

Construction Staging of Access Road Alternatives

Construction staging is defined as the steps the contractor will need to take during construction in order to build the access road. A plan for construction staging will need to be implemented to ensure safe and efficient construction operations as well as to minimize community impacts during construction. The Detroit River International Crossing (DRIC) study team has been reviewing construction staging practices and applying their knowledge gained from other complex freeway construction projects to develop preliminary staging plans for the access road.

Highway 3 and Huron Church Road Traffic During Construction

The objective during construction of the new access road is to maintain existing traffic on the Highway 3 and Huron Church Road corridors. Four lanes of traffic will be maintained along Highway 3 during construction. It is also planned that six lanes of traffic will be maintained along Huron Church Road during construction as required. Access to and from all major crossing roads, commercial and residential entrances will be maintained during construction.

Sequence of Construction

For each Practical Alternative, the access road is comprised of a freeway section (the Highway 401 extension) and the future service roads (Highway 3/Huron Church Road). The following is a typical sequence of construction for this type of infrastructure project:

Practical Alternatives 1A and 1B (at-grade or depressed with one way service roads)

The first phase of construction will focus on the relocation of utilities and other municipal services. There are numerous utilities located within the corridor, including Hydro, Bell, Union Gas, cable television as well as municipal services such as watermains, storm sewers, municipal drains and sanitary sewers.

The next construction phase would focus on building the future service roads, the realignment of the existing municipal roadways (where necessary), and the construction of any temporary staging roads. During this phase, traffic will remain primarily on the existing Highway 3/Huron Church Road with some routing onto localized temporary staging roads within the corridor.

The final phases of construction would focus on completing the new freeway itself. At-grade sections can be constructed using conventional freeway construction methods typically used on 400-series highways throughout the province. Depressed sections will be constructed by using excavation techniques suitable for urban areas. A variety of methods can be employed to minimize the overall property requirements of the project. During the final phases, traffic will be relocated onto the newly constructed service roads with some routing onto localized temporary staging roads within the corridor.

Practical Alternatives 2A and 2B (at-grade or depressed with a parallel service road)

The construction staging sequence and methods for these Practical Alternatives are similar to those for practical alternatives 1A and 1B. However, the alignment for Practical Alternatives 2A and 2B is, for the most part, beside the existing roadway so there will be less utility relocation and realignment of roadways required to construct these alternatives. During construction, traffic will remain primarily on the existing Highway 3/Huron Church Road with some routing onto localized temporary staging roads within the corridor.

Practical Alternative 3 (tunnel)

The first phase of construction will focus on the relocation of utilities and other municipal services. There are numerous utilities located within the corridor, including Hydro, Bell, Union Gas, cable television as well as municipal services such as watermains, storm sewers, municipal drains and sanitary sewers.

The tunnel box itself would be constructed in two stages. In each stage, the first sequence of tunnel construction would focus on the realignment of the existing roadways (where necessary) and temporary staging roads. During this phase traffic will remain primarily on the existing Highway 3/Huron Church Road with some routing onto localized

temporary staging roads within the corridor. The next phase of construction would focus on the construction of the tunnel structure itself using the cut and cover tunnel method. During this phase, traffic will be routed primarily onto temporary staging roads within the corridor.

Once construction of the tunnel structure is in place, remaining features such as ventilation systems, pumping stations, power systems will be constructed, and the surface road network will be completed.

Duration of Construction

The depressed and tunnel alternatives require significantly more complex construction than the at-grade alternatives. These alternatives, particularly the tunnel, will require a more intense construction period than the at-grade alternatives. The overall schedule will depend on equipment and labour availability, and further details of staging which will be determined in later phases of design.