

Elgin O'Hare - West Bypass

West Bypass South Connection Hybrid Options White Paper

April 2009

Introduction

Various location options were considered for the West Bypass freeway connections near I-90 and I-294, and for the IL Route 83 Freeway connection at I-90 as part of the Elgin O'Hare - West Bypass (EO-WB) alternatives development process. This included seven options for the West Bypass South Connection near I-294 - Options A, B, C, D, E, F and G. The options begin at a common location south of the proposed tunnel under the West Bensenville Rail Yard to a southerly connection with I-294. Corridor location options were developed on the basis of stakeholder input, consideration of design controls, and adjacent land uses and constraints.

There are multiple design constraints and challenges for this section of the West Bypass. These include: industrial, commercial and residential development; major freight rail and intermodal facilities including the Bensenville Freight Rail Yard and the UPRR corridor; and O'Hare Airport facilities and design restrictions, including runway protection zones and associated glide path constraints.

Following an initial evaluation of the seven West Bypass South Connection Options, three options (Options E, F, and G) were dismissed because of major design feasibility issues (conflicts with adjacent O'Hare Airport runway protection zones), and major impacts to the Bensenville Rail Yard. The four remaining options (Options A, B, C, and D) were advanced for more detailed review and evaluation.

At a recent meeting between the EO-WB team and the Village of Bensenville (January 22, 2009), the Village requested that the team explore the viability of developing a hybrid connection option, combining features of Connection Options B and C, with the objective of using the available space between the existing railroad tracks and adjacent industrial properties west of the tracks.

The existing available clear width between the UPRR spur lines and mainline and the industrial buildings is 90 ft and 60 ft respectively west to east. Exhibit 1 shows a typical section of this existing corridor. Several UPRR spur lines are also located along this corridor between the UPRR mainline and the industrial buildings.

For Connections Option B and C, estimated roadway footprint ranges between 300' and 500' (approximately 150' to 250' offset from West Bypass centerline), which exceeds the available width between railroad tracks and the buildings on each side of the tracks. Connection Option B results in impacts to several large industrial properties west of the railroad tracks, causing substantially higher tax revenue losses and employment displacements. Connection Option C results in substantial rail impacts and constructability issues associated with constrained construction areas and periods (due to rail operations). Exhibits 2 through 5 depict the Connection Options B and C, and the Hybrid Options along with associated structure displacements.

The remainder of this document presents findings of this analysis.

South Connection Hybrid Options Considered

Two approaches were considered for the South Corridor B/C Hybrid Options. For each option, an initial assessment of potential structure displacements was performed, and

potential design viability issues related to each option were reviewed. Refer to Table 1 for an impact comparison for Connections B and C and Hybrid Options, Approach 1 and 2.

Approach 1

This concept would shift Option B to the east approximately 70 ft., resulting in the northbound lanes of the West Bypass spanning the existing UPRR tracks. The southbound lanes of the West Bypass would occupy the area west of the railroad. The estimated construction footprint and potential structure displacements for Approach 1 are shown on Exhibit 4.

A review of Approach 1 revealed the following key design and impact issues:

- While the size of building footprint directly impacted by the West Bypass construction footprint would be reduced (when compared to Option B), building displacement would not be avoided. This is due to the width requirements for the West Bypass roadway section, and the limited available offset between the west edge of the UPRR corridor and adjacent buildings. Damage to parking and loading areas due to permanent structures or construction area requirements, may cause full displacement of the building. Exhibit 4 depicts a proposed cross section location for Approach 1 represented on Exhibit 6.
- Additional building displacements would be required east of the UPRR to accommodate the ramp connection from the northbound West Bypass to Franklin Ave.
- Similar to Option C, Approach 1 has major constructability issues associated with constructing a freeway spanning over an active railroad. Severely constrained construction periods (imposed by the railroad), and construction staging (longer construction period and remobilization issues) make this option unworkable.

Approach 2

This concept would split the West Bypass directional movements, placing the northbound lanes east of the UPRR, and the southbound lanes west of the UPRR. The inside edge of the roadways would be placed as close as possible to the edge of the existing rail lines (approximately 25 ft. from center of nearest track). The estimated construction footprint and potential structure displacements for Approach 2 are shown on Exhibit 5.

A review of Approach 2 revealed the following key design and impact issues:

- Splitting the West Bypass movements with the rail line would cause a greater number of building displacements than Options B, C, and Approach 1. This is due to the limited offset between the UPRR corridor and adjacent buildings, the width requirements for the northbound and southbound West Bypass roadway sections, and the presence of vital loading and parking areas adjacent to the rail line. Exhibit 5 depicts a proposed cross section location for Approach 2 represented on Exhibit 7.

Conclusion

A review of potential modifications to West Bypass South Connection Options B and C via a hybrid concept was conducted. The hybrid concepts would result in greater building impacts, with major design viability issues for Approach 1. Due to the building and railroad impacts, cost and constructability challenges listed above, it was concluded that a hybrid concept would not be pursued any further.