

# Concord Road Business Park Access Improvement Study

## Study Results and Recommendations

### Conclusions and Recommendations

The I-95 Industrial Park Detailed Alternatives Report studies with a greater level of detail, the three alternatives that were identified in the high-level alternatives analysis report from December 2020 and recommended in the summary document dated March 2021. All three of the alternatives in this detailed study meet the goals of the project.

The goals of this I-95 Industrial Park Access Study are to:

- Reduce congestion on the roadway network impacted by business park traffic; and to
- Improve safety for traffic between the I-95 Industrial Park and Bridgewater Business Park traveling to/from I-95

Each of the three alternatives contain these common components:

**Commerce Drive to Bethel Road – Highland Avenue Connection (Chester Township)** – This new connection will provide access between Commerce Drive in the I-95 Industrial Park, across a new bridge over the CSX rail lines, and Bethel Road via Green Street. This component is critical to reducing Industrial Park traffic on Concord Road and Bethel Road by providing a more direct access to I-95.

**Highland Avenue / Green Street / Bethel Road/I-95 Ramps Roundabout (City of Chester)** – With the addition of the Commerce Drive to Bethel Road Connection, this intersection component is a critical part of the project improvements. The Green Street leg will change its use from a low-volume local road to a collector road with higher truck volumes, as much of the traffic from the Industrial Parks will flow through this intersection.

**Highland Avenue / 15th Street Roundabout (City of Chester)** – The roundabout safely accommodates the driveways that are accessed within the intersection. This design also eliminates the conflicting dual access point for the NB I-95 on ramp and residential South Forwood Street. Access to I-95 northbound would be relocated to a new on-ramp from the intersection of Township Line Road with Renshaw Road. If it becomes necessary, the roundabout could be designed to keep access to NB I-95 at its current location.

**New I-95 On-Ramp and Township Line Road / Renshaw Road / SR 8015 Ramps Signalized Intersection (City of Chester and Upper Chichester Township)** – With the proposed closure of the existing I-95 northbound on-ramp at Highland Avenue / South Forwood Street, a new ramp connection to I-95 northbound would be provided adjacent to the existing off-ramp from US 322 EB / I-95 NB. The addition of the New I-95 on-ramp would require a reconfiguration of this existing intersection to include a channelized right turn only from Renshaw Road.

**Concord Road / McDonald Boulevard/ Chester Creek Business Center Drive Roundabout (Chester Township)** – This existing intersection currently operates over capacity and is anticipated to operate over capacity in future years under its current stop-controlled configuration. The proposed roundabout improves operation and safety.

#### Comparison of Alternatives 2, 2B, and 4

Alternatives 2, 2B and 4 operate very similarly from a traffic perspective. Each alternative improves access for traffic between I-95 and the I-95 Industrial Park and Bridgewater Business Park. Each alternative also reduces congestion on the roadway network impacted by business park traffic by providing the new connection across the CSX railroad and improving the operation of the intersection of the Highland Avenue / Green Street and Bethel Road / I-95 southbound ramps to attract vehicular traffic to that route.

Alternative 2 slightly outperforms the other two options when considering the impacts to the local road network. Alternative 2B requires Bridgewater Business Park traffic to use Concord Road while Alternative 4 has Bridgewater Business Park traffic using SR 452. Alternative 2 allows Bridgewater Business Park traffic to cut through the I-95 industrial park and avoid the local roadway network thus better meeting the need of reducing congestion on the local road network.

Since Alternatives 2, 2B and 4 operate very similarly from a traffic perspective, each alternative was examined closely to identify differences in impacts and costs for consideration of a recommended alternative for preliminary design.

The alternatives share several common components, so it is understandable that they have similar environmental impacts. However, there is appreciable difference in wetland and stream impacts as shown below in Table 10.1. Alternatives 2 and 4 have more impacts than Alternative 2B.

<b>Table 10.1: Wetland and Stream Impacts</b>			
<b>Alternative</b>	<b>Stream Crossings</b>	<b>Floodplain Fill (acres)</b>	<b>Wetland Fill (acres)</b>
2	Baldwin Run	0.22	0.83
2B	None	None	0.37
4	Baldwin Run	0.67	1.20

### **Final Comparison of Alternatives**

**Alternative 2** – In addition to the shared components, this alternative contains a new road to connect the Bridgewater Business Park to the I-95 Industrial Park. This connection includes a new bridge spanning Baldwin Run.

Estimated construction cost	\$28,800,000
Estimated ROW cost	\$ 3,152,000
Estimated Utility Cost	<u>\$ 567,000</u>
Total	\$32,519,000

**Pros:**

- Less wetland and stream impacts than 4.
- Less total cost than 4.

**Cons:**

More wetland/stream impacts than 2B due to bridge over Baldwin Run.

- Likely the least favorite of representatives from the I-95 Industrial Park and Bridgewater Business Park. They do not like the connection between the parks.
- Splits the Alloy Surfaces parcel and forces an adjustment of their driveway.
- Requires a 105/404 permit for a new crossing of Baldwin Run.
- Higher total cost than 2B due to bridge over Baldwin Run.

**Alternative 2B** – In addition to the shared components, this alternative contains upgrades to several intersections on Concord Road. Alternative 2B has the direct connection from the I-95 Industrial Park to the Bethel Road/Highland Ave intersection but requires traffic from the Bridgewater Business Park to access Concord Road as it does currently. Since the Bridgewater Business Park traffic would need to utilize Concord Road to get to and from I-95, upgrades would be provided at Concord Road intersections with Bridgewater Road, Engle Street, and Bethel Road.

Estimated construction cost	\$27,000,000
Estimated ROW cost	\$ 3,196,000
Estimated Utility Cost	<u>\$ 685,000</u>
Total	\$30,881,000

**Pros:**

- No stream impacts and least wetland impacts.
- Avoids the need for an additional crossing of Baldwin Run.
- Provides upgrades at Concord Road intersections with Bridgewater Road, Engle Street, and Bethel Road.
- Lowest total cost of all three alternatives.

**Cons:**

- Forces Bridgewater Business Park traffic to use Concord Road for access with I-95. Provides least reduction of Bridgewater Business Park traffic to Concord and Bethel Roads.

**Alternative 4** – In addition to the shared components, this alternative contains a new road to connect the Bridgewater Business Park directly to SR 452. This new road would extend from western the end of Bridgewater Road in Chester Township, through Upper Chichester Township, connecting to SR 452 in Aston Township via Turner Industrial Way. This connection includes a new bridge spanning Baldwin Run in Aston Township. Because this configuration would shift additional traffic onto SR 452 and down to the interchange with I-95, improvements to that interchange are also proposed.

Estimated construction cost	\$34,000,000
Estimated ROW cost	\$ 3,653,000
Estimated Utility Cost	<u>\$ 564,000</u>
Total	\$38,217,000

**Pros:**

- Will lead to upgrades at the intersections at the I-95 / SR 452 interchange that are operating over capacity.
- Likely the favorite of officials from the I-95 Industrial Park and Bridgewater Business Park because they each get their own access.

**Cons:**

- Highest wetland and stream impacts.
- Requires a 105/404 permit for a new crossing of Baldwin Run and more extensive wetland impacts than the other alternatives. and wetlands.
- Not favored by Aston or Upper Chichester Townships because it adds more traffic to already congested SR 452.
- Highest total cost of all three alternatives.

Based on the results of this study our team ranks the preferred alternatives in this order:

1. Alternative 2B
2. Alternative 2
3. Alternative 4