Capital Area Metropolitan Planning Organization
Transit Working Group

Capital Metro Green Line Proposal
Questions from December 1, 2008 Transit Working Group Meeting

Questions logged by CAMPO and Capital Metro staff and categorized into four groups:

1. ***Questions of a local policy nature***
2. ***Questions typically addressed as part of an Alternatives Analysis***
3. ***Questions typically addressed as part of a NEPA investigation***
4. ***Questions typically addressed as part of a refined financial analysis***

Each question has been categorized according to the four groups below. Questions answered previously (as a part of the December 1st or December 8th meeting) are not included.

A) Questions of a local policy nature

28. Will federal funds be requested and, if so, what must be done to perform an alternatives analysis which meets federal standards and how long will it take?

Response: It depends on several factors such as project competitiveness (including the use of the CAMPO regional travel model to predict ridership), regional priorities for funding, and the pending re-authorization of the federal transportation bill. The decision will be part of the financial analysis for the project. Federal funding is an attractive option in that it can pay for a large share of the capital costs of a transit project, however it carries with it significant requirements that add up-front time and cost.

Per the Federal Transit Administration (FTA): *An effective alternatives analysis answers the questions: What are the problems in a corridor? What are their underlying causes? What are viable options for addressing these problems? What are their costs? What are their benefits?*

Alternatives analysis is a locally managed study process that relies to a large extent on the information on regional travel patterns, problems, and needs generated as part of the metropolitan transportation planning process, as specified by 23 CFR Part 450 FTA/Federal Highway Administration (FHWA) Joint Final Rule on Metropolitan and Statewide Planning.

Additional information is available at:
http://www.fta.dot.gov/printer_friendly/planning_environment_2590.html
http://www.fta.dot.gov/planning/newstarts/planning_environment_6868.html

In terms of timing, an alternatives analysis process can take up to 24 months or more, with 18 months being a reasonable assumption. Due to the detailed work, substantial analysis, coordination with agency and FTA staff and public involvement required, a federally-conforming alternatives analysis will typically cost $1,000,000 to $2,000,000.

As an example of the risks and rewards that should be weighed, DART in Dallas received $700 million in federal funding for a light rail project under the FTA New Starts program, but only after spending approximately seven years and $5 million to complete the process.

B) Questions best addressed as part of an Alternatives Analysis

14. Please expand on the purpose of the Green Line in question 2 with some weighting to the purpose items listed.

Response: The Green Line project offers a tremendous opportunity to leverage a transportation investment to shape growth in the eastern part of central Texas. By focusing growth around rail stations in the form of transit-oriented development, the potential exists to reduce sprawl, conserve sensitive resource lands, reduce public infrastructure costs and provide mixed-use pedestrian oriented environments that offer more travel choice and reduce the requirements for automobile use. In support of this vision, and as attested by the numerous letters of support for the project included in the submittal, the jurisdictions with land use authority along the corridor have shown strong support for a coordinated transportation-land use program. Providing quality transportation choices and improved mobility and access for the community are also very important benefits.

15. What are the evaluation results of the 'alternatives analysis' of the considered modes leading the selection of the proposed Green Line as the preferred transit alternative for this corridor?

Response: An alternatives analysis has not been completed for this project. Nonetheless, a preliminary analysis clearly indicates that passenger rail is a very viable alternative. An overview of the findings was provided in response to question nine, indicating that both the "no-build" and the Bus Rapid Transit alternatives have considerable challenges and/or constraints that were not associated with the passenger rail alternative.

16. What is the calculation that determined 113 to 194 million VMT are reduced by this train as noted in the answer to question 2A-1? How does the source data relate to the Austin situation?

Response: The source data relates to the Austin situation in that it represents a wide-range of peer-reviewed research from numerous rail corridors with similarities to the Green Line. Per the Green Line submittal: "Assuming an average VMT reduction factor of 4.5, as suggested by the research (see table below), and a projected 2030 annual passenger trip miles traveled projection for the Green Line of 25 to 43 million transit miles (See Section 3C1-2), the estimated reduction in vehicle miles traveled (VMT) for automobiles and private vehicles is between 113 and 194 million VMT."

Table 1: Transit Leverage: VMT Reductions Due to Transit (Holtzclaw 2000)

Study	Cities	Vehicle Mile Reduction Per Transit Passenger Mile	
		Older Systems	Newer Systems
Pushkarev-Zupan	NY, Chicago, Phil, SF, Bost, Clev	4	
Newman-Kenworthy	Bost., Chicago, NY, SF, DC	2.9	
Newman-Kenworthy	23 Developed/country cities	3.6	
Holtzclaw, 1991	SF and Walnut Creek	8	4
Holtzclaw, 1994	SF and Walnut Creek	9	1.4
MTC/Raft 2010			4.4

17. As asked in question 2A-1: What is the estimated impact on commute times for train commuters? This should be calculated assuming the 290E toll road is completed which it is planned by the time the train is running.

Response: The travel time from Elgin to the Downtown Austin station should be approximately 50 minutes. Importantly, this speed will be consistent or even potentially improve over time (if rail upgrades are added). While it is expected that the construction of the 290 toll road project will provide for travel time improvements in that corridor, highway commuters to downtown Austin and adjacent areas will still be affected by congestion on IH-35 for the foreseeable future. The ability to provide consistent trip times that are effectively "congestion-proof" is a distinctive feature of dedicated right-of-way systems such as the proposed Green Line.

18. As asked in question 2A-1: What is the estimated impact on congestion in the corridor by the operation of this train? Consider the additional capacity being added to 290E by the upgrade project which will start soon.

Response: Rail transit affects congestion in two ways, by shifting trips away from the automobile and by spurring more accessible development patterns. As noted in *Rail Transit in America: A Comprehensive Evaluation of Benefits*, VTPI, October 2008. (www.vtpi.org/railben.pdf):

> "Congestion is a non-linear function: once a roadway reaches capacity even a small reduction in volumes can significantly reduce delays. For example, a 5% reduction in peak-hour traffic volumes on a road at 90% capacity can reduce delay by 20% or more. Transit can provide significant congestion reduction benefits, even if it only carries a small portion of total regional travel, because it offers an alternative on the

most congested corridors. Reducing just a few percent of vehicles on such roads can significantly reduce congestion costs."

Detailed modeling using a refined CAMPO regional travel demand model is required to answer this question at a high level of detail.

19. Please provide costs and ridership estimates which are comparative as follows:

A. Use estimated 'initial' capital and operating cost with 'initial' (first year) estimated ridership to provide cost per passenger mile, cost per trip and the cost of adding one additional transit rider,
using a realistic service start assumption.

Response: Rail transit is a long-term investment that helps to shape growth over time, particularly in the case of the Green Line. As noted in the project submittal, ridership estimates were only calculated for the CAMPO Metropolitan Transportation Plan forecast year (2030) as a part of this stage of analysis. As CAMPO continues to refine the regional travel demand model, additional ridership estimates that meet federal criteria are expected.

B. Use total estimated capital and operating cost to achieve the 2030 estimated ridership and the 2030 estimated ridership to provide cost per passenger mile, cost per trip and the cost of adding one additional transit rider.

Response: This level of detailed information will be part of the Alternatives Analysis.

20. Please provide all train and private vehicle capacity and ridership comparisons on a consistent basis. Preferably compare estimated average ridership of trains with estimated average ridership in private vehicles to compare track usage and highway lane usage. Compare the two-way train track estimated passenger volume with the two-way highway lane estimated volume. Provide passenger volume data over a 24 hour period for trains and lanes going each way.

A. Please provide the top 5 zip code work destinations for workers living in Elgin and for workers living in Manor.

Response: This information is not available from either CAMPO or Capital Metro. County to county information is available as a product of the 2000 Census, however it is not representative of the future conditions when the Green Line would be implemented.

B. What is the 2030 projection for total workers and the percentage of Elgin and Manor work trips with a downtown Austin destination and what percentage of these are estimated to be train riders?

Response: This type of analysis has not been completed at this early stage, and would be part of the Alternatives Analysis.

C) Questions best addressed as part of a NEPA investigation

25. Regarding the answer to question 2C-1, what are the actual calculations comparing the emissions of the proposed train per passenger mile to current private vehicles per passenger mile and what are the comparisons with 2030 private vehicles per passenger mile under current emissions regulations.

Response: This type of analysis has not been completed at this early stage, and would be part of the NEPA process.

26. What is the profile as to where the low income and minority folks live which would be riders of the Green Line. If they are closer to Austin, couldn't additions to the current bus routes be provided quicker and provide better (frequency and fare) service to this population, more cost-effectively?

Response: Low income and minority populations are found in all sections of the Green Line corridor, just as are other populations. The purpose of the Green Line is to provide mobility and transportation choice for all citizens in the corridor, not simply low income and minority groups. Capital Metro regularly makes improvements to current bus routes throughout the service area while also striving to improve efficiency and effectiveness. The agency is also preparing to undertake a comprehensive route restructuring study that will identify opportunities to enhance bus services. As has been evidenced in other communities across the country, those that offer a robust mix of transit options, including passenger rail service, are the ones that experience the highest ridership (see http://pubsindex.trb.org/document/view/default.asp?lbid=803543 for more information).

27. In order to achieve social equity, the transit system must not degrade transit service to the transit dependent or other services to the low income. Therefore, will the proposed Capital Metro and other funding sources maintain the needed level of service to the transit dependent, low income?

Response: The addition of passenger rail in the corridor will augment and enhance the existing level of transit service. Additionally, the Green Line is expected to help focus growth and development at and near future stations, increasing accessibility to jobs, goods and services for all segments of the population.

D) Questions best addressed as part of a refined financial analysis

21. The answer to question 2B-3 states "--rail along this line would produce an additional $398.5 million in property values--." What is this property value additional to: the region, the county, the city?
How does this conclusion relate to the 2006 Capital Market Research study for the City of Austin which stated there were essentially no 'net' increases in property values along the downtown circulator rail but only development location changes and a 'zero sum' result?
Please provide the Capital Metro analysis mentioned.

Response: Substantial research has been conducted on this issue, as summarized below*:

Increased Property Values

Transit oriented development tends to increase local property values due to improved accessibility and livability in that area (Eppli and Tu, 2000; Smith and Gihring, 2003). Transit stations often provide a catalyst for various neighborhood improvements such as urban redevelopment, historic preservation, improved pedestrian conditions and New Urbanist design practices. A portion of these property value gains may be economic transfers (property value increases in one area are offset by property value reductions at other locations), but increased property values resulting from agglomeration efficiencies, shifted consumer expenditures, transportation efficiency and community redevelopment are true economic gains that increase productivity. Many businesses prefer to locate near rail stations to improve access for employees and customers; some employers say that employees who commute by rail are more productive since they avoid the stress and uncertainty of driving on congested roads. Table 8 summarizes property value increases measured near rail transit stations in various European and North American cities.

Table 8 **Rail Station Proximity Impacts on Property Values** (Hass-Klau, Cramption and Benjari, 2004)

City	Factor	Difference
Newcastle upon Tyne	House prices	+20%
Greater Manchester	Not stated	+10%
Portland	House prices	+10%
Portland Gresham	Residential rent	>5%
Strasbourg	Residential rent	+7%
Strasbourg	Office rent	+10-15%
Rouen	Rent and houses	+10%
Hannover	Residential rent	+5%
Freiburg	Residential rent	+3%
Freiburg	Office rent	+15-20%
Montpellier	Property values	Positive, no figure given
Orléans	Apartment rents	None-initially negative due to noise
Nantes	Not stated	Small increase
Nantes	Commercial property	Higher values
Saarbrücken	Not stated	None-initially negative due to noise
Bremen	Office rents	+50% in most cases

This table summarizes how property values are affected by proximity to rail stations in various cities.

*Source: *Rail Transit in America: A Comprehensive Evaluation of Benefits*, VTPI, October 2008. (www.vtpi.org/railben.pdf)

The 2006 Capital Market Research study analyzed development potential within a specified radius around the proposed stations (usually ¼ mile) and refers to the anticipated changes in use and value in that area. The study did not determine or assert that the development is attracted to the TOD from some other location nearby.

22. The answer to question 2B-1 references a study which concludes there is an increase in regional income of $2.9 million and increased regional employment of 226 regional jobs by shifting 1% of regional automobile travel to transit travel.

This shift of a hypothetical 1% would require doubling the regional transit ridership. There are no examples of this in recent times.
What is the estimated capital and operating costs required to double the transit ridership, even if it were possible? What would the taxpayer subsidy be for this doubled transit ridership?

Response: The Green Line submittal did not imply a 1% shift of regional travel to transit. The cost of doubling regional transit ridership has not been calculated, and is not germane to the Green Line Decision Tree response. The reference in the submittal states that "a similar proportional response would be anticipated in the Austin-Manor-Elgin corridor from continued investment in rail and other high capacity transit options."

The introduction of rail transit commonly results in more than a 1% shift of trips to public transportation within the corridor in which the service is provided, as has been the case in both Dallas and Houston.

Are there corroborating studies to the one referenced? On the surface, the referenced study seems very shallow and shortsighted in that it does not consider the proven economic benefits for people able to access a greater percentage of the regions employment opportunities, thus securing a higher paying job which produces income greater than the cost of the private transportation. This also applies to access to other life offerings such as more economical shopping, etc. Nor does it consider:
1. Employers which have access to a larger number of employees, through better mobility, will have better employees with higher productivity with higher income.;
2 The high tax subsidies paid by 99% of the travelers for the 1% using transit could be spent in more productive ways for the region's economic benefit.;
3. Higher density, multi-story housing construction near transit stations will cost more than equivalent low level housing in other locations.

Response: A similar study found that "Every $1 billion invested in public transit capital projects generates 30,000 jobs, and the same amount invested in transit operations generates 60,000 jobs. The return on investment could be as high as 9 to 1." (Source: Cambridge Systematics, Inc. and Economic Development Research Group, A Quantitative Analysis of Public Transportation's Economic Impact, October 1999.)

23. The question 2B-5 answer suggests the Green Line will generate excess funds for other projects.

A. What are the assumptions regarding taxpayer funding of development near the train stations?

Response: Based on the analysis to date, tax increment financing appears to be a viable funding option, and could generate additional revenues over time. Assumptions would be detailed in subsequent phases of project development and financial analysis.

B. What assumptions are made relative to capital cost additions and replacements?

Response: Capital cost additions and replacements would be included in Capital Metro's long range financial plan, as is the case with other capital assets. Any such assumptions would be detailed in subsequent phases of project development.

C. What are the expected reductions in city general funds and the impacts on city services,
infrastructure and tax rates as a result of the suggested tax based financing of this rail project and the incentives required for the related developments.

Response: If tax-increment financing is selected as one component of the project funding mix, additional analysis will be undertaken to fully assess the impact it may have on local governments that elect to use it.

24. What is the basis for Capital Metro estimates of the Green Line's fare box recovery?
What are the actual fare box recovery percentages for cities' train lines similar to the Green Line?
Are all costs considered included the feeder bus costs related to the train?

Response: Per the Green Line submittal: "Between 21% and 35% of the annual operating and maintenance costs will likely be covered by system revenues (e.g., fare box recovery), assuming all-day operation on the Green Line. This estimate is achieved by assuming a 4.25% rate of inflation on operations and maintenance costs through 2030. Commuter rail service will be treated as a premium service within the Capital Metro operating system. Fares on the Red Line are anticipated to start at $1.50 in 2009 and increase to approximately $3.00 by 2016. Following this same growth projection for the Green Line suggests a 2030 fare price for the service between Manor/Elgin and Austin of approximately $6.50 per trip. However, bulk pass purchases, senior discounts, and similar policies lower the actual average fare collected by approximately 35% and hence the average collected fare in 2030 is likely closer to $4.23 per trip."

The North County Transit District near San Diego operates the similar Coaster passenger rail line and per the 2007 National Transit Database, and that service had a fare box recovery of 36%. Other rail lines have farebox recovery percentages of a wide range, based upon local economic conditions, policy decisions and other factors. The initial estimates for the Green Line are reasonable based on national experience.

Fare box recovery calculations, when calculated for a specific service such as a passenger rail line, are based on the operating and maintenance cost of the service relative to the farebox revenue for that service. Any feeder bus services would have their own, independent fare box recovery figures.