

## 6. Comparison of Environmental Impacts

This chapter summarizes the anticipated environmental impacts – adverse and beneficial – that would be expected from implementation of the HOV/TOL Alternative evaluated in the AA/DEIS and the new build concepts. As a benchmark, effects from the No-Build Alternative are also presented. Table 6-1 summarizes the anticipated environmental impacts. Note, the table presents separate information for Concept B1 and its design option, Concept B2. But unless the effects are markedly different, the text simply describes the effects of Concept B.

**Table 6-1. Changes in the Environmental Impacts**

Environmental Issue	No-Build	AA/DEIS HOV/TOL	Concept A Bi-Directional	Concept B1 2-Lane Reversible	Concept B2 2-Lane Reversible (Optional Slip Ramps)	Concept C 3-Lane Reversible
Transportation (traffic)	●	○	◐	◐	◐	○
Transportation (transit)	●	◐	◐	◐	◐	◐
Transportation (freight)	◐	NA	◐	◐	◐	◐
Transportation (safety)	●	○	◐	◐	◐	◐
Property Acquisition	○	●	○	○	○	○
Land Use	◐	○	○	○	○	○
Population and Employment	○	●	○	○	○	○
Economic Impacts	○	●	○	○	○	○
Neighborhoods and Community Facilities	○	●	○	○	○	○
Environmental Justice	○	●	○	◐	◐	◐
Visual Quality and Aesthetics	○	●	○	◐	◐	○
Parklands and Other Section 4(f) Properties	○	○	○	○	○	○
Historic/Archaeological Resources	○	○	○	○	○	○
Air Quality	◐	○	○	○	○	○
Noise and Vibration	○	●	◐	◐	◐	◐
Ecosystems	○	●	◐	◐	◐	◐
Water Resources	○	●	◐	◐	◐	◐

**Table 6-1. Changes in the Environmental Impacts (continued)**

Environmental Issue	No-Build	AA/DEIS HOV/TOL	Concept A Bi-Directional	Concept B1 2-Lane Reversible	Concept B2 2-Lane Reversible (Optional Slip Ramps)	Concept C 3-Lane Reversible
Geology and Soils	○	◐	○	○	○	○
Hazardous Materials	○	◐	○	○	○	○
Safety and Security	○	◐	○	◐	◐	○
Construction Impacts	○	●	◐	○	○	◐
Indirect Impacts	○	●	◐	◐	◐	◐
Cumulative Impacts	○	●	◐	◐	◐	◐

Notes:



= indicates substantial adverse environmental impact.



= indicates moderate adverse environmental impact.



= indicates little or no adverse environmental impact, and potential beneficial effects.

NA = Not applicable. Freight traffic would use separate facilities under the HOV/TOL Alternative and therefore is not comparable to the No-Build Alternative or any of the new concepts. Moreover, GDOT policies changed following the publication of the AA/DEIS and no longer support the construction of such facilities.

### Transportation (traffic)

- For the HOV/TOL Alternative as well as the new build concepts, there would be a marginal reduction in traffic congestion in the general-purpose lanes due to vehicles switching into the managed lanes.
- For the HOV/TOL Alternative and the new build concepts, traffic using the managed lanes on both I-75 and I-575 would have improved level-of-service, LOS C or better operations.
- Increases in total daily traffic throughput on I-75 and I-575 for the reversible-lane concepts would exceed the traffic volumes forecast for either the HOV/TOL Alternative or Concept A, the bi-directional concept.

### Transportation (transit)

- Transit travel times would be better in the managed lanes for the HOV/TOL Alternative as well as the new build concepts and would be better than travel in the general-purpose lanes.
- Trade-offs would exist between the increased transit services under the HOV/TOL Alternative and the increased capacity and level-of-service for the reversible-lane concepts. All alternatives would provide improved service compared to the No-Build Alternative.

**Transportation (freight)**

- GDOT newly adopted policies would not permit freight trucks in new highway managed lane systems. As a result, travel times and reliability for freight trucks reported for the HOV/TOL Alternative in the AA/DEIS are no longer valid. Future conditions for freight truck travel under the new build concepts would be similar to existing conditions.
- Under the HOV/TOL Alternative and the new build concepts, however, the majority of freight truck traffic would be expected to continue to avoid traveling during peak periods.

**Transportation (safety and security)**

- The new travel lanes constructed as part of the HOV/TOL Alternative as well as the new build concepts would be built to current engineering design standards. They would have full shoulders, which would be an improvement for emergency access and safety compared to the existing general-purpose lanes.
- As a result, a greater proportion of traffic using the highway corridor would generally have improved safety and security under the HOV/TOL Alternative or any of the new build concepts.

**Property Acquisitions**

- The HOV/TOL Alternative would result in the acquisition of over 130 acres of right-of-way with 93 full acquisitions and 197 partial acquisitions, for a total of 290 affected parcels and 341 displacements.
- As is the case in the HOV/TOL Alternative, the new build concepts would include new lanes only in the medians of I-75 and I-575 north of the I-75/I-575 interchange, thus eliminating right-of-way acquisition. And south of the I-75/I-575 interchange, the new build concepts would be constructed almost entirely within the existing highway right-of-way.
- Due to the substantial reduction in project footprint (four TOL and the BRT facilities eliminated), the overall adverse effects from right-of-way acquisition for the new build concepts would be about 25 percent or less than the amount required for the HOV/TOL Alternative.
- Concept A would require more right-of-way acquisition, more parcels, and more displacements than Concept B because the concept would have two managed lanes on both the west side (same as Concept B), but two additional managed lanes on the east side.
- Concept B would require a total of about 13 acres of right-of-way and would affect an estimated 59 parcels with 15 displacements. The required right-of-way acquisition for Concept B1 and the optional design option Concept B2 would be the same.
- While Concept C provides three reversible lanes compared to the two reversible lanes of Concept B, it would require only about 5 acres of right-of-way and would affect an estimated 27 parcels with no displacements.



### **Land Use**

- The HOV/TOL Alternative as well as the new build concepts are all consistent with ARC planning policies as well as local plans and policies.

### **Population and Employment**

- The effects on population are directly related to the number of partial and full acquisitions, so adverse effects of the HOV/TOL Alternative and the new build concepts would be very reflect the qualitative effects described above for property acquisitions.
- The improved transportation effectiveness (enhanced access and reduced travel time) of the reversible-lane concepts compared to the bi-directional concept and HOV/TOL Alternative could attract residents and businesses to locate in the project corridor.

### **Economic Impacts**

- The economic effects are directly related to the number of partial and full acquisitions, so adverse effects of the HOV/TOL Alternative and the new build concepts would be reflect the qualitative effects described above for property acquisitions.
- Due to the reduction in project footprint, overall displacement impacts and reduction in property tax revenues associated with the new build concepts would be substantially less than those of the HOV/TOL Alternative.
- Due to the scaled back scope of the new build concepts, construction spending would similarly generate substantially fewer construction jobs compared to the HOV/TOL Alternative.

### **Neighborhoods and Community Facilities**

- Due to the reduction in displacement of both residential and commercial properties, adverse effects on overall neighborhood cohesion for the new build concepts would be substantially less than the HOV/TOL Alternative.
- The new build concepts, however, would have fewer – about half as many – direct access ramps to the proposed new managed-lane system compared to the HOV/TOL Alternative.

### **Environmental Justice**

- Due to the substantial reduction in property acquisitions, substantially fewer numbers of minority and low-income residents (environmental justice populations) under the new build concepts would be adversely affected by displacement and relocation compared to the HOV/TOL Alternative.
- None of the new build concepts would have direct access ramps to the managed-lane systems located near Franklin Road, a minority and low-income neighborhood. This is a loss of access to the proposed highway managed-lane system compared to the HOV/TOL Alternative.

- For low-income and transit-dependent travelers, travel time and reliability of using the new build concepts would be generally better than under the HOV/TOL Alternative.
- Except for the Concept A, which requires widening on both sides of the highway, the reversible-lane concepts would require widening primarily on the west side of the highway between I-285 and I-575. These effects, however, are substantially less than the potential adverse effects on environmental justice populations under the HOV/TOL Alternative.

### **Visual Quality and Aesthetics**

- The visual effects of the HOVTOL Alternative were primarily linked to the increased width of at-grade highway pavement. The combination of the two lanes in each direction for both the HOV-lane system as well as the TOL-lane system would increase the highway by eight travel lanes compared to existing conditions south of the I-75/I-575 interchange.
- The widening of the highway for Concept A and Concept C would similarly require highway widening for at-grade facilities, but the increased width would be between only two and four additional lanes south of the I-75/I-575 interchange.
- In contrast to other alternatives, Concept B is proposed to be built largely elevated, but generally within the existing right-of-way between I-285 and I-575. These visual effects would be greater than the other new build concepts, but less than those for the HOV/TOL Alternative.

### **Parklands and Other Section 4(f) Properties**

- The HOV/TOL Alternative as well as the reversible-lane concepts would not cause adverse effects on parklands or other Section 4(f) resources.

### **Historic and Archaeological Resources**

- The HOV/TOL Alternative as well as the reversible-lane concepts would not cause adverse effects on historic or archaeological resources.

### **Air Quality**

- In contrast to the No-Build Alternative, the HOV/TOL Alternative and new build concepts are part of an approved and conforming TIP.
- The HOV/TOL Alternative and the new build concepts would not cause or exacerbate violation of National Ambient Air Quality Standards (NAAQS).
- In addition, the HOV/TOL Alternative and new build concepts would be expected to slightly reduce carbon monoxide (CO) and volatile organic compounds (VOC), and slight increase particulate matter (PM) 2.5.

### **Noise and Vibration**

- Due to the reduced project footprint, the transportation facilities under the new build concepts would be farther distant from noise-sensitive land uses compared to those exposed to noise levels under the HOV/TOL Alternative.



- The new build concepts would have reduced noise levels compared to the HOV/TOL Alternative. This is because the original noise modeling assumed the truck-only lanes would be located on the outside of the highway and would cause higher noise impacts.
- Conditions for the new build concepts would be somewhat worse compared to existing noise levels considering the highway facilities would be widened with additional travel lanes with very little additional right-of-way acquired south of the I-75/I-575 interchange.

### **Ecosystems**

- Due to the substantial reduction in the project footprint and required highway widening for the new build concepts south of the I-75/I-575 interchange, overall adverse effects on habitat would be substantially reduced compared to the HOV/TOL Alternative, especially considering the fewer number of direct access ramp interchanges proposed. These impacts, however, would be greater than the No-Build Alternative.

### **Water Resources**

- Due to the substantial reduction in the project footprint, overall adverse effect on water resources from the new build concepts would be substantially reduced compared to the HOV/TOL Alternative.
- These effects of the new build concepts, however, would be greater than existing conditions. The at-grade Concept A and Concept C would have increased adverse effects to Rottenwood Creek, which parallels the east side of the highway near Delk Road. Concept B would be elevated and would minimize potential adverse effects on water resources.

### **Geology and Soils**

- Geology and soils effects of the new build concepts would be similar in nature as the adverse effects of the HOV/TOL Alternative. However, substantially less ground would be disturbed due to the substantially reduced footprint of the new build concepts.

### **Hazardous Materials**

- Due to the greatly reduced project footprint for the new build concepts, the overall adverse effects would be similar, but reduced in magnitude compared to the HOV/TOL Alternative. Due to the suburban and rural character of the corridor, however, the overall risk of contaminated soils should be considered low to moderate.

### **Safety and Security**

- Improved mobility and travel time for the managed-lane systems for the new build concepts as well as the HOV/TOL Alternative would similarly improve emergency response times.

- Emergency response times for incidents in the general-purpose lanes for the HOV/TOL Alternative and the new build concepts would be similar to the No-Build Alternative due to strong “latent” demand, especially during peak periods when level of service is very low.
- The elevated portion of Concept B would provide additional emergency access, safety and security concerns compared to Concept A and Concept C.

### **Construction Impacts**

- Construction duration for the HOV/TOL Alternative would be about six years. The duration for the new build concepts would all be about half as long due to the substantially reduced scope of the construction activities.
- There would be trade-offs in at-grade construction for Concepts A and C compared to the construction associated with the elevated travel lanes for Concept B. The construction of the elevated structures, however, would have minimal effects on highway traffic during construction.
- The types of temporary short-term construction effects of the new build concepts would be similar to the HOV/TOL Alternative and would include adverse effects from construction noise and dust, changes in vehicular access and visual quality, and potential temporary degradation of surface water quality.

### **Indirect Impacts**

- The indirect effects of the HOV/TOL Alternative would generally be expected to be greater than the new build concepts due to the influence of the truck-only lanes, greater number of re-constructed interchanges, and substantial displacement due to property acquisition.

### **Cumulative Impacts**

- Cumulative effects of the new build concepts would be similar to those described for the HOV/TOL Alternative, but the magnitude of these effects would be reduced.

## **6.1 Conclusions**

Based on the above qualitative assessment, the anticipated adverse effects on the environment from the new build concepts are fully anticipated to result in environmental impacts that are similar to, but generally substantially reduced from those disclosed in the AA/DEIS for the HOV/TOL Alternative. In particular, required property acquisition associated with the new build concepts would be between about 3 percent and 25 percent of the acreage required for the HOV/TOL Alternative. In turn, this dramatic reduction in property acquisition impacts would also result in substantial decreased effects on land use, population and employment, economic impacts, as well as neighborhood and community impacts. The substantial reduction in the at-grade or elevated footprint of the new build alternatives also would greatly reduce adverse effects on ecosystems, water resource, soils, and hazardous materials.





The AA/DEIS, however, also stated additional and more detailed environmental studies would be conducted prior to the completion of the environmental review process. These studies would be consistent with NEPA practices and the standards established by the recently updated GDOT *Environmental Procedures Manual* (GDOT 2008a). The studies would include the following:

- Updated land use consistency analysis
- Updated acquisition impacts and associated effects on population, employment, businesses, and local government revenues
- Expanded environmental justice analysis and community impact assessment
- Updated noise and air quality analysis based on the new ARC 2008 Travel Demand Forecasting Model
- More detailed ecology, water, and hazardous materials analysis.

The completion of these new environmental studies would provide updated and more detailed information and analysis for the new build concept selected as the preferred alternative. However, it is not expected that this environmental impact assessment would include environmental impacts that would be new or substantially different in magnitude than those discussed above for the several new build concepts.