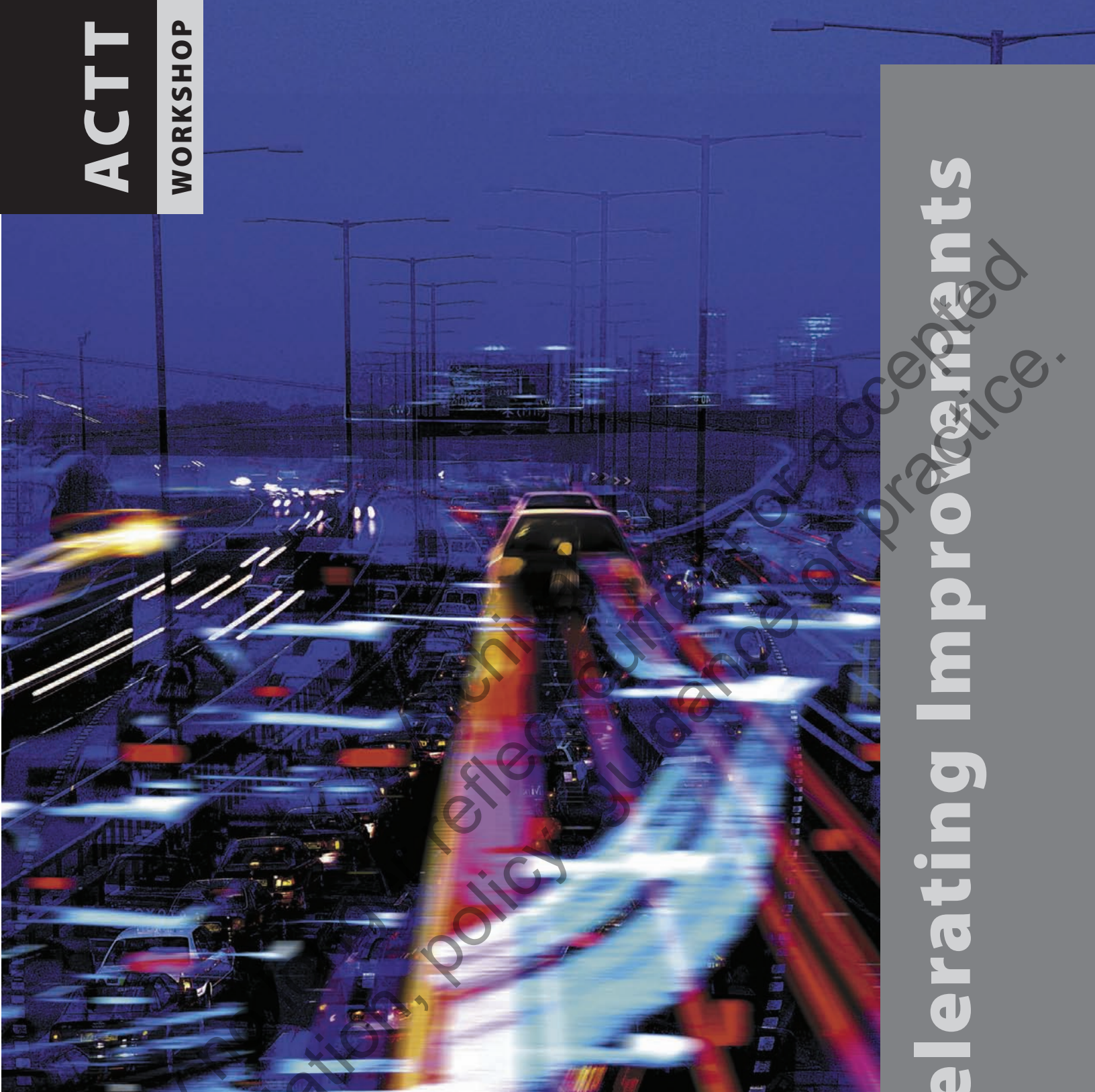


ACTT

WORKSHOP



Accelerating Improvements



U.S. Department of Transportation
Federal Highway Administration



WHY ACTT?

- ACTT provides a fresh outlook by bringing national experts to your planning table.
- ACTT introduces innovations that have been tested elsewhere.
- ACTT saves time: according to FHWA's ACTT II report, published in March 2005, "most agencies have found ways to slice construction time by 30 percent or more."
- ACTT saves money: ACTT suggestions enabled New Jersey to reduce its budget for the Route 46 bridge project from \$10 million to \$7.2 million.
- ACTT works for you and your customer!

How Do I ACTT?

- Select a corridor: ACTT is most helpful when applied during the project development phase.
- Make a workshop proposal to ACTT team members, and submit a copy of your proposal to the FHWA Division Office. Include details on the project corridor, timeline and goals.
- Hold a pre-workshop meeting with the ACTT management team.
- Select a meeting site, and coordinate workshop details with the FHWA Division Office.
- Host the workshop.
- Draft a report for submittal to FHWA.
- Incorporate ACTT in to project operations.

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Accelerating Improvements

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U.S. Department of Transportation
Federal Highway Administration



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Those planning efforts took center stage when Georgia Governor Sonny Perdue introduced his Fast Forward Congestion Relief Program to State residents in April 2004. Fast Forward is a comprehensive six-year, \$15.5 billion transportation program designed to relieve congestion and spur economic growth by accelerating existing projects. It does so by utilizing a combination of regular GDOT funding, General Obligation and Guaranteed Revenue Bonds (GRB) and GARVEE bonds to implement both short- and long-term congestion relief strategies, including the expansion of high-occupancy vehicle, or HOV lanes in metropolitan areas.

Not surprisingly, the I-75 from SR 54 North to Aviation Boulevard – for HOV Lanes project in Atlanta is part of the governor's Fast Forward program. And, as of December 2004, it became part of the Accelerated Construction Technology Transfer, or ACTT, process as well when transportation officials from around the nation came together to address issues surrounding the \$90 million reconstruction project.

The primary objectives of I-75 from SR 54 North to Aviation Boulevard – for HOV Lanes are to add northbound and southbound HOV lanes; reconstruct five interchanges, including one system-to-system interchange (I-285/I-75); and add noise barriers. GDOT's preferred typical section includes one or two barrier-separated HOV lanes in each direction with at least one new, exclusively-HOV interchange. The north end of the project will connect to existing HOV lanes but will require special coordination as it is near the airport, which is a major traffic generator.

With the above in mind, GDOT and the ACTT management team established six skill sets for the Atlanta workshop:

- Construction.
- Geometrics.
- Innovative Contracting and Financing.
- Public Relations.
- Structures.
- Traffic/Safety/ITS.

Over the course of the workshop, each skill set compiled a list of recommendations for the I-75 project. GDOT is in the process of reviewing these suggestions and incorporating them in to I-75 from SR 54 North to Aviation Boulevard – for HOV Lanes.

1.1. Opening Session

The I-75 from SR 54 North to Aviation Boulevard – for HOV Lanes workshop took place November 30 to December 2, 2004, at the Georgia Tech Global Learning & Conference Center in Atlanta, Georgia.

Dan Sanayi, construction and systems preservation engineer for FHWA, served as the workshop moderator. Following a brief orientation session for facilitators and note-takers, the workshop commenced with welcoming remarks from GDOT Commissioner Harold Linnenkohl. Linnenkohl outlined the significance of the project to the Atlanta area and asked workshop participants to be creative in identifying methods for achieving project goals, minimizing construction time and maintaining work zone safety. FHWA Georgia Division Director Robert Callan spoke next, reemphasizing the importance of minimizing impacts to the community.

Dave Gehr, vice president for Parsons Brinkerhoff and former commissioner of Virginia DOT, followed with a discussion of “Why ACTT, Why Now,” after which workshop participants introduced themselves. The group then toured the project corridor.

1.2. Workshop Process

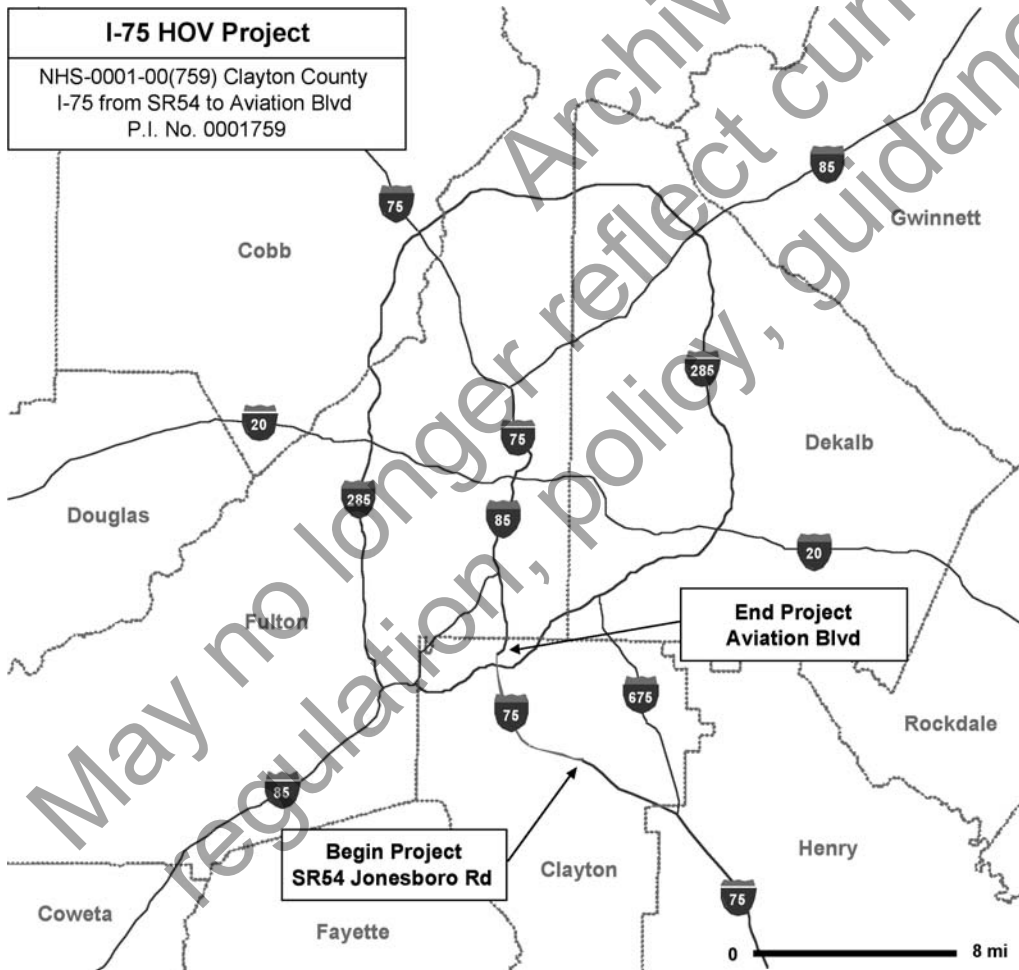
The Atlanta gathering followed the traditional ACTT workshop structure, with Brian Barth of the Texas DOT serving as the work session moderator. Under his direction, the skill sets broke out into small groups to begin their discussions. At the end of the morning session, each team presented their initial findings to the entire group. The work sessions continued after lunch, with the teams intermingling to ask questions and discuss key issues as they finalized their recommendations. A representative from each skill set presented their final thoughts on the third day.

2.1. Project Scope

GDOT has several reasons for making I-75 from SR 54 North to Aviation Boulevard – for HOV Lanes a priority project:

- The segment is one of the major routes for daily commuters in the metropolitan area as well as for travelers driving through the State.
- This 6.4-mile stretch has major traffic generators nearby, including the Hartsfield-Jackson International Airport and the State Farmers Market.
- The plans call for reconstruction of five interchanges, including one system-to-system interchange (I-285/I-75).
- The project will connect to existing HOV lanes at the north end, but it will require special coordination with the proposed international airport terminal.

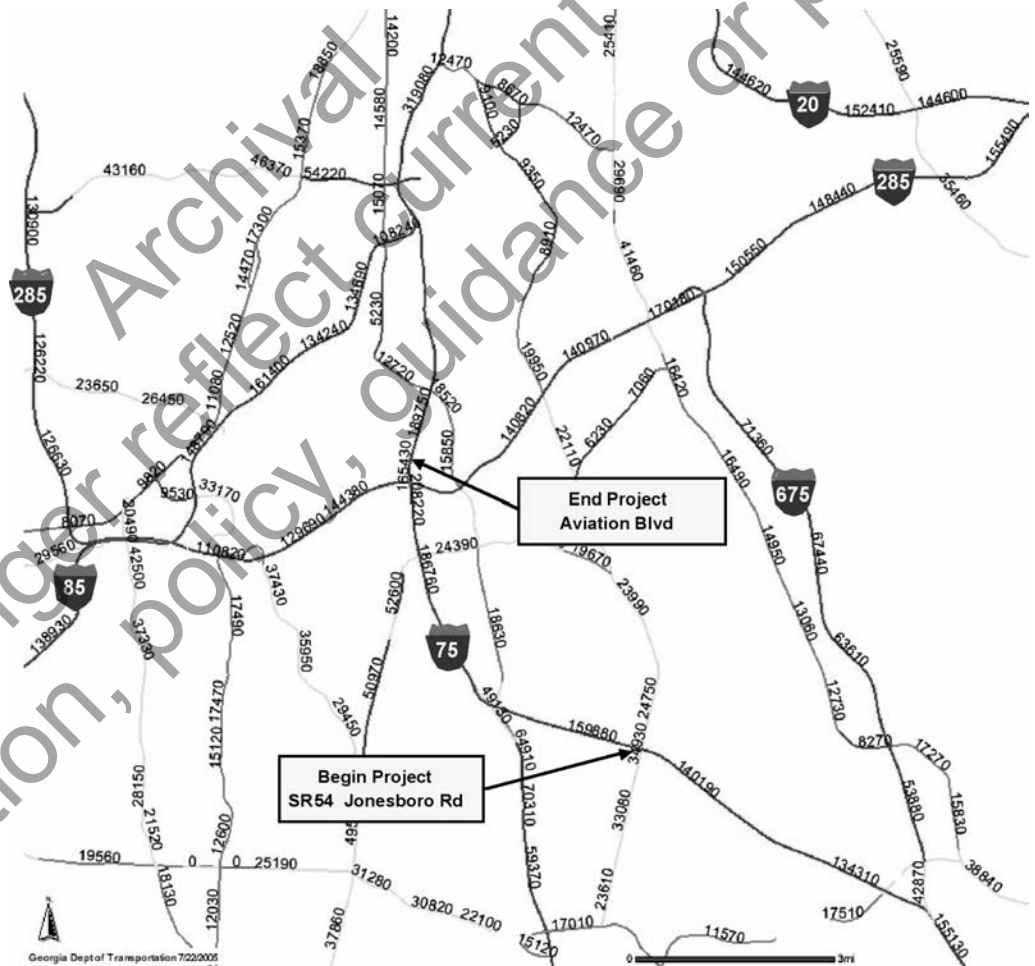
Figure 1. I-75 HOV project map



- The current daily traffic volume of almost 200,000 vehicles and the lack of realistic detour routes will create gridlock in the metropolitan area during construction.

Prior to the ACTT workshop, GDOT's preferred typical section included one or two barrier-separated HOV lanes in each direction with at least one new interchange that would be exclusively HOV. At the time of the workshop, GDOT had not yet detailed the project concept. Therefore, the group was free to make recommendations regarding lane configurations, i.e., whether to place the HOV lanes all to one side (east, west or inside) or to split the southbound to one side and the northbound to the other.

Figure 2. Traffic flow map around the project area



The project schedule is as follows: preliminary engineering, fiscal year 2005; right-of-way (ROW), fiscal year 2008; and construction, long range (six years). Bond funds are allocated for ROW.

Figures 1 and 2 show the general location and the Average Annual Daily Traffic (AADT) volumes for I-75 from SR 54 North to Aviation Boulevard – for HOV Lanes, respectively.

2.2. Workshop Priorities

As with all of the proposed HOV corridors in Georgia, I-75 from SR 54 North to Aviation Boulevard – for HOV Lanes is designed to address several established goals:

- Reduce and manage traffic congestion.
- Maximize the use of carpools, vanpools and transit.
- Ensure integration with transit.
- Provide connectivity to existing system and activity centers.
- Provide reliable travel timesavings.
- Increase person throughput.
- Increase corridor safety and reliability.

2.3. Project Challenges

Key challenges include:

- Managing construction under the demands of heavy daily traffic
- Reducing construction time by one-third.
- Minimizing congestion.
- Adhering to the programmed budget.

3.1. Construction

Total Directional Closure & Interchange Closures

- Close one direction at a time and use alternate routes.
- Use I-20 to I-285 to I-675 as the primary alternate.
- Include specified maximum closure times and the appropriate incentives/disincentives.

Partial Closures

- Consider partial closures if total closure isn't feasible.
- Widen the outside southbound first and shift traffic to the widened area; then close the northbound totally.
- Allow two lanes for northbound traffic in the southbound area (counterflow).
- Consider other partial closure scenarios.

Preliminary Work

- Perform any preliminary work ahead of mainline work.
- Do preparatory work on primary alternate route: I-675 at I-75.
- Add acceleration/deceleration lanes.
- Extend the six-lane section south to the I-75 merge.
- Consider other work:
 - Overpass structures.
 - Drainage, grading and fencing.
 - Retaining walls and sound walls. Consider precast, prefabricated and standardized.

Public Involvement/Public Relations

- Involve major stakeholders early and keep them informed as part of the process.
- Conduct a major PR campaign for closures.
 - Get information to tourists.
 - Consider incentives like free express buses.

Design Elements

- Consider elevated HOV lanes in restricted areas:
 - At interchanges for HOV access/exit.
 - In environmental areas, i.e., wetlands.
- Shift centerline and alignment.
 - Could be either temporary or permanent.
 - Would facilitate lane closures, traffic flow and geometrics.

Innovative Contracting

- Use incentives and disincentives, A-plus-B contracting and interim completion dates.
- Consider lane rentals and design-build (D-B).
- Make Value Engineering (VE) proposals more attractive.

Coordination of FAA Project @ Aviation Blvd

- Consider DOT construction management for the whole corridor.

Project Administration Streamlining

- Use submittal processing.
- Have higher approval authority for contract change orders at the project level.
- Have an active advisory team.
- Use electronic document control.
- Conduct regular tests and inspections.

One Total Construction Contract

- Use one contract to facilitate coordination and expedite the construction process.
- Use special prequalifications.
- Hold a mandatory pre-bid conference.
- Make advance plans available.

Constructability Review

- Hold reviews beginning at the early design stage.
- Include industry, DOT, FHWA, FAA, the Atlanta Airport, utilities, environmental agencies and other major design stakeholders in the process.

3.2. Geometrics

The geometrics team recommended using barrier-separated HOV where possible because of safety, operational, enforcement and pricing concerns:

- Build the barrier section with the expectation of having two HOV lanes; buy ROW and build the structure cost effectively.
- Eliminate the slip ramps at JC Penny and Lynwood Drive. This would address safety issues and eliminate operational problems caused by weaves to the slip ramps from the mainline.
- Improve secondary roads and connections to provide easier access to the HOV lanes.
- Allow one to three miles between drop ramps: proper HOV interchange spacing would reduce turbulence and provide the best access to the HOV interchange.
 - Consider a full diamond interchange at Aviation Blvd.
 - Construct a split diamond HOV interchange at Bob White northbound and Old Dixie southbound.
- Provide wishbone access from the I-75 HOV lanes to the C-D roads to I-285, since the connection between the I-75 HOV lanes and I-285 is imperative.
- Do not use D-B: the complexity is too great.
- Coordinate with Transit and Park & Ride.

The team made the following structure joint notations:

- The C-D system/wishbones/elevated interchange with I-285 will be dependent upon funding.
- Realignment of I-75 to the west in the northern portion would be expensive.
- They would prefer a half-diamond HOV interchange at Bob White Trail, north side. (Local roads must still be reworked.)
- Realignment of Forest Parkway is recommended to facilitate traffic flow during construction.

3.3. Innovative Contracting and Financing

Financing Goals

- Identify new financing sources.
- Consider public-private partnerships (PPP) – private equity or debt.
- Use the Fast Forward bonding program.
 - Bonds should be applied to the construction phase.
 - Bonds would be repaid with State and Federal funds.

Prioritized Financing Recommendations

1. Encourage private participation in a PPP with a toll facility. Public-private transportation legislation is in place.
2. Reallocate resources/funding to accelerate the project.
3. Build and manage a toll facility (100% public funds).
4. Implement a sales tax, a user fee based on a defined area or a mileage fee based on miles driven.
5. Apply for TIFIA, Transportation Infrastructure Finance & Innovation Act Federal credit assistance.
6. Use SIB loans – would require State legislation and a capitalization source.

Additional Considerations

- Issue tax-exempt bonds through Section 63-20 and/or proposed Private Activity provisions.
- Fund construction sooner with GRB by reallocating bond proceeds from other projects.
- Include HOT (High Occupancy Tolls) or TOT (Truck Only Tolls) for tolling concept.

Contracting Goals

- Shorten the schedule.
- Minimize the impacts to traffic.
- Guarantee quality.

Delivery Options

D-B (Design-Build) Option

- Eliminate the \$10 million statutory cap.
- Award a single contract.
- Assign dedicated project management personnel.
- Consider a PPP contract that includes finance, operations and maintenance.

D-B-B (Design-Bid-Build) Option

- Assign a dedicated project manager.
- Perform a third-party constructability review.
- Allow contractor-designed traffic staging/management.
- Use D-B for specific features.
- To implement Fast Forward, augment program delivery capability.
 - Outsourcing.
 - PPP.
 - GDOT staff.

Procurement

- Use cost-plus-time (A-plus-B) bidding to shorten the schedule.
- Solicit alternate bids when there's no change in the environmental impact.
- For D-B or PPP delivery, use a two-step best-value selection process featuring cost and other factors. Amend State legislation, if necessary.
- For D-B-B delivery, use special prequalifications to shortlist qualified contractors.

Contract Management

- Use incentives and disincentives for construction time.
- Implement traffic management incentives and disincentives.
 - Use lane rental: assess daily/hourly rental fees for taking lanes/ramps out of service.
 - Use travel time: compensate the contractor for reduced travel time, or assess contractor for excess travel time.
- Provide temporary transit alternatives during construction.

Administrative Procedures

- Use the following to accelerate construction:
 - Partnering.
 - Advisory team issue resolution (during design and construction).
 - Mediation.
 - Mandatory pre-bid meeting.
 - Pre-construction workshops with third-party coordination.
 - Public outreach.

Quality Management

- Include quality control/quality assurance (QC/QA) specifications and quality-based incentives.
- Include performance specifications.
- Require a pavement warranty.

3.4. Public Relations

GDOT Messages

- Establish a project team with representation from all areas.
- Coordinate with GDOT communications office on all messaging, logos, signs and PR efforts statewide, including consultant projects. The inconsistency in HOV/carpool lane signing in Atlanta is a case in point.
- Begin coordination during the planning process, and include it in every stage forward.

Research

- Hire a media-messaging consultant.
- Research best management practices in State and nationally.

Market Survey

- Identify project stakeholders.
- Identify the cultures and communities that will be affected.
- Find what resonates with the public.
- Ascertain how the public wants to receive information.

Objectives and Strategies

- Share market survey results internally.
- Utilize the market survey results to further community outreach during the environmental phase.
- Work with the project team to develop future strategies, measures and themes with the intent to preserve the fabric of the community as much as possible.
- Do follow-up surveys to determine the effectiveness of the measures used and to adjust tactics as needed.

Tactics

- Promote at umbrella and community-specific levels.
- Target your message.
 - a. Businesses.
 - b. Community.
 - c. Government.
 - d. Media.
 - e. Internal audience.
- Define campaign specifics.
- Share changes and success stories.
- Involve communications staff in designing the preliminary engineering scope of work.
- Make public outreach a standing component in construction budget.
- Ensure that the communications office is the central point of contact/oversight for all communications efforts.
- Use a “countdown to completion” and related incentives/disincentives.
- Secure professional endorsements.
- Consider third-party endorsements.

Other Issues

- Consider linking this project to reconstruction of the SR-54 interchange and any other local projects.
- If directional lane closures are used:
 - Elevate the public information campaign and the associated funding.
 - Consider hiring a consultant.
 - Consider additional elements such as billboards and outreach to other states.

3.5. Structures

Key Recommendations

- Place HOV lanes next to the median.
- Consider a half diamond design at Bob White Trail.
 - Build just north of the existing bridge.
 - Consider temporary closure of the Bob White Trail bridge if the alignment isn't shifted.
- Redo local/frontage roads at the SR-85 interchange and from Bob White Trail to US-19/41.
- Realign the Forest Parkway ramp to improve traffic and the maintenance of traffic during reconstruction.
- Accelerate Forest Parkway and US-41 to minimize impacts.
- Accelerate the project by optimizing the schedule:
 - Prefabrication.
 - Pre-assembly.
 - D-B.
- Allow alternatives such as the use of existing piers.

General Bridge Issues

- Remove and replace walls where needed. Use MSE walls.
- Consider different material/construction methods:
 - Use earth walls at Bob White Trail bridge.
 - Use maturity meters.
 - Consider including road user costs in comparing options – but they must be defined.
- Use pre-stressed beams for:
 - Forest Parkway – both bridges.
 - Bob White Trail.
 - US-41.
- Use curved steel girder on the Forest Parkway ramp.
- Make Lynwood Drive a normal steel widening project.

3.6. Traffic/Safety/ITS

Traffic Goals

- Improve air quality.
- Reduce congestion.
- Maintain traffic during construction.
- Maximize HOV/HOT.
- Minimize impacts on the public and local businesses.

Traffic Recommendations

- Develop the concept of operations.
 - Conduct an origin-destination study to identify what type of traffic this facility is going to serve: short-trip or longer-distance commuters (those traveling more than 10 – 12 miles).
 - Make a choice between express/HOV/HOT/commercial truck lanes or a combination thereof.
- Plan for maintenance of traffic during construction.
 - Prepare a traffic impact statement.
 - Prepare for closures and use of alternate routes.
 - Flexible closures: full/staged/time of day/time of week.
 - Use of I-675.
 - Upgrading of crossroads or parallel routes.
 - Use of incentives/disincentives in regards to their impact on the public.
 - Use of free buses to promote temporary or long-term mode shift.
 - Identification of staff to communicate with public (local and through traffic) and with project/GDOT staff.
- Incorporate/promote Park and Ride facilities.

Safety Goals

- Reduce accidents.
- Provide effective incident management.

Safety Recommendations

- Evaluate the use of barrier or buffer (striped) lane separation.
- Implement enforcement/crash investigation sites.
- Coordinate with local jurisdictions and facilities.
- Have pre-defined incident response plans (including during the construction phase).
- Use HERO, an “on-call” wrecker service and local officials.
- Use toll tag requirements and locations.
- Use vertical screens in the work zone to prevent rubbernecking.

ITS Goals

- Use the Transportation Management Center (TMC) for continuity of operations.

ITS Recommendations

- Replace the current fiber optics network with wireless communications.
- Provide enforcement utilizing available technologies.
- Provide real-time traveler information to the public.
- Depending on the ultimate concept, install and use ramp meters.
- Utilize smart work zones/portable trailers.
- Use dynamic message signs (DMS), closed circuit television (CCTV) and detectors to support HOV/HOT lane operations.

4.1. Key Items for Evaluation

Over the course of the workshop, the participants made many recommendations regarding the I-75 from SR 54 North to Aviation Boulevard – for HOV Lanes project. The following highlights the key items that GDOT plans to evaluate.

- Clearly define “success” by prioritizing goals such as environmental objectives, the minimization of impacts to the public and retail sites, safety and congestion, freeway management, etc.
- Advance the purchase of right-of-way, and build two barrier-separated HOV lanes in the median for safety, operation and enforcement.
- Perform an operational analysis to evaluate the potential for use of I-20 to I-285 to I-675 as the primary alternate: this would provide for total directional closure and super-accelerated construction. If total directional closure is not deemed feasible, widen the southbound first to provide four lanes for two-way traffic, and close the northbound to traffic; reverse the process once the northbound is constructed.
- Provide wishbone access from the I-75 HOV lanes to the C-D roads to I-285, as connection between the I-75 HOV lanes and I-285 is imperative.
- Accelerate the Forest Parkway and US 41 portions of the project. Consider using pre-fabrication, pre-assembly and D-B.
- Realign Forest Parkway to facilitate traffic flow during construction.
- Eliminate the slip ramps at JC Penney and Lynwood Drive to eliminate weaving and improve safety.
- Consider using a half-diamond interchange at Bob White Trail on the north side; this option would require improving local roads first.
- Improve secondary roads and the connections to the HOV lanes to provide easier access.
- Conduct market surveys to identify the stakeholders, communities and cultures affected by the project and to determine how best to share information or updates with the public.
- Utilize market survey results to develop community outreach initiatives during the environmental phase of the project and to further design strategies, measures and themes with the intent to preserve the fabric of the community.
- Coordinate with local jurisdictions to develop a concept of operations such as origin/destination, short/long commutes, HOV/HOT/commercial lanes, express/through trips, etc.
- Consider tactics like “countdown to completion,” professional endorsements (including professional athletic organizations) and third-party endorsements.
- Maximize the contributions of technology and people, including wireless communications, NaviGATOR, DMS, CCTV, HERO, a project public information officer, performance-based towing services and pre-defined incident response plans.

4.2. Next Steps

GDOT has already directed the consultant chosen for design to evaluate the HOV lane configurations discussed at the workshop and to use a barrier-separated HOV typical section where feasible. The agency is planning a massive public involvement effort to ensure that adequate public input is received and that stakeholders are well informed before any concept is finalized.

GDOT will continue evaluating the recommendations made from each skill set and determine which ideas or suggestions should be incorporated in to I-75 from SR 54 North to Aviation Boulevard – for HOV Lanes.

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**SKILL SETS
REPORTS**

CONSTRUCTION

GEOMETRICS

INNOVATIVE CONTRACTING AND FINANCING

PUBLIC RELATIONS

STRUCTURES

TRAFFIC/SAFETY/ITS

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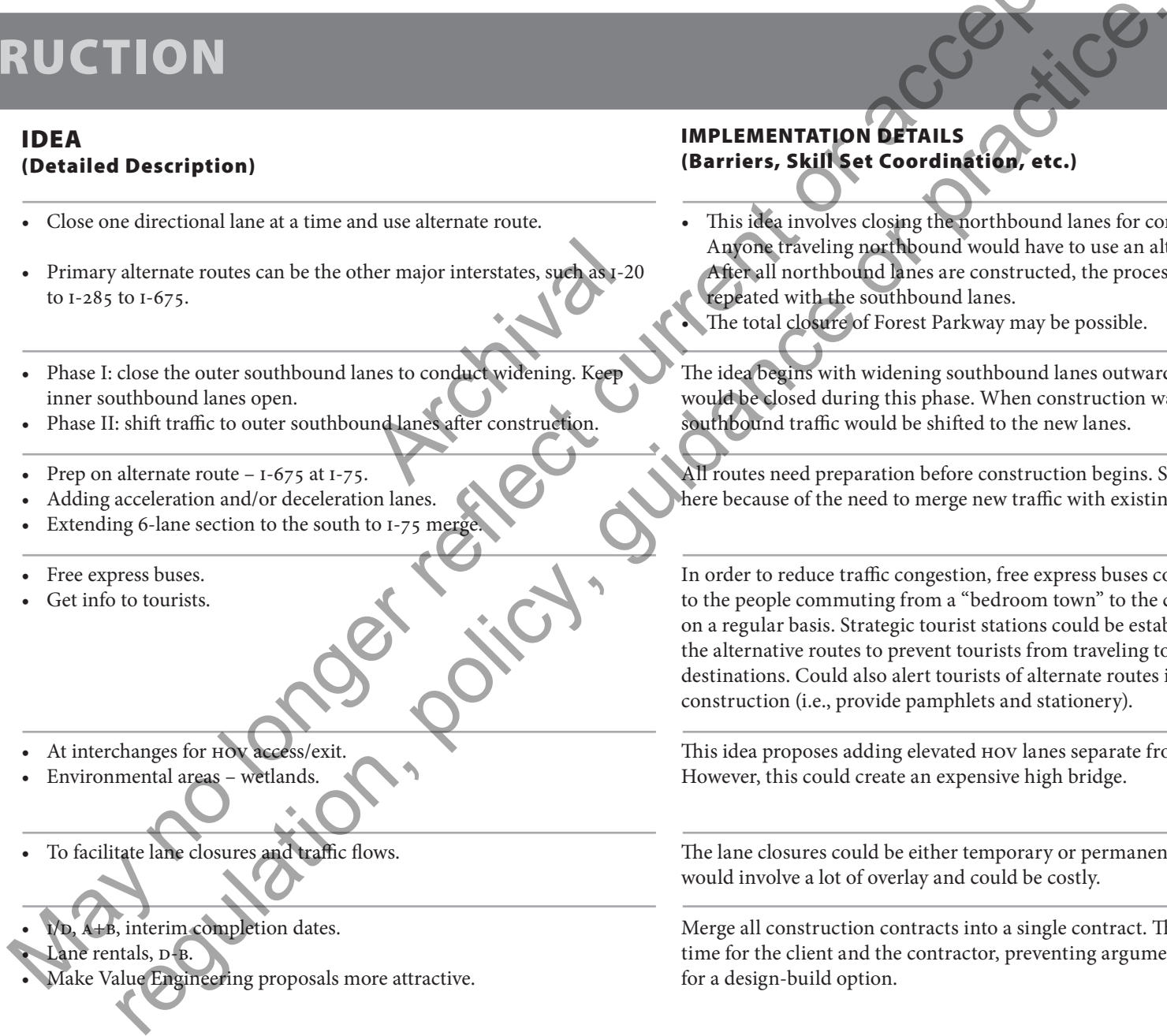
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CONSTRUCTION

IDEA (Short Name)	IDEA (Detailed Description)	IMPLEMENTATION DETAILS (Barriers, Skill Set Coordination, etc.)
Single Direction Lane Closing and Total Lane Closures	<ul style="list-style-type: none"> • Close one directional lane at a time and use alternate route. • Primary alternate routes can be the other major interstates, such as I-20 to I-285 to I-675. 	<ul style="list-style-type: none"> • This idea involves closing the northbound lanes for construction. Anyone traveling northbound would have to use an alternate route. After all northbound lanes are constructed, the process would be repeated with the southbound lanes. • The total closure of Forest Parkway may be possible.
Partial Lane Closures	<ul style="list-style-type: none"> • Phase I: close the outer southbound lanes to conduct widening. Keep inner southbound lanes open. • Phase II: shift traffic to outer southbound lanes after construction. 	<p>The idea begins with widening southbound lanes outward. The outer lanes would be closed during this phase. When construction was finished, the southbound traffic would be shifted to the new lanes.</p>
Preliminary Work/ Contracts	<ul style="list-style-type: none"> • Prep on alternate route – I-675 at I-75. • Adding acceleration and/or deceleration lanes. • Extending 6-lane section to the south to I-75 merge. 	<p>All routes need preparation before construction begins. Staging is an issue here because of the need to merge new traffic with existing traffic.</p>
Major PR Campaign for Closures	<ul style="list-style-type: none"> • Free express buses. • Get info to tourists. 	<p>In order to reduce traffic congestion, free express buses could be provided to the people commuting from a “bedroom town” to the city of Atlanta on a regular basis. Strategic tourist stations could be established along the alternative routes to prevent tourists from traveling to unnecessary destinations. Could also alert tourists of alternate routes in advance of construction (i.e., provide pamphlets and stationery).</p>
Possible Elevated HOV Lanes in Restricted Areas	<ul style="list-style-type: none"> • At interchanges for HOV access/exit. • Environmental areas – wetlands. 	<p>This idea proposes adding elevated HOV lanes separate from traffic. However, this could create an expensive high bridge.</p>
Shift Centerline & Alignment	<ul style="list-style-type: none"> • To facilitate lane closures and traffic flows. 	<p>The lane closures could be either temporary or permanent. This idea would involve a lot of overlay and could be costly.</p>
Innovative Contracting	<ul style="list-style-type: none"> • I/D, A+B, interim completion dates. • Lane rentals, D-B. • Make Value Engineering proposals more attractive. 	<p>Merge all construction contracts into a single contract. This would save time for the client and the contractor, preventing arguments. This is good for a design-build option.</p>

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CONSTRUCTION, CONTINUED

IDEA (Short Name)	IDEA (Detailed Description)	IMPLEMENTATION DETAILS (Barriers, Skill Set Coordination, etc.)
Coordination of FAA Project @ Aviation Blvd	Consider DOT construction management of this project.	A new project in the area is being constructed near I-75 and could interfere with this proposed project. The goal is to make the projects work in harmony with each other.
Project Administration Streamlining	<ul style="list-style-type: none"> • Submittals. • CCOS. • Advisory Teams. • Electronic documentation. • Inspection & testing. 	Need a simple, proactive way to facilitate the project with minimum errors and omissions.
One Total Construction Contract	<ul style="list-style-type: none"> • Special pre-qualifications. • Mandatory pre-bid conference. • Allow availability of advance plans. 	As mentioned before, one construction contract could carry all phases of the project in a streamlined, simplified fashion. This would reduce errors and omissions caused by confusion and miscommunication. A mandatory pre-bid conference could be scheduled to allow all parties to be educated on the project and the process.
Early Design Stage	Constructability review at early design stage by industry, DOT, FHWA, FAA, ATL Airport, utilities, environmental agencies, etc.	Time is of the essence since traffic predictions may be worse. A constructability review could be scheduled to catch mistakes and avoid costly errors in construction. By catching the errors, GDOT and other stakeholders would save both money and time.

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GEOMETRICS

**IDEA
(Short Name)**

**IDEA
(Detailed Description)**

**IMPLEMENTATION DETAILS
(Barriers, Skill Set Coordination, etc.)**

TYPICAL SECTION

HOV Lane on
Inside

- Advantages
 - Consistent with other HOV lane facilities in area/nation.
 - Reconstruction of existing facility may not be required if non-barrier-separated facility is constructed.
 - Allows for construction of Collector-Distributor (C-D) network with little or no conflict with HOV lane system, and vice versa.
- Disadvantages
 - Public perception of 'taking an SOV lane' vs. 'creating an additional HOV lane.'

HOV Lane on Outside

- Advantages
 - Potential access issues to HOV lane system if C-D network is constructed, and vice versa.
- Disadvantages
 - Inconsistent with other HOV lane facilities. Need driver education.

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GEOMETRICS, CONTINUED

IDEA
(Short Name)

IDEA
(Detailed Description)

IMPLEMENTATION DETAILS
(Barriers, Skill Set Coordination, etc.)

BARRIER-SEPARATED OR CONCURRENT HOV LANES?

Barrier-separated HOV
Lanes

- Advantages
 - Enhanced safety and operations (prohibit uncontrolled ingress/egress).
 - Reduction of enforcement areas needed.
- Disadvantages
 - Increased right-of-way and construction costs (larger project footprint and reconstruction of overpass structures with insufficient length to accommodate wider typical section).
 - Construct one or two lanes in each direction (section is modeled for one HOV lane in each direction).
 - General consensus of workshop participants is that two lanes in each direction will be needed – requires modification of planning model and STIP.

Concurrent, Non-
barrier-separated HOV
Lanes

- Advantages
 - Construct one HOV lane in each direction, not to preclude expansion of HOV system to two lanes in the future when traffic demand materializes (reduction of ROW and, potentially, construction costs).
- Disadvantages
 - Reduced safety and operations (uncontrolled ingress/egress).
 - Enlarged enforcement areas (increased operational/enforcement costs).

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GEOMETRICS, CONTINUED

IDEA
(Short Name)

IDEA
(Detailed Description)

IMPLEMENTATION DETAILS
(Barriers, Skill Set Coordination, etc.)

SYSTEM CONNECTIVITY – ACCESS POINTS

Retain Existing
Interchange
Geometrics and
Locations

- Advantages
 - Interchange spacing in compliance with Federal standards (2-3 mile interchange spacing).
 - No improvement of secondary needed as a direct result of HOV lane reconstruction project.
- Disadvantages
 - If barrier-separated HOV lanes are constructed, limited opportunity to access lanes (system underutilization).

Retain Existing
Interchange
Geometrics and
Locations with
Additional HOV Access

- Advantages
 - Access to HOV lanes from 'selected' cross streets.
 - Provides opportunity to incorporate mass-transit transportation modes and provides direct access to system.
- Disadvantages
 - If non-barrier-separated HOV lanes are constructed, increased weaving maneuvers and sub-standard interchange spacing will occur.
 - Improvement of secondary streets required

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GEOMETRICS, CONTINUED

IDEA
(Short Name)

IDEA
(Detailed Description)

IMPLEMENTATION DETAILS
(Barriers, Skill Set Coordination, etc.)

CONTRACTING/CONSTRUCTION METHOD

- | | |
|-----------------------|--|
| Conventional Contract | <ul style="list-style-type: none">• Advantages<ul style="list-style-type: none">• Without a well-defined concept, too many unknowns.• Disadvantages<ul style="list-style-type: none">• Time required to complete preliminary engineering work prior to letting project. |
| Design-Build Contract | <ul style="list-style-type: none">• Advantages<ul style="list-style-type: none">• Time required to complete preliminary engineering work and complete project.• Disadvantages<ul style="list-style-type: none">• No well-defined concept. |

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INNOVATIVE CONTRACTING AND FINANCING

IDEA (Short Name)	IDEA (Detailed Description)	IMPLEMENTATION DETAILS (Barriers, Skill Set Coordination, etc.)
FINANCING		
Private Participation	Encourage private participation in a PPP with toll facility. (Public-private transportation legislation is in place.)	Need to encourage participation by private sector. Also, legislation needs to be introduced to allow solicited PPP proposals.
Reallocation of Resources	Reallocate resources (funding) to accelerate project.	The TIP currently has scheduled the project for 2011. Move the project ahead in the schedule by reallocating funding in the TIP.
Public Toll Facility	Build and manage toll facility (100% public funds).	As an alternative to a privately managed facility, GDOT can develop the project as a toll facility, issue bonds or secure other financing, and build the project using conventional contracting.
Tax/Fee Implementation	<ul style="list-style-type: none"> • Sales tax. • User fee. • Mileage fee. 	<ul style="list-style-type: none"> • User fee based on a defined area or region. • Mileage fee based on miles driven.
TIFIA	Apply for TIFIA (Transportation Infrastructure Finance & Innovation Act) Federal credit assistance.	GDOT or a private partner can apply for TIFIA Federal credit assistance to fund construction and service debt through toll revenue.
SIB	Use State Infrastructure Bank Loans.	Can be used as an alternative or supplemental source of financing. Needs legislation and capitalization source.

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INNOVATIVE CONTRACTING AND FINANCING, CONTINUED

IDEA (Short Name)	IDEA (Detailed Description)	IMPLEMENTATION DETAILS (Barriers, Skill Set Coordination, etc.)
FINANCING, CONTINUED		
Tax Exempt Bonds	Issue tax-exempt bonds through Section 63-20 and/or proposed Private Activity provisions.	Georgia has initiated a bond financing program. Under a PPP, GDOT or private entity can set up a non-profit through Section 63-20 or issue tax exempt debt through the Private Activity bonds. The Private Activity bonding concept is a proposal in the transportation reauthorization bill.
GRB	Fund construction with GRB (Guaranteed Revenue Bonds) by reallocating from other projects designated for bond money.	GRB bonds are tied to motor fuel tax in State of Georgia issued through the State road and toll way authority.
HOT/TOT	Include HOT (High Occupancy Tolls) or TOT (Truck Only Tolls) for tolling concept.	HOV lanes can use variable pricing tolls applied to all vehicles or simply apply tolls to truck traffic.
DELIVERY		
D-B	<ul style="list-style-type: none"> Eliminate \$10M cap in statute. Award single contract. Assign dedicated project management personnel. PPP contract may include finance, operations and maintenance. 	The current statute does not allow use of D-B for projects greater than \$10M. A proposed amendment should eliminate the cap or allocate a higher dollar amount that can be allocated to D-B projects per fiscal year.
D-B-B	<ul style="list-style-type: none"> Assign dedicated project manager. Perform 3rd party constructability review. Allow contractor-designed traffic staging/management. Use D-B for specific features. 	If D-B is not a viable option, use D-D-B with enhancements to speed up construction. These could include contractor involvement in staging, traffic management, and potentially using D-B for specific project elements such that construction can proceed before the design is complete.
Program Delivery Capability	Georgia has made a commitment to a Fast Forward Program to build more projects sooner using bond financing or other financial tools.	To implement Fast Forward, augment program delivery capabilities: use outsourcing, PPP, and increase GDOT staff.

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INNOVATIVE CONTRACTING AND FINANCING, CONTINUED

**IDEA
(Short Name)**

**IDEA
(Detailed Description)**

**IMPLEMENTATION DETAILS
(Barriers, Skill Set Coordination, etc.)**

PROCUREMENT

Cost + Time

Use cost + time (A-plus-B) bidding to shorten schedule.

Contractor bids A – itemized project bid price – and B – cost of time based on project duration (days) – multiplied by a daily road user cost. The agency selects the successful low bidder based on the combined A+B cost. The final contract price is based on the A bid, and the contract time is based on the B number of days.

Alternate Bids

Solicit alternate bids when there is no change in environmental impact.

Alternates could be specified by GDOT for bridge, wall components or other structural components.

Best Value Selection

For D-B or PPP delivery, use a two-step best-value selection process – cost and other factors.

Amend legislation if necessary to allow a two-step best-value process and selection based on price and other factors.

Prequalification

For D-B-B delivery, use special prequalifications to shortlist contractor, JV, or design-builder.

Prequalifications should address qualifications to perform the work and be pass-fail to extent possible to avoid disputes over short listing.

CONTRACT MANAGEMENT

Construction Time
Incentive/Disincentive

Use I/D (incentives/disincentives) for construction time.

Could be applied to A-plus-B completion date and/or major milestones.

Traffic Management
Incentive/
Disincentive

- Lane rental: assess daily/hourly rental fees for taking lanes/ramps out of service.
- User travel time: compensate contractor for reduced travel time, or assess contractor for excess travel time.
- Temporary transit: provide temporary transit alternatives during construction.

Lane rental can be implemented as a bid item where contractor bids amount of time (days or hours) that lanes are taken out of service based on a defined (daily or hourly) user cost. Lane rental item is not included in bonded amount and is accounted for during the project. At end of project, if contractor uses less than bid amount, it keeps difference. If more than lane rental bid amount is used, contractor may pay additional rental fees. Under a performance-based traffic management specification, contractor would set target travel time and manage its operations such that users would meet or beat the target. Contractor would earn an incentive for beating the target or a disincentive for not meeting target.

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INNOVATIVE CONTRACTING AND FINANCING, CONTINUED

**IDEA
(Short Name)**

**IDEA
(Detailed Description)**

**IMPLEMENTATION DETAILS
(Barriers, Skill Set Coordination, etc.)**

ADMINISTRATION PROCEDURE

Partnering	Partnering is recognized method to improve relations, communicate better and resolve issues quickly using an escalation process for decision-making.	Partnering should be implemented as an ongoing process to maintain communication and timely decision-making.
Advisory Teams	Advisory teams to resolve project issues during design and construction.	Can set up to timely resolve design issues and to evaluate changes during construction. The key is expedited decision-making.
ADR	Mediation or partnering as an alternative to expedite the traditional disputes process.	Insert mediation clause into standard claims or disputes provisions. Use partnering as a parallel process to std changes and claims process.
Pre-bid Meeting	Mandate pre-bid meeting.	Designate as mandatory. Use as an informational meeting to clarify issues and give contractors a chance to ask questions.
Pre-construction Workshops	Coordination with 3rd parties.	Can be set up between award and mobilization to address 3rd party coordination, scheduling, submittals and other key issues affecting construction.
Public Outreach		

QUALITY MANAGEMENT

QA/QC Specifications	GDOT currently uses QC/QA specs for pavements as a standard practice.	To promote even higher quality, consider using I/D provisions in connection with QC/QA specifications if not used already.
Performance Specifications	Next generation of QC/QA specifications. Use in place tests to predict life-cycle performance.	Obtain samples from other states and implement on a trial basis on other projects before applying to I-75 or a similar large project.
Warranty	Warranty for pavements.	Warranties are more accepted for D-B projects where D-B has greater control over design. May not be feasible unless the entire pavement section (all lanes) will be reconstructed, if traffic loading projections are uncertain or other risk factors would potentially void the warranty.

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PUBLIC RELATIONS

IDEA (Short Name)	IDEA (Detailed Description)	IMPLEMENTATION DETAILS (Barriers, Skill Set Coordination, etc.)
HOV Lanes	<ul style="list-style-type: none"> Barrier-separated HOV. Helps enforcement. Need dedicated entrance/exit ramps. Incident clearance an issue. Need multi-jurisdictional coordination. Unclear theme: HOV, diamond, express lane, carpool lane. 	
Preliminary and Post Marketing Survey	<ul style="list-style-type: none"> What is the problem in this area? What are the possible solutions? What would you be willing to do? Henry Co. growing. A lot of industry. Airport. Motor carriers. New law – allows consortium to propose innovative tolls for non-funded projects. 	
Internal Change	<ul style="list-style-type: none"> Need to be involved from planning forward. Support for proactive rather than reactive GDOT messages from top down. Coordination with GDOT communications office on all messaging, logos, signs and PR efforts statewide including consultant projects. Example of change: communications department was included in the Fast Forward HOV Project. Would like to make this a standard thing. Create “vision” from project inception through project development through ribbon cutting to provide buy-in and outreach at grassroots level. Displays – malls, library, fairs and movie theatres. 	Ensure communications office is central point of contact/oversight for all communications efforts.

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PUBLIC RELATIONS, CONTINUED

IDEA (Short Name)	IDEA (Detailed Description)	IMPLEMENTATION DETAILS (Barriers, Skill Set Coordination, etc.)
Ongoing Public Outreach	<ul style="list-style-type: none"> • Displays – malls, library, fairs, and movie theatres. • Develop consistent research-based message. • Share results internally. 	<ul style="list-style-type: none"> • Put GDOT project office or offices in the area with maps and GDOT staff. • Define campaign specifics: <ul style="list-style-type: none"> • Materials, project offices, door-to-door efforts, etc. • Speakers Bureau. • Crisis Plan – public info team. • Web sites stating construction phases and dates. • Celebrate completion within the community. • Obtain 3rd party endorsements. • Secure professional endorsements. • Use “countdown to completion” and related incentives/disincentives.
Need a Research Campaign	<ul style="list-style-type: none"> • What is best way to get message out to public? • Interface with other divisions. • ID problems, measures/messages with intent to preserve the fabric of the community as much as possible. • What’s out there for messaging? • Hire transportation consultant with background in media messaging. • Research what’s been done with HOV lanes in State and nationwide. • Identify markets. • Do a market survey. <ul style="list-style-type: none"> • What resonates with public. • How they want to receive information. • Involve GDOT staff. • Identify stakeholders. 	<ul style="list-style-type: none"> • If directional lane closure used: <ul style="list-style-type: none"> • Elevate information campaign. • Consider hiring consultant (FHWA funding). • Consider additional elements such as billboards. • Share changes and success stories. • Promote at umbrella and community-specific level. • Target your messages: <ul style="list-style-type: none"> • Business. • Government – emergency services. • Community – school, recreational. • Media. • Internal.
Budget	Set budget.	<ul style="list-style-type: none"> • Involve communications staff in designing preliminary engineering scope of work. • Identify funding sources after P.E. • Define process for setting budget and handling procurement.
Follow-up Surveys	Do market research to determine effectiveness of methods used to communicate with the public.	Share information and adjust tactics as needed.

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STRUCTURES

IDEA (Short Name)	IDEA (Detailed Description)	IMPLEMENTATION DETAILS (Barriers, Skill Set Coordination, etc.)
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BRIDGE SUPERSTRUCTURES

PSC Beams	The project should utilize psc beams as much as possible.	The replacement bridges at US 41, Bob White Trail and Forest Parkway should be designed with psc beams. This type of bridge can be built quickly and the end product is of high quality.
Steel Girder	psc beams may not be an option for the Forest Parkway ramp because of the curvature of the bridge.	The replacement bridge for the Forest Parkway Ramp should be designed with curved steel girders.

BRIDGE SUBSTRUCTURES

Substructure Design and Construction	Precast construction of some substructure elements will be considered. The use of existing piers may also be considered.	A D-B approach might be used to implement these considerations. If these considerations are used as options, incentives could be used to get the work done earlier. The contractor would need to be provided with some design details.
High Performance Materials	High performance materials could be used.	High performance materials will be used for the rapid construction of economical bridges of high quality.

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STRUCTURES, CONTINUED

IDEA
(Short Name)

IDEA
(Detailed Description)

IMPLEMENTATION DETAILS
(Barriers, Skill Set Coordination, etc.)

CONSIDERATIONS FOR BRIDGE DESIGN

Substructure Design and Construction

Precast construction of some substructure elements will be considered. The use of existing piers may also be considered.

A D-B approach might be used to implement these considerations. If these considerations are used as options, incentives could be used to get the work done earlier. The contractor would need to be provided with some design details.

High Performance Materials

High performance materials could be used.

High performance materials will be used for the rapid construction of economical bridges of high quality.

CONSIDERATIONS FOR BRIDGE CONSTRUCTION

Superstructure Construction

Consider alternative construction methods for superstructure construction.

Alternative construction methods such as incremental launching, off line/site construction, and roll in or lift in place construction will be considered, but these alternatives may not be possible because of the traffic along the project.

Maturity Meters

The use of maturity meters might increase the speed of construction.

The use of maturity meters will be considered for the project.

Optimization of Schedule

The project can be constructed faster if the construction is correctly scheduled.

The project can be accelerated by optimizing the schedule for prefabrication and pre-assembly. Also, the project schedule may be accelerated with the implementation of D-B.

FOREST PARKWAY BRIDGES

Impacts

Currently there is a lot of traffic on the Forest Parkway bridges over I-75.

The construction of the Forest Parkway bridges should be accelerated in order to minimize the impacts on the traveling public.

Realignment

The flow of traffic on Forest Parkway over I-75 must be maintained during construction.

The realignment of Forest Parkway is recommended in order to facilitate traffic flow during construction.

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STRUCTURES, CONTINUED

IDEA
(Short Name)

IDEA
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FOREST PARKWAY RAMP BRIDGE

Realignment

The Forest Parkway ramp needs to be realigned for both traffic and the maintenance of traffic during construction.

A replacement structure could be built north of the existing structure. The replacement structure could be constructed early.

Frontage Roads

The new Forest Parkway ramp needs to be accessible to traffic.

The location of the intersection of SR85 and the new Forest Parkway ramp must be decided. Also, the intersections and possible frontage roads that may affect the new Forest Parkway ramp must be considered. These issues should be dealt with as soon as possible.

BOB WHITE TRAIL BRIDGE

Realignment

Relocating Bob White Trail should be considered.

Bob White Trail should be relocated just north of the existing structure. If the bridge is not relocated, a temporary closure of Bob White Trail and incentives to finish construction rapidly should be considered.

Drop Ramps

Bob White Trail only needs half drop ramps on the north side of Bob White Trail bridge.

Only the drop ramps for I-75 southbound onto Bob White Trail and from Bob White Trail onto I-75 northbound should be required.

Frontage Roads

The frontage roads between Bob White Trail and US 41 must be improved.

The HOV drop lanes at Bob White Trail must coincide with improved access between Bob White Trail and US 41. The issues at these routes and some of the intersections should be dealt with as soon as possible.

US 41 BRIDGE

Impacts

Currently there is a lot of traffic on the US 41 bridge over I-75.

The construction of the US 41 bridge should be accelerated in order to minimize the impacts on the traveling public.

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STRUCTURES, CONTINUED

IDEA
(Short Name)

IDEA
(Detailed Description)

IMPLEMENTATION DETAILS
(Barriers, Skill Set Coordination, etc.)

WALLS AND SOUND BARRIERS

MSE Walls	The drop ramps at Bob White Trail can be built with MSE walls.	Drop ramps on the north side of the new Bob White Trail bridge should utilize MSE walls.
Sound Barriers	Existing sound barriers may have to be removed.	Replace sound barriers where needed.

OTHER CONSIDERATIONS

HOV Lanes	HOV lanes should be located so that construction can be accelerated and traffic needs are met.	The HOV lanes should be placed next to the median so that no transition is needed between the existing HOV lane and the new HOV lane.
User Costs	User costs may define the success of the project.	After defining the road user costs, the user costs could be used when comparing different options for construction.
Altering the Scope of Project	Changing the scope of the project might not be financially feasible and could decelerate the project.	Connecting the HOV system to I-285 would be extremely dependent on funding. Realignment of I-75 into the wetlands to the west would be expensive.

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TRAFFIC/SAFETY/ITS

IDEA (Short Name)	IDEA (Detailed Description)	IMPLEMENTATION DETAILS (Barriers, Skill Set Coordination, etc.)
TRAFFIC		
Traffic Impact Statement	GDOT needs to establish construction activities traffic impact statement/guidelines.	Traffic impact statement could be created utilizing performance measures such as queue length and time of delay.
Assessment of HOV Lanes' Effectiveness	What is the experience with HOV lanes in this State/area? Are they effectively solving congestion and air quality problems?	This study could be coordinated with a survey performed by the public relations skill set.
Alternatives to HOV Lanes	Evaluation of different alternates such as carpool programs, Park and Ride, HOT system, express lanes, C-D locals.	This evaluation could be performed using an engineering/scientific approach or assessing the public perception regarding HOV lanes.
Enforcement of HOV Lanes	The public perception is that HOV lanes are not enforced effectively ("cheaters"); examine current HOV enforcement measures.	
Microscopic Modeling	How are the supporting roads to interstates working? Should GDOT look at the rest of the system to address the problems? In some instances, it has been identified that the problem involves the rest of the system.	
Incentives and Disincentives	Furthermore, allow the contractor to be responsible for traffic management during construction.	Incentives/disincentives depending on how early or late the lanes are reopened to traffic. Could also utilize time of delay or queue length as the performance measure for the incentives/disincentives.
Interchanges/Exit Ramps	Evaluate the reconstruction of interchanges/exit ramps only where it is needed. For example, US 19/41/Tara Blvd.	Perform a traffic study to support this idea. Coordinate with other skill sets to see if the savings of working fewer interchanges would make it possible to extend project (HOV lanes') length.
Eliminate Free Parking	This measure has been implemented in other states and is done to help promote carpooling and the use of the public transit system.	Making parking more expensive than using alternate transportation methods, i.e. riding the bus.

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TRAFFIC/SAFETY/ITS, CONTINUED

IDEA
(Short Name)

IDEA
(Detailed Description)

IMPLEMENTATION DETAILS
(Barriers, Skill Set Coordination, etc.)

SAFETY

Construction Work
Zone Safety

Coordinate with local officials and evaluate the use of different types of barriers.

Vertical Screens

Vertical blinds to cover construction work zone and prevent rubber necking; widely used by Caltrans.

On Call Wrecker
Service

This service would have equipment located near the construction area to be able to respond to incidents within 30 minutes and minimize traffic impacts.

If possible, should be included as part of the contract. Company should be selected based on performance (not necessarily on cost).

Temporary Accident
Investigation Sites

Implementation of accident investigation sites at the construction work zone to minimize traffic impacts.

ITS

Wireless
Communications

Use of wireless communications to replace current fiber optic system beneath the roadway shoulders. This would involve relocating only devices and not the entire fiber optic network.

The use of wireless communications will save time during construction and solve future maintenance issues.

Public Information

Provide real time traffic information to the public.

Use of portable/changeable signs, radio information system managed by TMC.

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reflect current or accepted
guidance or practice.
regulation, policy

Innovative Financing. The team's primary goals are to align potential financing options with project goals; match anticipated cash flow with project management; and provide options for managing competing priorities for existing resources.

ROW/Utilities/Railroad Coordination. The ROW group's primary role is to ensure that ROW, utilities and railroad work comply with state laws and procedures. They must also consider the numbers and types of businesses and residences impacted by a project and evaluate the ready availability of additional right-of-way.

Geotechnical/Materials/Accelerated Testing. The geotechnical team explores subsurface conditions to determine their impact on the project; pursues options for expediting materials acceptance and contractor payment; and evaluates the use of innovative materials in accordance with project performance goals and objectives.

Traffic Engineering/Safety/ITS. The traffic engineering team strives to enhance safety; improve traffic management; and explore technologies, including ITS systems, that will communicate real-time construction information to the public.

Structures (Bridges, Retaining Walls, Culverts, Miscellaneous). The structures skill set focuses on accelerating the construction of structures. Their task is to identify the most accommodating types of structures and materials that will meet design requirements and minimize adverse project impacts.

Innovative Contracting. The innovative contracting group explores state-of-the-art contracting practices and strives to match them with the specific needs of the project.

Roadway/Geometric Design. The roadway team evaluates proposed geometrics and identifies the most accommodating product with the minimum number of adverse impacts.

Long Life Pavements/Maintenance. The maintenance skill set identifies pavement performance goals and objectives and explores future maintenance issues for the project corridor, including winter service, traffic operations and preventative maintenance.

Construction (Techniques, Automation and Constructability). The construction crew explores techniques that will encourage the contractor to deliver a quality product within a specific timeframe while maintaining traffic.

Environment. The environment team ensures that the scope of work and construction activities reflect local environmental concerns. Their goal is to provide the most accommodating and cost effective product while minimizing natural and socio-economic impacts.

Public Relations. The public relations skill set discusses ways to partner with local entities and effectively inform both local communities and the traveling public about the project before, during and after construction. Their role is to put a positive spin on the project.

Background of ACTT

ACTT is a process that brings together public- and private-sector experts from across the country in a setting that encourages flexibility and innovation. The goal is to recommend technologies that will accelerate construction time while reducing user delay and community disruption. This necessitates a thorough examination of all facets of a highway corridor with the objective of improving safety and cost effectiveness while minimizing adverse impacts to the traveling public.

The ACTT concept was originated by the Transportation Research Board (TRB) in conjunction with FHWA and the Technology Implementation Group (TIG) of the American Association of State Highway and Transportation Officials (AASHTO). Following the completion of two pilot workshops, one in Indiana and one in Pennsylvania, the originating task force, A5160, passed the concept off to FHWA and TIG to continue the effort. They have done so by coordinating a series of ACTT workshops around the country, with several more pending in 2005 and 2006.

More information on the ACTT program is available online at:

<http://www.fhwa.dot.gov/construction/accelerated/index.htm>.