

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

Wednesday, September 16, 2009

Session on:

Overview of Research Program

By:

Donald Williams PE

Office of Research and Special Studies

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What is research?

Research means to search or investigate exhaustively. The collection of information about a particular subject.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

There are two types of research:

- Basic Research
- Applied Research

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

Basic Research:

Basic research is research that is driven by a curiosity or interest in a scientific question. The basic motivation is to expand knowledge on the subject, not to create or event something.

Example: What is the history of limestone formations in West Virginia?

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

Applied Research:

Applied research is designed to solve practical problems rather than to acquire knowledge for knowledge's sake.

Example: Develop a new snow plow that will remove ice off the road.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What does the Division's research section look like?

- Three employees:
 - Donald Williams
 - Elizabeth Lilly
 - Shelly Jeffrey

- Don has an office in Morgantown while Elizabeth and Shelly have an office in Charleston.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

- What are we doing currently?
 - We have approximately 62 (Current and projected) projects in various degrees of activity.
 - Approximately \$11.5 million in contract costs.
 - Have an income to the program of approximately: \$2.1 million.
 - In rough numbers, we can have approximately a \$1.2 million dollar annual program.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

Where does our researchers come from?

- West Virginia University
- West Virginia University at Tech.
- Marshall University
- Fairmont State University
- Rahall Transportation Institute (RTI)
- Other

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

Where do we get ideas for research.

- WVDOT employees
- Management
- University researchers
- Consultants
- FHWA
- Contactors
- Outside agencies

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

Typical letter to solicit problem statements:

Official DOH Letterhead

Dear fellow DOH employee,

Each year, West Virginia Division of Highway employees are given the opportunity to do something that can make a real difference in the way they do their work. Annually, the Division's Research section solicits problem statements from various sources as to possible future research. Although problem statements are solicited from various sources (consultants, researchers, etc.), the statements submitted by our employees are valued knowing that they come from the men and women who see what is done daily and must make it work.

The type of research that the Division conducts through different groups is diverse. As a result, any problem submitted could be studied if chosen. The statements submitted can be from any level and with varying degrees of complexity. I would like to encourage all from field personnel to upper management to submit statements that can make a change. Statements can range from the way an operation works in the field to problems we are having with design specifications. The Commissioner and Deputy Commissioner have indicated that future research projects should emphasize issues that are important to agency personnel. The statements submitted should be something that can be implemented by the DOH and improve the performance of the Division.

To submit a problem statement, please complete the attached form and submit it to Donald Williams by August 31, 2008. Directions as to specifically where to send it are located on the form. Please submit only the form and no solutions at this time. Once received, the Research section will have groups evaluate the statements and then prioritize them. The plan will be to incorporate chosen problem statements from various sources into the 2010 research program.

In closing, the Division looks forward to the evaluation of your statements. If you have any questions, feel free to contact me at 304-677-4000 or Elizabeth Lilly at 304-558-9602.

Sincerely yours,

Donald L. Williams
Research and Special Studies

Attachment:

Cc: Rob Pennington, Paul Mattox, Paul Turman, Marvin Murphy, Jim Sothen, Tom Smith (FHWA), Kevin Burgess (FHWA)

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

Why do we solicit problem statements?

It may not seem obvious but there is a reason we solicit problem statements instead of ideas or thoughts. Problem statements are just that, a statement concerning something to be researched. If it was submitted as an idea, then the one submitting it has certain intellectual property rights and ownership.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

Form to solicit problem statements:

West Virginia Department of Transportation
 Division of Highways
 Research and Special Studies
 Solicitation Form for Research Problem Statements (For FY 2009)
 (Due by: September 30, 2009)

General information on one submitting problem statement:

First Name: _____ Last Name: _____
 Address: _____ City: _____
 State: _____ Zip Code: _____
 Email Address: _____ Fax Number: _____
 Phone Number: _____ Date: _____

Proposed title for problem statement:

State the background of the problem statement: (Technical objectives, principle work tasks, etc.)

What is the objective of the research? (What will be the outcome if completed? Ex: reduce cost)

What is the potential benefit of the proposed research to the WV Division of Highways?

Project Specific Information:

Estimated duration of the research? _____ Months Don't Know
 Estimated cost to do the research? _____ Don't Know
 Do you have a recommendation as to who should do the possible research? Yes No
 If yes, who would be the person: _____
 Would you be willing to be the project monitor? Yes No

Please send completed form by email to: Donald.L.Williams@wv.gov
 Or mail to: Donald Williams, Research and Special Studies, 1900 Kanawha Blvd E., 8 th. Floor,
 Charleston, WV 26305 (Fax to: 304-558-3783)

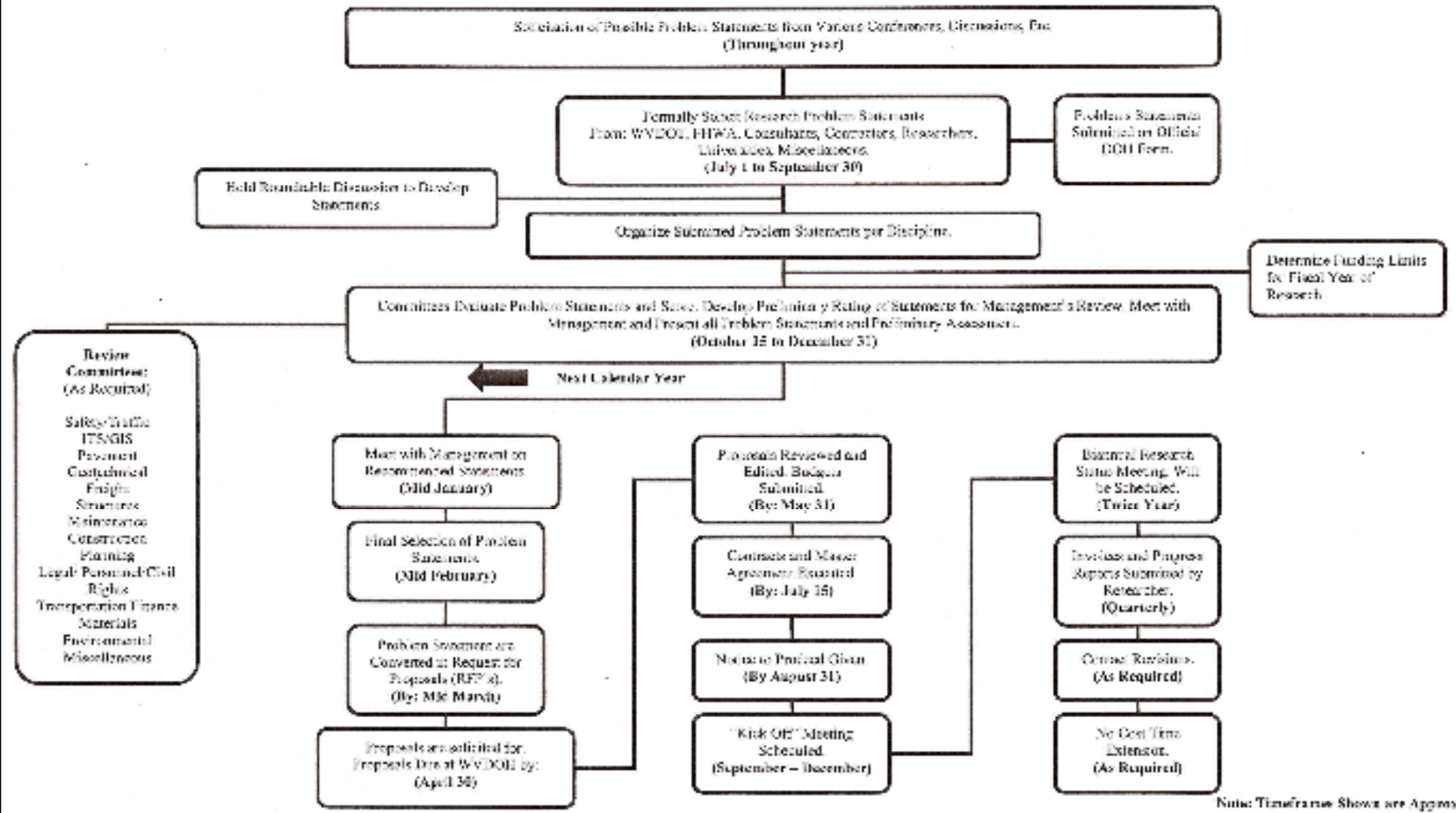
If you need additional information or have a question, please contact Donald Williams at 304-677-4000, Elizabeth Lilly at 304-558-9602 or Shelly Jeffrey at 304-558-9294.

WVDOT Office of Research and Special Studies
 Date: November 25, 2008
 Form Number _____

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

How does the process work?

Process and Time Frames for Solicitation, Selection and Monitoring of WVDOT Research Projects



2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What are the proposed projects for FY 2010?

Continued funding of the State's Asphalt Technical Program at WVU (RP-122).

Has been normally funded at a level of \$80,000 per year.

Would like to add to the current program submitted problem statements PS-46 and PS-55 which looks into the maintenance activities associated with maintaining current asphalts (Example: evaluating various commercial products available for pothole patching) Would add an additional \$30,000 for this evaluation of materials and discussion.

Also would add to the RP for research in evaluating the use of R.A.P. in asphalt along with the details associated with the use of "Warm Mix" asphalt. Add an additional \$30,000.

Research will meet with Material's personnel to develop specific tasks for this research.

These monies would be used based on the distribution of the tasks developed.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What are the proposed projects for FY 2010?

Low cost solutions for dust abatement on gravel roads.

Project submitted the WVDOT to evaluate ways and materials that can be used for dust control on gravel roads. Would evaluate commercial products and see what other methods are available. Field work would take place and report would be generated.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What are the proposed projects for FY 2010?

A study of concrete mix designs and temperature control methods for mass concrete projects in West Virginia.

Subject that has much discussion and WVDOT forming task group to look at use of mass concrete requirements and specifications. Would anticipate meeting with said task group to determine tasks for research. Research would be developed based on needs required from recommendations of task group. If task group does not have specific research questions, monies will carry forward.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What are the proposed projects for FY 2010?

Evaluation of quick set concrete bridge deck repair products.

District 7 has done some of this work. Will evaluate different commercially available products.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What are the proposed projects for FY 2010?

Initial evaluation as to need of a WVDOT testing facility for structures, materials and traffic.

Would determine if there is a need for a WVDOT testing facility. This would be a preliminary study to develop a needs assessment and preliminary cost for such a facility. Goal would be to develop a document with recommendations for management as to use, location, cost, etc.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What are the proposed projects for FY 2010?

Development of work zone traffic control to prevent end of queue accidents.

Would take aspects of both problem statements to develop tasks to help eliminate this very dangerous situation. Goal will be to develop a static or movable advance warning system to warn motorist of an approaching queue.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What are the proposed projects for FY 2010?

Concrete deck sealers and friction courses.

Evaluate current deck sealers and aftermarket friction additives for concrete and asphalt surfaces.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What are the proposed projects for FY 2010?

Supplemental to RP-221

Continue working with Dr. Chen at WVU on self consolidation concrete.
Materials had requested this supplemental.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What are the proposed projects for FY 2010?

Pooled fund study with Southwest Research Consortium.

States in the same region of RAC are pooling together to meet and determine common projects that are beneficial to the whole region. Monies are to travel, etc. I have indicated my support preliminary of this consortium.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What are the proposed projects for FY 2010?

Peer review of WVDOT's Research program.

Each state is to have a peer review of its research program by other states as per FHWA mandates. It would be requested that a peer review be completed of the State's anticipated new research manual in the Spring of 2010. Costs are all refundable by the state for all expenses. Normally 10-15 states participate along with the FHWA.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What are the proposed projects for FY 2010?

Review and evaluation of shoulder stabilization.

Submitted by FHWA. Research will evaluate different methods to achieve long term shoulder stabilization. This could reduce off the road accidents. Would also like to evaluate in the field the Mechanical concrete that has that the WVDOT has been approached by Sam Banasso. Idea would be to do test sections in field where problems exist and do some long term monitoring.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What are the proposed projects for FY 2010?

FRP Vision meeting.

The goal would be to have a one to one and a half day meeting with WVDOT end users (Bridge Engineers, Design Engineers, Central office and Materials) to meet with the goal of focusing the best locations to use FRP in West Virginia. The meeting would also expose this group to what has been done in West Virginia in FRB areas outside of decks. May bring in some other states to show case new uses to FRP products. Would like to have professors from Marshall, RTI and WVU attend to listen and then offer advise. Goal is to focus research monies to the needs in West Virginia.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

Review:

- The problems statements submitted are diverse.
- Research will take place at various locations.
- Problems statements coming from and being directed more from DOH personnel.
- Almost a 50/50 split of what I would call applied verses basic research. In the past, much of what was done was applied.
- Length of research shorter terms so that results can be implemented.
- More focus on developing specifications and standard drawing for things so that employees can implement.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What does the future hold with the section of Research and Special Studies?

- A new Research manual.
- Forms that are consistent.
- A justifiable format for selecting problem statements.
- Developing a process to ensure that best researchers for topic chosen.
- Developing a new Master Agreement.
- Making sure that more research is applied.
- Keeping in tune with current research.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What does the future hold with the section of Research and Special Studies?

- The development of a library for the DOH.
 - Location to be determined.
 - Archive current resources.
 - Hire a librarian.
 - Ability to obtain books and resources from around the world.
 - Do literature reviews and studies.
 - Develop process for searching internet.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

What can you do?

- Submit problem statements that can make a difference in the way we do our work.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

Special thanks !!!!

Many in these groups will receive surveys I receive from other State DOT's. Some are simple but some require quite a bit of work. I do appreciate the time many have taken in answering these and returning the requested information.

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

Any Questions?

2009 WVDOT/MPO/FHWA PLANNING CONFERENCE

Thanks?