AMERICAN PUBLIC TRANSPORTATION ASSOCIATION

October 13, 2021

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The Honorable Nuria I. Fernandez
Administrator
Federal Transit Administration
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Subject: Request for Information Concerning the Capital Investment Grants Program (FTA–2021–0010)

Dear Administrator Fernandez:

On behalf of the 1,500 public- and private-sector member organizations of the American Public Transportation Association (APTA), I write to provide comments on the Federal Transit Administration's (FTA) Request for Information (RFI) Concerning the Capital Investment Grants (CIG) Program published on July 15, 2021, in the *Federal Register* at 86 FR 37402.

APTA strongly supports the CIG program, and we are grateful for the opportunity to provide this input. We appreciate that FTA is seeking feedback from the industry and all interested parties and is considering a myriad of ways that the CIG program and processes could be improved. In developing this response, APTA surveyed its members to develop the comments below regarding FTA's CIG Program RFI. We are also excited that FTA's RFI suggests that the CIG program expand ways for FTA to consider issues of equity, access to opportunity, human health, and other ways that transit can improve the lives of Americans.

We appreciate that the existing CIG program criteria and measures are largely transparent and clear. This approach allows project sponsors to determine at an early phase of planning, and at key decision points in project development, whether potential projects could qualify for funding. At a local level, this allows for better plans to prioritize projects and funding mechanisms. Project sponsors must expend significant staff time and local funds to conduct early planning and analysis tasks before cost items and expenditures become eligible for Federal reimbursement.

The transparency and clarity of the CIG criteria allow our members to determine early in the planning process whether they have a project that is likely to qualify, and therefore is worth additional investment in time and local funds. We encourage FTA to strongly consider this need for transparency and clarity for project sponsors as it considers changes to the program process requirements and evaluation measures. To that end, we are grateful that FTA issued the February 16, 2021 CIG Dear Colleague Letter rescinding the prior Dear Colleague Letter, recognizing that Federal loans that are paid back with non-federal funds will be counted as part of the local share.

APTA and its members greatly appreciate the critical support that Congress and FTA have provided to public transit agencies throughout the COVID-19 pandemic. Under its CIG reporting requirements, FTA has allowed agencies to use pre-pandemic financial, ridership, and other data to support the travel forecasting, financial analysis, and other measures. Given that the pandemic is continuing to have a severe negative effect on transit ridership and agency finances, APTA believes FTA should continue this practice for at least the next few years. Similarly, FTA should not penalize agencies for pandemic-related service reductions when assessing the "Current Capital and Operating Condition."

As FTA considers ways to improve the CIG program and processes, we urge the agency to undertake a zero-based review of all CIG requirements. Beginning with enactment of the Transportation Equity Act for the 21st Century in 1998, both Congress and FTA have repeatedly layered additional requirements on the CIG program, resulting in a less than clear process. APTA urges both Congress and FTA to adopt CIG reforms to strengthen the CIG program, expedite approval, and ensure that beneficial projects across the nation are delivered in a timely manner.

We strongly support the CIG reforms included in both the House- and Senate-passed versions of H.R. 3684, the Infrastructure Investment and Jobs Act. We are hopeful that Congress will enact this critical legislation this fall, and we urge FTA to immediately begin planning to implement the statutorily required changes to the CIG program. In addition, as part of FTA's review of the CIG program, we urge the agency to further assess the need for each and every administrative requirement included in the program. We also urge the agency to review its internal project review processes and take steps to reduce the necessary review times. In addition, to further expedite CIG projects, FTA needs sufficient staff to complete the reviews and approvals required by the CIG process. Many, if not all, FTA staff working to review CIG projects are overworked. This situation has forced FTA regional offices to hire consultants to support the National Environmental Policy Act (NEPA) review of projects, sometimes at the expense of project sponsors. APTA urges Congress and the U.S. Department of Transportation (DOT) to support FTA with sufficient funding and authorization to hire the staff necessary to manage the pipeline of proposed CIG projects.

In response to the specific questions that FTA has asked, APTA, on behalf of its members, has the following responses.

Question 1: Is there a maximum amount of time beyond two years that FTA should allow a project sponsor to extend Project Development to remain consistent with statutory intent?

APTA recognizes the two-year time limitation is established by law and requires an act of Congress to change. By law, project sponsors are required to complete the NEPA process and submit to FTA the information needed for a project rating within two years of approval into Project Development, as further discussed below.

APTA urges Congress to extend the timeline to three years, recognizing that Project Development requires successful completion of work under NEPA, and that the average time required for completion of an Environmental Impact Statement (EIS) is generally more than two years. Given the current time restrictions, many transit agencies must complete substantial pre-NEPA and NEPA work before the official start of Project Development. Much of this work requires intensive public and stakeholder engagement, and various factors can influence the time required to successfully complete meaningful engagement. This engagement will be even more important as new equity and inclusion practices expand. Moreover, many project sponsors find it difficult to gain meaningful collaboration with other federal agencies during the NEPA process if the project is not yet in FTA's Project Development process. The costs incurred before Project Development, which can often be significant, are not eligible for federal reimbursement. As a result, additional time in the Project Development phase is an important financial step for agencies.

APTA encourages Congress to align the Project Development timeline with typical NEPA requirements and real-world considerations, so transit agencies have adequate time to ensure a project is a good fit for the CIG program, to ensure that environmental and community factors are fully considered, and to lessen some of the risks inherent in undertaking substantial NEPA work before starting Project Development. Given that FTA has authority to grant extensions of the two-year timeframe, APTA believes no arbitrary maximum time limit should be set if the project sponsor meets the statutory extension requirements and demonstrates sufficient progress during the extension period.

Question 2: Should FTA alter any provisions of its CIG guidance? Please be specific as to the reason for the response and any proposed alterations.

Letter requesting entry into Project Development
APTA agrees that a letter requesting entry to Project Development should be a concise document. Given the amount of information FTA requests be included in these letters, it is our experience it can be difficult for some project sponsors to provide the necessary information in letters that are less than five pages. In particular, for projects with many partners or serving many jurisdictions, the need to identify all partners, roles, and all other requested information can lead to longer letters. It would be more appropriate to target a length of five to 10 pages for the letter and allow project sponsors to include all the necessary information, with minimal supporting information needing to be generated to support the letter requesting entry into Project Development.

FTA should consider granting pre-award authority no later than the initiation on NEPA
FTA advises New Starts and Core Capacity project sponsors to wait to enter Project Development until a point in the NEPA process when achievement of a project scope, schedule, and budget is sufficient to lock in the CIG funding amount within two years. Thus, the project sponsor does not have pre-award authority for NEPA activities that occur before entry into Project Development, and the sponsor's full cost to meet federal NEPA requirements is ineligible for CIG funding.

FTA should provide pre-award authority for NEPA activities upon the formal initiation of a Categorical Exclusion (CE)/Documented Categorical Exclusion (DCE), Environmental Assessment (EA), or EIS.

Separate completion of Project Development from Entry to Engineering
APTA is concerned that FTA, by policy, has added requirements to Project Development that are not based in statute, and, therefore, undermine the ability of projects to more expeditiously through the CIG process. Most of

these requirements are more appropriately steps for entry into Engineering than completion of Project Development. FTA should interpret the requirements for completion of Project Development to be limited to the statutory requirements.

The Fixing America's Surface Transportation (FAST) Act (P.L. 114-94) specifies that during Project Development, and not later than two years after the date the project enters Project Development, the following activities must be completed:

- The project sponsor must select a locally preferred alternative (LPA);
- The project sponsor must get the LPA adopted into the fiscally constrained metropolitan transportation plan;
- The environmental review process required under NEPA must be completed as signified by a final FTA environmental decision (e.g., categorical exclusion, finding of no significant impact, combined final EIS/record of decision, or record of decision) covering all aspects of the project proposed for FTA funding; and
- The project sponsor must develop sufficient information for FTA to develop a project rating.[1]

The current guidance states:

> *Therefore, if a project sponsor has completed all of the Project Development activities listed above within the two-year timeframe specified in FAST, but wishes to perform additional engineering and design before seeking entry into Engineering and locking in the CIG amount, the sponsor may submit a written request addressed to the FTA Associate Administrator for Planning and Environment requesting that FTA postpone consideration of the project for advancement into Engineering.*[2]

There are benefits for some project sponsors to delay entry into Engineering (e.g., to allow project sponsors to advance the design to gain greater confidence in project scope and budget). A key challenge, however, is that FTA requires a number of activities beyond those specified by statute to complete Project Development, including: a commitment of 30 percent of the non-CIG share, and the preparation of project management plans and sub-plans, project definition, cost estimates, schedules, third-party agreements and right-of-way requirements, geotechnical analyses, project delivery method analyses, value engineering report, preliminary safety hazard analysis and preliminary threat and vulnerability analysis, accessibility analyses, and constructability review report. APTA believes this list of activities greatly exceeds Congress' intent when it defined the requirements for completion of Project Development. For projects that wish "…to perform additional engineering and design before seeking entry into Engineering and locking in the CIG amount…."[3] these requirements would result in duplicative effort between completion of Project Development and the request for entry into Engineering.

[1] *FTA, Final Interim Policy Guidance Federal Transit Administration Capital Investment Grant Program, June 2016*.
[2] *FTA, Final Interim Policy Guidance Federal Transit Administration Capital Investment Grant Program, June 2016*.
[3] *FTA, Final Interim Policy Guidance Federal Transit Administration Capital Investment Grant Program, June 2016*.

FTA's response to the comments on its 2015 proposed rules for the CIG program stated:

> *The parameters associated with the steps in the process proposed by FTA were built on the premise that the Federal process should not stand in the way of local agencies that wish to move quickly while strong local political support exists. In order to allow projects to move quickly if they desire, FTA's approach allows them to enter the Engineering phase with relatively little engineering and design completed (30 percent) as long as they include sufficient contingencies in their cost estimate to account for the unknowns at that stage.*[4]

APTA fully supports FTA's decision to design a process that allows "…local agencies that wish to move quickly if they desire…."[5] Yet, the additional requirements for the completion of Project Development, together with the time required for FTA and its Project Management Oversight Contractor to review the resulting products, misses the intent of allowing local agencies to move quickly.

FTA may assert that requirements for Project Development that are not based in statute are necessary to evaluate and rate the project, as required by statute. APTA believes this approach would deviate from FTA's long-standing tradition, and good practice, of evaluating and rating projects in Project Development as part of the Annual Report, without requiring project sponsors to seek a grant agreement or entry into Engineering. A project rating achieved through the Annual Report evaluation process provides project sponsors with a "snapshot in time" as to its competitiveness for funding and allows sponsors to work with their project partners to secure the necessary funding for CIG projects. It also allows project sponsors to make necessary modifications to the project if they desire a higher rating.

Locking in CIG share of project cost

APTA believes FTA's often lengthy negotiations of the CIG share with project sponsors is a major deterrent to an effective CIG program. Moreover, FTA's 2016 Final Interim Policy Guidance on the CIG Program added significantly to requirements to be met during Project Development, and APTA strongly recommends these administrative requirements be reconsidered. The first and most substantial recommendation is to change the point in the process when project sponsors are required to lock in the amount of CIG funding to be requested. The "lock" should occur at the time when the sponsor seeks a funding recommendation in the President's budget, rather than at the conclusion of Project Development. Locking in the federal amount should follow the additional design and cost estimating work entailed in Engineering (New Starts and Core Capacity), while still allowing FTA the ability to budget and plan appropriate for the CIG program.

Collaborative approach to Risk Assessment

We endorse a more collaborative risk assessment review process. Ideally, the project sponsor and FTA should agree on model methodologies and inputs and utilize the services of a third-party risk consultant who can balance the perspectives of both the project sponsor and FTA. This arrangement will further ensure FTA's

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[4] *FTA Summary of comments received on Capital Investment Grant Program proposed interim policy guidance, August 2015, https://www.transit.dot.gov/funding/grant-programs/capital-investments/summary-comments-capital-investment-grant-program, page 8.*

[5] *FTA Summary of comments received on Capital Investment Grant Program proposed interim policy guidance, August 2015, https://www.transit.dot.gov/funding/grant-programs/capital-investments/summary-comments-capital-investment-grant-program, page 8.*

oversight requirements are met with the least amount of burden on the project sponsor. Further, FTA's risk model inputs are based on traditional Design-Bid-Build delivery and are derived from many different types of construction. We believe it would be more accurate to develop and utilize factors that more precisely represent the specific project, including those with Design-Build delivery.
We recommend FTA consider eliminating the "P65" requirement for entry into Engineering (the requirement that a project has at least a 65 percent likelihood of coming in at budget and on time) and revert to the P50 level of certainty.

Making Sufficient Progress During Project Development (Small Starts) or Engineering (New Starts and Core Capacity)—every 3 years
APTA supports FTA's approach to review the progress of projects within the CIG program three years after entry to Project Development (Small Starts) or Engineering (New Starts and Core Capacity). However, there have been a few instances in which project sponsors have continued to make sufficient progress on design and met the funding commitments that are required three years after entry to Project Development (Small Starts) or Engineering (New Starts and Core Capacity) but later have had challenges. As a result, for a project to remain in the CIG program, "…continuing progress [should] be made during Engineering rather than allowing a project to remain stagnant indefinitely."[6] The requirement of "continuing progress" should be extended to Small Starts projects. APTA does not believe this should require project sponsors to demonstrate continuous progress on a monthly, quarterly, or annual basis for fear of being withdrawn from the CIG program. APTA agrees that FTA should have the ability to review projects every three years for a demonstration of sufficient progress, but recommends that initially this could be in the form of a report that allows for explanations of delays due to unanticipated events should progress be less than anticipated in the project schedule.

Pre-award authority for Small Starts vehicles
On February 16, 2016, FTA published a *Notice of FTA Transit Program Changes, Authorized Funding Levels, and Implementation of Federal Public Transportation Law as Amended by the Fixing America's Surface Transportation (FAST) Act and FTA Fiscal Year 2016 Apportionments, Allocations, Program Information, and Interim Guidance* in the *Federal Register*. Included in these changes was "[f]or Small Starts projects, upon completion of the environmental review process and confirmation from FTA that the overall project rating is at least a Medium, FTA extends pre-award authority for vehicle purchases."[7] FTA should include similar language in FTA's Policy Guidance for the CIG Program and letters granting entry into Small Starts Project Development to clarify pre-award authority extends to vehicles following the completion of NEPA similar to how utility relocation and right-of-way acquisition and related relocations are currently addressed.

Commitment of 30 percent of non-CIG funds for Entry to Engineering
FTA should consider modifying its guidance for entry into Engineering to eliminate the requirement that a minimum of 30 percent of the non-CIG funding be committed. FTA's requirement conflicts with the multiple measures approach that has guided CIG project evaluation for most of the program's history. FTA should allow its evaluation and rating of commitment, alongside the other financial criteria, to inform the decision to approve a project's entry into Engineering.

[6] *FTA, Final Interim Policy Guidance Federal Transit Administration Capital Investment Grant Program, June 2016*.
[7] Federal Register, Vol. 81, No. 30, Tuesday, February 16, 2016. Pg. 7920. 2016-02821.pdf (govinfo.gov)

Per FTA CIG policy guidance, a 30 percent funding commitment equals a Medium rating for "commitment of capital and operating funds," which is 25 percent of the overall local financial commitment rating. By requiring a 30 percent capital commitment standard, FTA is indicating that a Medium commitment rating is the most important rating and that the ratings for "agency condition" and "reasonableness of cost and revenue assumptions" are effectively irrelevant. This requirement is similar to FTA's policy in the mid-2000s of only approving and funding projects which achieved a Medium cost effectiveness rating, no matter the other project justification ratings. A Medium rating for justification and local financial commitment plus demonstration of sufficient funding commitment to complete Engineering should be the only requirement for entry into Engineering.

Additional Standard Cost Categories

FTA should examine the standard cost categories (SCC) used for projects. In particular, FTA should consider adding two additional categories within SCC 20 Stations, Stops, Terminals, Intermodal for pedestrian/bike access and accommodation (20.08) and at-grade automobile, bus, and van accessways including roads, parking lots at stations (20.09). This approach would allow all station-related expenses to roll up to SCC 20. Project sponsors frequently report project costs by SCC code for purposes other than FTA reporting. Adding the code would allow a project sponsor's decision between a structured and surface parking facility to be captured in a single cost category.

In addition, SCC 50, Systems, should include an additional code for battery electric bus (BEB) charging equipment and spare batteries. As more projects implement BEBs, it is important that the SCC are updated to reflect these changes. This approach would allow for easier comparisons across projects regarding the costs of BEB charging equipment and spare batteries as well as permit FTA to assign a consistent useful life for this equipment for all projects.

Specific Evaluation Criteria for each Project Type

FTA should develop a set of distinct rating thresholds for New Starts and Small Starts projects for the Land Use, Mobility Improvements and Congestion Relief criteria. Having the same thresholds for both New Starts and Small Starts projects implies FTA expects projects competing for funding in both program categories to achieve similar outcomes. Project sponsors should be rewarded for choosing the scale of transit improvement and costs that best meets the needs of their corridor and community.

Update Cost Effectiveness and Environmental Benefits Thresholds

APTA also believes FTA should reexamine the breakpoints for the cost effectiveness criteria to account for inflation and more recent project experience. The current breakpoints for cost effectiveness have not been adjusted since 2016. As a result, projects that would have qualified for funding in 2016 may not qualify for funding in 2021, simply due to inflationary factors. FTA should align the thresholds to the annual construction inflation index, which would allow project sponsors to advance projects in a fluctuating market and would reduce the FTA administrative burden to frequently modify the CIG guidance.

In addition, this change would add consistency to project ratings during the many years that some projects require to complete Project Development and Engineering. For example, under current thresholds, a project that qualified for funding upon entry to Engineering could be disqualified from a Full Funding Grant Agreement simply due to inflationary effects. This change will be especially important as we are experiencing higher than normal construction inflation rates as our economy is recovering from the effects of COVID-19. For instance,

Engineering News Record (ENR) reported 8.8 percent inflation over the previous 12 months for the construction index. Three years of inflation at eight percent annually means a project that cost $1 billion at entry into Engineering could cost more than $1.25 billion when FTA is reevaluating the project before the grant agreement, due simply to inflationary factors. Without an inflation adjustment, project sponsors will be forced to identify additional resources to cover the increased cost of the project and could also face a lower project rating.

Question 3: Should FTA consider under the Economic Development criterion whether a proposed CIG project is located in a federally designated community development zone (e.g., designated opportunity zones, promise zones, empowerment zones, or choice neighborhoods)?

APTA recognizes the importance of considering the implications of transit capital funding on furthering equity in the communities we serve. To that end, APTA believes it is useful to consider whether a proposed CIG project serves a federally designated community development zone, such as opportunity zones, promise zones, empowerment zones, or choice neighborhoods. APTA has concerns about these designations because they are not uniformly defined and not all places are treated uniformly in the designation of these zones.

APTA believes it would be appropriate for FTA to reestablish the practice of considering "Other Factors" in the ratings process. By doing so, FTA could provide a rating increase for projects that serve these zones, without requiring all project sponsors to address situations that do not apply to their projects. Projects in designated community development zones could receive a one-step increase for two measures under the Economic Development criterion: Performance of Transit-Supportive Plans and Policies and Potential Impact of Transit Project on Regional Development. These measures include an evaluation of the local and regional economic environment or recent development activity in the corridor. Areas within federally designated community development zones are likely to have suffered from disinvestment in the past, and therefore are less likely to have the track record of economic development success. APTA believes it is important to not reinforce this pattern of disinvestment through the CIG project justification measures. Providing a rating increase to proposed CIG projects serving these zones for these two measures is one approach to addressing these historic inequities.

Whether a proposed CIG project serves one of these zones does not, however, guarantee a proposed project will provide substantially more useful service or access to people or businesses in that zone, or more widely to low-income households or people of color across a region. Thus, APTA believes the incorporation of the above recommended changes is just one of many steps that FTA should take to enhance how the CIG program considers equity in its measures and criteria. Additional recommendations for considering equity are discussed in APTA's responses to Questions 5 and 6.

Question 4: Should FTA consider other ways of assessing whether local plans and policies are transit supportive and encourage affordable housing under the Economic Development criterion? Please be specific as to what different or additional metrics could be used, and what thresholds for these metrics could be deemed as transit supportive.

FTA should continue to allow project sponsors to detail their local plans regarding affordable housing and the steps taken to implement them. FTA should give equal consideration to the development of new affordable housing options and the preservation of existing affordable housing stock. Project sponsors should be able to

define and describe the unique local housing needs that the proposed CIG project seeks to align with and support.

To advance the creation of affordable housing, the FTA criterion should give credit to agencies that have established policies and a track record of providing surplus property to affordable housing providers. Agencies granted such credit should be required to extend these policies to the project seeking CIG funds.

Question 5: For equity considerations, should FTA evaluate measures under Land Use that are easy to calculate using Census data, such as the minority population or the number of households in poverty along the alignment?

APTA strongly endorses the idea that equity should be prioritized throughout the CIG evaluation process and metrics, and not just in the Land Use criterion. APTA sees value in doing so, and echoes FTA's recognition that any such measure should be easily calculable and based on widely available datasets such as the Census. For this and all other CIG criteria, APTA recommends FTA work with other DOT modal agencies to formulate a consistent definition of "equity" in the transportation context, and provide illustrative examples of the types of data, quantitative measures, and qualitative descriptions that project sponsors can use.

APTA agrees that assessing the minority population and the number of households in poverty along a project corridor would be useful measures to assess equity under the Land Use criterion. FTA's Title VI Requirements and Guidelines for Federal Transit Administration Recipients (FTA Circular 4702.1B) could be the basis for defining what populations and households to consider in this analysis. Currently, the Title VI guidance counts "minority persons" as anyone who identifies as American Indian or Alaska Native; Asian; Black or African American; Hispanic or Latino; or Native Hawaiian or Other Pacific Islander. APTA believes it would be useful for consistency across federal programs to maintain this definition, but also believes that it may be helpful to use different naming conventions, such as "people of color" or "historically excluded groups", because the term "minority persons" may not be accurate. In some cities, counties, or metropolitan areas, persons within these groups constitute a majority of the population.

The FTA's Title VI Circular defines a low-income person as someone whose median household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines. FTA recommends agencies consider a locally developed threshold for low-income persons that captures "an individual whose family income is at or below 150 percent of the poverty line." Using this definition would maintain consistency across FTA regulations and programs, but it may be too restrictive and may miss locally relevant factors that can exacerbate poverty, such as high housing costs in expensive urban communities. Therefore, APTA recommends defining the threshold for low-income as a household measure based on the applicable regional (MSA) or county median household income (e.g., 50 percent or 80 percent of the applicable area median income (AMI)). This methodology and the income ranges are already defined and used by the U.S. Department of Housing and Urban Development (HUD) as part of many housing programs.

One possible measure to assess whether a proposed project serves "people of color" would be to calculate the "Percentage of People of Color Relative to Systemwide Average." In addition to the general employment and population densities along the corridor, a project could be scored on the share of people of color living in station-area Census block groups. The share within station areas can be averaged across the project corridor and compared to the applicable systemwide average or regional (MSA) share and scored accordingly. A similar

analysis should be run for low-income households, using the same process and breakpoints described above. This recommendation is one way to integrate equity measures into the Land Use criterion but is not the only option.

However, FTA should also recognize that some projects may not directly serve large percentages of people of color or low-income households of a county or region, but the improvements made by a project may dramatically improve travel times for these groups who are accessing jobs or opportunities in the proposed CIG project corridor. Therefore, APTA recommends that FTA consider a range of new access measures to capture these potential impacts and to specifically develop access measures that consider the change in access for people of color and low-income households. Our suggestions about access measures are further clarified in APTA's response to Question 6.

Question 6: Should FTA consider ''access to opportunity'' under the Land Use criterion? If so, how specifically could FTA measure it? For example, should access provided by the project to education facilities, health care facilities, or food stores be considered? Please identify measures/data sources that would be readily available nationwide without requiring an undue burden on project sponsors to gather and FTA to verify the information.

A widely shared goal for our industry is to connect people to the places they need and want to go. Thus, APTA believes it is important to measure how proposed CIG projects affect the access we are providing to our customers. Access measures get at the heart of what many communities want transit to do: expand the ability of people to go places and do things in a reasonable amount of time. Access reframes discussions of travel time: instead of asking how long it takes to go to a particular place, we can look at how many useful places people can go in a given time. In short, access measures are about access to opportunity, which means not just work or school but the freedom to do anything that requires leaving home.

When we increase people's ability to reach destinations in a shorter amount of time, we are improving ridership potential, revenue potential, climate emission benefits, congestion mitigation benefits, overall access to opportunity, and personal freedom. We can measure whether we are doing these things equitably. Access measurement can help meet all these seemingly disparate goals. Since access measures can provide insight on all these different areas, APTA believes that access measures can be a useful tool for multiple criteria, such as Mobility Improvements, Economic Development, Congestion Relief, and Environmental Benefits.

A great deal of academic research in the area of access measures has recently culminated in the development of the Transport Access Manual (https://ses.library.usyd.edu.au/handle/2123/23733), which provides a range of ways to measure access and should be a key guide to FTA staff in thinking about ways to incorporate access measures into the CIG criteria. In addition, the Transit Center and the Center for Neighborhood Technology have recently produced *Equity in Practice: A Guidebook for Transit Agencies*, which outlines a range of tools and approaches to measure changes in transit services or major transit investments using access measures.[8] In addition, the Brookings Institution report, *Delivering Inclusive Access*, provides thorough background on the history of access measures and a framework for thinking about where and how different access measures can be applied to different situations.[9]

[8] https://www.cnt.org/sites/default/files/publications/Equity-in-Practice.pdf
[9] https://www.brookings.edu/research/delivering-inclusive-access/

An example of one approach would be to use General Transit Feed Specification (GTFS) files of a region's transit system with and without the CIG project and quantify the increase in the number of "opportunities" reachable within a given travel time via transit. Additional weight could be given to opportunities reachable by low-income households, people of color, or from affordable housing units to incorporate additional measures of equity into the CIG measures. It may be possible to assess the change in access for many other groups of concern, such as people with disabilities or people with Limited English Proficiency. However, the smaller the population group is, the harder it will be to find high-quality data on the location of persons in that group, and therefore it may be more challenging to ensure that the CIG measures are consistently applied across the country.

In consideration of FTA's Question 8, APTA suggests FTA consider incorporating access measures into criteria other than the Land Use criterion. Given the Land Use criterion already includes five measures about the current state of land use and housing within a project corridor, adding more measures would dilute the value of each of these measures. In addition, although measuring how a transit project changes access to opportunity does account for land uses around a project, the change in access with and without a project tells us more about how a proposed transit project, and the rest of the transit network it connects to, can increase the access to opportunity. Therefore, APTA suggests FTA consider the many possible ways that access measures could be incorporated into other CIG criteria.

Mobility Improvements

APTA recommends adding an access measure to the Mobility Improvements criterion by measuring the increase in the number of resident-job pairs in the metro region that are connected by a travel time of 30 or 45 minutes. A resident-job pair is an imagined link between every resident and every job. Each link represents a possible commute, which is an opportunity that someone might value now or in the future. The number of resident-job pairs in a region is the number of residents times the number of jobs that are linked in the specified time. Although this measure may seem to focus excessively on commute trips, many resident-job pairs are valuable for other needs: a new resident-job pair to a retail job represents a new possible shopping destination while a new resident-job pair to medical jobs represents expanded access to medical services. This measure would be a valuable access measure to assess the improvements in mobility that are enabled by a new transit project, and the inclusion of a travel time parameter would allow the measure to give credit to faster trips as well as new trips.

In considering Question 12, if FTA incorporated this kind of access measure into the Mobility Improvements criterion, then additional weight could be added to those resident-job pairs that include low-income residents, people of color residents, or any other subgroup of persons for whom adequate Census data is available. Furthermore, if FTA wished to incorporate additional measures that capture essential destinations, the resident-job pairs for certain types of jobs could be calculated. For example, jobs in North American Industry Classification System (NAICS) Code 62 for Health Care and Social Assistance could serve as a proxy for measuring increased access to medical services. In this case, measuring the access to jobs is not about measuring opportunities for commuting to work, but more generally about access to essential needs. For example, if a CIG project increases the number of medical sector jobs that are reachable for elderly residents in 45-minute travel time, these residents likely do not care about those jobs for the purpose of commuting to them or competing for those jobs. Yet, these elderly residents would value that increased access to medical sector jobs because it represents increased access to medical services that they otherwise might not be able to reach or would now be able to reach in a much shorter travel time. Measuring access to medical destinations by using

jobs as a proxy also has the benefit of weighting the destinations by the number of jobs, giving higher weight to medical and social service destinations with more jobs, which are more likely to provide a wider range of services.

Economic Development

Given the current set of Economic Development measures are all qualitative, adding an access measure to this criterion could be helpful by incorporating a quantitative measure. If a transit project is hoping to spur economic development, a key feature of its ability to spur that development would be the expanded access it could provide. Using a similar metric to the change in resident-job pairs described above would provide an overall assessment of how much a project could affect overall economic activity in a region by expanding access to opportunity overall. Or, if FTA wants to limit the focus to economic development within the project corridor, then another access measure could be developed by calculating the increase in workforce access (e.g., by calculating the change in working age adults who could reach job locations within the corridor). Finally, the current Economic Development measures are primarily about policies for encouraging transit supportive development, but another way transit can spur economic development in the long-term is through expanding access to human development opportunities, particularly higher education. Therefore, FTA could consider incorporating an access to educational opportunities measure within the Economic Development criteria.

Congestion Relief

Currently, this criterion has one measure based on ridership modeling: the predicted new transit trips resulting from the project implementation. If access measures are used more widely in the CIG criteria, it may be valuable to incorporate an access measure into this criterion. Research suggests transit expansion can create drastically more economic growth and development at a fixed congestion level and improve the ability of those who cannot drive to participate in the life of the community. It expands access to opportunity without generating a car trip. Access measures can help inform whether a transit project has a high likelihood of providing an option to avoid congestion. Therefore, using a resident-job pair access measure under this criterion would be a valuable addition to the CIG measures.

Environmental Benefits

Related to Question 9, access measures can inform how transit projects improve human health outcomes in two ways:

- Improved access to medical services should lead to better health outcomes as persons with poor access to medical services may have great difficulty managing their personal health conditions; and
- Improved access to recreational opportunities can improve physical health through increased opportunities for exercise.

Research on the connections between improved access and clinical health outcomes is limited, and, therefore, it is not possible to derive a specific dollar value of these benefits, as is currently calculated for other Environmental Benefit measures. Nevertheless, research suggests transportation is a significant barrier to healthcare access for those with low incomes.[10]

[10] Syed, S.T., Gerber, B.S. & Sharp, L.K. *Traveling Towards Disease: Transportation Barriers to Health Care Access*. J Community Health 38, 976–993 (2013). https://doi.org/10.1007/s10900-013-9681-1

Data Challenges

APTA recognizes that a key challenge in implementing access measures is deciding what to count and how to ensure consistency and accuracy in the data used across all projects assessed across the country. For instance, FTA is understandably concerned about asking project sponsors to collect data on the location of every grocery store, which may only be available from private data providers. It is also challenging to specific destinations given that many vary greatly in size and permanence. A grocery store open today may be long gone by the time a proposed project is built.

We believe these data and measurement challenges can be overcome with thoughtful consideration of the various existing data resources available from the Census and other federal agencies. For example, Longitudinal Employer-Household Dynamics (LEHD) data on employment can be used in a variety of ways to measure access to opportunities of all kinds, not just commutes to work. LEHD data on job locations can be used in measures of overall access to jobs and jobs-resident pairs. LEHD data usually includes information about wage levels and industry codes (NAICS) for jobs at the Census block group level. This information can be useful as a proxy for measuring access to certain kinds of destinations, such as NAICS Code 62 for Health Care and Social Assistance jobs, or NAICS Code 61 for Educational Services jobs, or NAICS 45-45 for Retail Trade jobs as a proxy for access to shopping destinations.

Question 7: In a Memorandum on Redressing Our Nation's and the Federal Government's History of Discriminatory Housing Practices and Policies (January 26, 2021), President Biden highlighted the Federal government's history of disconnecting neighborhoods from access to high-quality housing, jobs, public transit, and other resources. Should FTA consider under the Land Use criterion whether the project corridor has been affected by major transportation projects in the past that destroyed, divided, or isolated neighborhoods? If so, how should FTA analyze and evaluate those impacts and consider them in the Land Use criterion?

APTA recognizes that many past transportation projects, especially highway projects, have contributed to the destruction, isolation, and division of neighborhoods in communities across the country. Many of the neighborhoods most affected have been communities of color or lower income neighborhoods. The process of remedying those past mistakes is a challenge that will require efforts across all areas of federal transportation policy. Within the CIG program, measures that apply to all projects raise the challenge of consistency in measurement and available data to measure the effects of past decisions. APTA and its partners believe that, given the challenges in measurement and consistency, it would be simpler if provided an option to incorporate documentation of how a proposed project might remedy a past injustice within an "Other Factors" category. If a project sponsor can provide sufficient documentation that a CIG project would help remedy a past injustice, FTA could provide an increase in rating in a Land Use or Economic Development criterion from this optional documentation. This approach would relieve sponsors for whom this issue does not apply from having to provide documentation or measures.

Question 8: The more measures used to develop a criterion rating, the less influence each measure has on the outcome. How many measures are appropriate to include in total under the Land Use criterion given the questions above? Should the use of multiple, strongly correlated measures be avoided?

See APTA's response to Question 6.

Question 9: As mentioned in the existing CIG policy guidance, FTA intended to include the direct and indirect benefits to human health resulting from implementation of a proposed project in the Environmental Benefits measures but has had difficulty in determining how to do so. How should FTA calculate the health benefits of transit projects? Please provide specific proposed measures and data sources that would be readily available across the nation without requiring an undue burden on project sponsors to gather the information or on FTA to verify the information.

APTA believes FTA is doing a good job of quantifying the direct and indirect benefits of CIG projects on human health as part of the Environmental Benefits criterion. Currently, a portion of the Environmental Benefits criterion is based in part on direct and indirect changes in CO, NOx, VOC, and PM2.5 pollutants as a result of the project. Each of these pollutants directly affects human heath, including contributing factors for asthma, heart attacks, irregular heartbeats, and decreased lung function, according to the U.S. Environmental Protection Agency.[11] In addition, FTA uses the estimated reduction in fatalities and disabling injuries due to the project in its assessment. Further, APTA believes it is important to recognize that, although the FTA's current measure is based on the reduction in vehicle miles traveled, many of the benefits accrue to transit riders, regardless of their ability to own a vehicle.

Some members of APTA believe FTA should go further to measure the effect of a project on human health through other measures. Some APTA members believe FTA should consider incorporating health impact assessment criteria into the evaluation of the environmental benefits of a project. For example, researchers conducted an analysis of the effect of the Charlotte Bule Line LRT on body mass index and physical activity.[12] We know transit has environmental benefits beyond reducing emissions. Incorporating this type of measure would enable CIG projects to quantify those benefits. FTA could also use access measures to include improved access to healthcare and recreation and improvements to bike and pedestrian safety would be valuable additions to the measures of human health outcomes. *See* APTA's response to Question 6.

Question 10: Should FTA also consider impacts to water quality under the Environmental Benefits criterion? Please provide any available research or data on the impact of a transit project on water quality. Please identify measures/ data sources that would be readily available across the nation without requiring an undue burden on project sponsors to gather the information and FTA to verify the information.

Although APTA believes water quality is an important issue, most APTA members do not believe water quality should be incorporated in the FTA's Environmental Benefits criterion. APTA believes, for FTA to add a measure to assess water quality, there should be clear industry acceptance of the science of the measure and the necessary data to apply the measure consistently across the country without adding an undue burden on project sponsors or require project sponsors to advance project design beyond a conceptual design level. Currently, there does not appear to be sufficient research and data to provide a clear measure that could assess the water

[11] https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution
https://www.epa.gov/no2-pollution/basic-information-about-no2
https://www.epa.gov/indoor-air-quality-iaq/volatile-organic-compounds-impact-indoor-air-quality
https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm

[12] MacDonald JM, Stokes RJ, Cohen DA, Kofner A, Ridgeway GK. *The effect of light rail transit on body mass index and physical activity*. Am J Prev Med. 2010 Aug;39(2):105-12. doi: 10.1016/j.amepre.2010.03.016. PMID: 20621257; PMCID: PMC2919301. https://pubmed.ncbi.nlm.nih.gov/20621257/

quality impact of transit projects. If a particular project does offer a large benefit to water quality, it could be included as an "Other Factor" that could potentially influence the project rating.

Therefore, APTA believes the effects on water quality of a proposed CIG project are currently and more appropriately addressed through the NEPA process which provides for the locational and project-specific analysis of potential water quality issues.
Some APTA members have expressed support for FTA incorporating water quality benefits to the Environmental Benefits and Cost Effectiveness criteria through a measure of improvements to water quality from bioswales, permeable pavement, rain gardens, green roofs, and similar improvements that are completed as part of a proposed CIG project. FTA could add these items to the list of eligible "enrichments" to be deducted from the project capital cost for the purpose of rating calculation. For further discussion, see APTA's response to Question 11a.

Question 11a: How could FTA further incentivize project sponsors to incorporate environmentally sustainable project elements into CIG projects? Please be specific in any suggestions provided.

APTA agrees with FTA that incentivizing "green" elements of CIG projects is important to ensure that projects are designed and implemented in a manner that reduces our impact on the environment. One option to encourage more environmentally sustainable projects would be to encourage the use of zero-emission vehicles in CIG projects. FTA should consider providing an automatic rating increase to the Environmental Criterion for any project that will replace existing internal combustion engine vehicles with low- and zero-emission vehicles as part of the project. This approach would provide a clear connection with environmental goals and encourage CIG projects to consider low- and zero-emission vehicles in their project design. Full credit should be provided to all types of low- and zero-emission bus and rail vehicles.

In addition, APTA requests that FTA expand the use of enrichments to <u>all</u> CIG projects, including New Start, Core Capacity, and Small Start projects, and SCC 10-50 and 70s. Currently, enrichments only apply to New Starts projects and SCC codes 20.01-20.04 station facilities, 30.01-30.04 maintenance facilities, 40.06 pedestrian and bicycle facilities, and 70.04 buses.

In the five years since FTA last updated its guidance, New Starts projects have accounted for less than 30 percent of grant agreements awarded under the CIG program. As a result, the enrichments for "green" elements have not been applied to more than 70 percent of the program. If FTA wants to encourage project sponsors to utilize "green" elements in their project, the enrichments program should be expanded to all CIG projects, including Core Capacity and Small Start projects. APTA understands that FTA received similar comments on previous proposed rulemaking. However, APTA is not convinced by the FTA response:

> *In other words, the measure is not based on the total project cost. Rather it is based only on the Section 5309 CIG share of the project cost. It does not include operating and maintenance costs. Thus, excluding the cost of enrichments is not reasonable. FTA allows enrichments for New Starts projects because it wants to encourage project sponsors to consider green building design, alternative fueled vehicles, joint development, and bicycle and pedestrian access when planning a project, but these items can add to the project cost making the project fare worse on the evaluation criteria. Thus, FTA allows the cost of these enrichments to be excluded from the cost-effectiveness and environmental benefits calculations as a*

> *matter of policy to encourage sponsors to consider including these types of elements. Because the Core Capacity cost-effectiveness calculation does not look at the total project cost but only the Section 5309 CIG share, there is no need to remove costs from the calculation. The calculation is already based on something less than the total project cost.*[13]

FTA states, "Because the Core Capacity cost effectiveness calculation does not look at total project cost but only the Section 5309 CIG share, there is no need to remove cost from the calculation." The need is not to remove costs from the Cost Effectiveness calculation; it is to encourage project sponsors to invest in "green" infrastructure. If FTA were to provide this incentive to all CIG projects, including more than 70 percent of CIG projects where these enrichments currently do not apply, including many bus rapid transit (BRT) projects, FTA and project sponsors would be working in tandem to deliver projects that advance environmental sustainability both now and in the future.

For New Starts projects, "Alternative Energy Bus Vehicles" qualify as an enrichment. Fifty percent of the purchase cost of "green" buses may be removed from the cost effectiveness calculation. Any type of clean fuel bus is eligible for the credit, including buses with compressed natural gas (CNG), hybrid, electric, or fuel cell propulsion.

Currently, FTA determines annualized CIG share (Core Capacity) and capital federal share (Small Starts) by applying the federal/CIG share evenly across all SCC codes. FTA could continue this approach and apply the enrichment credits similar to how they are applied for New Starts.

The following table provides an example as to how FTA could incorporate enrichments into Core Capacity and Small Start projects.

	Electric Bus Cost	Useful life	Federal Share %	Federal Share $	Annualization factor	Enrichment	Annualized Federal share
Current Small Starts	$1,000,000	12	80%	$800,000	0.0946		$75,648
	$1,000,000	12	50%	$500,000	0.0946		$47,300
Recommend Small Starts	$1,000,000	12	80%	$800,000	0.0946	50%	$37,824
	$1,000,000	12	50%	$500,000	0.0946	50%	$23,650

In addition, FTA should also allow project sponsors to claim enrichments for green items on all SCC codes, not just facilities and buses if they are elements that allow the project to achieve *Institute for Sustainable Infrastructure (ISI) Envision* or a comparable third-party certification to count toward the enrichment. *Envision* more closely aligns with infrastructure projects like those funded under the CIG program.

[13] FTA Summary of comments received on Capital Investment Grant Program proposed interim policy guidance, August 2015, https://www.transit.dot.gov/funding/grant-programs/capital-investments/summary-comments-capital-investment-grant-program

Question 11b: Are there lifecycle cost savings or other benefits that transit agencies have realized from implementing ''green'' elements (i.e., evidence of fuel, maintenance, or parts savings)? Please provide examples or data.

In addition to capital elements, project sponsors should not be penalized for making policy decisions which may increase annual operating and maintenance costs but reduce the agency's carbon footprint. For example, one agency has a goal that 50 percent of its electrical load will be provided by renewable sources by 2025. If the policy results in the agency paying a premium for renewable electricity, it should be able to "make the case" as to why the increased incremental operating costs associated with this policy should not be considered in the Cost Effectiveness or Environmental Benefits criteria.

Question 12: Should more emphasis be placed on trips made by transit-dependent persons? Why or why not?

There are several potential improvements that could fit the way FTA measures the benefits of a transit project for individuals who stand to benefit the most individuals currently referred to as "transit dependent" in the rating criteria. The current emphasis on auto ownership (the only available measure if using STOPS) is flawed. It captures individuals who do not own a car by choice, but, conversely, neglects individuals who own a car because they must own one, to get to their job or take care of daily needs. APTA believes the term "transit dependent" has negative connotations for many people and should be abandoned.

In addition, being more specific about the population or households measured (e.g., low-income persons or zero-car households) would add clarity to individual choices.

APTA recommends FTA consider the following alternatives for the current Mobility Improvements Measure:

- For project sponsors developing ridership estimates using STOPS, update STOPS software to replace auto ownership with low-income populations or give project sponsors the option to choose among both when developing the local STOPS application; and
- Rather than double-counting trips by zero-car (or low-income) passengers, apply weights to the ridership forecast based on the cost of transportation relative to income in the project corridor or region. This would measure the benefit of the project in terms of the targeted population and the potential benefits of the project to ease the economic burden associated with transportation. Tools, such as the Center for Neighborhood Technology's Housing + Transportation Affordability Index, use a measure of localized transportation cost as a percentage of household income.[14] Income data are readily available from the Census, while the transportation cost measure is modeled based on neighborhood and household characteristics. This measure could be produced nationally and used as a reference dataset for all project sponsors.

In addition, FTA should consider a wider range of Mobility Improvement measures. Assessing projects only on predicted ridership is too narrow a measure and misses many potential mobility benefits of transit projects. As described in APTA's response to Question 6, APTA recommends using access measures, such as the increase in resident-job pairs, as a measure under the Mobility Improvement criterion. FTA could add weight to those

[14] https://www.cnt.org/tools/housing-and-transportation-affordability-index

resident-job pairs that include low-income residents, or people of color, or any other subgroup of persons for whom adequate Census data is available to add emphasis to the improvements made for individuals most in need.

Finally, Small Start projects are rated based upon the same Mobility Improvement metrics and breakpoints as much more costly, and higher ridership, New Start projects. APTA believes it would be valuable to have a different set of mobility metrics or at least lower breakpoints for Small Start projects.

Question 13: By what methods do transit agencies determine if a transit corridor is at capacity today or soon will be? Please be specific on the measures and calculations used. Are the measures based on readily available data routinely calculated by transit agencies or do they require a situation-specific analysis? Could the measures be applied in a national program evaluating various modes and corridors across the country?

A transit corridor's capacity is determined by three factors:

1) the corridor's maximum throughput capacity, meaning the maximum number of vehicles per hour per direction the agency can deploy using existing technology, equipment, and infrastructure;
2) ridership levels and passenger loads, particularly at maximum load points; and
3) the safe and comfortable passenger carrying capacity per vehicle.

Agencies establish thresholds for passenger crowding in their formal service standards, the most common of which is vehicle passenger loads at maximum load points. Those service standards are officially adopted by the agency's policymaking body and communicated to FTA in the agency's Title VI Program.

Agencies generally determine a corridor's capacity needs by comparing both current-year ridership and 20-year ridership forecasts to the passenger load factors established in their service standards. In general, if hourly ridership divided by total customer carrying capacity exceeds the agency's established service standards for crowding and passenger loads, it indicates the need for service improvements, a capital project, or both. Typical responses include improving frequency by adding vehicle trips or increasing the carrying capacity at current service levels (e.g., adding railcars to trains or shifting to larger buses). If the agency's service standards are being violated and the corridor is already performing at maximum vehicle throughput capacity (i.e., the maximum number of trains or buses per hour as determined by existing systems, equipment, and facilities), the corridor may warrant the type of major capital investment anticipated by the Core Capacity category of the CIG program. Importantly, adding carrying capacity at existing service levels, such as adding railcars to trains, may require related system improvements such as expanded rail yards, upgraded signaling systems, new bus garages, etc. Most corridor capacity issues that cannot be readily solved by improving frequencies or acquiring vehicles will require major capital investments. Because those investments take 10 to 20 years or more to plan, design, fund, and deliver, agencies must base capacity determinations on both current and projected future ridership.

APTA strongly encourages FTA to allow a project to qualify as capacity constrained based on the agency's own established service standards, as included in the Title VI Programs submitted to FTA. This approach would align FTA's calculations and requirements with the standards and methods most agencies already use to track and evaluate corridor crowding and capacity. It also allows FTA to easily verify each project sponsor's metrics and thresholds against the service standards listed in the Title VI Program. As mentioned above, the most

common capacity metric is a passenger load factor, in terms of the number of passengers per vehicle at a maximum load point or segment. If FTA seeks a broadly applicable measure routinely used and calculated by transit agencies, persons per vehicle at maximum load point or segment would be a sound choice. APTA suggests that because agency-adopted load factors trigger financial obligations by the transit agency, in terms of providing more service and expanding capacity, the project sponsor would not be inclined to set artificially low load factors.

An alternative approach could be to base the capacity needs calculation on a factor applied to maximum-seated capacity, similar to the current Core Capacity calculation for commuter rail lines. That factor could be 100-150 percent utilization of a vehicle's maximum-seated capacity, depending on mode, frequency of service, and/or average trip length. Under either approach, APTA believes the capacity utilization measure should be calculated and applied at the corridor's maximum load point or segment, rather than calculated as a corridor average.

If FTA wishes to retain the current capacity measure based on average space per passenger, FTA should allow project sponsors to input the actual usable space of the vehicles serving that corridor, rather than an automatic calculation based on the vehicle's length and width. This approach would allow for a fairer accounting of the actual useable space in an agency's vehicles, as seating configurations and other internal elements can vary widely.

APTA also encourages FTA to reconsider the five-year horizon for qualifying as a corridor at or near capacity. Core Capacity projects are likely to be major investments, similar to New Start projects, and may require 10 years or more to deliver. The current requirement for corridors to hit maximum capacity thresholds within five years does not align with the long project development and delivery process often required for major capital projects. APTA recommends allowing project sponsors to base the capacity needs calculation on forecasts up to 10 years in the future.

The Core Capacity program and evaluation process should be extended to multiple project types that are difficult to fund as the program currently stands. Core Capacity should encompass station capacity needs. Rail station capacity calculations could be based on either or both of two measures: platform occupancy and utilization of vertical circulation elements. Platform occupancy is a straightforward calculation of the number of riders entering and exiting a platform in a given interval (e.g., 15-minute intervals provide a higher degree of precision). If the number of riders using a platform divided by the total usable space of that platform is less than seven square feet per passenger, the station is at capacity. This threshold is based on the platform's Levels of Service (LOS) concept and crowding thresholds from the Transit Capacity and Quality of Service Manual (TCQSM), 3rd Ed.

A second potential measure is the Volume-to-Capacity Ratio (V/C Ratio) for vertical circulation elements (escalators and stairs). The V/C Ratio is a capacity utilization metric that seeks to ensure exiting passengers can clear the platform before the next train arrives, and that entering customers do not create backups at faregates and mezzanines. The V/C Ratio can be calculated as the total number of passengers using a vertical circulation element per direction (enter or exit) divided by the carrying capacity of that element. If the resulting ratio is 0.5 or higher, the station is at capacity for vertical circulation. Transit agencies that do not use tap-in/tap-out fare media or passenger counters can estimate the vertical circulation ratio based on hourly entries and exits. As an alternative, FTA could use safety thresholds established by the National Fire Protection Association Codes and Standards 130: Standard for Fixed Guideway Transit and Passenger Rail Systems (NFPA 130).

Finally, APTA also encourages FTA to consider that agencies may feel a need to adjust their passenger load factors and maximum crowding thresholds downward in light of the COVID-19 pandemic and concerns over future public health emergencies.

Question 14: What load factor policies do transit agencies use to determine when additional vehicles are needed on a transit line? Please provide specific examples of what load factors are used, and how they are calculated. Please include load factors for each mode.

The most common indicator of transit corridor capacity and utilization is the passenger load factor, calculated by dividing the total number of riders traveling through the corridor per hour and per direction by the number of vehicles, and the carrying capacity of those vehicles. These passenger load factors are generally assessed at and determined by the maximum load point or segment, where ridership and throughput are at the highest point relative to carrying capacity. The load factor is in turn related to the corridor's maximum vehicle throughput capacity, since in some corridors crowding cannot be addressed by service improvements alone. These passenger load factors are included in an agency's established service standards and communicated to FTA in the agency's Title VI Plan.
For urban heavy rail systems, the most common load factor measure is the number of passengers per railcar, or PPC, at the maximum load point. PPC is a simple calculation of the number of people occupying each railcar as it leaves a station, considering the passenger load coming into the station and entries and exits at that station. Some rail systems base this calculation on the amount of space utilized per passenger, while others base it on a factor applied to maximum-seated capacity (e.g., 125-200 percent of seated capacity). If the transit agency has smart fare media or a tap-in/tap-out system, the passenger load calculations can be easily delivered with a high degree of accuracy. Otherwise, agencies can estimate the average passengers per car by dividing the total number of passengers traveling through a station by the number of railcars serving that station, in half-hour or hour increments. This approach would not capture peak-of-peak situations, where a few trains during peak hours are exceptionally crowded, but it would improve upon the current Core Capacity calculations by better reflecting and aligning with the transit agency's adopted service standards.

The most common metric for other rail and bus systems is a passenger load factor based on total vehicle seating capacity. Depending on service frequency, average trip length, and mode, the threshold for crowded conditions ranges from 95 percent to 150 percent of seated capacity. The passenger load factor is typically a factor applied to each vehicle's maximum seated capacity, calculated by dividing the average maximum number of passengers per bus trip is by the total seated capacity of the vehicle. Agencies often establish different maximum passenger load factors for bus service depending on service type, frequency, and trip length.

Question 15: Should FTA evaluate Congestion Relief differently? If so, please identify measures and data sources that would be readily available at transit agencies across the nation without requiring an undue burden on project sponsors to gather the information and FTA to verify the information.

APTA strongly believes the Congestion Relief criterion needs to be entirely reconsidered. Transit projects should be evaluated not for their impacts on road and highway traffic, but rather for how well they function **as public transportation.** Evaluating projects under this rubric means measuring a project's likely performance in moving large numbers of people to as many key destinations and vital needs as possible; relieving crowding on the transit system; supporting car-free and car-optional lifestyles; expanding access to high-quality public transit in lower income neighborhoods and communities of color; evolving the transportation network to a more

sustainable model with better health, air quality, and energy outcomes; and positively impacting the economic, workforce development, and quality of life for all Americans. These impacts should be the primary metrics for the value of a transit investment—not whether the project draws traffic off nearby highways.

In reconsidering this criterion, APTA urges FTA to better align the criterion with the primary impacts and outcomes of public transportation. APTA encourages FTA to consider these alternative measures, either in place of or in addition to the current metric of net new weekday trips:

- Expanded and improved access to jobs and essential needs, especially for low-income households and persons of color (*see* APTA response to Question 6);
- Total person throughput carried by transit in the corridor, or change in mode share; or
- Improvements in corridor travel time and reliability.

The latter metric could be made easier for project sponsors to calculate if FTA integrated its Summit tool with its STOPS model, which would allow the project sponsor to estimate aggregate time savings produced by the project. To develop breakpoints, FTA should consider normalizing against current ridership or through testing to establish thresholds based on the range of travel time improvements experienced by projects currently in the CIG pipeline.

For BRT projects where existing service operates along the same corridor, an alternative and simpler measure of time savings could be defined as the difference between planned route run times versus existing route run times, multiplied by existing ridership or passenger throughput. Sponsors would need to substantiate the running time estimates as well as throughput calculations. This option could be part of the Small Start project warrants.

Question 16: Do transit agencies measure and evaluate resilience benefits of proposed capital projects? Do they use a quantitative approach? Please provide examples of specific metrics or analyses used.

APTA discourages FTA from including resiliency as a criterion or measure in the CIG program. *See* APTA's response to Question 17. Individual transit agencies routinely assess the return on investment for resiliency measures, but most are still working to integrate resiliency planning and requirements into their capital programs. The current state of practice has not advanced sufficiently in this regard to support resiliency and futureproofing as formal CIG criteria, or to identify reliable and effective quantitative measures.

Agencies generally think about the cost and benefits of resilience as the costs incurred today to make assets stronger and better able to handle climate events, but they do not always consider the avoided cost of repairs and disruption to communities. Measuring those benefits at a system-wide or regional scale is challenging. Examples of how transit agencies are starting to integrate resiliency requirements and benefits into their capital programs include:

- Los Angeles County Metropolitan Transportation Authority's (LA Metro) Resiliency Indicator Framework—A tool to assess resiliency strategies that includes resilience scores and weighting. The framework utilizes 20 technical indicators and 41 organization indicators for various types of resilience. Examples of technical indicators include: whether the agency has conducted a climate vulnerability assessment; whether the asset meets resilience design criteria; whether the mode or route offers alternate

routes or facilities or has spare capacity; and whether emergency condition "safe-to-fail" approaches are included in project design guidelines. A project gets a score of one to four on each of these indicators, and an overall resiliency score.

- LA Metro Climate Action and Adaptation Plan—As part of the Plan, each LA Metro asset received an overall climate risk score, based on vulnerability to climate hazards and criticality of that asset to the agency's core functions. Each asset received a vulnerability score, a criticality score, and an overall risk score for seven types of climate hazard. The vulnerability score is the average of sub-scores for three components, ranging from one to five points each: the asset's potential exposure to, sensitivity to, and adaptive capacity responding to the relevant climate hazard. The criticality score is an average of eight components, each scored one to five, such as ridership, redundancy, and connectivity. Like most other agencies, LA Metro is still formulating quantitative approaches to cost benefit impacts and assessing co-benefits of resiliency strategies.

- Massachusetts Bay Transportation Authority's Climate Resiliency Program—The Program includes climate vulnerability assessments of existing assets and systemwide facilities and components; formulation of a Climate Resiliency Score to evaluate projects proposed for the five-year Capital Investment Plan; new design standards for flood protection, stormwater management, and other climate impacts; and consideration of climate risks for all new projects. The Climate Resiliency Score, which is a factor in the five-year Capital Investment Plan, scores assets based on asset condition, impact on other assets, operations criticality, flood risk, and severe weather resiliency.

- The Maryland Department of Transportation's Maryland Transit Administration (MTA)—MTA developed a *Climate Change Vulnerability Assessment* in 2016 to identify sensitive locations and classify assets vulnerable to climate change events. Since the development of the report, MTA developed an online, real-time Adaptation and Resiliency Toolbox (ART) to proactively plan, design, and construct emergency preparedness measures for its local bus, commuter bus, light rail, subway, and paratransit services. The tool evaluates projects for their criticality, interactions with other systems and components, and redundancy. ART provides an internally shared, interactive resource for MTA that will continually be updated with new data, implementation measures, and lessons learned to assist in prioritizing funding, programming, and projects.

Question 17: Should resilience elements be formally incorporated into the CIG project evaluation process? If so, how might resilience be measured and incorporated? What thresholds would distinguish one project from another? Should FTA use its Hazard Mitigation Cost Effectiveness (HMCE) Tool to measure benefits and costs of resilience elements as it has done for projects considered for emergency relief funding?

APTA discourages FTA from including resiliency as a criterion or measure in the CIG program at this time, although it could be an "Other Factor" that an agency could highlight where relevant and seek an enhanced rating. In general, resiliency and futureproofing are critical needs for both FTA and project sponsors to consider but APTA does not believe the project rating criteria and evaluation process is the best vehicle for addressing those concerns. As noted in APTA's response to Question 16, transit agencies are still trying to formulate effective quantitative measures for resiliency costs and benefits. The state of practice has not advanced sufficiently in this regard to support resiliency and futureproofing as formal CIG criteria or measures. The CIG

evaluation and scoring framework already has numerous criteria and measures. Adding new criteria or measures risks watering down each measure's impact and importance.

Alternatively, APTA suggests FTA could address resiliency requirements and strategies by setting new guidelines or requirements for risk assessment/management documentation and the Project Management Oversight (PMO) process. APTA believes FTA's Hazard Mitigation Cost Effectiveness (HCME) Tool may benefit project sponsors interested in exploring ways to measure costs and benefits of resiliency strategies, and that greater dissemination of the tool and its measures may help inform those discussions at transit agencies across the country. Although FTA could suggest its use in revised guidelines documents, APTA does not recommend adding resilience and futureproofing criteria to the CIG evaluation process. However, APTA would like to engage with FTA in the development of appropriate resiliency strategies that could be effectively addressed through new guidelines for risk assessment/management documentation in the PMO process.

Question 18: The concept of ''future-proofing'' is often discussed along with resilience to ensure infrastructure projects will continue to be of value into the distant future and not become obsolete quickly. What emerging technologies may have an impact (positive or negative) on a transit system, and how can avoiding this situation be prepared for in the planning and how can avoiding this situation be prepared for in the planning and design of CIG capital projects?

APTA believes FTA should encourage project sponsors to both plan for the future and push the envelope on new technology. In recent years, we have seen substantial progress in terms of cleaner fuels/propulsion systems. Older, polluting diesel engines have been replaced by much cleaner options releasing a fraction of the air pollutants they were 20 or 25 years ago. For instance, the share of hybrid vehicles has more than doubled in the last 10 years, from seven percent to 19 percent. Moreover, many transit agencies have begun deploying zero-emission buses. APTA sees the potential for similar strides related to connected and automated vehicles and battery life for both rail and bus systems in the next few years if development of the technology is properly supported and project sponsors are not forced to bear the full cost of being at the vanguard of technological innovation.

APTA believes a program similar to the enrichments provided for "green" elements of the project serves as good model as to how FTA could allow project sponsors to "future proof" their projects without overburdening the project rating. FTA should allow project sponsors to provide documentation regarding the incremental cost associated with "future proofing" or implementing new technology. FTA should allow the project sponsor to remove 50 percent of the incremental cost of "future proofing" or new technology. This approach will both encourage project sponsors to push the envelope when it comes to new technology, while still holding them accountable for their decision making.

	Bus Cost	Incremental cost of Future proofing	Enrichment %	Enrichment credit	Base year cost of cost effectiveness	Useful life	Annual factor	Annualized share
Traditional Bus	$500,000				$500,000	12	0.0946	$47,300
Automated bus	$750,000	$250,000	50%	$125,000	$625,000	12	0.0946	$59,125

In addition to the project evaluation and rating process, APTA members expressed concerns regarding the effect of FTA's rules for spare ratios on their willingness to try new technology. Project sponsors have a duty to their customers to deliver a high-quality and reliable service. This obligation acts as a disincentive to try new technology that may or may not be as reliable for early adopters. FTA's current spare ratio requirements prevent agencies from implementing the appropriate contingency plans regarding potential problems related to new technology. As a result, APTA requests that vehicles with new technology be excluded from the agencies spare ration calculation.

Question 19: Project sponsors that do not qualify for warrants (automatic financial ratings) must submit a 20-year cash-flow statement to FTA for evaluation and rating. Should FTA consider accepting cash flow statements for other time periods (e.g., a 10-year, 15-year, or 25- year project cash-flow statement)? If so, please explain why and the suggested time period.

APTA believes FTA should accept cash flow models based on how a project sponsor intends to fund the project. For projects that are using debt financing or bonding, APTA believes it is more appropriate to use the cash flow model to the retirement of the debt taken out regarding the project. Most, if not all, project sponsors who are using debt financing for a CIG project have in-house financial plans that demonstrate the agency's ability to retire the debt associated with the project.

For projects using a pay as you go model, the 20-year cashflow can be overly burdensome on project sponsors and provides little additional information than the five-year cash flow, which is currently required for a Full-Funding Grant Agreement (FFGA). For these projects, FTA could provide an option to use this minimum period of the FFGA, consistent with the FFGA language for the cash flow model.

FTA should consider expanding the use of the highly simplified financial statements currently available to Small Start projects. APTA believes these simplified financial reporting standards should be expanded to all CIG projects (including New Start and Core Capacity projects) that can demonstrate the following:

- A reasonable plan to secure funding for the local share of capital costs or sufficient available funds for the local share;
- The additional operating and maintenance cost to the agency of the proposed CIG project is less than five percent of the project sponsor's current year approved operating budget; and
- The project sponsor is in good financial condition, as demonstrated by the audited financial statements indicating a positive cash flow over the past three years, a reasonable current ratio, and no material findings.

For projects that can meet the above requirements, FTA should apply an automatic medium rating for the local financial commitment.

Other Comments on Funding Commitments

FTA should establish fixed federal CIG shares for New Start, Core Capacity, and Small Start projects. Consistent with the applicable statutory authorities of the CIG program, the fixed federal CIG shares should be:

New Starts:	60 percent or, for New Start projects with significant total project costs, a lesser percentage;
Core Capacity:	80 percent or, for Core Capacity projects with significant total project costs, a lesser percentage; and
Small Starts:	80 percent.

Restoring the CIG share to a greater federal contribution will better enable these public transit projects to compete locally with highway alternatives, which often provide an 80 percent federal share. Moreover, with COVID-19-related project cost escalation issues (e.g., materials availability, tight employment market), project sponsors would be able to rely on the certainty of the federal partner. In addition, FTA should reconsider increasing the limit (e.g., $100 million - $150 million) for annual CIG payments under FFGAs. To the extent CIG annual amounts allocated to a project sponsor extend beyond the project construction period, FTA should pay 100 percent of the additional financing charges triggered by the elongated federal contribution.

In negotiating down the federal CIG share, the current FTA practice shifts a major financial burden to the project sponsor and the local level to fund major projects that often deliver outsized benefits beyond just the immediate project area. The current practice benefits sponsors and regions with an already strong financial capacity, and disadvantages lower capacity sponsors and regions that may be unable to secure the commitment of billions of local match dollars. Without reconsideration, large projects may remain out of reach for many parts of the country and regions with higher proportions of people of color or people in poverty.

FTA should also adjust the Local Financial Commitment measures and calculation methodology to ensure that public transit systems remain competitive and advance through the CIG process despite the impacts of the COVID-19 pandemic. Service cutbacks that allow grantees to right-size service based on pandemic and post-pandemic service needs and commuting patterns should not be viewed punitively or considered in the calculation of Current Capital and Operating Condition measures. We suggest removing "service cutbacks" from consideration, at least on a temporary basis. At a minimum, we suggest that FTA not consider service cutbacks that are unrelated to the introduction of the proposed CIG funded project.

Finally, FTA should allow public transit agencies with strong and established credit ratings to count Transportation Infrastructure Finance and Innovation Act (TIFIA) loans as "Committed" or "Budgeted" in the Financial Rating. For project sponsors financing expansions through a combination of local match, CIG allocations, and TIFIA loans, DOT's Build America Bureau and FTA require that the TIFIA loan and FFGA be executed at the same time. Despite this requirement for simultaneity, the New Starts financial rating process counts TIFIA loans only as "Planned" funding sources, which lowers the financial rating, even for agencies with a strong credit rating and a proven record of securing TIFIA loans.

The New Start financial rating process should allow FTA to count a TIFIA loan as Committed or Budgeted funding sources, especially if it is included in a TIFIA Master Credit Agreement (MCA). If the Build America Bureau has included the project in a TIFIA MCA, the project and Financial Plan have already undergone multiple financial reviews from the Build America Bureau and the New Starts financial rating should reflect this fact.

We appreciate the opportunity to provide input to FTA as it considers improvements to the CIG program and look forward to working closely with FTA on its update to the 2016 policy statement on the CIG program. Our

members welcome additional opportunities to work with FTA as it crafts new measures, revises its guidance, and considers other updates to the CIG program. Should you have questions about APTA's comments, feel free to contact Art Guzzetti at AGuzzetti@apta.com or Ward McCarragher at WMcCarragher@apta.com.

Thank you for your consideration.

Sincerely,

Paul P. Skoutelas
President and CEO