determined to be beneficial, points will be awarded based on the community's relative concentration of equity indicators, as mapped by ARC. A project's ability to connect people to affordable and subsidized housing will also be considered for those projects outside of Environmental Justice census tracts.

Table RTT7 – Metric for Evaluating the Roadway TSM&O Environmental Justice Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Addresses Equity	Does project serve a minority or low-income community?	Numerical. An Environmental Justice analysis of Census data measuring minority and low-income populations and NHTS data. Written. Sponsor provides details on whether the project serves/connects to HUD-subsidized low-income housing or households, or ARC staff will compare project with HUD database. Point distribution in Table RTT8.	Yes; the sponsor must provide details on previous and planned community engagement, and mitigation of potential negative externalities. Numerical evaluation will be done by ARC staff.

Table RTT8 – Scoring Scheme for the Roadway TSM&O Equity Metric

Social Equity Scoring	Points Awarded
Low/None	0
Medium-Low	25
Medium	50
Medium-High OR Serves subsidized housing	75
High	100

Projects located in lower-scoring Environmental Justice areas are still able to gain points for this metric if they connect to subsidized housing. The sponsor must provide details on their project serves housing subsidized by programs run by the U.S. Department of Housing and Urban Development. ARC staff may independently verify these details using internal data or checking the HUD Subsidized Property Database.

Housing Affordability

Promoting housing affordability throughout the region is a goal of the ARC. Transportation projects that connect existing and potential affordable housing options can help lower the total costs of transportation and housing. The Metro Atlanta Housing Strategy provides guidance to local governments on a variety of methods to boost housing supply and affordability. Zoning codes that allow, require, or incentivize affordable housing are an important part of connecting transportation and land use policies.

Table RTT9 – Metric for Evaluating the Roadway TSM&O Housing Affordability Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Promotes Housing Affordability	ADOPTED/ENACTED Zoning or Development codes that require or provide incentives for affordable to workforce housing development	Yes/No	Yes; ARC staff may consult ARC's Inventory of Zoning/Development Codes

These zoning codes could include inclusionary housing ordinances, or incentives or requirements that support or permit affordable housing.

Safety

All projects should strive to correct existing safety issues while maximizing safe design for all modes along a corridor. The measures and metrics associated with the safety criterion were selected to encourage good design and prioritize safety-enhancing projects in areas with prevalent risks to roadway users. See Table RTT10 for the metrics used to evaluate the roadway transportation system management and operations safety criterion.

Table RTT10 – Metric for Evaluating the Roadway TSM&O Safety Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Improves Safety	Properly addresses safety concerns in project area	Numerical	No

Roadway design, crash rates and history, and safety countermeasures will be considered in determining this score. The Numetric tool will be used to determine crash history, crash rate, and potential causes for crashes. The proposed countermeasures must address the safety issues present in the project area. The point distribution is in Table RTT11.

Table RTT11 - Scoring Scheme for Roadway TSM&O Safety Score

Effectiveness of Safety Measures	Points Awarded
None	0
Low	25
Medium-Low	50
Medium-High	75
High	100

USDOT has compiled research on the effectiveness of certain safety countermeasures at reducing crashes. ARC is promoting the use of the following 16 measures for reducing crashes in roadway TSM&O projects:

- Backplates with Retroreflective Borders
- Corridor Access Management
- Dedicated Lanes at Intersections
- Reduced Left-turn Conflict Intersections
- Roundabouts
- Systemic, Low-cost Countermeasures at Intersections
- Yellow Change Intervals
- Leading Pedestrian Interval
- Pedestrian Hybrid Beacon
- Crosswalk Visibility Elements
- Street Lighting
- Design Improvements at Curves
- Rumble strips
- Safety Edge
- Median Barrier

- Local Road Safety Action Plan
- Road Safety Audits
- USLIMITS2

A full list of proven safety countermeasures can be found in Appendix A. Project sponsors will also be able to provide other safety countermeasures from the lists available on USDOT's website (see the Glossary of Links). This website provides a searchable database; searches by mode or other element can identify possible countermeasures for transportation projects. ARC staff will consider the effectiveness of the safety measures proposed to address safety needs based on the Crash Modification Factors and ability to improve safety for vulnerable road users. Projects which do not include appropriate safety measures will be given zero points for Safety.

Resiliency

Project Emissions

Automobile travel is a primary source of pollutants that cause bad air quality and climate change. Congested roadways with very slow speeds and start-and-stop traffic flow create increased emissions and worsened air quality. Well-designed transportation projects can help decrease emissions by reducing congestion and improving traffic flow. That said, many projects can also induce traffic demand and can lead to worsened air quality. Therefore, it is not uncommon for roadway expansion projects to either improve or worsen air quality depending on the project specific details.

Table RTT12 outlines the metrics associated with the roadway expansion air quality and climate change criterion. Project emissions are calculated from ARC's in-house Visum model.

Table RTT12 – Metrics for Evaluating the TSM&O Air Quality & Climate Change Criterion

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Project Emissions	Change in NO_x, emissions	Numerical; in kg/year	Yes	25%
	Change in VOC emissions	Numerical; in kg/year	Yes	25%
	Change $PM_{2.5}$ emissions	Numerical; in kg/year	Yes	25%
	Change in greenhouse gas emissions $CO_2(e)$	Numerical; in kg/year	Yes	25%

Transit Expansion

Table TE1 outlines the scheme for evaluating transit expansion projects. Projects received in the solicitation that focus on expanding or improving transit service through creating new service or improving the frequency or service hours of existing transit, will be evaluated using the performance measures indicated in the table. Further information on the exact metrics and scoring follows in the subsections.

Table TE1 – Transit Expansion Project Evaluation Scheme

Mobility & Access		
Ridership	40%	35%
Reliability	15%	
Network Connectivity	20%	
Improves Access to Destinations	25%	
Equity		
Addresses Equity	70%	25%
Promotes Housing Affordability	30%	
Safety		
Improves Safety	100%	20%
Resiliency		
Reduction of Air Pollutants	70%	20%
Supporting Land Use	30%	

Mobility & Access

Transit projects can help reduce congestion and improve regional mobility by improving access for more people to more locations in the region and by reducing the demand on public roadways. Two key measures and metrics to measure the success of a transit project are the estimated ridership and reliability of a route.

Ridership

A standard measure of success for transit projects is estimating how many people will ride the new service. ARC's in-house modeling software will be used to estimate how many new transit trips each project will induce. Sponsors will also be able to provide any documentation from internal analyses or analyses from the ATL Authority that include ridership estimates.

Table TE2 – Metrics for Evaluating the Transit Expansion Mobility & Congestion Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Ridership	Change in project level transit boardings (unlinked trips)	Numerical; derived from ARC's modeling or from a sponsor-provided study	Maybe

A distribution of these data is used to assign scores from 0-100. The projects with the most trips will receive the highest score, the project with the least will receive the lowest. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

Reliability

Whereas reliability for roadway projects focuses on predictable travel times, reliability regarding the expansion of transit service is focused on ensuring proposed projects offer frequent service on dedicated or exclusive right-of-way, or technology enhancements that improve on-time performance. These three measures enhance predictability in travel times and offer a competitive advantage over automobile travel. Table TE3 illustrates the measures and metrics for the reliability criterion for transit expansion projects.

Table TE3– Metrics for Evaluating the Transit Expansion Reliability Criterion

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Dedicated Right-of-Way	Percent of proposed route with dedicated right-of-way	Numerical; amount of the route with dedicated right-of-way as a percent of total project centerline miles	Yes	50%
Transit Service Frequency	Service headway in minutes	Numerical; sponsor should provide service frequency for peak and off-peak periods	Yes	25%
Transit Signal Priority	Will the project implement transit signal	Yes/No; sponsor provides information about proposed	Yes	25%

	priority or queue jumping technology?	technology being implemented		

Dedicated right-of-way is right-of-way that is either totally exclusive to the transit service or right-of-way that is managed to maintain reliability. For this analysis, any transit service in exclusive right-of-way or on managed lanes, and express bus operating on managed lanes is considered dedicated. Streetcars operating in mixed traffic are not considered to be on dedicated right-of-way. The resulting values for the first two metrics will be evaluated on a distribution to assign a range of scores from 0-100. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

Network Connectivity

Ensuring the region's transit system is well-connected is a key goal of the Atlanta Region's Plan. This metric focuses on awarding credit to regionally significant transit projects that maximize connections to high frequency bus service and rail, see Table TE4. High frequency bus service is considered any service that operates at some point during peak periods with at least a 15-minute frequency.

Table TE4 – Metric for Evaluating the Transit Expansion Network Connectivity Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Connections to Rail and High Frequency Transit	Does the project connect to high frequency (<=15 mins) connections or rail lines?	Yes/No	No

Improves Access to Destinations

Transit expansions should be able to provide access to a variety of destinations and job opportunities. ARC will run projects through an in-house model that will predict how new projects can connect residents to job opportunities. Sponsors will also be able to provide any documentation from internal analyses or analyses from the ATL Authority that include job access estimates.

Table TE5 – Metrics for Evaluating the Transit Expansion Access to Destinations Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
# of jobs/destinations the project provides access to	The number of jobs accessible within a 45-minute travel time.	Numerical	Maybe

Equity

Ensuring a fair and equitable transportation system is a key goal associated with the Atlanta Region's Plan. The demographic criteria analyzed – racial minority, ethnic minority, and low-income – were considered indicators of the greatest potential inequality in the Atlanta region. These criteria also align with federal guidance, including Title VI of the Civil Rights Act and the Executive Order on Environmental Justice. Our region's transportation assets need to equitably benefit communities of color and low-income communities, while also avoiding disproportionately burdening these same communities. To meet the social equity criterion, project sponsors will be required to provide information on how projects serve these populations and how projects do not cause undue hardships for these communities. For projects that are determined to be beneficial, points will be awarded based on the community's relative concentration of equity indicators, as mapped by ARC. A project's ability to

connect people to affordable and subsidized housing will also be considered for those projects outside of Environmental Justice census tracts.

Table TE6 – Metric for Evaluating the Transit Expansion Environmental Justice Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Addresses Equity	Does project serve a minority or low-income community?	Numerical. An Environmental Justice analysis of Census data measuring minority and low-income populations and NHTS data. Written. Sponsor provides details on whether the project serves/connects to HUD-subsidized low-income housing or households, or ARC staff will compare project with HUD database. Point distribution in Table TE7.	Yes; the sponsor must provide details on previous and planned community engagement, and mitigation of potential negative externalities. Numerical evaluation will be done by ARC staff.

Table TE7 – Scoring Scheme for the Transit Expansion Equity Metric

Social Equity Scoring	Points Awarded
Low/None	0
Medium-Low	25
Medium	50
Medium-High OR Serves subsidized housing	75
High	100

Projects located in lower-scoring Environmental Justice areas are still able to gain points for this metric if they connect to subsidized housing. The sponsor must provide details on their project serves housing subsidized by programs run by the U.S. Department of Housing and Urban Development. ARC staff may independently verify these details using internal data or checking the HUD Subsidized Property Database.

Housing Affordability

Promoting housing affordability throughout the region is a goal of the ARC. Transportation projects that connect existing and potential affordable housing options can help lower the total costs of transportation and housing. The Metro Atlanta Housing Strategy provides guidance to local governments on a variety of methods to boost housing supply and affordability. Zoning codes that allow, require, or incentivize affordable housing are an important part of connecting transportation and land use policies.

Table TE8 – Metric for Evaluating the Transit Expansion Housing Affordability Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Promotes Housing Affordability	ADOPTED/ENACTED Zoning or Development codes that require or provide incentives for affordable to workforce housing development	Yes/No	Yes; ARC staff may consult ARC's Inventory of Zoning/Development Codes

These zoning codes could include inclusionary housing ordinances, or incentives or requirements that support or permit affordable housing.

Safety

In 2021, ARC adopted regional safety performance targets (SPTs), derived from local Public Transportation Agency Safety Plans (PTASP). These targets measure the number of people killed or injured while on transit, and the state-of-good-repair of transit systems. This performance-based approach ensures expansion and enhancement projects contribute to meeting or exceeding these targets.

Table TE9 – Metric for Evaluating the Transit Expansion Safety Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Improves Safety	Does the project help achieve the regional transit safety targets?	Written; sponsor provides information on how the project will help achieve or improve upon the regional transit safety targets.	Yes

ARC staff will consider the potential impact of the proposed safety measures and award points based on the distribution in Table TE10.

Table TE10 - Scoring Scheme for the Transit Expansion Safety Score

Effectiveness of Safety Measures	Points Awarded
None	0
Low	25
Medium-Low	50
Medium-High	75
High	100

Transit expansions projects that impact roadways and/or more significant collaboration with local governments on creating safe transit corridors can consider the USDOT research on the effectiveness of

certain safety countermeasures at reducing crashes. ARC is promoting the use of the following 10 measures for reducing crashes in transit projects:

- Corridor Access Management
- Systemic, Low-cost Countermeasures at Intersections
- Leading Pedestrian Interval
- Medians & Pedestrian Crossing Islands
- Pedestrian Hybrid Beacon
- Road Diet
- Walkways
- Separated Bike Lanes
- Crosswalk Visibility Elements
- Street Lighting

- Local Road Safety Action Plan
- Road Safety Audits
- USLIMITS2

A full list of proven safety countermeasures can be found in Appendix A. Project sponsors will also be able to provide other safety countermeasures from the lists available on USDOT's website (see the Glossary of Links). This website provides a searchable database; searches by mode or other element can identify possible countermeasures for transportation projects. ARC staff will consider the effectiveness of the safety measures proposed to address safety needs based on the Crash Modification Factors and ability to improve safety for vulnerable road users. Projects which do not include appropriate safety measures will be given zero points for Safety.

Resiliency

Project Emissions

Encouraging people to switch from automobile to transit travel reduces vehicle emissions that cause bad air quality and contribute to climate change. Despite requiring fuel and/or electricity, transit trips are generally considered to be beneficial to air quality, especially on well utilized transit routes. ARC's in-house Visum model can produce estimates of emissions reductions from the development of new transit projects. Table TE11 outlines the metrics associated with the air quality and climate change criterion.

Table TE11 – Metrics for Evaluating the Transit Expansion Air Quality & Climate Change Criterion

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Project Emissions	Change in NO_x, emissions	Numerical; in kg/year	Yes	25%
	Change in VOC emissions	Numerical; in kg/year	Yes	25%
	Change $PM_{2.5}$ emissions	Numerical; in kg/year	Yes	25%
	Change in greenhouse gas emissions $CO_2(e)$	Numerical; in kg/year	Yes	25%

The amount of emissions offset will be scored on a distribution to assign a range of scores from 0-100. The project with the most emissions reduced will receive the highest score, the project with the least will receive the lowest. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

In order to calculate emissions for transit expansion projects, sponsors will need to provide the following additional information in Table TE11 to run projects through the Visum model.

Table TE12 – Sponsor Required Inputs for Transit Expansion Projects

	Required Input	Nature of Metric	Sponsor Provided
1)	New type of transit service	Written; diesel bus, CNG bus, LNG bus, hybrid electric bus, light rail, heavy rail	Yes
2)	Transit corridor weekday hours of service per day	Numerical; hours	Yes

Land Use

Implementing transit expansion projects where existing land use best supports proper density is a key factor in planning for project success. Two metrics were identified that relate to ensuring supportive residential and mixed-use densities, and at planned and current transit stops/stations, see Tables TE13 and TE14 for details on the metrics and the scoring scheme. The two metrics are compared, and the higher result is taken to evaluate the project.

Table TE13 – Metric for Evaluating Transit Expansion Land Use Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Transit-Supporting Land Use	1) Do the communities the transit line passes through have transit supportive land use zoning in place? -OR- 2) Does the existing density support the development of transit?	Numerical; sponsor should provide information on the average number of dwelling units/acre zoning provisions within ½ mile of new transit stations and/or stops -OR- Numerical; sponsor should provide information on the population per square mile within ½ mile of new transit stations and/or stops	Yes

Table TE14 – Scoring Scheme for the Transit Expansion Land Use Metric

FTA Guideline Density Classification	Residential Density Threshold (Dwelling Units/Acre)	Points Awarded
Low	< 5	0
Low-Medium	5 – 10	25

Medium	10 – 15	50
Medium-High	15 – 25	75
High	> 25	100

Transit Asset Management & System Upgrades

Table TA1 outlines the scheme for evaluating transit asset management and system upgrade projects. In 2018, ARC worked with four of the region's transit agencies to develop asset management targets as well as a strategy for prioritizing a state of good repair via the Group Transit Asset Management Plan. Projects should contribute to meeting or exceeding these targets.

Projects received in the solicitation that focus on transit asset management and system upgrades could include: vehicle replacements, renovated pedestrian infrastructure (bridges, sidewalks), rehab of existing maintenance facilities or stations, track renovations, power system maintenance. Further information on the exact metrics and scoring follows in the subsections.

Table TA1 – Transit Asset Management & System Upgrades Project Evaluation Scheme

Mobility & Access		
Riders Affected	100%	30%
Equity		
Addresses Equity	100%	20%
Safety		
Addresses Safety	100%	30%
Resiliency		
Reduction of Air Pollutants	50%	20%
Asset Condition	50%	

Mobility & Access

Maintenance and upgrades of transit projects can help attract and maintain ridership on public transportation, reducing congestion and improving regional mobility. Projects affecting a larger number of passenger trips will have a greater impact than projects affecting fewer passenger trips.

Table TA2 – Metrics for Evaluating the Transit Asset Management Mobility & Access Criterion

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Riders Affected	Number of passenger trips per year affected by the asset upgrade	Numerical; based on existing ridership	Yes	50%
	Share of annual system trips impacted	Numerical; percent based on data in previous metric	Yes	50%

After affected trips are calculated for all transit asset management and system upgrade projects, project scores are compared. A distribution of these data are used to assign scores from 0-100. The projects with the most affected trips will receive the highest score, the project with the least will receive the lowest. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

Equity

Ensuring a fair and equitable transportation system is a key goal associated with the Atlanta Region's Plan. The demographic criteria analyzed – racial minority, ethnic minority, and low-income – were considered indicators of the greatest potential inequality in the Atlanta region. These criteria also align with federal guidance, including Title VI of the Civil Rights Act and the Executive Order on Environmental Justice. Our region's transportation assets need to equitably benefit communities of color and low-income communities, while also avoiding disproportionately burdening these same communities. To meet the social equity criterion, project sponsors will be required to provide information on how projects serve these populations and how projects do not cause undue hardships for these communities. For projects that are determined to be beneficial, points will be awarded based on the community's relative concentration of equity indicators, as mapped by ARC. This process is outlined in Tables TA3 and TA4.

Table TA3 – Metric for Evaluating the Transit Asset Management Equity Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Addressing Social Equity	Does project serve a minority or low-income community?	Written; sponsor provides an assessment of how developing the project will support these populations. This information is used to screen projects to receive a score.	Yes; with supplemental ARC assessment of minority or low-income areas

Table TA4 – Scoring Scheme for the Transit Asset Management Equity Metric

Social Equity Scoring	Points Awarded
Low	0
Medium-Low	25
Medium	50
Medium-High	75
High	100

Safety

ARC has worked in conjunction with the transit agencies across the region to develop transit safety targets regarding the number of people killed or injured while on transit and the state of good repair of transit assets. It is important to measure how any new project will contribute to meeting or exceeding the regional targets.

Table TA5 – Metric for Evaluating the Transit Asset Management Equity Criterion

Measure	Metric	Nature of Metric	Sponsor Provided
Improves Safety	Does the project help achieve the regional transit safety targets?	Written; sponsor provides information on how the project will help achieve or improve upon the regional transit safety targets.	Yes

ARC staff will consider the potential impact of the proposed safety measures and award points based on the distribution in Table TA6.

Table TA6 - Scoring Scheme for the Transit Asset Management Safety Score

Effectiveness of Safety Measures	Points Awarded
None	0
Low	25
Medium-Low	50
Medium-High	75
High	100

Transit asset management projects many use certain elements of USDOT research on the effectiveness of certain safety countermeasures at reducing crashes; especially in regards to implementing aspects of agency or local plans. ARC is promoting the use of the following 3 measures for reducing crashes in transit asset management projects:

- Local Road Safety Action Plan
- Road Safety Audits
- USLIMITS2

A full list of proven safety countermeasures can be found in Appendix A. Project sponsors will also be able to provide other safety countermeasures from the lists available on USDOT's website (see the Glossary of Links). This website provides a searchable database; searches by mode or other element can identify possible countermeasures for transportation projects. ARC staff will consider the effectiveness of the safety measures proposed to address safety needs based on the Crash Modification Factors and ability to improve safety for vulnerable road users. Projects which do not include appropriate safety measures will be given zero points for Safety.

Resiliency

Ensuring the region's transportation system is resilient is a key goal of the Atlanta Region's Plan. Maintaining our current assets and repairing or replacing them as needed will help keep our transit systems stable and operating.

Table TA7 – Metrics for Evaluating the Transit Asset Management & Resiliency Criterion

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Asset Condition	1) If the asset is a vehicle, ratio of age to useful life benchmark. 2) If the asset is a facility, or a component of a facility, condition rating on the FTA TERM scale.	Numerical; expressed as fraction at year money is requested Numerical; the specific component should be considered, not the entire facility unless the project completely replaces an existing facility	Yes. For vehicles, sponsor will provide age of asset and useful life benchmark. For facilities, sponsor will provide TERM rating of facility or component of a facility.	80% for vehicles 100% for facilities
	If the replaced asset is a vehicle, number of miles between mechanical problem road calls.	Numerical	Yes	20%

An asset's age and condition will be considered on its Useful Life Benchmark (ULB) or TERM rating. Higher ULB ratios and lower TERM ratings will be scored highly. For the road call metric, the shortest distance traveled will receive the highest score. Scores will be normalized between 0-100. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

Project Emissions

Transit bus replacement projects are a subset of transit asset management projects. These projects are focused only on replacing existing buses with newer vehicles. Often, replacing older diesel buses with

new vehicles can have positive air quality benefits, especially when switching to cleaner burning fuels or electric vehicles.
ARC's CMAQ Calculator is able to estimate the emissions reductions from replacing older vehicles. Table TA8 outlines the metrics associated with the air quality and climate change criterion for transit bus replacements.

Table TA8 – Metrics for Evaluating the Transit Asset Management Project Emissions Criterion

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Project Emissions	Change in NO_x, emissions	Numerical; sum of three pollutants in kg/year	Yes	25%
	Change in VOC emissions	Numerical; sum of three pollutants in kg/year	Yes	25%
	Change $PM_{2.5}$ emissions	Numerical; sum of three pollutants in kg/year	Yes	25%
	Change in greenhouse gas emissions $CO_2(e)$	Numerical; in kg/year	Yes	25%

The amount of emissions offset will be scored on a distribution to assign a range of scores from 0-100. The project with the most emissions reduced will receive the highest score, the project with the least will receive the lowest. ARC staff will account for outlier projects when assigning the distribution curve to assign points.

Sponsors will need to provide the following additional information in Table TA9 for ARC to calculate emissions for transit bus replacement projects using the CMAQ Calculator.

Table TA9 – Sponsor Required Inputs for Transit Bus Replacements

	Required Input	Nature of Metric	Sponsor Provided
1)	Average Model Year of Alternative Vehicle	Numerical	Yes
2)	Type of Alternative Vehicle	Written; CNG, LNG, gas, diesel, electric, hybrid electric, propane	Yes
3)	Average Model Year of Existing Vehicle	Numerical	Yes
4)	Type of Existing Vehicle	Written; CNG, LNG, gas, diesel, electric, hybrid electric, propane, hydrogen	Yes
5)	Number of Vehicles to be Replaced	Numerical; the number of vehicles in the fleet that will be replaced	Yes
6)	Annual Miles Traveled per Vehicle (vehicle miles traveled)	Numerical; Enter the fleet average annual miles traveled per vehicle	Yes
7)	Annual Average Speed (mph)	Numerical; Enter the annual average travel speed for the target vehicles.	Yes

Miscellaneous Emissions Related Projects

Most types of CMAQ-eligible or CRP-eligible projects will fit into the categories listed in previous sections of this document. Some project types are not as easy to categorize but are still eligible for these funds. Projects will be evaluated on a case-by-case basis through ARC's CMAQ Calculator or off-model techniques as necessary. All projects must demonstrate, at a minimum, an emissions reduction. ARC staff will work with project sponsors to acquire the necessary information to evaluate these projects.

Below is a list of some additional eligible project types that are not included in the project categories above:

- Electric & Other Alternative Fuel Vehicles
- Diesel engine retrofits
- Transit Signal Priority
- Emerging technologies

Table E1 has the main metrics that will be considered for evaluating Miscellaneous Emissions projects.

Table E1 – Metrics for Evaluating Air Quality Effect of Miscellaneous Emissions Projects

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
Project Emissions	Change in NO_x, emissions	Numerical; sum of three pollutants in kg/year	Yes	25%
	Change in VOC emissions	Numerical; sum of three pollutants in kg/year	Yes	25%
	Change $PM_{2.5}$ emissions	Numerical; sum of three pollutants in kg/year	Yes	25%
	Change in greenhouse gas emissions $CO_2(e)$	Numerical; in kg/year	Yes	25%

Electric & Other Alternative Fuel Vehicles

Local governments can use CMAQ funds to pay for the difference in cost of purchasing electric vehicles or other alternative fuel vehicles (hybrid electric, hydrogen, etc.) compared to conventional fossil fuel vehicles. These vehicles can include school buses, civilian fleets, or public safety vehicles. Electric vehicle charging stations as well as alternative fueling stations are also applicable providing that the public can still access the facilities and that a measurable reduction in emissions can be found.

Table E2 outlines the sponsor required data to evaluate emission benefits of alternative fuel vehicle & technology projects.

Table E2 – Sponsor Required Inputs for Alternative Fuel Vehicles & Technology

		Required Input	Nature of Metric
1)	Average Model Year of Alternative Vehicle	Numerical	Yes
2)	Existing fuel type of vehicle being replaced	Written; CNG, LNG, gas, diesel, electric, hybrid electric, propane, hydrogen	Yes
3)	Type of vehicle being replaced	Written; transit bus, school bus, passenger car, passenger truck, medium duty truck, heavy duty truck, refuse truck	Yes
4)	Average Model Year of Existing Vehicle	Numerical	Yes
5)	Alternative fuel type of vehicle being purchased	Written; CNG, LNG, gas, diesel, electric, hybrid electric, propane	Yes
6)	Type of vehicle being purchased	Written; transit bus, school bus, passenger car, passenger truck, medium duty truck, heavy duty truck, refuse truck	Yes
7)	Number of vehicles being replaced	Numerical	Yes
8)	Annual miles traveled per vehicle	Numerical	Yes
9)	Annual Average Speed (mph)	Numerical; annual average travel speed for the target vehicles.	Yes

Diesel Engine Retrofits

There are still many vehicles in the region that run on diesel. Adding emission control technology to old diesel engines can lead to better air quality and improved public health outcomes for regional communities while responsibly extending the useful life of these vehicles. Table E3 outlines the sponsor required data to evaluate emission benefits of diesel retrofit projects.

Table E3 – Sponsor Required Inputs for Diesel Engine Retrofits

		Required Input	Nature of Metric
1)	Retrofit technology	Written; (1) diesel particulate filters (DPF), (2) diesel oxidation catalyst (DOC), (3) Diesel Oxidation Catalyst + Closed Crankcase Ventilation, (4) Diesel Oxidation Catalyst + Diesel Particulate Filter, (5) Exhaust Gas Recirculation + Diesel Particulate Filter, (6) Selective Catalytic Reduction + Diesel Particulate Filter	Yes

2)	Number of trucks/buses proposed to be retrofitted (built after 1995 if using DPF)	Numerical	Yes
3)	Average annual miles traveled per vehicle	Numerical	Yes
4)	Annual Average Speed (mph)	Numerical; annual average travel speed of each vehicle in the fleet that will be retrofitted.	Yes

Emerging Technologies

The region is seeing increasing interest in emerging technologies like autonomous and connected vehicles, smart corridors, and other innovative techniques to manage congestion. ARC will evaluate the potential of these projects to reduce emissions and consider if they are eligible for CMAQ or CRP funding.

Appendix A: Safety Countermeasures

A list of proven safety countermeasures ARC is suggesting for each project type.

	PROJECT TYPES						
COUNTERMEASURES	**Bike/ Ped**	**Trails**	**Road Assets**	**Road Expand**	**TSMO**	**Transit Assets**	**Transit Expand**
Backplates with Retroreflective Borders			●	●	●		
Corridor Access Management	●	●	●	●	●		●
Dedicated Lanes at Intersections			●	●	●		
Reduced Left-Turn Conflict Intersections	●	●	●	●	●		
Roundabouts			●	●	●		
Multiple Systemic, Low-Cost Countermeasures at Intersections	●		●	●	●		●
Yellow Change Intervals			●	●	●		
Leading Pedestrian Interval	●	●		●	●		●
Medians & Pedestrian Crossing Islands	●	●	●	●			●
Pedestrian Hybrid Beacon	●	●		●	●		●
Road Diet	●	●	●				●
Walkways	●	●	●	●			●
Separated Bike Lanes *	●	●		●			●
Neighborhood Greenway / Bike Boulevard *	●	●		●			
Crosswalk Visibility Enhancements *	●	●	●	●	●		●
Street Lighting *	●	●	●	●	●		●
Enhanced Delineation and Friction for Horizontal Curves			●	●			
Roadside Design Improvement at Curves				●	●		
Longitudinal Rumble Strips and Stripes on Two-Lane Roads			●	●			
Safety Edge			●	●			
Median Barrier			●	●	●		
Local Road Safety Plan	●	●	●	●	●	●	●
Road Safety Audit	●	●	●	●	●	●	●
USLIMITS2	●	●	●	●	●	●	●

Appendix B: Changelog

A listing and explanation of major scoring mechanisms that were changed, added, remove, or update between the 2022 TIP Solicitation and the 2024 evaluation methodologies.

Title VI

- Titel VI language was updated to reflect current federal standards and the 2022 ARC Title VI Plan.

Key Decision Point 1

- KDP1 filter criteria were updated to better reflect ARC priorities for project readiness, safety, and collaboration with state and regional partners.

All projects: Value of Health Benefits

- The CO-Benefits Risk Assessment (COBRA) tool from EPA is no longer being used as the process to use the tool was far too time-consuming with limited extra benefits compared with standard air quality analyses.

Bicycle & Pedestrian and Trail: Network Connectivity criteria

- Bike & Pedestrian criteria renamed to "Design Standards" from "Network Connectivity" to better measure the need for well-built pedestrian infrastructure over simply filling sidewalk gaps. These include width of infrastructure and proper protection for bike infrastructure.
- Updates to the Trail Network Connectivity criteria to better reflect the design standards for high quality trail projects that ARC should fund.

Bicycle & Pedestrian and Trail: Average Trip Lengths

- The average trips lengths for walk trips, bicycle trips, and various transit modes were updated based on the 2022 NHTS data (for walk and bicycle trips) and an average of 2018-2022 NTD data (for transit modes). Tables BP16 and T14 reflect these updates.

Benefit-Cost Analysis updated

- Roadway Expansion and TSM&O – Built Environment projects will undergo a safety benefit-cost analysis to determine their impact on transportation deaths and serious injuries in the region. The decrease or increase in severe crashes will be monetized and compared with the project cost.
- All projects will undergo additional analysis to monetize the benefits of emissions reductions the project may contribute to.