Agenda Report

TO: CITY COUNCIL **DATE:** October 9, 2006

FROM: CITY MANAGER

SUBJECT: FOLLOW-UP DISCUSSION OF "ROUTE 710 TUNNEL TECHNICAL FEASIBILITY ASSESSMENT"

RECOMMENDATION

This information is provided in response to questions raised by the City Council regarding the "Route 710 tunnel Technical Feasibility Assessment". This is background should the City Council choose to make comments.

BACKGROUND:

At the Council meeting of August 14, 2006, representatives from the Los Angeles County Metropolitan Transportation Authority (MTA), California Department of Transportation (Caltrans) and their consultants made a presentation regarding the findings of the Route 710 Tunnel Technical Feasibility Assessment. Once MTA receives comments from all the involved agencies, this matter will be presented to the MTA Board. The City Council decided to postpone making comments on the study until it receives responses from MTA staff on a number of technical questions about the study.

Comments and questions from City Councilmembers were collected and provided to MTA for response. Attached is a cover letter and responses to all comments provided by MTA. It is anticipated that MTA staff will attend this meeting to respond to any follow-up comments by the City Council. The MTA has requested that comments be sent to them by October 12, 2006.

FISCAL IMPACT:

There is no fiscal impact as a result of providing this information.

Respectfully submitted:

CYNTHIA J. KURTZ
City Manager

STR0881

MEETING OF 10/09/2006 AGENDA ITEM NO. 7.A.2

Prepared by:

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Approved by:

JOYCE V. AMERSON
Director of Transportation

Attachment

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September 28, 2006

Ms. Joyce Y. Amerson, Director
Department of Transportation
City of Pasadena
221 East Walnut Street, Suite 210
Pasadena, CA 91101

RE: Response to Pasadena Councilmembers' Questions/Comments on the Route 710 Tunnel Technical Feasibility Assessment Report

Dear Ms. Amerson: Joyce:

This is in response to your letter dated September 20, 2006 regarding Pasadena City Councilmembers' questions/comments on the Route 710 Tunnel Technical Feasibility Assessment (the Assessment) report. We'd like to thank you for giving us this opportunity to clarify some of your Councilmembers' technical questions and comments.

Please see the attachment for our responses. The questions/comments have been grouped by similar topics. Please note that our responses are based on the Assessment report and the information that is readily available to us.

Please contact me at (213) 922-3061 if you have any questions and/or clarification.

Sincerely,

Shahrzad Amiri

Shahrzad Amiri
Director, San Gabriel Valley Area Team

cc: Bahman Janka, Pasadena

ATTACHMENT

STUDY SCOPE – CONGRESSMAN SCHIFF SAFETEA-LU FUNDS

Comments:

What is the status of the 710 study funded by Congressman Schiff?

A preliminary observation relates to the scope of the Assessment Report which was, as I recall, estimated to cost over $ 5.0 million. In this regard, Representative Adam Schiff was approached to seek federal funding for the study and he responded by obtaining an allocation of $2.4 million. But less than $500,000 was expended on the Assessment Report, which was begun earlier than the original schedule and did not address one of the principal conditions that Mr. Schiff had conveyed to MTA, that the feasibility study for the Route 710 tunnel explore all possible routes, including workability of a connection to Route 2. Accordingly, I would hope for an early response from MTA whether a more extensive preliminary study, which is not limited to the Meridian Corridor, and which will be conducted as the next step. I am informed that the Special Advisory Committee of the City of South Pasadena – formed to conduct an in-depth study of the assessment report – is of the opinion that in general it appears to be more of a conceptual document than a "feasibility assessment"

Response:

No study has been initiated using SAFETEA-LU funding identified by Congressman Schiff. Route 710 Tunnel Technical Assessment was initiated prior to the authorization of the SAFETEA-LU and was conducted using solely MTA funding.

Comment:

Will additional studies regarding the feasibility be completed that are non-route specific, and which involve additional examinations to assist in scoping the design, construction, engineering, environmental, and other issues as well as providing meaningful information regarding total cost. When the idea of a feasibility study was first discussed, I recall the estimated costs exceed $5 million, and the federal funding allocated for such a study specified the non-route specific condition.

Response:

Yes, some additional non-route specific preliminary engineering can proceed as an initial element of the EIR/EIS Scoping and Project Description development. At

some point, of course, specific routes would need to be identified for the EIR/EIS to proceed with detailed environmental studies. Also, keep in mind that, as a general rule, the shortest, most direct route between the north and south termini, would most probably be the least costly.

TRAFFIC-LOCAL IMPACTS

Comments:

Please describe the facilities that would be needed to accommodate traffic using the 710 tunnel as it exists and enters the Pasadena Portal. The number of lanes, the total width of the new construction, associated land acquisitions requirements, and the car exhaust to be experienced in the open –air area between the portal and Routes 134 and 210 freeways.

Absent significant re-engineering of the 710/210/134 intersection and reconstruction of that intersection, Pasadena will likely experience a massive influx of traffic on our surface streets caused by drivers seeking ways to get around the already impassable intersection, especially during peak hours. What will Caltrans (or the builder) do to mitigate traffic impacts on surface streets? (Our worst-case scenario is played out daily at the intersection of the 134/101 freeways right now.)

Regarding the above increases (traffic on 210), how many cars are expected to exit the freeway and travel on City streets in northwest Pasadena and East Pasadena?

...Traffic using the facility would necessarily surface in the 710 Freeway Corridor above Columbia Boulevard-referred to as the Pasadena Portal- and would ... require significant roadway facilities for the interchange carrying traffic from and to the 710 tunnel from the existing Route 134 and 210 freeways. Obviously, detailed and accurate information about the traffic that would be brought to southwest Pasadena by reason of the new facility should be obtained, evaluated and understood by Pasadena as soon as possible and on an ongoing basis.

Response:

The EIR/EIS will include a traffic impact analysis covering local streets as well as for the 710/210/134 interchange. The appropriate traffic mitigation will be proposed once we have this definitive information. Previous traffic studies on the Route 710 Gap Closure Project have historically indicated overall reductions in surface street traffic in Pasadena, especially on north-south streets.

Comment:

Upon completion, what is the projected increase in traffic (both the number of cars and the percentage increase) on the 210 Freeway through northwest Pasadena? The 210 Freeway through East Pasadena?

Response:

The Assessment relied on the SCAG Year 2030 Regional model to develop rough order of magnitude traffic forecasts to assess the impacts of the tunnel alternatives on the freeway and arterial networks. The traffic modeling undertaken for the Assessment was intended to focus on the traffic flows in the tunnel link to complete the 'gap' and to assess the associated impacts along the adjacent freeways and arterial network. The traffic forecasts for the tunnel alternatives yielded a general reduction in traffic volumes on the adjacent freeways as compared to the No-Build alternative. However with tunnel alternatives completing the gap, additional traffic is attracted to the Route 710 north of the Interstate 10 freeway. Consequently, the Route 710 north and south of the tunnel, is anticipated to experience higher volumes of traffic compared to the No-Build alternative. The traffic forecasts predicts along I-210 north of the Route 710 connection will increase between 2000 to 2500 passenger car equivalents (pce) in the peak direction during the peak hours. This represents approximately a 7% increase over the No-Build alternative. For the I-210 at Allen Avenue (East of Route 710), there would be decreases in the order of zero to 750 pce in the Year 2030 peak flow direction in peak hours. It should be noted that different scenarios were tested based on a number of assumptions that are explained in more detail in the Final Report.

TRAFFIC - TRUCKS

Comments:

Truck traffic should be prohibited on the 710 to Pasadena. Truck traffic will contribute significantly to the congestion that will result from the 710 completion, especially if the intersection with the other freeways isn't re-engineered and reconstructed. At the very least, we should insist that truck traffic be absolutely prohibited on the 710/210/134 freeways from 6 a.m. to 9:30 a.m. and from 3:30 p.m. to 7 p.m.

Will trucks be allowed? If so, what is the projected increase in truck traffic (both the number of trucks and the percentage increase) that travels east 210? North 210?

Response:

As part of the Assessment, we examined facilities that could accommodate the full spectrum of vehicular traffic including trucks. Consequently, roadway and tunnel

facilities were conceived with design criteria that can carry all types of legal vehicles on the roadway. Although each tunnel alternative considered can accommodate all legal vehicles, the option to restrict heavy trucks from using the tunnel is not precluded. Whether to allow truck usage is a policy decision that could be addressed in the future.

CONSTRUCTION

Comments:

The Assessment Report does make clear that a 710 tunnel solution is a project of massive scale. Most highway tunnels around the world provide for two lanes in each direction Apparently a few tunnels provide for three lanes of traffic, with almost none having four lanes, except for projects in urban areas constructed not as tunnels but pursuant to "cut-an-cover" technology. If the 710 tunnel is built with four lanes of traffic in both directions over a length of more than 4 miles, it appears that nothing comparable to the project exists anywhere in the world.

The scale and complexity of the project is evident from certain other information in the Assessment Report. The total displacement and excavation of earth for a 710 tunnel would amount to about 6 million cubic yards of bulk material. This appears to be an unprecedented undertaking. In addition, there are significant questions regarding the 100 feet exhaust towers: the interchange facility between the tunnel and the Route 134 and 210 Freeways; and the impact of construction activity on west Pasadena once construction might get underway during the next 20 years.

The assessment report indicates that the construction of the tunnel requires that construction activity to be concentrated at the portals instead of spread along the entire route of say, a "cut-and-cover" project. Please describe the construction process that would occur in southwest Pasadena if this project moves forward, indication the number of vehicles, hours per day, days per week, and related implications as well as staging areas required to accommodate equipment, remove materials, and construction equipment and supplies. How long would the construction continue?

Response:

Over the past two decades, tremendous technological advancements have been made in the field of underground engineering and construction. Previously, a tunnel of the magnitude under consideration to complete the Route 710 gap would be beyond the realm of reality. However, today there are several major roadway tunnels under development that include an inside diameter of approximately 50 feet. Advancements in tunnel boring machines have enabled large urbanized communities to implement major highway tunnels to augment their transportation networks. Currently there are a number of tunnel projects in the construction phase that are of similar scale to the

Route 710 tunnel alternatives including the M30 Motorway in Madrid, Spain and the A-86 in Paris, France.

Construction of a project of this scale and magnitude will require extensive planning and coordination with the affected agencies, stakeholders and public. A product of the environmental process may include a list of potential restrictions and mitigations that may be mandated during construction. It is likely that the one or both areas outside the tunnel portals will be used for temporary offices, staging, logistics and trucking activities. The excavated materials will be transported to these areas, loaded onto trucks and hauled off-site via direct freeway connections at each end, which would reduce impacts to local streets.

VENTILATION/AIR QUALITY

Comments:

Traffic using the facility would necessarily surface in the 710 Freeway Corridor above Columbia Boulevard-referred to as the Pasadena Portal- and would involve the emission of huge volumes of exhaust in our area from vehicle operation through a mile or more of tunnel.

The implications of a 100 foot high exhaust tower in southwest Pasadena needs early and complete attention. It is my impression that while certain "cleansing" of the exhaust is currently feasible, significant pollution would be emitted on a 24-hour basis. This could dramatically adversely affect the area , including the Huntingdon Medical Center, and the concentration of medical offices in the area; the emerging biotech and other business activities in the commercial corridor of south Fair Oaks and south Raymond; the southwest Pasadena residential area; and the Blair High School educational complex, which is moving towards a K-12 scope of activity.

Please provide a detailed description of the exhaust towers contemplated in the Assessment Report, indicating the size in height. the and horizontal dimensions, the materials involved, and the available mitigation measure s to reduce the impact of such structures. Is it possible that more than three towers will be required. Please confirm that such a tower will be located in south-west Pasadena. As specifically as possible, please indicate whether such towers will be located north of California Boulevard or south of California Boulevard.

The 100 foot ventilation tower is much too massive and out of scale with other structures in the area where it is proposed. Why do they require a tower at the end of the tunnels? It would seem more workable to have the three towers interspersed along the alignment, one 25% of the way, one 50% of the way and one 75% of the way along.

Where will the ventilation towers be located?

What are the dimensions of the tower (i.e. height, width, depth)? I recall the height to be 100 feet.

Is there anything in the neighborhood of similar dimensions?

The study showed they could be as high as 100' feet – worst case. What's the best case?

Response:

This is a conceptual feasibility assessment and additional comprehensive modeling and analyses will be required to definitively develop the schematic layout of the ventilation system including the sizing of the ventilation towers. Based on our initial investigation and experience on other highway tunnel projects, we concluded ventilation shafts would be required at or near to each portal. The preliminary assessment indicates that they might be in the order of 100 feet high – a similar scale to some existing church towers for example. Shafts at intermediate locations would also be required, possibly at one or two other locations (say, approximately at mid-point or third points) but this would need much more extensive modeling and design before the exact number, location and size of these facilities can be defined.

Comment:

If trucks aren't allowed, do we need the same kind of exhaust towers?

Response:

Yes similar ventilation structures would be required with or without trucks.

Comment:

There's a tunnel under the English Channel – do they have exhaust towers?

Response:

The Channel Tunnel between England and France is a very different type of tunnel. The autos are not allowed to be driven through the tunnel. Autos are freighted through the tunnel on special trains. The tunnel carries these special trains as well as passenger trains and the ventilation systems required are therefore very different.

Comments:

Please describe the existing technology used to cleanse the exhaust accommodated by the towers, indicating what polluting materials are present and what portions thereof is

reliably removed by existing cleansing capability. Please describe the geographic reach of any pollution that would be disseminated by reason of the exhaust tower.

How is the exhaust that is emitted from the tower treated?

Response:

No specific analysis is done at this initial conceptual stage. Exhaust air would need be dispersed and diluted to concentrations that meet the stringent California Air Quality standards. There would also likely be even more stringent once any tunnel were completed and moreover the assessment of such air quality impacts would need to consider ongoing improvements in vehicle fleet emissions and the use of developing technologies to remove constituents of exhaust air such as particulate matter.

PORTALS/APPROACHES

Comments:

Pasadena's portion of the 710 should be completely covered, as well as that under South Pasadena. There's no reason Pasadena should suffer where other communities are not.

For the area in Pasadena where there's currently freeways in a cut – is it feasible to cover that?

Response:

The feasibility study was tasked to examine the feasibility of completing the 'gap' in the existing system and addressing added amenities like a cover over the existing freeway was not examined. However, covering a portion of the existing freeway is likely physically feasible and could be examined as part of the subsequent technical studies.

NOISE IMPACTS

Comment:

Upon completion, what is the projected increase in auto noise along the sound wall-less sections of the 210 Freeway (northwest Pasadena and East Pasadena)?

Response:

This analysis was not part of the study scope and would be addressed as part of any Environmental Impact Assessment process if it is decided to investigate the project further.

TOLLING

Comments:

There has been a suggestion that a portion of the funding be obtained through toll revenues, and I understand that a toll system at the Pasadena portal of the proposed project would significantly expand the interchange facility from what is otherwise required and perhaps require major land acquisition of major Pasadena properties adjacent to the corridor, such as Maranatha High School and Ambassador Auditorium, the Westgate Project and Old Pasadena. The implication to Pasadena of accommodating the necessary facilities for toll revenue system should, I hope, be examined in the near future.

If toll revenues constitute a source of funding for this project, please describe what expansion of the interchange is required to accommodate collection activities, and provide similar information regarding the size of the resulting facility, the construction period and land acquisition requirements.

Will tolls be charged?

Will peak hour tolls be charged?

Response:

Although a variety of potential funding sources including tolls were considered as a possible funding scenario, no determination has been made regarding the implementation of tolling on the Route 710.

COMMUNITY OUTREACH

Comment:

What will be the process going forward for community involvement and outreach?

Response:

If the tunnel concept were to move forward, Metro will request the lead agency to include community involvement and outreach as part of further studies. Community outreach is a required component of EIR/EIS process.

PROJECT FINANCE

Comment:

When might there be better financial projections about the cost revenues available for the tunnel?

Response:

In subsequent studies when it is determined whether the tunnel would be tolled, trucks would be allowed, etc.

CHANGING TECHNOLOGY

Comment:

What if technology changes in the next 10 or 15 years?

Response:

As stated in the Final Report it is expected that relevant technologies would continue to develop and the design process of any tunnel would need to take full account of such advances. These might include advances in the technology for "cleaning" exhaust air from the ventilation systems, including electrostatic precipitators and further development in the tunnel engineering and excavation equipment and techniques such as Tunnel Boring Machine construction.

ENVIRONMENTAL FEASIBILITY

Comments:

At such time as the environmental studies are initiated, will a project description be developed that covers in details the kind of information requested in the above related interchange, toll collection facilities, the exhaust tower, construction, and the geographic territory included in the environmental studies to (be) sure that all environmental implications from the project, in both construction and operation, are taken into account

in the conduct of the environmental studies. Will the project description be disseminated to stakeholders such as the City of Pasadena with sufficient time to allow the stakeholders to determine the adequacy of the description?

The study comes to the conclusion that the tunnel is environmentally feasible. Is there sufficient information before an EIR is completed to reach that conclusion?

Response:

The study required the examination of likely environmental issues that might arise from a tunnel solution and concluded that no insurmountable problems arose that could not examined in more detail as part of the later full EIR/EIS process. At this stage it was required to identify the potential types of environmental and other impact that might occur if a tunnel solution were to be adopted. It concluded that the types of anticipated impacts have found solutions of other similar projects. However, each project presents a set of unique issues and possible solutions and a full EIR/EIS and public outreach process would be necessary if it is decided to investigate a tunnel project further.

COST

Comment:

Please provide an analysis of the cost estimate presented in the Assessment Report, which appears incomplete in several respects. Cost factors apparently not included include, based on my understanding, no cost for electrostatic precipitators, land acquisition, project design, construction management, or toll facilities of any kind. The allowance for design contingency is only 15%, a number which is low for the current state of information about a massive and perhaps unprecedented project. I am told that the allowance for design contingency of 30 % or more would not be unreasonable. Further a reasonable estimate of inflation seems appropriate, since it is apparently in 2006 dollars, and construction would not begin for many years. Very little information is available about ground conditions and the cost to address environmental and community impact requirements. These are significant factors which cannot be ignored.

Response:

The cost estimates were prepared based on the information that were available at this stage, thus the cost estimates were focused on the construction costs. The cost estimates have not been presented as "all inclusive" program costs to implement the tunnel since the timing and funding is uncertain and many potential items that may be included are speculative at this juncture. This is the case for many items including the Electrostatic Precipitators and toll facilities; these options may or may not have application to the Route 710 tunnel. Your observations are very astute and more

technical studies are needed to adequately identify other program elements to establish a total implementation cost estimate. Also should the tunnel concept advance closer to reality, a horizon year will be established for construction and the total program costs can be escalated to the mid-point of construction.