

**From Council Member Cooper on 12/24/2017**  
**Initial Questions on Assumptions in Transit Plan**  
**1/10/2018**

*Given the \$8.74 Billion projected cost of the Transit Plan (over 20x this year's Capital Spending Plan), these questions seem an appropriate start. Responses should be able to be shared with the Budget and Finance Committee. Thank you.*

The preparation of Nashville's Transportation Improvement Program (TIP) was preceded by extensive multi-year planning efforts; namely NashvilleNext and nMotion. These adopted plans included significant public and stakeholder involvement and identified the need for, location of and preferred modes for specific corridors radiating from downtown Nashville. With few exceptions, the TIP represents a refinement of these proposed transit improvements suitable for a Davidson County referendum. As required by the IMPROVE Act, the purpose of the TIP is to provide enough conceptual planning and assumptions for the independent CPA firm to attest to the basic feasibility of the revenue sources and their uses defined in the financial plan of the program.

While care has been taken to create a comprehensive and achievable program, it is important to remember that Metro is currently at an early stage of program planning. At this stage, it is not possible to resolve all of the issues and account for all of the details before more detailed pre-design and intensive public input occurs. As noted in the responses below, the Program has attempted to make conservative assumptions in advance of environmental evaluation, engineering and risk analysis. Going forward, the referendum demarks the beginning of a rigorous process which will define and develop individual projects based on the ongoing accumulation of information, public and stakeholder input, and a better understanding of project specific risks and associated costs.



Fee Questions

1. Please break-out the total and annual soft costs by category for transit projects, both rail and bus, including estimated program manager fee? If soft cost projections are the only estimates, what are the estimates?

**Soft costs are accounted for in the bus and rail capital cost estimates and include professional services such as engineering, project and program management and construction administration.**

- a. **Soft costs estimated for bus capital projects are nested in the bus acquisition unit cost. Here the soft costs are limited to production line inspection and post-delivery audit at \$4,000 per bus. This soft cost figure is included in unit pricing per bus, which is programmed into the TIP for both expansion buses at program inception and at replacement (programmed according to USDOT allowable replacement cycles).**

Soft costs are also included in the bus related facility design and construction. Bus related facility projects are generally site specific, lacking the complexity of right of way projects associated with rail. As such, a general benchmark was inserted for “soft costs” based on similar projects around the country with an overall value of 25% of project cost (10% engineering; 10% construction management; 5% utilities); with property acquisition varying depending on location and included as a separate line item.

- b. Soft cost for rail infrastructure are included in the Standard Cost Category (SCC) 80 as shown in the TIP. At this stage of program planning, the soft costs for professional services are set at about 35% percent of the construction cost (SCC items 10 – 50), consistent with industry experience. A myriad of professional services (including program management), is required to advance the program from planning through implementation and revenue service. However, a detailed budget for these individual costs has not been created at this phase of program planning and will vary depending on the actual scope of responsibilities that are to be determined.

2. Please give the estimated break-out of the \$70 million ‘total project professional fees’ by function and vendor category?

The \$70 million Total Professional Fees shown in the Detailed Cash Flow in Annex A of the TIP represent fees associated with financing the program and include:

- Arranger Fees: \$28.7 million  
(0.5% of initial capital cost paid to party that arranges financing for each respective corridor in second year of construction for each respective corridor)
- Cost of Issuance and Underwriting Fees: \$30.2 million  
(1.0% x long term debt issuance, paid in year of issuance)
- Legal Issuance Fee: \$11.0 million  
(\$1 mm per long term debt offering, paid in year of issuance)

Could any of the recipients of ‘project professional fees’ also receive fees from the administration or design elsewhere in the project? If so, who?

The identity of all potential future consultants and advisors have not yet been determined given the 15-year delivery schedule of the Program. It is possible that some entities may receive compensation for other services, though at this time that is not anticipated in regard to the recipients of the fees described above.

3. Please break-out the current contract with HDR, by total \$ amount, amount currently performed, balance, as well as scope of work. Identification of any other services/work HDR might perform under the transit plan and estimated dollar value of such services/work?

HDR is currently operating under a five-year Program Management Consultant Services master contract with Metropolitan Public Works with an initial contract value of \$4M. HDR will have invoiced ~\$1.5M (including ~\$320K for subs), through the end of October 2017 for the first task order. These efforts focused on the preparation of the Transit Improvement Program, which is the initial step in management of the program. HDR has also provided educational information in support of public involvement associated with the program. No other task orders have been issued to date under the contract.

With respect to the overall scope of services, the Program Management Consultant (PMC) is to assist the Agency in a comprehensive approach to the program of projects from planning through implementation and monitoring of revenue service for on-going transit operations. As such, some of the major areas of PMC responsibility include; program management and administration; planning and engineering support; planning, engineering

and construction oversight; procurement and financial planning support; interagency and stakeholder coordination.

In addition, the MTA Board has entered into a similar PMC contract with CDM Smith to refine and deliver the bus related improvements. To date, \$1.25 million has been programmed to CDM Smith for work undertaken toward development of the Program of Projects for the referendum (from the initial \$4 million approved by Metro Council in the FY2018 Capital Spending Plan) for bus-related projects. To date, not all funds programmed on this contract have been charged to the program.

4. Break-out of fee arrangement with Goldman Sachs, estimated \$ total, amount currently performed, balance, as well as scope of work.

Goldman Sachs is receiving a fee not to exceed \$100,000 for the work provided to date on the plan.

Is Goldman Sachs recusing itself from any further fees for services/work performed under the transit plan?

No

If not, why not?

Goldman Sachs has deep experience in assisting Cities and Mass Transit agencies develop and deliver financing plans for large transit expansion projects across a range of models from Public Private Partnerships (P3) to traditional Revenue Bond financing, and Nashville may wish to utilize their services to assist in financing the project.

What is their role in the project beyond initial feasibility?

None at this time, they have the option to compete for future roles to provide advisory or financing for the Project.

Is it a conflict of interest to give an opinion where large fees could be triggered by that same opinion?

Metro has retained multiple consultants to prevent this exact occurrence. The goal has been to make sure Nashville receives high-quality advice and service as it evaluates and plans this complex long-term project. In the case of our financial consultants, we mandated Goldman to perform this service because of their extensive background in this area. As this process moves forward, we will continue to engage our traditional financial advisor, Hilltop Securities, to provide advice on municipal securities as a checks-and-balances system. Additionally, as required under Statute, Kraft CPAs reviewed the calculations and methodology utilized for the development of the financial plan.

#### Program Cost Questions

5. Please give the estimated cost and location of all new bridges in Transit Plan? Under what category on page 49 are the bridge costs reported? What is the projected cost of the new Cumberland River Bridge?

The costs of bridges are included in the Capital Costs reported in the TIP under Guideway and Track Elements. For program planning purposes, broad assumptions were made in terms of which bridges may need to be modified and or replaced to accommodate LRT service. The table below identifies the location of the structures by corridor, a general

description of the scope and a base year construction cost estimate before contingencies. The crossing of the Cumberland River is included in the Gallatin corridor.

Note: the information below is based on planning assumptions and will change as individual projects advance through more detailed planning and design and the associated scope and costs will deviate accordingly.

Corridor	Crossing	Base Year Construction Costs w/o Contingencies (x000)
<b>Gallatin</b>	Main Street over Cumberland River – new structure	\$56,619
	Railroad overpass at Iverson – replace on new alignment	\$1,543
<b>Murfreesboro</b>	Brown Creek, east of Fairfield Avenue – widen/rehab for LRT loading	\$348
	Railroad overpass, east of Menzler Road – bridge replacement	\$5,060
	Railroad shoofly – temporary alignment of rail for bridge construction	\$5,040
	Vultee Boulevard Overpass – replace existing structure	\$1,178
	Bridge over railroad southeast of Briley – widen existing structure	\$199
	Donelson Pike over McCrory Creek – culvert extension	\$37
	Airport Taxiways Bridges over LRT/Donelson Pike – reconstruction of west span for LRT transitway and secure Service Road	\$13,213
<b>Nolensville</b>	LRT Bridge over railroad at Hart Street/Houston Street	\$4,554
	Railroad bridge over 2 <sup>nd</sup> Avenue/Ensley Blvd. – new railroad structure	\$5,400
	Railroad shoofly over 2 <sup>nd</sup> Avenue/Ensley Blvd. – temporary construction for railroad bridge reconstruction	\$4,800
	I-440 – replace, new structure	\$4,016
	Bridge over railroad south of I-440 – widen existing bridge	\$1,025
	Railroad overpass near Zoo Entrance – add pier protection	\$300
<b>Charlotte</b>	James Robertson Parkway – replace with new structure	\$1,485
	Railroad bridge overpass at 10th Avenue – replace, new structure	\$12,130
	Railroad shoofly at 10th Avenue – temporary railroad tracks for reconstruction	\$7,170
	Bridge over railroad at 25th Avenue – widen existing structure	\$1,279
<b>Northwest</b>	LRT over CSX - new structure	\$828
	LRT over Albion Street – replace with new structure	\$912
	LRT over Alameda Street – replace, new structure	\$921
	LRT over Meharry Boulevard – replace, new structure	\$921
	LRT over alley between Jefferson Street and Meharry Boulevard – replace, new structure	\$844
	LRT over Jefferson Street – replace, new structure	\$985

6. Under what category are Park 'n Rides accounted for in 'Project Costs 2018-2032'?

The capital cost estimates for park-and-ride facilities associated with LRT improvements are within each individual LRT corridor of the Project Costs 2018-2032 table, located on page 49 in the TIP. Within the Capital Cost Summary by LRT Corridor (Table 3) in the TIP, the surface parking lots are in the Sitework and Special Conditions line item; parking structures are in the Stations, Stops, Terminals line item; and additional right of way for the park-and-ride facilities are included in the ROW, Land, Existing Improvements line item.

As part of the bus network of regional transit centers, up to seven Local Transit Mini-Hubs will incorporate up to 200 parking spaces each. The costs for these facilities are included in the Existing System Expansion line item of the Project Costs 2018-2032 table, located on page 49.

7. What are the number of parking spaces provided in the Park 'n Ride Plan, both rail and bus? Estimated all-in cost of parking program, including land, as well as projected estimated average cost per completed parking space? A superficial analysis would indicate the need for at least a \$750 million cost for the total system? 25,000 spaces at \$30,000 per space. If less than this, why less? Do we have too much 'train capacity' vs. too little 'parking capacity'?

The Simplified Trips On Projects (STOPS) model estimates that about 14% of the average daily ridership comes from park and ride passengers. Given the projects' ridership, that's on the order of about 9,600 spaces with an estimated ridership of 61,000 to 71,000 average weekday LRT trips. Accordingly, for program planning purposes, there are about 9,600 parking spaces representing about \$137 M of construction and right of way costs.

The trains and service plan are "sized" to meet the highest load point on the system. Based on this planning level analysis, the train and parking capacity has been balanced with the forecasted demand.

For facilities associated with the bus program, up to approximately 1,400 spaces, all projected to be surface spaces, are proposed at regional transit centers.

8. Please estimate of how many riders of transit system are projected to arrive by car? By foot or bicycle? At which specific Transit Stations?

On the planned LRT system, 55 % (36,950) riders are estimated to access the rail station by walking, 6 % would be Kiss and Ride, 14 % would be park-and-ride and 25 % would be transferring from buses to trains. The Music City Central station, 5th Ave and Broadway station, and the SoBro Transit Center will have high transfers between buses and rail. Stations with high park-and-ride activity would include:

- Gallatin Pike near Walton Ln
- Charlotte Ave near 28th Ave
- Nolensville Pike near Harding Place
- Nolensville Pike near Peachtree St
- Murfreesboro Pike near Donelson Pike

9. What is the estimated parking revenue per space? Total projected parking revenue? Is this revenue reported in the Plan? What is the parking revenue portion under 'Operating Revenue'? By bus, by rail?

The Plan of Finance does not include revenue estimates from parking at stations. This is a potential source of revenue that could be evaluated in the future.

10. What is the estimate of annual 'maintenance/replacement cycle' cost per year after 2030 using U.S. DOT government guidelines for transit system maintenance costs, both rail and bus? Shouldn't this number be a formal part of operating cost projections for a combined transit system, even if accrued on a non-cash basis?

**Routine maintenance costs for bus and rail are captured in the annual O&M cost estimate. In terms of vehicle replacement, the Plan of Finance assumes that buses will be replaced every 12 years, paratransit vehicles will be replaced every 5 years, and LRT cars will be replaced every 25 years. Further, the Plan of Finance assumes a cost allowance for mid-life overhauls for buses and LRT rail cars.**

11. How much of the estimated program cost is in sidewalks? How much sidewalk network is necessary to serve the foot traffic projections to arrive at which Transit Station? Which of the Transit Stations will require the most sidewalk investment?

**The LRT improvements include approximately 36 miles of sidewalks with a cost of about \$7M (pavement costs only). For program planning purposes, this included maintaining/reconstructing existing sidewalks and providing additional sidewalks for continuity along the LRT corridors. Additionally, LRT stations and park and ride facilities include sidewalks typical to those facilities but the costs are not broken out separately. Coordination with Metro on parallel bike routes will occur in the future corridor studies.**

**Total program cost for sidewalks as part the bus network enhancements is approximately \$6.5M. This cost is distributed amongst bus stop expansion, neighborhood transit centers, and local transit mini-hubs.**

**A determination of which stations will require the most sidewalk investment will be contingent upon existing infrastructure at final transit center locations. In general, transit centers located within the urban core of the city will rely more upon pedestrian access compared to centers located at end-of-line which will utilize a combination of bike, pedestrian, and automobile access. It is assumed that there will also be some sidewalk improvements (where necessary) as part of rapid bus infrastructure improvements, but sidewalks were not programmed as a specific program element.**

**In addition Other Transportation Improvements, as shown in the Bus Program Capital Cost Expenses in the TIP, represents about \$114M (2017 dollars) through year 2032. These improvements may include pedestrian improvements, bikeways, and ADA access that may not be directly connected to the transit investments.**

#### Cost and Tax Escalator Questions

12. Please provide the break-out and confirmation of the cost escalator for estimated annual construction cost increases from 2018-2030? All types of construction and equipment? Bridge, Tunnel, Rail, Bus, Rolling Stock? Justification? The projections on page 49 appear to anticipate a 2% annual cost increase over today's 2017 numbers in all categories, but construction costs have increased an average of 6-7% over the last several years in Nashville. If future construction cost estimates are based on some 'universal' inflation index, why wouldn't all other assumptions based on this same universal inflation index?

**All components of the capital cost estimates are projected to increase annually based on a Consumer Price Index (CPI) forecast purchased from Moody's Analytics. Over the 2018 to 2032 Plan of Finance analysis period, the average annual CPI increase is approximately 2.4 percent. See further discussion below.**

13. Confirmation of escalator for sales tax and business tax increases from 2018-2032? It appears to be 4% for sales tax and 5% for business taxes.

**Business Tax revenues are modelled to grow at Moody’s projected Nashville CPI, which averages approximately 2.3% from 2018-2032. Sales Tax revenues are grown at rates from a University of Tennessee tax study, which average approximately 4% from 2018-2032. Sales tax revenue growth rates from UT Tax study based on historical sales tax base in the county, a yearly time trend, and data on national payroll employment and nominal gross domestic product (GDP).**

Population growth during this period of time is projected at less than 1% per year. If sales tax collections are this robust (predicting a very strong economy for a very long time), why wouldn’t construction cost increases be equally robust?

**Construction costs generally increase at CPI, whereas Sales Taxes grow at CPI + Real GDP Growth + Population Growth, and thus would anticipate construction cost inflation to lag Sales Tax growth.**

14. How can sales tax growth rates be sustainably that much higher than population growth?

**Sales tax growth rates from UT tax study based on historical local sales tax base. Sales tax growth is nominal GDP (Real GDP + CPI) + Population increase.**

What does this imply for estimated tax collections from tourists? What proportion of projected sales tax revenue is estimated to be from these ‘non-Nashville’ sources by 2030?

**This data point is not available and not incorporated into the analysis.**

As compared to today?

**Per the Chamber of Commerce, approximately 47% of sales tax revenue is paid by tourists / people from outside Davidson County**

15. What is the historic effect of a recession on any ‘tourist-heavy’ sales tax projections? Aren’t the effects of a recession deeper on sales tax collections where more elective spending is involved? This is the ‘bridesmaids may go somewhere else’ and then we are stuck question. Response?

**In the case of a severe recession, delays and/or scope reduction for the Program are likely. See below for impact on sales tax collections for Nashville and Orlando following recession.**

	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Nashville Sales Tax	94,235	94,605	86,346	79,665	81,192	91,051	97,752	102,395
<i>Nashville ST Growth Rate</i>		0.4%	-8.7%	-7.7%	1.9%	12.1%	7.4%	4.7%
Orlando Sales Tax	30,164	29,635	26,744	27,655	29,801	30,998	33,415	35,613
<i>Orlando ST Growth Rate</i>		-1.8%	-9.8%	3.4%	7.8%	4.0%	7.8%	6.6%

16. What is the escalator for annual operating cost increases in the plan for rail and bus? What is the escalator for farebox increases during the same period of time?

**Annual operating costs for bus and rail service increase annually based on a Consumer Price Index (CPI) forecast purchased from Moody’s Analytics. Over the 2018 to 2032 Plan of Finance analysis period, the average annual CPI increase is approximately 2.4 percent.**

The table below summarizes MTA's historic cost per vehicle hour and annual rates of change over 2007 to 2014, as reported to the National Transit Database. As indicated in the table, while year over year growth rates have ranged from -6.3 percent to 7.1 percent, the average growth rate over this period was 1.32 percent, and the compound annual growth rate was 1.24 percent. Thus, the 2.4 percent average annual CPI increase is consistent with recent trends.

	2007	2008	2009	2010	2011	2012	2013	2014	CAGR	Average
Cost per vehicle hour	90.6	92.9	93.5	100.1	93.8	98.1	97.3	98.765	1.24%	
Annual Change		2.54%	0.65%	7.06%	-6.29%	4.58%	0.85%	1.54%		1.32%

Source: National Transit Database, Table 27: Service Supplied and Consumed Ratios; 2007 to 2014.

**The Plan of Finance reflects an assumption that passenger revenues increase at the same rate as operating costs to annually achieve a targeted farebox recovery ratio of 23% for bus, 8% for ADA, and 28% for rail.**

- Using any acknowledged pricing theory to recognize the capital costs of the transit system, as well as the annual operating costs, what would be the actual cost to Metro be per ticket for a rail passenger? Bus passenger?

**We assume you are asking what is the total cost per passenger to deliver the services? This is calculated by taking the total (uninflated) operating cost by mode (rail or bus) plus the average annual allocable capital repayment to each mode (allocated by % of initial capital investment), divided by the projected number of annual passengers in 2040. A range based on low and high ridership estimates would be approximately \$13.00 - \$15.00 / rail passenger or \$6.25 - \$7.25 / bus passenger.**

- Would the tunnel work (or any of the other construction work) be performed under a GMP (guaranteed maximum price contract), where a construction company would be responsible for any cost over-run or cost increase? If not, why not? If it is performed under a GMP, what cost escalator for future cost predictions would they be using? Would any of the contractors presenting at the Chamber tunnel forum accept these estimated cost escalator factors?

**Nashville will explore various potential contracting and delivery methods, that may include a range from public-private partnerships (P3) (where not only would a construction company be responsible for cost over-run and cost increases, but also the private sector would provide at-risk financing to ensure initial and long term contract performance), to Design-Build or GMP (CMGC) contracting, to other forms of contracts including design-bid-build. Each project would be let with the form of contract to provide the lowest risk-adjusted cost to Nashville. Cost escalators for any GMP or other project would be determined at the time the contract is let.**

Finance, Funding and Debt Questions

- How many cities received New Start and Small Start Federal money? How many apply? What is the average award under these grants? What is the amount of money these cities are looking for? Is the amount of money being awarded under these programs increasing or decreasing over the past 10 years? 5 years? What is the funding level in the current Federal budget? What are the future out-year projections for this Federal funding?

Based on FTA's Annual Report to Congress on the Capital Improvement Grant (CIG) Program over the federal fiscal years 2009 to 2018 period, the tables below summarize projects that have received New Starts and Small Starts funding and the total annual funding under the CIG Program:

- **New Starts:**
  - 29 agencies received funding to support implementation of 46 projects. Agencies with multiple projects include: Denver, Houston, Los Angeles, Minneapolis, New York, Orlando, Portland, Salt Lake City, and Seattle.
  - The average project cost was \$1.5 billion and costs ranged between \$200 M and \$7.0 B.
  - Average New Starts funding was \$620 M or 47% of the average project cost. Funding requests ranged from \$123 M to \$2.6 B and the share of funding ranged from 21% to 80% (note: most requests were 50% or less of project costs).
- **Small Starts:**
  - 39 agencies received funding to support implementation of 50 projects. Agencies with multiple projects include: El Paso, Grand Rapids, Jacksonville, Kansas City, King County (WA), Los Angeles, and Seattle.
  - The average project cost was \$76 million and costs ranged between \$2.5 M and \$198 M.
  - Average Small Starts funding was \$41 M or 59% of the average project cost. Funding requests ranged from \$1.4 M to \$75 M and the share of funding ranged from 12% to 80% (note: most requests were 50% to 80%).
- **Annual CIG Program Totals:**
  - Annual CIG Budget increased from \$1.6 B in 2009 to \$3.5 B in 2017. The 2018 Budget decreased to \$1.2 B and reflected the transition to the new administration. Specifically, FTA's direction in completing the annual report was to only budget for those projects with existing full funding grant agreements. It is important to note that Congress has authorization to spend \$2.3 billion annually through 2020 on existing full funding grant agreements and new full funding grant agreements (New Starts and Small Starts).
  - The CIG Program is funded through 2020 which is the last year of the current federal transportation authorization legislation – the FAST Act. Annual funding levels beyond 2020 will reflect the next transportation authorization bill.

Summary of New Starts Project Funding (FFY 2009 to 2018)

Location	Project	Project Cost	New Starts Funds	% New Starts
Baltimore	Red Line	\$2,644,518,185	\$900,000,000	34%
Bethesda	Maryland National Capital Purple Line	\$2,371,148,367	\$900,000,000	38%
Boston	Green Line Extension	\$1,656,556,658	\$714,406,000	43%
Charlotte	LYNX Blue Line Extension - Northeast Corridor	\$1,069,217,178	\$534,608,570	50%
Chicago	Ravenswood Line Extension	\$529,910,000	\$245,520,000	46%
Dallas	Northwest/Southeast LRT MOS	\$1,470,622,000	\$700,000,000	48%
Denver	Southeast Corridor LRT	\$879,270,000	\$525,000,000	60%
Denver	East Corridor (Eagle P3)	\$1,765,102,000	\$850,446,000	48%
Denver	Gold Line	\$715,532,000	\$180,000,000	25%
Denver	Southeast Extension	\$224,295,280	\$92,000,000	41%
Denver	West Corridor LRT	\$709,830,000	\$308,680,000	43%
Fort Worth	TEX Rail	\$809,765,563	\$404,882,781	50%
Hartford	New - Britain - Hartford Busway	\$572,690,000	\$275,300,000	48%
Honolulu	High Capacity Transit Corridor Project	\$5,347,681,000	\$1,550,000,000	29%
Houston	North Corridor LRT	\$667,000,000	\$331,700,000	50%
Houston	Southeast Corridor LRT	\$680,600,000	\$333,500,000	49%
Los Angeles	Metro Gold Line Eastside Extension	\$898,810,000	\$490,700,000	55%
Los Angeles	Regional Connector Transit Corridor	\$1,366,293,948	\$669,900,000	49%
Los Angeles	Westside Subway Extension Section 1	\$2,839,716,323	\$1,250,000,000	44%
Los Angeles	Westside Subway Extension Section 2	\$2,374,436,573	\$1,187,000,000	50%
Minneapolis	Southwest LRT	\$1,653,448,925	\$826,724,462	50%
Minneapolis	Northstart Corridor Rail	\$317,380,000	\$156,810,000	49%
Minneapolis	Central Corridor LRT	\$941,316,000	\$466,158,000	50%
New York	Long Island Rail Road East Side Access	\$7,386,000,000	\$2,632,114,000	36%
New York	Second Avenue Subway Phase 1	\$4,866,610,000	\$1,300,000,000	27%
Norfolk	Norfolk LRT	\$232,100,000	\$127,980,000	55%
Northern NJ	Hudson-Bergen MOS-2	\$1,215,400,000	\$500,000,000	41%
Northern Virginia	Dulles Corridor Metrorail Project – Ext. to Wiehle Ave.	\$3,142,470,000	\$900,000,000	29%
Orlando	Central Florida Commuter Rail Transit (Sun Rail)	\$357,200,000	\$178,600,000	50%
Orlando	SunRail Phase II South	\$173,599,720	\$86,799,860	50%
Phoenix	Central Phoenix / East Valley Light Rail	\$1,412,120,000	\$587,200,000	42%
Pittsburg	North Shore LRT Connector	\$435,000,000	\$235,700,000	54%
Portland	South Corridor I-205/Portland Mall LRT	\$575,700,000	\$345,413,000	60%
Portland	Portland-Milwaukie Light Rail Project	\$1,490,350,173	\$745,175,087	50%
Sacramento	South Corridor Phase 2	\$270,000,000	\$135,000,000	50%
Salt Lake City	Weber County to Salt Lake City Commuter Rail	\$611,680,000	\$489,300,000	80%
Salt Lake City	Mid-Jordan LRT	\$535,370,000	\$428,290,000	80%
Salt Lake City	Draper Transit Corridor	\$206,030,000	\$123,618,000	60%
San Diego	Mid-Coast Corridor	\$2,112,114,987	\$1,043,384,804	49%
San Francisco	Central Subway LRT	\$1,578,300,000	\$942,199,000	60%
San Jose	Silicon Valley Berryessa Extension Project	\$2,562,930,607	\$900,000,000	35%
Santa Ana	Santa Ana / Garden Grove Streetcar Project	\$288,748,876	\$144,373,915	50%
Seattle	Central Link Initial Segment	\$2,436,900,000	\$500,000,000	21%
Seattle	University Link LRT Extension	\$1,798,120,000	\$750,000,000	42%
Seattle	Lynnwood Link Extension	\$2,345,925,753	\$1,172,728,284	50%
Washington	Largo Metrorail Extension	\$607,200,000	\$364,300,000	60%
	<b>Average</b>	<b>\$1,503,152,394</b>	<b>\$620,119,821</b>	<b>47%</b>

Summary of Small Starts Project Funding (FFY 2009 to 2018)

Location	Project	Project Cost	Small Starts Funds	% Small Starts
Albuquerque	Rapid Transit Project (The ART)	\$126,156,088	\$69,023,577	55%
Aspen	Roaring Fork Vallet Bus Rapid Transit (VelociRFTA)	\$46,400,000	\$25,990,000	56%
Austin	MetroRapid BRT	\$47,000,000	\$37,600,000	80%
Charlotte	CityLYNX Gold Line Phase 2	\$150,000,000	\$74,999,999	50%
Columbus	Cleveland Avenue BRT (CMAX)	\$47,667,067	\$38,133,654	80%
El Paso	Mesa Corridor BRT	\$27,081,000	\$13,540,000	50%
El Paso	Dyer Corridor BRT	\$35,251,663	\$20,407,094	58%
El Paso	Montana Corridor BRT	\$45,516,813	\$26,972,509	59%
Eugene	West Eugene EmX Extension	\$95,567,000	\$74,999,999	78%
Everett	Swift II BRT	\$66,590,000	\$43,190,000	65%
Fitchburg	Commuter Rail Improvements	\$149,980,000	\$74,990,000	50%
Flagstaff	Mountain Links BRT	\$10,410,000	\$6,240,000	60%
Fort Collins	Mason Corridor BRT	\$74,190,000	\$59,350,000	80%
Fort Lauderdale	Wave Streetcar	\$142,589,000	\$49,650,000	35%
Fresno	Fresno Area Express Blackstone/Kings Canyon BRT	\$48,188,000	\$38,550,000	80%
Grand Rapids	Silver Line BRT	\$37,000,000	\$29,599,000	80%
Grand Rapids	Laker Line BRT	\$71,014,000	\$56,811,200	80%
Indianapolis	Red Line All-Electric	\$96,330,294	\$74,989,999	78%
Jacksonville	First Coast Flyer North Corridor BRT	\$21,299,000	\$17,040,000	80%
Jacksonville	First Coast Flyer Southeast Corridor BRT	\$23,877,000	\$19,101,000	80%
Jacksonville	First Coast Flyer East Corridor BRT	\$33,860,407	\$16,930,204	50%
Kansas City	Troost Corridor BRT	\$30,730,000	\$24,480,000	80%
Kansas City	Prospect MAX	\$53,819,555	\$29,886,460	56%
King County	RapidRide E Line BRT	\$48,090,000	\$21,629,000	45%
King County	RapidRide F Line BRT	\$36,800,000	\$15,880,000	43%
Livermore	Livermore-Amador Route 10 BRT	\$21,660,000	\$10,930,000	50%
Los Angeles	Metro Rapid Bus System Gap Closure	\$25,660,000	\$16,680,000	65%
Los Angeles	Wilshire Blvd Bus-Only Lane	\$31,510,000	\$23,320,000	74%
Mesa	Central Mesa LRT Extension	\$198,490,000	\$75,000,000	38%
Monterey	Monterey Bay Rapid Transit	\$3,540,000	\$2,830,000	80%
New York	Nostrand Ave BRT	\$39,872,414	\$28,398,554	71%
Oakland	East Bay BRT	\$234,553,000	\$75,000,000	32%
Portland	Streetcar Loop	\$126,920,000	\$75,000,000	59%
Provo	Orem BRT	\$149,927,986	\$74,964,311	50%
Reno	4th Street/Prater Way Corridor	\$52,570,000	\$6,470,000	12%
Riverside	Perris Valley Line	\$168,260,000	\$75,000,000	45%
Sacramento	Downtown Riverfront Streetcar	\$150,000,000	\$74,999,999	50%
San Bernardino	E Street Corridor sbX Bus Rapid Transit	\$163,390,000	\$75,000,000	46%
San Diego	Mid-City Rapid	\$43,300,000	\$21,650,000	50%
San Francisco	Van Ness Avenue BRT	\$118,608,000	\$74,723,000	63%
San Rafael-Larkspur	San Rafael to Larkspur Regional Connector	\$42,532,750	\$22,532,873	53%
Seattle	Bellevue-Redmond BRT	\$26,950,000	\$20,210,000	75%
Seattle	Pacific Highway South BRT	\$2,507,000	\$1,408,000	56%
Seattle	West Seattle BRT	\$28,366,000	\$21,274,000	75%
Seattle	Seattle Streetcar Center City Connector	\$134,881,680	\$74,999,999	56%
Springfield	Pioneer Parkway Emx BRT	\$41,290,000	\$32,540,000	79%
Stockton	Metro Express-Airport Way Corridor Bus Rapid Transit	\$9,740,000	\$2,810,000	29%
Tacoma	Tacoma Link Light Rail Expansion	\$166,008,514	\$74,999,999	45%
Tempe	Tempe Streetcar	\$182,851,740	\$74,999,999	41%
Vancouver	C-TRAN Fourth Plain BRT	\$53,404,002	\$38,723,202	73%
	<b>Average</b>	<b>\$75,643,999</b>	<b>\$40,688,953</b>	<b>59%</b>

*Annual Capital Investment Grant Program Budget (FFY 2009 to 2018)*

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Total Capital Investment Grant Program Budget	\$1,621	\$1,827	\$1,822	\$3,236	\$2,235	\$2,132	\$2,500	\$3,250	\$3,500	\$1,232

20. What were/are the city credit ratings for the peer cities being used as examples for transit – Denver, Charlotte, Minneapolis, Phoenix?

**The ratings of the cities are not relevant for the financing, since the financing for this project, and most mass transit projects, are based on Revenue Bonds secured only by local surcharges / taxes, principally Sales Tax. Secured Sales Tax credits for mass transit entities vary from AA-/Aa3 to AAA/Aaa. Comparable credits include: Denver RTD FasTracks Sales Tax, SoundTransit Prior and Parity Bonds, Houston METRO Sales Tax, DART Sales Tax, MARTA Sales Tax, and LACMTA Sales Tax Credits.**

What is Nashville's?

**As of Oct 2017, Nashville/Davidson County maintains an "AA" rating from Standard & Poor's and "Aa2" from Moody's for general obligation debt.**

What percentage of their transit funding was/has been provided by the state and Federal government.

**See the response to question #19 for the federal participation in capital projects. Per data reported to the FTA in 2014 (latest available), operations for the listed systems are funded with the following:**

**Example Revenue Sources for Transit Operation Costs (FTA 2014)**

<u>City</u>	<u>Transit System</u>	<u>Federal</u>	<u>State</u>	<u>Local</u>	<u>Fares</u>	<u>Other</u>
Denver	Denver Regional Transportation District (RTD)	14%	<1%	60%	23%	3%
Charlotte	Charlotte Area Transit System (CATS)	4%	9%	64%	22%	2%
Minneapolis	Minneapolis Metro Transit	1%	64%	7%	26%	2%
Phoenix	Phoenix Valley Metro	10%	2%	64%	19%	5%

Were these regional or county-only plans? What amount of general obligation/moral obligation debt did these cities issue or plan to issue for their transit plans?

**In almost every prior mass transit expansion, the cities do not issue any moral or general obligation bonds, all financing is performed exclusively by dedicated Revenue Bonds, generally secured by Sales Taxes, similar to the proposed approach for the Nashville system.**

What is their total current and projected level (post-transit) of general/moral obligation debt, also per capita?

**Not applicable given the Revenue Bond approach.**

What is their annual subsidy to their transit operations?

**For most systems, the subsidy is exclusively paid for by the residual local surcharges / taxes pledged to the projects. Nationally, Farebox Recovery ranges from 11% to 42%, and is generally 20-25% for similarly sized systems to that of Nashville.**

21. Are the bonds projected to be issued by Metro (\$3.023 Billion) backed by the full faith and credit of the City?

**No, these would be Revenue Bonds exclusively secured by the Surcharges.**

Are they the 'moral responsibility' of the issuer?

**No, these would be Revenue Bonds exclusively secured by the Surcharges.**

Would a default on these bonds have the same financial repercussions as a default of General Obligation bonds?

**No, these would be Revenue Bonds exclusively secured by the Surcharges.**

Would a default on these bonds have any effect on the City being able to fund its Capital Spending Plan?

**No, these would be Revenue Bonds exclusively secured by the Surcharges and not impact the City's Capital Spending Plan.**

22. Allegedly, only \$2.5 Billion of these Transit bonds can be 'Revenue Bonds' because projected sales tax revenues will not support a higher number. Is this true?

**No, all bonds could be issued as Revenue Bonds.**

If so, what category will the remaining \$500 million in bonds be issued under?

23. What is the history behind the expectation of the \$500 million TIFIA loan?

**TIFIA has the statutory authority to fund up to 49% of total project cost, but is limited by USDOT rule-making to 33% of total project cost. This would indicate eligibility of at least \$1.8 bn of TIFIA loans (based solely on initial rail corridor capital costs). The \$500 million amount was used to show utilization of federal programs designed to support transportation investment, but not to overly-rely on receiving a large loan.**

What is the program size?

**The TIFIA loan program receives annual allocation for "Credit Subsidy" which must be paid from USDOT to US Treasury when each loan is closed. The Credit Subsidy is somewhat of a "risk premium" assessed on each loan by the US Office of Management and Budget. TIFIA provides guidance that the credit subsidy is generally ~10% of the loan size on average. The FAST act provides for a total of \$1.435bn of Credit Subsidy for TIFIA through 2020 (excluding un-used but still available rollover balances), which would indicate over \$14bn of loan capacity.**

How many cities have received how much under this program?

**TIFIA has closed 75 loans since 1999 for a total of \$29.5bn (as of Dec 28, 2017).**

Average loan size?

**Loans have varied from \$42mm up to \$1.876bn, with an average of \$394mm.**

Is the amount of this program being increased or decreased under out-year Federal budget projections?

**Annual support under the FAST Act increases annual availability of TIFIA Credit Subsidy. All talk regarding future infrastructure spending from Washington has typically focused more on expanding loan / credit programs (including TIFIA), versus expanding direct grants, which indicates if anything would anticipate expanded TIFIA capacity.**

What would be the expected debt service of this loan, if it were included in the operating statement for the transit system?

**For the purposes of modeling TIFIA debt service, the financing plan matches TIFIA statutory flexibility and assumes that interest on the TIFIA debt will accrete through 2032, followed by payments of Interest Only are due through 2037, then 50% of the debt is amortized over the 15-years through 2052 and the final 50% of the balance is amortized over the 10-years ending 2062. Min, Max and Average debt service payment during the years when debt service is paid are \$39 million, \$74 million and \$54 million, respectively.**

24. The extension of the Charlotte corridor is being financed, as reported by the Tennessean, by additional unanticipated tax revenue from the First Tennessee Park and the Music City Center. Please elaborate. Both entities currently are losing money on an operational basis. This past year, First Tennessee Park required Metro to make up for deficient TIF financing. What projections are allowing for this previously unaccounted for revenue windfall?

**Projected sales tax collections are calculated based on base year sales tax collected in FY17. After completing initial analysis, we were informed that the FY17 sales tax collection data provided had not included collections from the areas described, and so the base year FY17 local option sales taxes totaled was revised upwards from \$382,934,147 to \$399,192,241.**

#### Results Question

25. What is the forecast improvement in commute times? How is this measured?

**An analysis is currently in progress to estimate auto, bus and LRT travel times. This information will be made available upon completion of the study.**