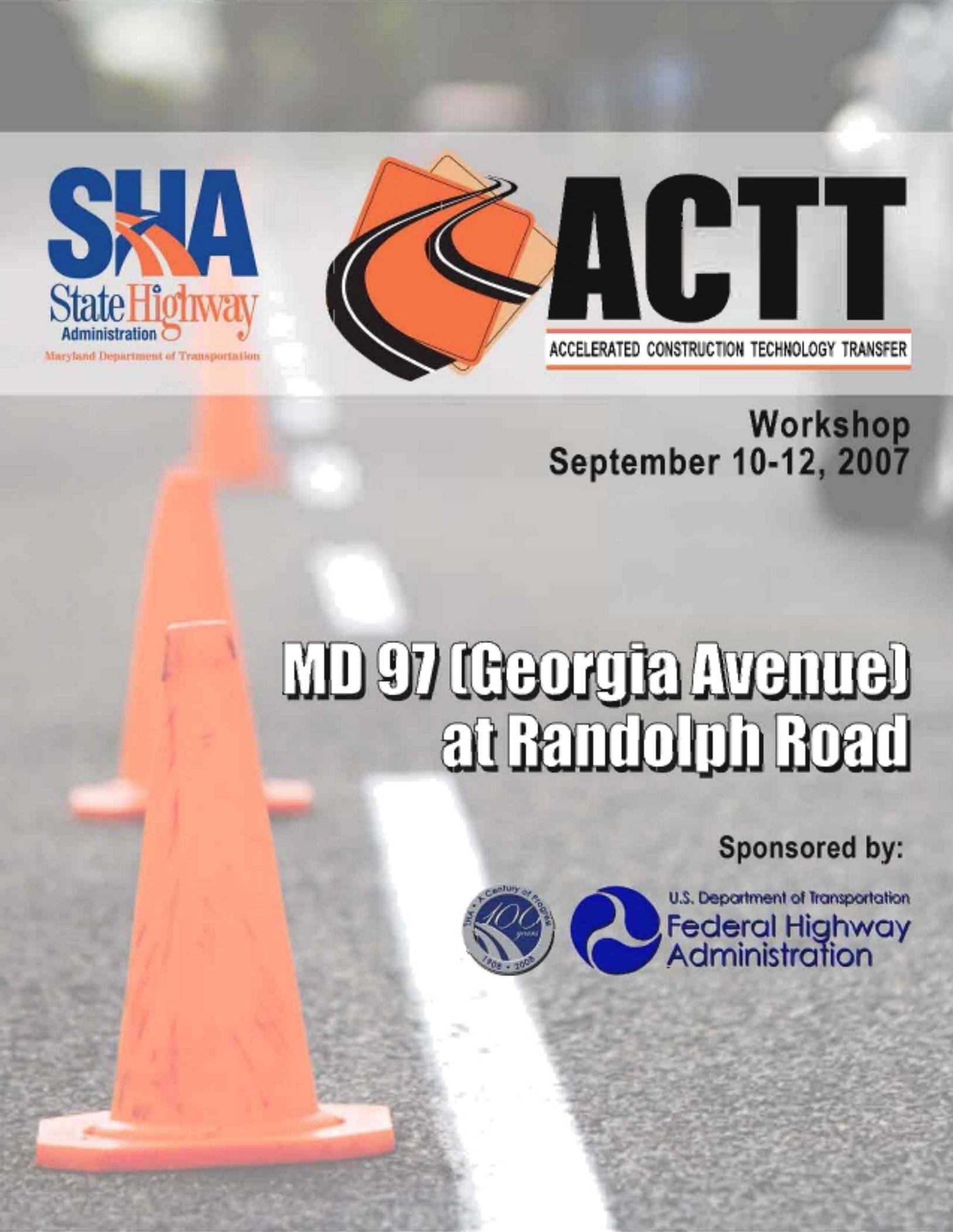


SHA
State Highway Administration
Maryland Department of Transportation

ACTT
ACCELERATED CONSTRUCTION TECHNOLOGY TRANSFER

Workshop
September 10-12, 2007

MD 97 (Georgia Avenue) at Randolph Road

Sponsored by:

U.S. Department of Transportation
Federal Highway Administration

ACTT
ACCELERATED CONSTRUCTION TECHNOLOGY TRANSFER

SHA A Century of Progress 1908 2008

September 10, 2007

Dear ACTT Workshop Participant:

Welcome to the Maryland State Highway Administration's first ever Accelerated Construction Technology Transfer Workshop. Thank you very much for your attendance and active participation in the workshop. Over the next three days, we are looking forward to exploring opportunities to accelerate construction and facilitate innovative construction techniques on our MD 97 at Randolph Road Interchange Project with you and we hope you enjoy learning about this transportation project in our fine state of Maryland.

MD 97 at Randolph Road is an at-grade, four legged intersection in a heavily urbanized area with heavy traffic flows, particularly during peak hours. This is a very constrained urban intersection with businesses tightly configured in all four quadrants. The project proposes to grade separate the intersection with an innovative design. While the proposed vertical grade of MD 97 will remain very close to the existing grade, Randolph Road will be lowered over twenty five feet . Valuable project stakeholders include the Kensington Volunteer Fire Department, other emergency responders, Shoppers Food Warehouse and other large retailers, the general public, the City of Wheaton and major utility owners, PEPCO and Verizon among others. Extensive coordination with local utility companies will be required. Generally, the citizenry and business community in the area are in unified support of the project.

The project goals are to improve mobility, safety and accessibility for the public and businesses in the area. We intend to deliver the project with as minimal an impact to the surrounding community as is practical, and to reduce utility impacts and overall project construction duration while still maintaining traffic through the intersection.

There is an urgent need to accelerate construction of this project due to traffic congestion in the area, continuing failing Levels of Service, safety concerns and the overall expected duration of the project if delivered conventionally. This project is very high on Montgomery County's priority list. The average daily traffic (ADT) along this portion of MD 97 for 2003 is 55,325 and the projected ADT of 89,250 in 2025. The ADT along Randolph Road in this area for 2000 is 34,000 and projected at 52,000 in 2020.

Thank you for your commitment in making this workshop a success. We intend to use the lessons learned in this process not only on this project, but hopefully as fruitful approaches to future projects as well.

Sincerely,

Neil J. Pedersen, Administrator
Maryland State Highway Administration

Nelson Castellanos, Division Administrator
Federal Highway Administration

SHA State Highway Administration

U.S. Department of Transportation Federal Highway Administration

ACTT
ACCELERATED CONSTRUCTION TECHNOLOGY TRANSFER

Agenda

Accelerated Construction Technology Transfer (ACTT) Workshop
MD 97 at Randolph Road Project

AGENDA

Day One

September 10, 2007

11:00 p.m. - 12:45 p.m.	Onsite Registration – Pre-Function Area (Lunch is on your own)	
1:00 p.m.	Opening Session – General Session Room, Salon 3 (**Jerry Blanding**, Moderator – Federal Highway Administration)	
	Welcome	**Douglas Rose** Deputy Administrator MD State Highway Administration
	Welcome	**Bill Wade** Assistant Division Administrator Federal Highway Administration
	ACTT – Building on Success	**Jerry Blanding** Moderator Federal Highway Administration
	Self Introductions	**All Participants**
	Project Overview	**Ken McDonald** SHA Project Manager Johnson, Mirmiran & Thompson
2:30 p.m.	Afternoon Break – Pre-Function Area	
2:45 p.m.	On Site Orientation of the Project (Bus to leave front of hotel by 3:00)	**All Participants**
6:30 p.m.	Dinner and Reception – Pre-Function Area & Salon 4	

Accelerated Construction Technology Transfer (ACTT) Workshop
MD 97 at Randolph Road Project

AGENDA

Day Two

September 11, 2007

7:00 a.m.	Continental Breakfast– Pre-Function Area & Salon 3	
8:00 a.m.	Day Two Work Session – General Session Room, Salon 3	
	Workshop Overview How will it work? The Brainstorming	**Jerry Blanding** Moderator Federal Highway Administration
8:30 a.m.	Convene Breakout Sessions – Breakout Rooms	
10:45 a.m.	Stretch Break	
11:00 a.m.	Reconvene General Group – General Session Room	
	What Are We Finding? (5-7 minutes per Skill Set)	**Skill Set Speakers**
12:00 p.m.	Working Lunch – Pre-Function Area & Breakout Rooms	
12:00 p.m. - 2:00 pm.	Breakout Sessions (cont'd) – Breakout Rooms What have we heard?	
2:00 p.m.	Skill Set Intermingling	
3:00 p.m.	Afternoon Break – Pre-Function Area	
3:15 p.m.	Developing Skill Set Final Thoughts – Breakout Rooms	
6:00 p.m.	Dinner – Pre-Function Area & Salon 4	

Accelerated Construction Technology Transfer (ACTT) Workshop
MD 97 at Randolph Road Project

AGENDA

Day Three

September 12, 2007

7:00 a.m.	Hot Buffet Breakfast – Pre-Function Area & Salon 3	
8:00 a.m.	Finalize Skill Set Presentations	**Skill Set Participants**
8:30 a.m.	Day Three Work Session – General Session Room, Salon 3 **Jerry Blanding** – Moderator, Federal Highway Administration	
	Skill Set Recommendations	**Skill Set Speakers**
10:00 a.m.	Morning Break – Pre-Function Area	
10:15 a.m.	Project Discussion: What We Are Hearing?	**All Participants**
10:30 a.m.	SHA Feedback	**Kirk McClelland** Director Office of Highway Development MD State Highway Administration
	Closing Remarks	**Douglas Simmons** Deputy Administrator MD State Highway Administration **Bill Wade** Assistant Division Administrator Federal Highway Administration
11:00 a.m.	Next Steps, Follow up & Closeout	**Jerry Blanding** Moderator Federal Highway Administration
12:00 p.m.	Workshop Adjourned	

General Information

BIOGRAPHIES

Jerry Blanding

Innovative Contracting Engineer
Federal Highway Administration, National Resource Center

Jerry Blanding is currently the Contracting Specialist for the Federal Highway Administration National Resource Center. Jerry has extensive experience working with Infrastructure - Innovative Contracting, Claims Avoidance and Mitigation, Contract Administration, and Accelerated Construction Techniques and Technologies.

Jerry is active on the Accelerated Construction Technology Transfer Management Team (ACTT) in Ohio, New York, Hawaii, Iowa, Illinois, Nebraska, and Wisconsin. He was a presenter of ACTT and Highways for LIFE at the Virginia Concrete Conference. He has conducted process reviews by working with States to evaluate and recommend improvements in areas of consultant negotiations (Maryland), utility relocation (New Jersey, Puerto Rico) and construction staffing levels (Massachusetts). He has participated in the Contract Administration Core Curriculum workshop as an instructor in New Hampshire, Georgia, Virginia, Pennsylvania, and Tennessee. He has also been involved in the SEP-14, Innovative Contracting training/briefing in multiple states/divisions.

Jerry joined FHWA in 1998. He possesses a Bachelor of Science degree in Civil Engineering from Morgan State University. He also is a candidate for his Juris Doctorate from the University of Maryland. Jerry has his Engineer-in-Training Certification from the Ohio Professional Engineers Board.

BIOGRAPHIES

Douglas R. Rose

Deputy Administrator / Chief Engineer for Operations
Maryland State Highway Administration

Douglas R. Rose serves as Maryland State Highway's Deputy Administrator/Chief Engineer for Operations. In his position as Deputy Administrator, Mr. Rose directs and oversees SHA's 7 district offices, traffic and safety operations, materials and research operations, maintenance, construction and SHA's ITS Program.

Mr. Rose serves as chairman of the Transportation Agency Consultant Screening Committee, chairman of Maryland's Statewide Operation CHART Board (Maryland's ITS Initiative), chairman of Maryland's Quality Initiative (MdQI) and chairman of the Maryland SHA Total Quality in Construction Council.

Mr. Rose is actively involved in AASHTO, most recently serving as Vice-Chair, Standing Committee on Quality and AASHTO Co-Chair NPHQ. Additionally, he is a member of the Joint AGC-ARTBA-AASHTO Task Force, served for four years on the Task Force on SHRP Implementation and five years on the AASHTO Technology Implementation Group (TIG). Mr. Rose is also a member of AASHTO's Subcommittee on Operations and Management and is chair of the Performance Measurement Task Team. Mr. Rose is Past President of the Board of Directors for the Maryland Association of Engineers and is an active member of the American Society of Civil Engineers, American Society of Highway Engineers, and County Engineer's Association.

Mr. Rose graduated from Clarkson College of Technology with a Bachelor of Science Degree in Civil and Environmental Engineering, and has a Master of Science Degree in Civil Engineering from the University of Maryland, College Park. Mr. Rose is a graduate of the Maryland Executive Institute and MD SHA's Management and Leadership Development Programs.

BIOGRAPHIES

Bill Wade

Assistant Division Administrator
Federal Highway Administration, Maryland Division Office

Bill Wade is currently the Assistant Division Administrator for Federal Highway Administration (FHWA) in the Maryland Division Office located in Baltimore, MD. Bill served 4 years in the United States Marine Corps prior to graduating from Maryland University at College Park in 1981 with a Bachelor of Science in Transportation Management. He then worked for the Maryland State Highway Administration from 1984 until 1988, at which point he joined the Federal Highway Administration. Over the last 19 years Bill has served in various duty stations and positions within FHWA, including a four year assignment in the headquarters office in Washington, DC. Most recently Bill served in the FHWA Florida Division where he was the Director of Planning, Environment & Right of Way from 2001 until June 2007 when he was advanced to his current position.

Kirk G. McClelland

Director, Office of Highway Development
Maryland State Highway Administration

Kirk has been with Maryland State Highway Administration since 1982 and has served in a number of capacities including Chief of the Highway Design Division and Head of the Highway Hydraulics section. He is a registered Professional Engineer. His current position is Director of the Office of Highway Development, with responsibility for final pre-construction engineering activities for projects throughout the state.

Douglas H. Simmons

Deputy Administrator / Chief Engineer for Planning and Engineering
Maryland State Highway Administration

Doug Simmons serves as the Maryland State Highway Administration's Deputy Administrator and Chief Engineer for Planning and Engineering. In this role, he directs SHA's Offices of Planning and Preliminary Engineering, Bridge Development, Highway Development, Environmental Design, and Real Estate.

Doug has worked for SHA since 1983, after receiving his bachelor's degree in civil engineering from the University of Maryland. A registered professional engineer, Doug also received his master's degree in business administration from the University of Baltimore.

BIOGRAPHIES

Ken McDonald

Project Manager For the MD 97 at Randolph Road Project
Johnson Mirmiran and Thompson, Incorporated

Ken has been serving as the State Highway Administration's Project Manager since March 2006. In this role, Ken is managing the activities necessary to keep this project current with respect to design standards, project correspondence and coordination with all key stakeholders.

Ken previously worked for the State Highway Administration for thirty one years, working in various offices including, the Office of Materials and Research, the Office of Bridge Development, the Office of Highway Development and in 2004, retired from state service as the Division Chief for the State Highway Administration's Engineering Access Permits Division. Ken is a graduate of the Johns Hopkins University and also the SHA's Management Development Program

Scott R. Holden, P.E.

Design Project Manager For the MD 97 at Randolph Road Project
STV Incorporated

Scott is a licensed professional engineer with more than 15 years of experience in highway and transportation engineering and planning. His expertise ranges from preparation of preliminary engineering studies to completion of final PS&E construction documents. Mr. Holden's experience also includes geometric design, right-of-way requirements, drainage planning and design, utility relocation, maintenance of traffic (MOT), sequence of construction, and erosion and sediment control. He is also experienced in signing and pavement markings, lighting, intersection traffic capacity and safety analysis, specifications and estimates, and coordinating and facilitating public meetings.

Scott has been serving as the MD 97 at Randolph Road Design Project Manager since 2003 and is responsible for roadway layout and design for the grade separation of the existing at-grade intersection of MD 97 and Randolph Road in Montgomery County, Maryland. Mr. Holden is managing the development of contract documents, quantities, and project reports; the coordination of erosion and sediment control; and the development of structural and traffic control plans with the appropriate departments.

PARTICIPANT LIST

State Highway Administration	Skill Set or Role
Catherine Agostino	Workshop/Facilities/Staff Coordinator
Maurice Agostino	Construction
Dane Barton	Roadway/Geometric Design/Note taker
William J. (Turk) Bradley, III	Construction
Dave Buck	Public Relations/Involvement
Valerie Burnette Edgar	Public Relations/Involvement
Lisa Choplin	Lead Workshop Coordinator
Doug Evans	IT Support
Jesse Free	Structures
Jamie Folden	Geotechnical
Geoffrey Hall	Geotechnical
Matt Harrell	Construction/Note taker
Sean Johnson	Geotechnical/Note taker
Christina Lavoie	Public Relations/Involvement/ Note taker
Kevin Law	IT Support
John Mays	Construction
Kirk McClelland	Director-Highway Development/ Speaker
Wesley Mitchell	Deputy District Engineer
Kelly Nash	Geotechnical
Kevin Nowak	Construction
Girish Pancholi	Roadway/Geometric Design
Jawad Paracha	Roadway/Geometric Design
Sae'd Rahwanji	Traffic/ITS/Safety
Jeff Robert	Structures
Doug Rose	Deputy Administrator/Speaker
Stephanie Rose	Registration
Dan Sajedi	Structures
Doug Simmons	Deputy Administrator/Speaker
Barb Solberg	Roadway/Geometric Design
April Stitt	Traffic/ITS/Safety
Mark Terry	Traffic/ITS/Safety
Kim Tran	Public Relations/Involvement
Fran Ward	Public Relations/Involvement

Consultant Staff	Skill Set or Role
Scott Holden	Design Project Manager – STV
Ken McDonald	SHA Project Manager/Roadway – JMT
Shawn Reynolds	Traffic/ITS/Safety/Note taker – JMT
Jacob Smith	Structures/Note taker - STV

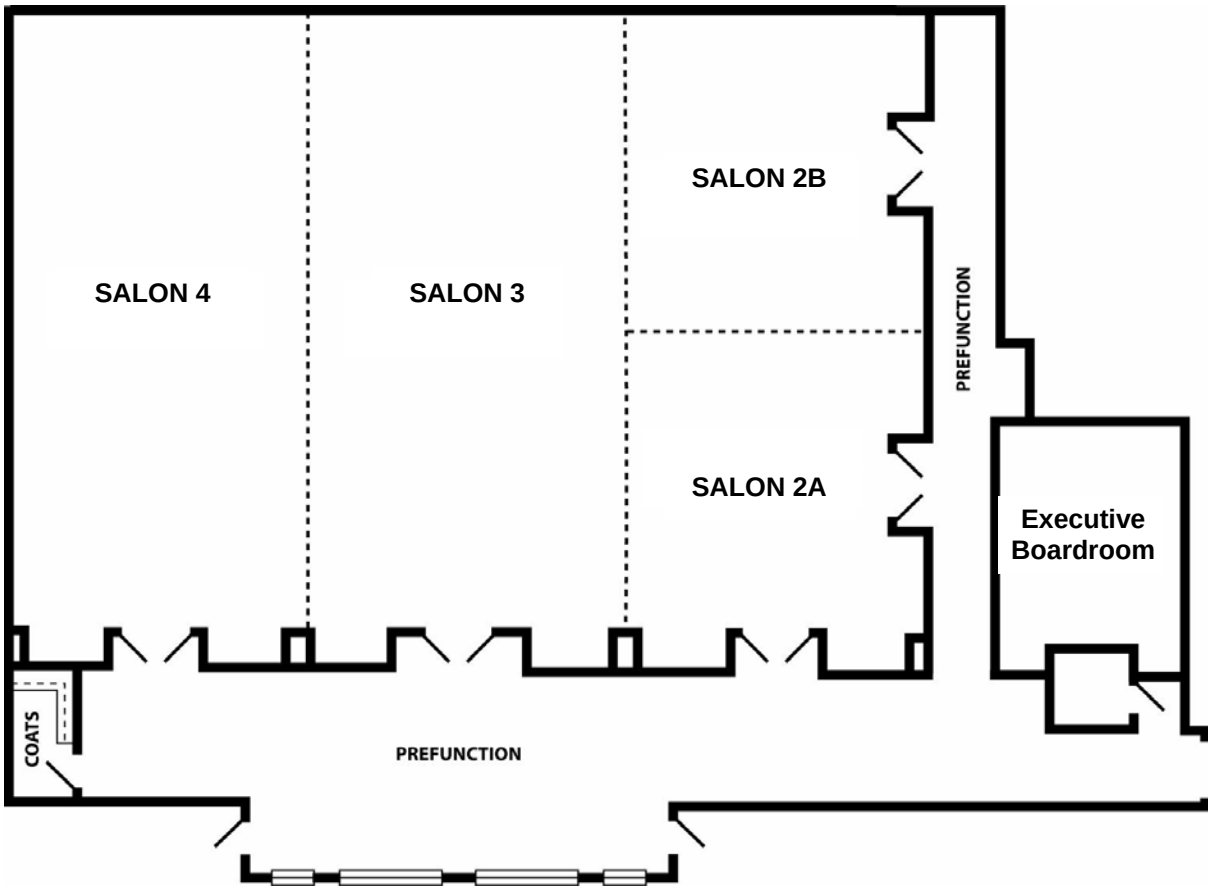
Stakeholders	**Skill Set or Role**
Chip Lambert	Construction
Stephen J. Park	Roadway/Geometric Design
Bob Simpson	Public Relations/Involvement

FHWA	**Skill Set or Role**
Jerry Blanding	Moderator
Derek Constable	Structures
Keith Gray	Structures
Joseph Huerta	Construction/Facilitator
Bernie Kuta	Construction
Carin Michael	Public Relations/Involvement
Vasant Mistry	Structures/Facilitator
Silas Nichols	Geotechnical/Facilitator
Dan Sanayi	Infrastructure & Technology Team Leader
Bill Wade	Assistant Division Administrator/ Speaker

National Experts	**Skill Set or Role**
Mark Ball	Public Relations/Involvement/Facilitator
Gus Khankarli	Geotechnical
Steve Moler	Public Relations/Involvement
Wilton A (Bud) Roberts	Roadway/Geometric Design/Facilitator
Jim (J.R.) Robinson	Traffic/ITS/Safety
Mark Robinson	Traffic/ITS/Safety/Facilitator
Norman Roush	Roadway/Geometric Design
Michael M. Sprinkel	Construction
Steve Stroh	Structures

Sheraton
Baltimore Washington
AIRPORT HOTEL

Conference Room Floor Plan



Accelerated Construction Technology Transfer (ACTT) Workshop
MD 97 at Randolph Road Project

MENUS

September 10, 2007

2:30 p.m. Break – Pre-function Area

Brownies; Blondies; Assorted Cookies; Coffee, Tea; Assorted Sodas; Bottled Waters

6:30 p.m. Buffet Dinner – Pre-function Area, Salon 4

Soup du Jour; Mixed Baby Greens with Mandarin Oranges, Toasted Pecans, Red Onion and Raspberry Vinaigrette; Cajun Sausage Jambalaya; Pan Seared Chicken Marsala; Grilled Pork Loin with Peach Mango; Baked Rice Medley with Tomato and Basil; Seasonal Vegetable Medley; Fresh Baked Apple and Peach Cobbler; Coffee; Tea

September 11, 2007

7:00 a.m. Continental Breakfast – Pre-function Area, General Session Room

Chilled Juices; Fruit Filled Danish; Assorted Muffins; Bagels with Cream Cheese, Butter, and Jams and Jellies; Coffee and Tea

12:00 p.m. Working Lunch – Pre-function Area, Breakout Rooms

Deli Buffet: Spring Mix Salad; Cole Slaw; Potato Salad; Variety of Sandwich Meats: Roast Beef, Turkey Breast, Honey Cured Ham, and Corned Beef; Variety of Sliced Cheeses: Swiss, American, and Cheddar; Sandwich Toppings; Fresh Bread and Rolls; Assorted Desserts; Coffee; Tea

Note: Lunch can be taken to Breakout Rooms

3:00 p.m. Break – Pre-function Area

Individual Bags of Cracker Jacks, Popped Popcorn & Salted Peanuts; Warm Soft Pretzels with Mustard; Mini Corn Dogs; Coffee; Tea; Assorted Sodas; Bottled Waters

MENUS

September 11, 2007 (continued)

6:00 p.m. Buffet Dinner – Pre-function Area, Salon 4

Soup du Jour; Caesar Salad; Pan Roasted Salmon Filet with Dill Sauce; Grilled Herb Chicken; Garlic Mashed Potatoes; Seasonal Vegetable Medley; Rolls and Butter; Assorted Desserts; Coffee; Tea

September 12, 2007

7:00 a.m. Hot Buffet Breakfast – Pre-function Area, General Session Room

Fresh Baked Croissants, Assorted Muffins, Fruit Danish and Bagels with Cream Cheese, Jam, and Jellies; Flavored Yogurts; Crunchy Granola; Sliced Seasonal Fruits & Fresh Berries; Nutri-Grain Bars; Breakfast Potatoes; Bacon & Sausage Links; Scrambled Eggs with Shredded Cheddar Cheese & Chives; Assorted Fruit Juices; Coffee; Tea

10:00 a.m. Break – Pre-function Area

Fresh Scones; Whole Fruit; Coffee; Tea

ACCELERATED CONSTRUCTION TECHNOLOGY TRANSFER

Construction

Skill Set: Construction.

Acceleration of the construction process can only happen with the cooperation and participation by the contractors performing the work. While contractors are generally willing participants in a partnering process, and are professionally concerned with producing a quality project, it must be recognized that one of their primary goals is to profit financially. Therefore any innovative construction techniques which are suggested must be reasonably constructed, and fiscally viable. Moreover, if financial incentives can be associated with envisioned innovative techniques, there is a greater chance that these techniques will result in shortened construction periods without lessening quality. Proactive contract administration, pre-fabricating and pre-ordering materials, state of the art field work, i.e. surveying, data collection, fast curing concrete, etc. are all ideas that could be explored.

Goals for Skill Set:

- This is a highly urbanized area. Possible work areas and staging sites will be difficult to identify and should be explored.

- Work zone safety, pedestrian mobility and safety and motorists' safety must be maintained.

- Are there new types of construction materials that could be used on this project that would speed construction such as quick setting or pre-cast concrete for drainage structures?

- Construction management by a private firm that is expert in the field could improve, materials delivery, contract administration and reduce contractor delays. Should this approach be adopted?

- Utility relocation, specifically PEPCO and Verizon are critical path items for this project. Are there means and methods to improve the efficiency and time frame for their relocation?

- Maintenance of Traffic is a critical item in this project and will require a minimum of seven stages. Is there any way to reduce the number of stages of MOT while maintaining motorists, pedestrians and others mobility while preserving work zone safety?

- Much, if not all of the existing at grade intersection will be removed. Are there innovative demolition techniques that could be employed to speed this process?

- The newly constructed Randolph Road will be depressed beneath the existing grade approximately twenty three feet and will be located approximately twenty six feet above WMATA tunnels. Randolph Road will be carried in a tunnel that will be constructed in multiple stages in the same footprint as the existing intersection. Keeping in mind that WMATA has special requirements for working within the "Zone of Influence", can this be done more efficiently?

Construction **(Executive Board Room)**

Maurice Agostino, SHA, Office of Bridge Development, Assistant Division Chief
Kevin Nowak, SHA, District 3 Construction, Area Engineer
John Mays, SHA, District 5, Utility Engineer
William Bradley, III, SHA, Office of Construction, Regional Construction Engineer
Chip Lambert, Verizon
Joseph Huerta, FHWA, National Resource Center, Pavement Management Engineer, Facilitator
Bernie Kuta, FHWA, Resource Center, Contract Administration Engineer
Michael Sprinkel, Virginia Transportation Research Council, Associate Director
Matt Harrell, SHA, Office of Highway Development, Transportation Engineer (note taker)

2. http://www.fhwa.dot.gov/construction/accelerated/wsaa0601.cfm#acttnow

ACCELERATED CONSTRUCTION TECHNOLOGY TRANSFER

Geotechnical

Skill Set: Geotechnical.

There is a significant amount of excavation that will be performed in connection with this project. Subsurface conditions and innovative techniques, particularly during maintenance of traffic should be explored to expedite construction.

Goals for Skill Set:

- The finished profile of Randolph Road will be depressed approximately twenty three feet below the existing grade. Attention should be focused on grading requirements within constrained areas and the use of earth retention systems.

- Extensive Maintenance of Traffic stages will require temporary detour roads to be constructed at various elevations. Can MOT phases be combined? Will there be adequate materials on site for construction of detour lanes?

- Storm water Management is being provided by using bioretention facilities. Are there any opportunities to expedite this construction?

- An existing WMATA rail line exists directly beneath the intersection of MD 97 and Randolph Road, approximately fifty feet below. Considerations for WMATA have included the use of spread footers to eliminate concerns with the vibration of pile driving. Examine geotechnical report to explore opportunities during foundation construction.

- Extensive Pepco and Verizon facilities exist directly beneath the intersection and will be relocated into a newly constructed duct bank infrastructure system beneath Judson and Sheraton Roads. Will subsurface conditions allow expedited construction of the infrastructure system?

- Groundwater readings were taken at select locations along the depressed roadway. Based on the results of the readings, groundwater does not appear to be a concern, but should a high groundwater table be encountered, what methods of dewatering can be implemented to expedite construction?

Geotechnical **(Suite _)**

Geoffrey Hall, SHA, Office of Materials and Technology, Division Chief
Kelly Nash, SHA, Office of Bridge Development, Project Manager
Jamie Folden, SHA, District 5 Construction Office, Assistant District Engineer

Geotechnical (Suite _) Continued

Silas Nichols, FHWA, National Resource Center, Geotechnical Engineer, Facilitator
Gus Khankarli, Texas Department of Transportation, Design Manager
Sean Johnson, SHA, Office of Highway Development, Transportation Engineer (note taker)

2. http://www.fhwa.dot.gov/construction/accelerated/wsaa0601.cfm#acttnow

ACTT
ACCELERATED CONSTRUCTION TECHNOLOGY TRANSFER

Public Relations

Skill Set: Public Relations / Involvement

In a highly urbanized area such as this one, impacts during construction to the citizenry in the area, the traveling motorists, pedestrians, business owners that utilize the facility for daily deliveries, and emergency service providers cannot be avoided, only minimized. It is critical that effective public relations are provided to assure that these citizens are well informed of construction periods and stages and can make intelligent travel decisions. Businesses may elect to alter delivery times to coincide with certain phases of MOT. Local elected officials will require constant project updates.

Goals for Skill Set:

- Identify all stakeholders in the project.
- Bring stakeholders into the project and the process of regional communications.
- Investigate methods of effective communication to motorists and pedestrians traveling through the area during construction.
- Investigate the need for a Public Relations Manager on site.
- How do we secure the acceptance and participation of all stakeholders?
- How do we collaborate with and manage the information released by the Press?
- What is the most effective means of informing the local elected officials and their constituents of construction progress and impacts?
- Develop a plan to engage all stakeholders in the acceleration of construction process and communicate to them the overall benefit. Solicit their assistance.

Public Relations / Involvement (Salon 4)

Valerie Burnette Edgar, SHA, Office of Communications, Director
Dave Buck, SHA, Office of Communications, Division Chief
Kim Tran, SHA, District 5 Traffic Office, Assistant District Engineer
Fran Ward, SHA, District 4 Office, Public Relations Officer

Public Relations / Involvement (Salon 4) Continued

Bob Simpson, Montgomery County Department of Public Works & Transportation
Carin Michael, FHWA, Communications & Marketing Team Leader
Steve Moler, FHWA, Public Affairs Specialist
Mark Ball, Texas Department of Transportation, Public Information Officer, Facilitator
Christina Lavoie, SHA, Office of Highway Development, Transportation Engineer (note taker)

2. http://www.fhwa.dot.gov/construction/accelerated/wsaa0601.cfm#acttnow

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ACCELERATED CONSTRUCTION TECHNOLOGY TRANSFER

Roadway Geometric Design

Skill Set: Roadway / Geometric Design

Highway design elements such as horizontal and vertical geometrics and roadside grading can impact overall project costs as well as construction time frames. Adverse impacts associated with roadway geometrics could include, problematic excavation due to rock, or unsuitable materials requiring excavation and backfill, to impacts to neighboring properties among others. Vertical and horizontal alignments can often result in utility impacts which should be considered during geometric layout. Design guidelines allow for flexibility during design. The designers challenge is to meet state and national design standards while minimizing adverse impacts overall. If all of these elements can be brought together in an efficient manner, the result should be a construction time frame that is as timely as possible with minimal adverse impacts.

Goals for Skill Set:

- Evaluate the horizontal and vertical geometrics to assess efficacy of construction both overall and during various phases of Maintenance of Traffic.

- Evaluate the horizontal and vertical geometrics with regard to access to the surrounding properties during construction.

- Evaluate the design geometrics with regard to impacts to neighboring properties.

- Review all design elements to assure that necessitated utility relocations have been minimized to the greatest extent possible.

- Review key design elements to assess if there are any means of accelerating construction through innovative design techniques.

- Review design elements with regard to the need for permits and the possibility of minimizing or eliminating.

Roadway / Geometric Design (Salon 3)

Ken McDonald, JMT/SHA, Office of Highway Development, Project Manager
Barb Solberg, SHA, Office of Highway Development, Assistant Division Chief
Girish Pancholi, SHA, District 3 Maintenance
Jawad Paracha, SHA, Office of Traffic and Safety

Roadway / Geometric Design (Salon 3) Continued

Wilton (Bud) Roberts, Parametrix, Facilitator
Stephen Park, PEPCO
Norman Roush, URS Corporation
Dane Barton, SHA, Office of Highway Development, Transportation Engineer (note taker)

2. http://www.fhwa.dot.gov/construction/accelerated/wsaa0601.cfm#acttnow

Traffic/ITS/Safety

Skill Set: Traffic / ITS / Safety

Traffic management techniques both during construction and in the completed facility will be critical to the overall success of the project. All innovative techniques that will aide in improving safety, traffic flow, communication and overall speed of construction should be thoroughly reviewed for possibilities. Efficiency in communicating to local elected officials, emergency service providers, the traveling community, and local businesses regarding traffic shifts/detours/restrictions and maintenance of traffic phases during construction will help to minimize impacts. Information systems to communicate via the internet and media should be explored. Incident management systems should also be assessed for potential benefit for this project.

Goals for Skill Set:

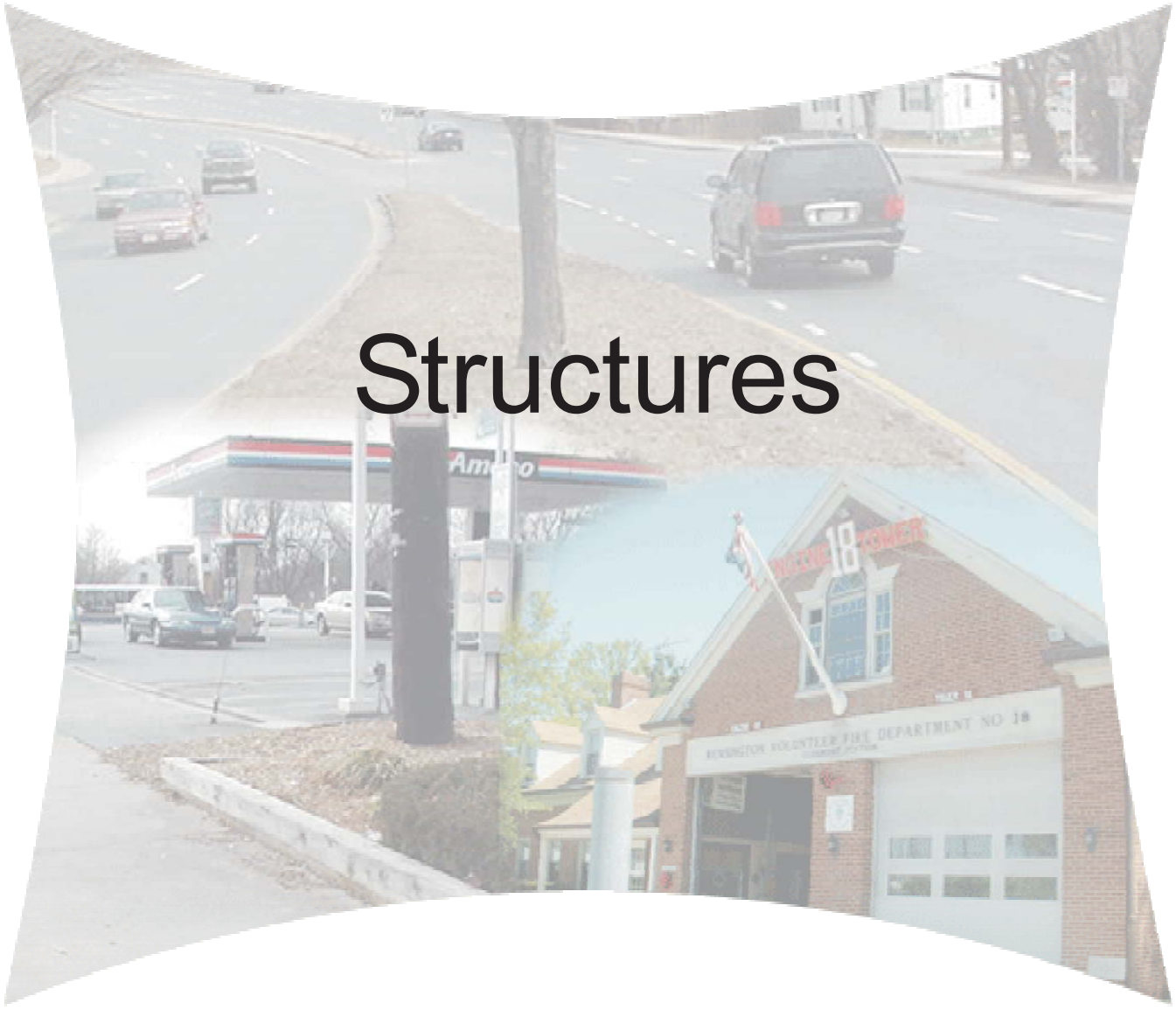
- Review Maintenance of Traffic Plans for opportunities to improve traffic flow and eliminate phases or shorten durations while maintaining safety practices.
- Assess pedestrian and biker safety, mobility and accessibility during construction.
- Consider truck detours during heavy construction periods.
- Consider working with businesses to coordinate truck business deliveries to non construction hours.
- Assess the benefits of a Public Involvement Liaison and Campaign during construction.
- Review construction phases for work zone safety.
- During construction, consider alternate route detours or elimination of certain movements to maximize work zone areas.
- On hand field resources for Incident Management; special event planning during construction and post construction.
- Utilize ITS into construction phasing.
- Assure current technology for traffic control devices (signs, signals, VMS, arrow panels, portable signs).
- Post construction – Traffic Demand Management (hov, mass transit, car/vanpooling, work with local business to encourage flex time, telecommuting, etc.)

Traffic / ITS / Safety **(Salon 2B)**

Sae'd Rahwanji, SHA, Office of Traffic and Safety
April Stitt, SHA, District 7 Traffic Office, Transportation Engineer
Mark Terry, SHA, District 3 Traffic Engineer
Mark Robinson, SAIC, Facilitator
Jim (J.R.) Robinson, VDOT
Shawn Reynolds, Johnson, Mirmiran & Thompson, Designer (note taker)

2. http://www.fhwa.dot.gov/construction/accelerated/wsaa0601.cfm#acttnow

Structures



Skill Set: Structures

The tunnel carrying Randolph Road beneath MD 97, with WMATA rail tunnels located approximately fifty feet below the existing intersection is the focal point of this project. Any effective means of accelerating the construction of both the tunnel and associated retaining walls could have the resultant effect of accelerating the overall project construction period. Review of standard design and construction practices should be performed. Prefabrication or pre-ordering of materials when applicable to avoid delays should be reviewed. Partnering between the owner and the contractor may aide in communications and expediting construction and should be considered.

Goals for Skill Set:

- Design concepts should consider availability of materials. Are there any long lead items?
- Construction areas will be constrained in this tightly urbanized area. Staging areas and accessibility of those areas should be assessed.
- Design concepts should consider the use of early strength concrete or pre-cast materials for tunnel and retaining walls.
- Evaluate impacts to utilities associated with structure foundations.
- Assess the stages of construction and evaluate the possibility of reducing stages.
- Should construction management be considered as a means of improving construction efficiency, owner/contractor partnering and reduction of delay?
- Are there other new types of construction materials and/or techniques that could be used on this project that would speed construction?

Structures **(Salon 2A)**

Jeff Robert, SHA, Office of Bridge Development, Team Leader
Dan Sajedi, SHA, Office of Materials and Technology

Structures **(Salon 2A) Continued**

Jesse Free, SHA, District 4 Construction, Area Engineer
Vasant Mistry, FHWA, Structural Engineer, Facilitator
Derek Constable, FHWA, Senior Bridge Engineer
Keith Gray, FHWA, Bridge Engineer
Steve Stroh, URS Corporation, Deputy of Surface Transportation Bridge Group Manager
Jacob Smith, STV, Designer (note taker)

2. http://www.fhwa.dot.gov/construction/accelerated/wsaa0601.cfm#acttnow

ACCELERATED CONSTRUCTION TECHNOLOGY TRANSFER

Resources on Flashdrive

These Resources are available on the Flashdrive

Planning Document Summary

Environmental

- **4(f) Documentation**
- **Final 4(f) with FHWA Approval**

Meeting Minutes

- **Focus Group/Task Force**
- **Director's Review**
- **Administrator's Review**
- **Adjacent Property Owner**
- **WMATA**

Memo's

- **Administrator's Review**
- **Property Owner**
- **Design**
- **Public Hearing**
- **Improvements to selected alternate**

Photographs of the project at various locations.

ACCELERATED CONSTRUCTION TECHNOLOGY TRANSFER

Resources on Table

<u>These Resources are available on the Table in the Lobby</u>

- **A complete set of plans at 1”=30’-0”**
- **A complete set of cross sections**
- **A copy of the Geotechnical Report**
- **A Color Utility Mosaic depicting the PEPCO and Verizon Relocation Infrastructure**

ACTT
ACCELERATED CONSTRUCTION TECHNOLOGY TRANSFER

General Project Overview

MD 97 (Georgia Avenue) at Randolph Road

Purpose

- Improve vehicular, bicyclists and pedestrian safety
- Improve Levels of Service
- Increase capacity
- Improve mobility and accessibility for the public

Need

- Inadequate capacity
- Safety for motorists, pedestrians and bicyclists
- Inefficient mobility and accessibility
- Montgomery County priority project
- High accident location
- High Traffic Volumes

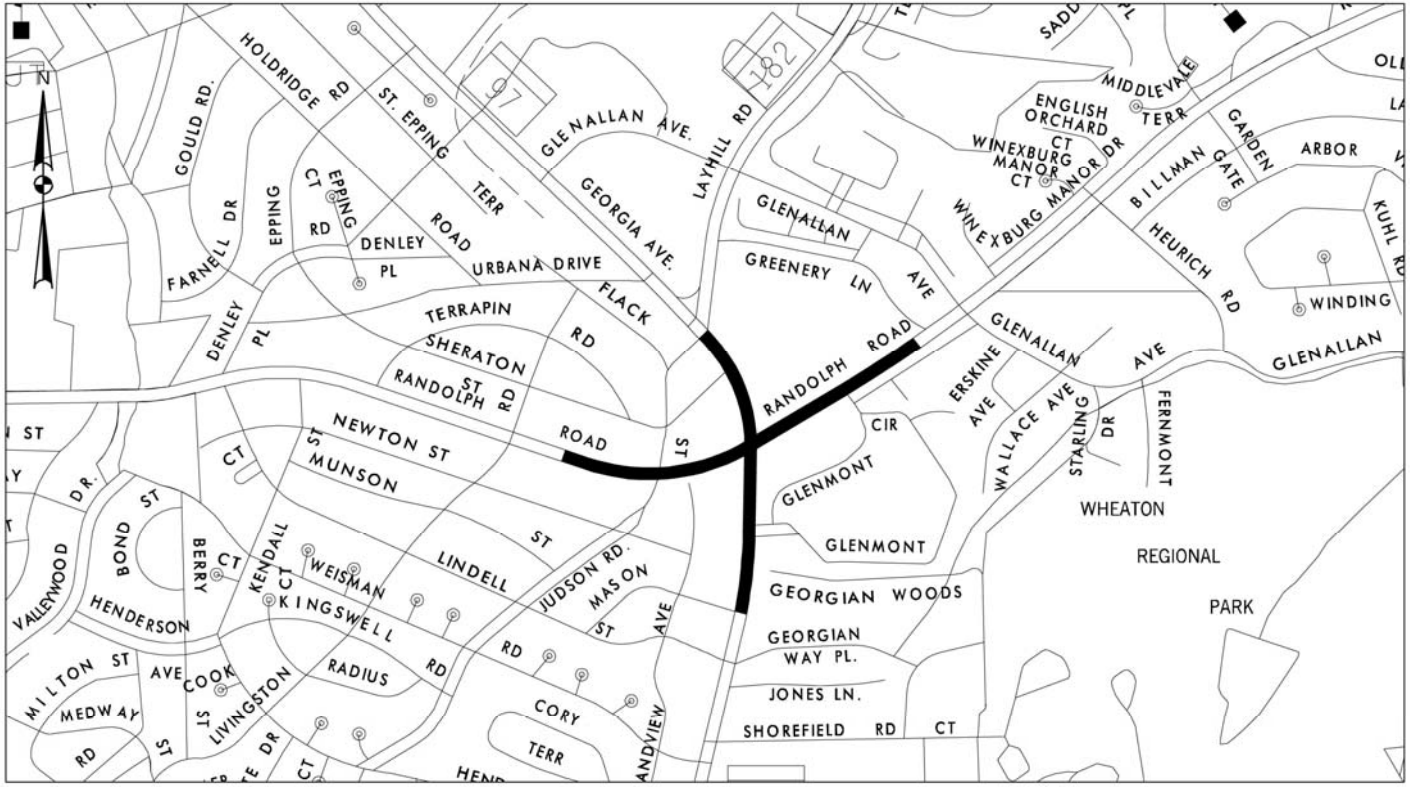
Overview

- Project Costs
  - Preliminary Engineering - $2.7 M (funded)
  - Construction - $45.8M (unfunded)
  - Right-of-Way Acquisition - $23.8 M (unfunded)

Overview

- Proposed Grade Separation
  - Limits:
    - MD 97 From Mason Street on the south to MD 182 (Layhill Road)
      - Approximately 1,900 ft
    - Randolph Road From 300 ft west of Judson Road to 500 ft east of Glenmont Circle
      - Approximately 2,200 ft

Overview



MD 97 (GEORGIA AVENUE) AT RANDOLPH ROAD

Overview

MD 97 (GEORGIA AVENUE) AT RANDOLPH ROAD

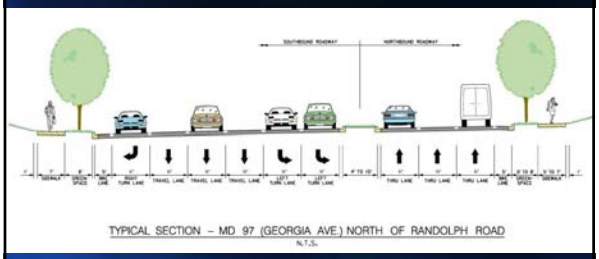
Overview

- **Proposed Grade Separation:**
  - **Randolph Road lowered over 25 ft**
  - **ADT:**
    - MD 97 - 89,250 (2025)
    - Randolph Road - 52,000 (2020)
  - **Structures:**
    - (1) Structure carrying MD 97 over Randolph Road
    - (4) Retaining Walls

Overview

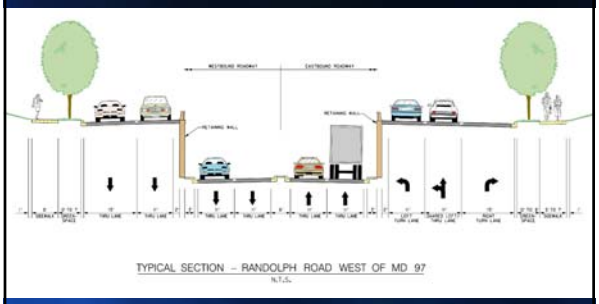
- **Major Utility Relocations:**
  - PEPCO (Electric) – 69,000 volts
  - Verizon (Communications) – Major Communications and Fiberoptics
- **Complex Maintenance of Traffic Plan:**
  - (7) Stages requiring detours to be built to the South to move traffic from the tunnel footprint
- **Typical Sections:**
  - MD 97
    - (3) 11'-0" lanes each direction with turning lanes
    - 5'-0" outside shoulder, variable width median, sidewalks
  - Randolph Road
    - (2) 11'-0" lanes each way through tunnel
    - On top eastbound – three lanes- lt, lt/thr,rt
    - On top westbound – four lanes- two lt, lt/thr,rt
    - 8'-0" Shared off street pedestrian/bicycle path
    - Sidewalks

Overview



TYPICAL SECTION – MD 97 (GEORGIA AVE.) NORTH OF RANDOLPH ROAD

Overview

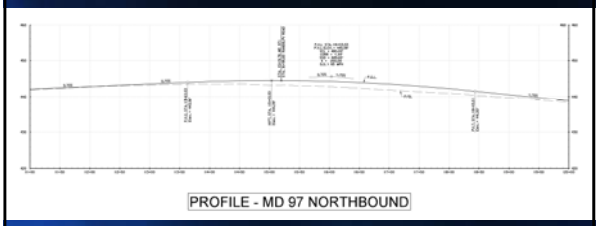


TYPICAL SECTION – RANDOLPH ROAD WEST OF MD 97

Overview

- **Profiles:**
  - MD 97 raised less than 2 ft above existing grade
  - Randolph Rd depressed approximately 25 ft below existing grade
- **Design Status:**
  - Plans are approximately 65-70% complete
  - Utility Breakout Project - advance construct PEPCO/Verizon (on-going)
    - (1) Year Design and (2) Year Construction after design is complete
- **Right of Way Plats have been issued**
- **Permits required:**
  - Stormwater Management, ESC, DNR Roadside Tree Permit

Overview



PROFILE - MD 97 NORTHBOUND

Overview

PROFILE - RANDOLPH ROAD

Project Activities and Schedules

- Location Design Approval – 2002
- Preliminary Engineering Begins - 2003
- Milestone Reviews
  - P.I. Review (30%) - January, 2004
  - Semi- Final Review (65%) - November, 2004
  - Right of Way Plats issued - January, 2007
  - ACTT Workshop September 2007

Major Project Challenges

- Utility Relocations
  - PEPCO and Verizon (Require 2 year Construction)
- Plan of Action:
  - Relocate utilities from beneath the existing intersection to beneath residential streets
    - Judson Road
    - Sheraton Road

Overview

Major Project Challenges

- Kensington Volunteer Fire Department (KVFD)
  - Property is a total take
  - Replacement site and funding for new facility under negotiations between:
    - Montgomery County
    - KVFD
  - Prior to taking of the Existing Facility
    - A new site or replacement services at existing locations must be provided prior to condemnation

Major Project Challenges

- Kensington Volunteer Fire Department

Major Project Challenges

- Complex Maintenance of Traffic
  - Highly urbanized and constrained area
  - Properties tight in all four quadrants
  - 7 Stage MOT including
    - New detour roads to move traffic from footprint of intersection to allow the tunnel structure to be built

Existing Conditions – MD 97 (Georgia Avenue)

MD 97 N. of Randolph Rd
Looking South

MD 97 S. of Randolph Rd
Looking North

Existing Conditions – Randolph Road

MD 97 (Georgia Avenue) at Randolph Road

QUESTIONS?

ACCELERATED CONSTRUCTION TECHNOLOGY TRANSFER

ACTT Presentation

Building on Success

Accelerated Construction Technology Transfer (ACTT)

MD Route 97/ Randolph Road
Interchange Project
Montgomery County, Maryland

Jerry Blanding
Moderator
Federal Highway Administration
September 10, 2007

What is ACTT?

"ACTT is a strategic process, which uses various technologies and techniques to reduce construction time while enhancing safety and quality."

(Faster, Safer, Better)

Building on Success

Origin of ACTT

- **TRB Special Report 249 (1996)**
  - **Recommended strategic forum**
- **TRB Task Force A5T60 "Accelerating Innovation in Transportation" (1999)**
  - **Remove barriers to innovation**
  - **Advocates continuous quality improvement**
  - **Foster strategies for beneficial change**
- **Sponsored by AASHTO TIG & FHWA until 2005**

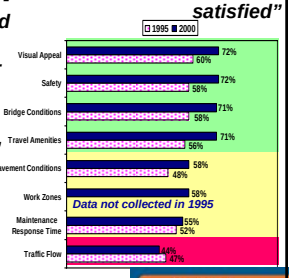
Building on Success

Mobility – An American Necessity

… The public is unhappy with delays and bumper-to-bumper traffic caused by construction, repair, and maintenance of our nation's highways…

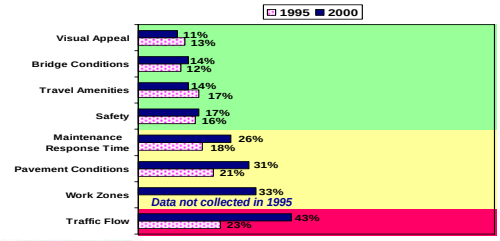
"Get In, Stay In, Get Out, and Stay Out"

Percentage of responses "satisfied" and "very satisfied"



Building on Success

Percentage of responses "dissatisfied" and "very dissatisfied" shown



Building on Success

Why ACTT in Maryland?

- **ADDRESS CUSTOMER NEEDS!!**
- Apply National Expertise
- Improve Roadway Performance
- Improve Safety for the Traveling Public
- Reduce Construction Time & Costs
- Minimize Worker Exposure
- Minimize Traffic Congestion



Building on Success

ACTT Successes and Lessons Learned

- **Feedback received from 6 States that used an ACTT workshop in the project development process**
- **The scope of the 6 projects varies greatly**
- **All 6 States report significant savings or vital lessons learned as a result of the ACTT process**

Minnesota Department of Transportation

Oklahoma ACTT

- **ODOT has realized an estimated $15.8 million in savings for the $360 M I-40 Crosstown project**
  - **Completed early geotech investigations**
  - **Eliminated cast-in-place wall designs**
  - **Use of better traffic control schemes/ detours**
  - **Utilizing pre-established borrow sites**

Louisiana ACTT

- **LaDOTD reduced the construction timeframe from 225 proposed to 125 actual days for its I-20 project**
  - **Utilized very early strength latex modified concrete**
  - **Hyroblasted and overlaid 1½" without raising the road irons**
  - **Used innovation in its TCP and detours**
  - **Incorporated innovative contract methods and optimizing the letting date**

Montana ACTT

- **MDT incorporated a host of ACTT recommendations. A few include:**
  - **Prioritize parcels for acquisition**
  - **Utilized A-plus-B bidding and incentives**
  - **Allow one-lane nighttime operation**
- **Workshop results could have been more significant if held earlier in the project development process**

How ACTT Works

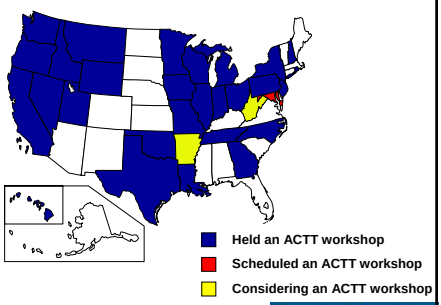
- Review corridor needs to set planned project limits
- Initiate ACTT Model early (planning process)
- Set measurable goals for project (traffic, time, cost)
- Identify needed SKILL SETS (project focus)
- National & local Transportation Professionals brainstorm
- Develop & consider all SKILL SET strategies
- Network with other affected SKILL SETS
- Develop SKILL SET priorities & project limit adjustments
- Develop initial & final reports (address recommendations)



ACTT Skill Sets

- Construction
- Environmental
- Geotechnical & Materials
- Innovative Contracting/ Innovative Financing
- Pavement/Maintenance
- Public Relations
- RW/Utilities/RR
- Roadway Design/Geometrics
- Structures
- Traffic Safety/ITS
- Worker Health and Safety

Status of ACTT to Date



Thank You

QUESTIONS?

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Jerry Blanding
Moderator
Federal Highway Administration