MEMORANDUM

TO: Scoping Committee

FROM: Ohio Department of Transportation and the Consultant Team

DATE: October 9, 2003

RE: University Circle Access Boulevard

Dear Scoping Committee Member:

The following information addresses background information, operational and safety issues, and modeling results concerning the University Circle Access Boulevard (UCAB) located from the I-490 and East 55th Street intersection to the University Circle Area. Construction of the UCAB is an identified component of the Advanced and Maximum Hybrid Alternatives.

I. University Circle Access Boulevard Existing Condition

Description

The goal of the University Circle Access Boulevard is to provide direct access between the freeway system and University Circle to relieve traffic pressure on the Innerbelt Freeway. This new boulevard would also provide direct access to/from several east side neighborhoods, first-ring suburbs, the University Circle District and the existing freeway network.

Operations

The University Circle area is located 4 miles east of the Central Business District (CBD). A portion of the traffic that currently travels the Innerbelt Freeway is traffic destined for the University Circle area. Currently, there is not a good, direct connection to the University Circle area from points to the west and south. Access between the Innerbelt Freeway and the University Circle area is provided at the following interchanges:

I-90 and Carnegie Avenue/Prospect Avenue – For the purpose of this discussion, the two partial interchanges located at Carnegie and Prospect Avenues will be considered as a single interchange. This is a pair of partial interchanges that provide full access between the Innerbelt Corridor and the University Circle area.

I-90 and Chester Avenue – This interchange provides full access between I-90 and the University Circle area.

Thus, traffic travels along the Innerbelt Freeway to either the Carnegie Avenue/Prospect Avenue or Chester Avenue interchanges and then proceeds towards University Circle. This traffic must travel through as many as three of the four primary bottlenecks that exist along the Innerbelt Freeway.

No University Circle access problems associated with this pair of interchanges have been identified; however, commuters have questioned the original design that requires them to travel through the most heavily congested portions of the regional freeway system in order to access University Circle.

II. University Circle Access Boulevard Alternatives

Description

The proposed boulevard is part of the Advanced and Maximum Hybrid Alternatives. It would be a six-lane city street facility with a median (see Figure UC-5). The boulevard would begin near the existing intersection of I-490 and East 55th Street (see Figure UC-1). The boulevard would then follow the existing railroad right-of-way (Norfolk-Southern, CSX, and the Greater Cleveland Regional Transit Authority) to East 105th Street in the University Circle area. The boulevard would then either continue up East 105th Street to Carnegie Avenue or would connect to existing Martin Luther King Drive. Possible intersection locations for this new boulevard include: East 55th Street, Kinsman Road (U.S. 422), East 75th Street, East 79th Street, Buckeye Road, East 89th Street, East 93rd Street, Quincy Avenue and Carnegie Avenue.

Figures UC-2 through UC-4 show examples of what the new boulevard may look like. The photograph shown as existing on Figure UC-2 shows an aerial photograph of the existing area between East 55th Street, which runs from bottom left to top of the photo, to just east of Kinsman Road, which runs top center to bottom right of the photo. Grand Avenue can be seen just above the existing railroad corridor in the approximate center of the photograph. In the proposed photograph, it can be seen that the intersection of I-490 and East 55th Street has been moved north along East 55th Street to align with approximately Grand Avenue. Further, Grand Avenue has been replaced by the new University Circle Access Boulevard on the north slope of the existing railroad corridor. A street level perspective of this area is shown in Figure UC-4 showing existing Grand Avenue and the proposed UCAB. Figure UC-3 shows the UCAB corridor between East 75th Street and East 79th Street.

There are several alignments under consideration north and/or south of the railroad corridor. The alignment would be chosen during the environmental phase of the Cleveland Innerbelt Study if the UCAB were chosen as part of the Preferred Alternative.

III. University Circle Access Boulevard Findings

Operations

The growth in Vehicle Miles of Travel (VMT) within the Innerbelt Corridor is expected to be a modest 4.2 percent over the entire 25-year period. The Vehicle Hours of Travel (VHT) is expected to grow by 6.6 percent from 71,000 VHT in 2000 to 75,700 VHT in 2025. The Vehicle Hours of Delay (VHD) is expected to increase by 26 percent from 8,600 VHD in 2000 to 10,800 VHD in 2025. The majority (74 percent) of the increase in VHT is the result of increased congestion. Stated in another way, because the Innerbelt Freeway operates at or near capacity, even a modest increase in travel (VMT) causes a disproportionate increase in delay (VHD). The following discussion analyzes the effect of the increase in travel on the operational performance as measured in terms of level of service.

The UCAB was modeled for both peak periods (AM and PM peaks) and for Advanced and Maximum Hybrid Alternatives. The future model year considered is year 2025.

AM Peak Hour Modeling Results

It is estimated in the AM peak hour, the UCAB will carry 1,900 vehicles in the eastbound direction and approximately 1,800 vehicles in the westbound direction. The intersections throughout the corridor will perform at a LOS D or better. The arterial in the eastbound and westbound directions operates at an average LOS B.

PM Peak Hour Modeling Results

It is estimated in the PM peak hour, the UCAB will carry 1,600 vehicles in the eastbound direction and approximately 1,800 vehicles in the westbound direction. The intersections throughout the corridor will perform at a LOS D or better. The arterial in the eastbound and westbound directions operates at an average LOS B.

Synergistic Impacts with Southern Innerbelt Improvement Component

When the Southern Innerbelt Improvement component was modeled as part of the Intermediate Hybrid Alternative the UCAB component was not considered as part of the analysis. The Southern Innerbelt Improvement component alone, through the addition of mainline capacity, reduced cut-through traffic along the West 14th Street corridor from 1500 vehicles to 925 vehicles in the peak hour. It has been estimated that 1250 vehicles use West 14th Street as a cut-through in the AM peak hour on any given incident free day. Thus, it may be estimated that the Southern Innerbelt Improvement component alone reduces cut-through traffic by approximately 45%.

With the addition of the UCAB component in the Advanced Hybrid Alternative, cut-through traffic along West 14th Street was further reduced. Additional traffic from mainline NB I-71 and NB SR-176 is diverted to the I-490 exit ramp in advance of the I-71/SR-176 merge to access the UCAB. This reduced demand for the mainline NB I-71

facility in the Southern Innerbelt area, by more effectively using the underutilized capacity of the I-490 ramp and mainline facility. In turn, this reduced cut-through traffic along the West 14th Street corridor from 1500 vehicles to 725 vehicles in the peak hour. Thus, it may be estimated that the UCAB, when combined with the Southern Innerbelt Improvement component, reduces cut-through traffic by approximately 60%.

Potential Right-of-Way Impacts

The UCAB, depending on the alignment chosen, could require the taking of 20 to 30 residential units and 10 to 20 commercial units. All of these potential takings occur in an area subject to environmental justice considerations. The majority of these potential residential unit impacts come from a single apartment building on the north side of the railroad corridor between East 75th Street and East 79th Street. Also, up to eight historical/landmark sites could be impacted by the UCAB.

Several alignments are being analyzed. If an alignment on the northern side of the railway corridor was chosen, residential impacts would be at the higher end of the given range and commercial impacts would be at the lower end of the stated range. The opposite is true if a southerly alignment is chosen along the railway corridor. As this alternative is further analyzed in the environmental process, property impacts will be examined in greater detail before a recommended alignment is chosen.

Economical Impacts

Currently, the UCAB is being studied for economical enhancements/impacts to the adjacent areas of the UCAB. Results will be forthcoming.

IV. University Circle Access Boulevard Conclusions

The operational modeling of this component shows that the proposed construction of the University Circle Access Boulevard has a positive impact on operation. Cut-through traffic along West 14th Street is notably reduced when the UCAB is added. Further, the addition of the UCAB reduces traffic through three of the four primary bottlenecks within the Innerbelt study area. The reduction in cut-through traffic in the Tremont neighborhood, improved mainline freeway operation and reduction of vehicles utilizing the three primary bottlenecks will result in improved safety within the Innerbelt Freeway corridor. From an operational and safety standpoint, the UCAB has a positive impact on the Innerbelt Freeway and is recommended for inclusion in the Recommended Alternative. However, this recommendation must be contingent on positive results from the economical impact study of the UCAB, as it does have the largest number of potential Right-of-Way takes of any component considered.

Figure: UC-2

Boulevard: **Boulevard Alignment at Grand Avenue**

Existing

Proposed

Figure: UC-3

Boulevard: **Boulevard Alignment at East 73rd Street**

Existing

Proposed

Figure: UC-4

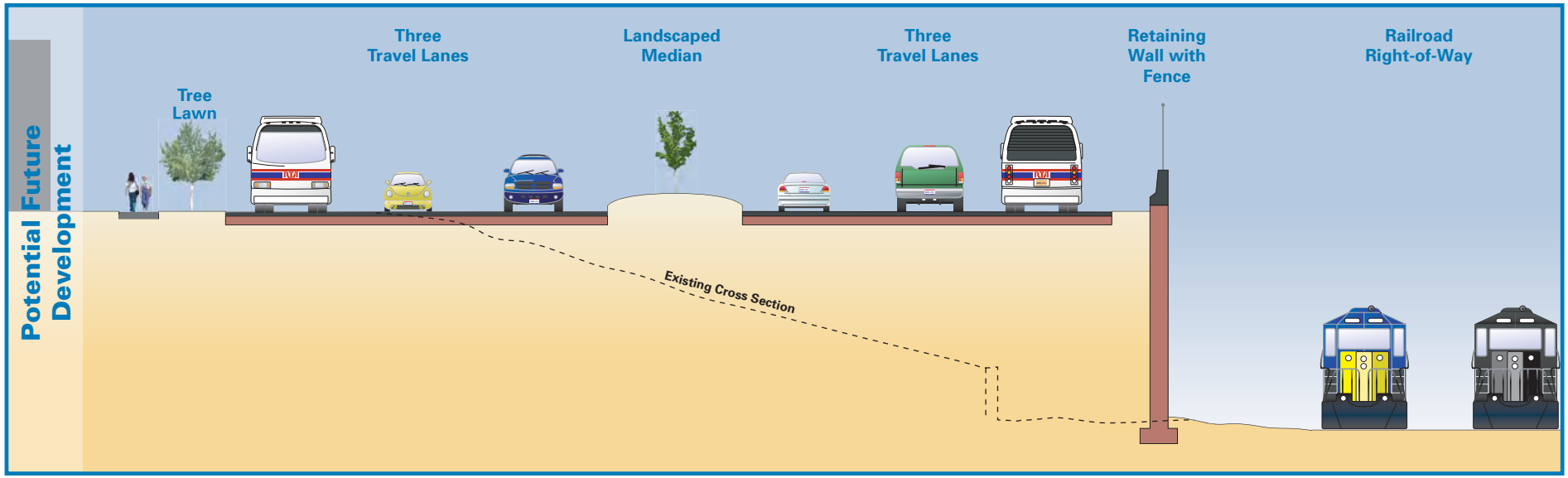
Boulevard: Neighborhood Rendering

Existing

Proposed

Figure: UC-5

University Circle Access Boulevard Cross Section



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