

Materials Laboratory Strategic Directions 09-11

7/14/2011

Geotechnical

Steve Lowell		2009			2010						2011															
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter			
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
1	GIS boring log database																								80%	
2	Improve horizontal drain effectiveness																									80%
3	Modified wire mesh/cable net slope protect system																									95%
4	Update unstable slopes folio							100%																		
5	Develop residual strength dbase - landslide design																									70%

Jim Cuthbertson		2009			2010						2011															
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter			
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
6	Develop lab test ability to characterize liquefaction																									80%
7	Develop expertise in site specific seismic design																									90%
8	Develop soil/rock property database																									50%
9	Geogrid Subgrade and base course stabilization	On hold until more research funding becomes available as a follow-up to the pooled fund study just completed.																								

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Geotechnical

Tony Allen		2009			2010						2011															
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter			
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
10	Update Geotechnical Design Manual																									95%
11	LRFD design spec's development																									90%
12	MSE Wall Research																									90%

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Geotechnical

Task	Description
1	<p>Develop strategy and implementation plan (including estimated cost, time, and FTE's required) to develop plan to include new and existing geotechnical borings statewide in a GIS database, and begin implementation. Assigned to: Steve Lowell/Marc Fish</p> <p>Status: A prototype of the database has been developed that will use gINT and Stellant as the source for the data, and is close to being ready to implement. The final draft plan has been completed and is awaiting management review. Anticipated completion of final plan is September 2011, with data entry continuing into 2012, depending on how fast the portions of the implementation plan that need software development can be accomplished.</p>
2	<p>Improve horizontal drain effectiveness through development of improved design procedures. (A) Complete pooled fund research study, including assessment of several instrumented field horizontal drain installations. (B) Develop implementation plan to incorporate results into WSDOT design and construction practice. Assigned to Steve Lowell/Tom Badger</p> <p>Status: Pooled fund study is underway - anticipated completion is end of 2011. had TAC meetings in March and June and research is on track for on time completion.</p>
3	<p>Develop, via a regional pooled fund project, a modified (elevated) wire mesh/cable net slope protection system to improve ability of system to capture rockfall and direct it to ditch at slope bottom. (A) Develop preliminary design with help of Bridge Office. (B) Set up a regional pooled fund research project and obtain funding. (C) Gather results from previous research studies worldwide (Europe, Colorado, previous pooled fund study at WSU on wire mesh slope protection) to estimate likely loads imposed on system. (D) Develop prototype design suitable for field verification testing. (E) Conduct field verification testing (possibly at existing test facility such as the one CDOT has). Implement in WSDOT design and construction practice, including development of standard designs and plan sheets, GSP's, etc. Assigned to: Steve Lowell/Tom Badger</p> <p>Status: Final Bridge Office plans have been completed. Tom Badger's trip to Switzerland in August resulted in our ability to potentially access a number of full scale case histories from there that we can use to calibrate the design. But so far, those who possess that information have been unwilling to share it with us. Since that time, we have completed one full scale installation in a project near Lake Chelan, from which we were able to learn how to make the system more constructable. From that, the Bridge Office has made plan improvements, and visual monitoring of the performance of that installation will continue through next summer (2012).</p>
4	<p>Update unstable slopes folio to reflect current program status and strategy. Due by: Dec. 2009.</p> <p>Status: Folio has been completed and distributed by end of 2009, as planned.</p>

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Task	Description
5	<p>Develop residual strength database to improve design parameter selection for landslide analyses. (A) Obtain ring shear testing device to be used to determine the residual strength of soil for landslide projects. (B) Develop database of ring shear (residual strength) test results and correlate with other soil properties such as PI or LL, gradation, residual strength from back analysis of landslide, and also correlate with geologic unit. Assigned to: Steve Lowell./Doug Anderson</p> <p>Status: Ring shear testing device has been purchased and equipment has arrived. Preliminary testing has for the most part been completed. The first comparison tests to testing done by Division consultants to verify accuracy of our testing has shown that the detailed protocol needs improvement, and that significant modification of the available ASTM standard is needed. Work to improve the test protocol will continue through the rest of 2011.</p>
6	<p>Develop the ability to conduct soil specific testing to assess the potential for liquefaction and to provide input parameters for liquefaction design. (A) Obtain cyclic simple shear testing device once funding is available. (B) Also obtain x-ray or gamma ray device to evaluate usability of soil samples for cyclic simple shear testing. (C) Provide training to staff on how to pick test parameters and on how to use the data obtained from the cyclic simple shear tester. (D) Develop database of liquefaction test results and correlate to geologic units. Assigned to: Jim Cuthbertson/Pete Palmerson.</p> <p>Status: Equipment has arrived, the staff have had basic training on the equipment, and trial testing has begun. Have begun using the equipment for actual design projects. However, purchasing X-ray equipment has been put on hold for the foreseeable future, so we have investigated local places where we can get such testing done. Additional advanced training for this equipment is yet to be accomplished. Completion will depend on when the advance training can be accomplished.</p>

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Task	Description
7	<p>Develop expertise in site specific seismic design, including lateral spreading/flow failure analysis. (A) Start with core seismic staff who already are developing the needed expertise. (B) Develop training plan for core staff to more fully develop their expertise in this area, including attendance at conferences as they become available and are determined to be beneficial to achieving this strategic direction. (C) Obtain or update the necessary computer software to conduct the seismic analyses needed – especially important is obtaining/augmenting non-linear effective stress analysis software. (D) Have core seismic staff consult with other staff who are faced with doing this type of design on their projects, and as they do so, train these other staff on how to do the analyses needed. (E) Continue development/revision of the GDM, especially chapter 6 on seismic design to document the design procedures needed, how to obtain the design parameters needed, etc. Assigned to: Jim Cuthbertson.</p> <p>Status: The core seismic team members have been selected and are informally recognized as such. One key program has been purchased (DMOD-2000) though there are some key flaws in the program model that need to be overcome. Basic training regarding the use of this program has been completed, but more detailed training is needed. Chapter 6 of the GDM continues to be updated to reflect what we have learned on this subject so that the rest of the staff know. Some areas are still under development, such as how to estimate lateral spreading and its effect on foundations more accurately. We need to develop our expertise in FLAC modeling as it relates to seismic design to overcome these problems. We have recently purchased updated FLAC programming, and have completed basic staff training on its use for liquefaction/lateral spreading, and general use of the FLAC program. Two projects have been identified to implement this training, and are currently underway. We have also conducted implementation research through the University of WA to develop ground motion modeling and analysis tools and guidance needed for conducting site specific seismic analyses, including the inclusion of better earthquake records for subduction zone earthquakes. The final report and computer program for this work is currently under review by Geotechnical Division staff and should be ready to implement by early fall 2011.</p>
8	<p>Develop soil/rock property database and correlate those properties to geologic units are commonly encountered. (A) Set up database so that as test results are obtained, they can be recorded/stored in an easily retrievable system. Build in flexibility for future use in GIS. (B) Do search of lab data in previous projects recorded/stored in Stellant to help populate the database. (C) As time allows (during less busy times in lab), conduct tests for key properties (shear strength, compressibility, etc.) on existing stored undisturbed samples. (D) Correlate test results to geologic units. (E) Summarize results in Chapter 5 of the GDM to provide design parameter selection guidance based on these results. Assigned to: Jim Cuthbertson/Pete Palmerson/Bob</p> <p>Status: The complete lab data are being gathered and stored on the M-Drive, for now organized by project. A summary database has not been developed as yet, and we are looking at options on software that could link this data to the data already stored in gINT. Will likely need IT help to fully accomplish this. Once that database is created, we will begin correlating it to geologic units. Due to the heavy work load this year, we have not been able to get this database to a usable form as yet. The first step will be to develop a plan and draft RFP to procure the needed database development, anticipated to be developed by Dec. 2011 - continued progress on this strategic direction will depend on the ability to get the needed funding priority to develop the database.</p>

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Geotechnical

Task	Description
9	<p>Develop investigation and implementation plan for use of geogrids in pavement base coarse reinforcement and as subgrade reinforcement for pavements. (A) Summarize results from nationwide survey. (B) Review research results obtained to date by others, and in consideration of nationwide survey results, determine what is known, and what is not known that needs to be known, developing preliminary design and use policies for geogrids for this application. (C) Identify potential test sites where this trial design policy could be tested. Assigned to: Jim Cuthbertson</p> <p>Status: The survey has been completed, but the final report on the survey is yet to be completed due to the heavy workload that has occurred during the past year. A final report for a pooled fund study on this subject (WSDOT is a study partner) has just become available. Conclusions at this point indicate that geogrids provide marginal benefit unless the subgrade soil is very soft. However, what we don't know is just how soft the subgrade, or how thin the pavement section, needs to be before significant benefit can be derived from the geogrid. More research is needed, and research efforts by others (NCHRP) is underway to develop the analysis tools needed by pavement designers to accommodate geosynthetic base reinforcement. This strategic direction should be put on hold until the results of that research are available.</p>
10	<p>Continue development of the GDM, especially focusing on foundation design for marine structures, addressing the specific needs of WSF, completing an update to the walls chapter, and filling any gaps in the recommended design practice to insure clarity for design-build contracts. (A) Complete updates by Dec. 2009 Assigned to: Tony Allen/Jim Cuthbertson</p> <p>Status: Updates to several GDM chapters were completed and reviewed (including FHWA approval) in October 2009 and published in January 2010. The development of new guidance on design of marine structure foundations has been part of this effort but there is still much to do to complete that particular chapter, and improvement to other chapters has become higher priority due to the needs of several design-build projects. Completion of the marine foundation chapter has therefore been put on hold. Chapter 15 (walls) underwent a major revision (including the geosynthetic wall Standard Plans referred to in that chapter), and was published in August 2010, and another update to that chapter was completed, approved, and published in June 2011. Working on continued updates to chapters 6 and 8. The chapter on geotechnical investigation for design-build projects is in need of major revision, and is anticipated to be completed by the end of August 2011. Note that work on the GDM is an on-going process, so this strategic direction is anticipated to continue through the next biennium.</p>

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Geotechnical

Task	Description
11	<p>Continue to develop geotechnical design procedures in LRFD format for aspects of foundation and wall design that are not currently in LRFD format (soil nail walls, micropiles, noise walls, reinforced slopes, etc.), primarily through continued participation in the AASHTO Bridge Subcommittee and various NCHRP panels, and possibly other research. Develop updated procedures to submit to AASHTO regarding seismic design of walls, and updated drilled shaft foundation design procedures. Assigned to: Tony Allen.</p> <p>Status: A major update to the pile design specifications was submitted to and approved by the AASHTO Bridge Subcommittee in July 2009. Updated seismic provisions for walls has been completed by T. Allen, and was approved nationally by the Bridge Subcommittee in May 2011. Observations made by T. Allen through a trip to Chile to investigate earthquake damage were considered in the writing of these new seismic provisions. With the new FHWA drilled shaft manual anticipated to be available soon, the next major effort will be an update to the AASHTO Section 10 shaft design specifications, anticipated to be completed by July 2012.</p>
12	<p>Develop long range plan to fully implement MSE wall research (K-Stiffness Method). Complete research reports and publish updated design method in well respected journals. This includes development of load and resistance factors using reliability theory, application of method to seismic design and to establish link between working stress design (K-Stiffness method) and limit equilibrium design (compound stability analysis). Work with other states/agencies to identify potential instrumented test walls, including those with lower quality backfill materials to establish accuracy of method. Complete RMC research - scheduled completion date is Dec. 2010. Prepare agenda item for AASHTO to include new design method in the AASHTO LRFD specifications. Assigned to: Tony Allen.</p> <p>Status: Numerous journal papers on the K-Stiffness Method have been published or are in the publication process in a number of international and domestic journals. The most recent work has been done with the assistance of a visiting scholar from Japan, in which the K-Stiffness method was shown to be valid for a series of Japanese walls, broadening the applicability and acceptance of this research. The method has now also been expanded to lower quality backfill materials through the evaluation of Japanese and other full scale wall case histories, and the K-Stiffness method has been modified to accommodate the cohesion that is usually present in lower quality backfill materials. Testing of the full scale lab walls using the lower quality backfill material has been completed, so that this adaptation of the K-Stiffness method to cohesive soils can be refined. The final experimental features project report for the SR-18 test walls is near completion. Analysis and numerical modeling of all the data is underway, including calibration work to adapt the method for LRFD wall design. The amount of data to analyze has been overwhelming, and it is not anticipated that completion of the final report will be at least June 2012. Several papers on the LRFD calibration of the various MSE wall design methods including K-Stiffness, have been recently published or submitted for publication, and are in review. Efforts are also now underway to relate K-Stiffness working stress design to limit equilibrium design, a key final step in developing a complete design protocol for these types of walls.</p>

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Pavements

Jeff Uhlmeyer		2009			2010						2011															
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter			
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
1	Update WSDOT Pavement Policy																									100%
2	Quieter Pavement Communication Tools																									100%
3	Permeable Pavement Proviso																100%									
4	Next Generation Concrete Surface Texture																									100%
5	WSDOT Pavement Preservation Folio																									75%
6	PCCP 10 Year Plan																100%									

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Pavements

Mark Russell (Design)		2009			2010						2011														
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter		
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
7	Monitoring of Quieter Pavement Test Sections	On going data collection and evaluation																							
8	Experimental Features	On going data collection and evaluation																							
9	Pavement Forensics	On going data collection and evaluation																							
10	2010 Annual Chip Seal Cost Summary													100%											
11	2011 Annual Chip Seal Cost Summary																								100%
12	PCCP Smoothness Specification																								60%
13	Update Pavement We Page																								95%
14	Safety Edge Evaluation																								40%
15	Diamond Grind Specification Evaluation																								80%
16	Roundabout Pavement Policy																								100%

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Pavements

David Luhr (Mgmt)		2009			2010						2011														
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter		
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
17	New WSPMS Interface				100%																				
18	WSPMS Documentation																								75%
19	webWSPMS 2.0 Development													100%											
20	WSPMS Training																						100%		
21	Evaluation of Pavement Life																								30%
22	Economic Performance Measures																								85%
23	WSPMS Data Base Audit																								20%
24	Evaluation of INO, texture and Skid Data																								10%
25	Develop WSPMS Notebook																								60%
26	Tracking P1 Preventive Maintenance																								80%

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Pavements

Task	Description
1	<p>Update WSDOT Pavement Policy</p> <p>Status: The WSDOT Pavement Policy document has not been updated since January 2010. Several developments have occurred over this period of time and require update of document (Rumble strips criteria, LCCA and roundabouts, design catalogs).</p>
2	<p>Quieter Pavement Web Page Communication Tools. Provide updates to folios and webpages communicating WSDOT's quieter pavements performance.</p> <p>Status: Web page will be launched January 2011</p>
3	<p>Prepare Permeable Pavement Proviso documenting the feasibility of utilizing permeable pavement in Washington State.</p> <p>Status: Literature search is underway.</p>
4	<p>PCCP Diamond Grinding Evaluation - A "new generation" technique for diamond grinding of concrete pavements has been developed by industry, and WSDOT test sections will be used to evaluate.</p> <p>Status: The I-82 test project was constructed in 2010, another I-82 project is planned for 2011. A report is being written to document the work.</p>
5	<p>WSDOT Pavement Preservation Communication Plan - Develop communication strategy and prepare document to communicate a.) the benefits from the P-1 program over the last 30 years, b.) the expected increase in costs or decrease in quality of P-1 not fully funded including discussion of the risks inherent in letting HMA pavements become past due, c.) Consider using folio (four pager), webpage, two-pager, Power-Point and other methods to communicate.</p> <p>Status: Plan is being developed.</p>
6	<p>PCCP 10 Year Plan/WSDOT Concrete Needs</p> <p>Status: Plan is being developed to communicate WSDOT's statewide 10 year concrete needs.</p>
7	<p>Monitor and evaluate (for at least a five year period or until failure) pavement performance and noise characteristics on the three (I-5, Lynnwood, SR-520 and I-405 - construction in 2009) quieter pavement test sections. Monitor WSDOT concrete test sites.</p> <p>Status: Monitoring of Lynnwood began 2006, SR-520 began in 2007 and I-405 began in 2009. Various concrete sites are being monitored statewide.</p>

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Pavements

Task	Description
8	Continue documenting WSDOT's Experimental Features. Status: Continuing monitoring construction and performance.
9	Continue documenting WSDOT's Forensic Investigations. Status: Continuing follow-up with documenting pavement failures, those that have not performed as anticipated. This activity is ongoing.
10	2010 Annual Chip Seal Cost Summary. Status: Review is complete for 2010 contracts
11	2011 Annual Chip Seal Cost Summary. Status: Review is begun for 2011 contracts
12	PCCP Smoothness Specification. Status: Project is on hold until measuring equipment can be modified.
13	Pavement Design Tools for Web. Status: Project is on hold.
14	Safety Edge Evaluation Status: Evaluation is beginning
15	Diamond Grind Specification Revision Status: Discussion underway with the SC Region. A revised specification will be used on I-82 in 2010
16	Roundabout Pavement Policy Status: Plans used statewide are being summarized and a single recommendation is forthcoming.
17	New WSPMS Interface - Contract with Pavia Systems for a 3-year development of user interface for WSPMS. Status: webWSPMS 1.0 was deployed in July 2009.

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Pavements

Task	Description
18	<p>WSPMS Documentation - The WSPMS has been successfully functioning for over 40 years. However, no concise documentation of the WSPMS exists. This documentation will summarize the existing publications as well as describe PMS concepts incorporated into the webWSPMS.</p> <p>Status: WSPMS file processes have been documented, Profilometer calibration has been documented. WebWSPMS requirements document, and API document are complete. Reporting of webWSPMS functions and development needs to be completed.</p>
19	<p>webWSPMS 2.0 Development - The development of WSPMS will continue with webWSPMS 2.0 version targeted for a series of deployments in 2010.</p> <p>Status: Purchased Services contract with Pavia was not continued. The 2010 version of WSPMS was completed internally and delivered on June 14, 2010.</p>
20	<p>webWSPMS Training - Training for webWSPMS will be ongoing. This will include on-line tutorials, Regional on-site training, and Go-To-Meeting demonstrations.</p> <p>Status: A new User's Guide was developed and placed online with the 2010 version of WSPMS. More GoToMeeting sessions are planned for the future, and Regions have been notified that on-site training is available. On-site training was conducted in each region and HQ for a total of 90 attendees in February - March 2011.</p>
21	<p>Evaluation of Pavement Life - The Calculation of pavement life in the past few years has not been very rigorous, and many lane-miles of performance have been left out. A thorough method needs to be developed so Pavement Life statistics are automatically generated in the future.</p> <p>Status: Initial calculations have been performed; results will be analyzed.</p>
22	<p>Economic Performance Measures - The development of economic performance measures (e.g., \$/lane-mile/year or \$/lane-mile/ESAL) will provide important information on how economically WSDOT is managing its road network.</p> <p>Status: An initial set of data has been processed, and is available on the Beta version of WSPMS. The Economic Performance measures will be available with the June 2011 production release of WSPMS.</p>
23	<p>WSPMS Data Base Audit - Some fields in the database are blank, for certain years. Other data is not consistent. An audit needs to be done to identify problems with the data base and develop remedies.</p> <p>Status: Work has begun on evaluation of data issues, but no recent progress has been made.</p>
24	<p>Evaluation of INO, texture and Skid Data - These data items have been collected for years, but a thorough analysis has never been done. The data needs to be evaluated to determine how it could or should be used in WSPMS. One new aspect is use of INO data for estimating grinding quantities.</p> <p>Status: The analysis work has not begun. INO data has been made available to the regions.</p>

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Pavements

Task	Description
25	<p>Develop WSPMS Notebook - Similar concept to the "Grey Notebook", the WSPMS Notebook can be a standard repository of statistics, graphs, and other performance indicators that any one can retrieve off of the internal web site. Items to include: WSPMS lane miles by type, fair or better condition plots, IRI data, construction lane miles by season, project costs, chip seal annual costs and more . . .</p> <p>Status: Requirements document has been completed. Scope is being modified to not overlap with WebWSPMS. Many functions can probably be included in WSPMS</p>
26	<p>Tracking P1 Preventive Maintenance -Most Regions have chosen to select preventive maintenance projects (crack sealing, chip seal, and patching) in their P1 program. These sections need to be monitored so that the effect of the preventive maintenance can be evaluated.</p> <p>Status: Regions have selected projects, and some maintenance work is was completed in 2009. Sections will be noted for monitoring in WSPMS. Meetings have been held with Maintenance to discuss data needs and current file systems. Data components are being developed for the June 2011 production release of WSPMS.</p>

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Construction Materials

Joe DeVol		2009						2010						2011											
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		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1	Examination of HMA N-design																								75%
2	Identify and Implement New Moisture Susceptibility Procedure										100%														
3	Performance Prediction Testing Study - Part 2 (Hamburg Wheel Tester)												100%												
4	Aggregate Specific Gravity Study - Part 1 (Mechanical vs. Human)																			100%					
5	Aggregate Specific Gravity Study - Part 2 (Variation in Production)																								100%
6	PG Plus Specifications													100%											
7	Multiple Stress Creep Recovery Asphalt Binder Specifications																								50%
8	HMA Rutting and Moisture Susceptibility Research Study																								30%
9	HMA Density Study																								20%

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Construction Materials

Bob Briggs		2009						2010						2011											
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		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
10	Integrated Computer Applications																								100%
11	Replace RegTec with Mats											100%													
12	MTP												100%												
13	Statistical Aggregate Acceptance																								100%
14	HMA Mix Design Submittal Program																								25%
15	Concrete Mix Design Submittal Program																								10%
16	Document Storage for MTP																								96%
17	Finish the Materials Testing Program																								93%

Rob Molohon		2009						2010						2011											
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		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
18	Quality Control Plans																								0%
19	Specification for Large Aggregates/Rocks																100%								

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Rob Molohon		2009						2010						2011											
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		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
20	Revision to Division 3 of the Standard Specs																								10%
21	Requirements for a RAM Program																								0%
22	Re-Evaluation of QPL products																								5%
23	Traffic Specification for Trailer Mounted Attenuators							100%																	
24	NTPEP Requirement for HDPE Plastic Pipe																								100%
25	Americans with Disabilities Act (ADA) Warning System																								85%
26	Comparison Study of Sampling Frequency of Aggregate Materials																								100%
Linda Hughes		2009						2010						2011											
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter		
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
27	Develop Basic Statistical Class																								99%

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Randy Mawdsley		2009						2010						2011												
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter			
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
28	Materials Documentation Guide for Design Build																								99%	
29	Materials Section for Design Build Manual																									93%
30	Desk Manual for the CATS Software																									15%

Marilyn Olson		2009						2010						2011													
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter				
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun		
31	Paint - Pig Sealer Specifications																									99%	
32	Replacement Schedule for ICP to X-Ray Florescence																										50%
33	IR Scans for Epoxies																										65%
34	Method studies and set-up for new Ion Chromatograph																										98%
35	Standard specification for silicone joint sealants																										90%
36	Traffic Paint-Metal free Alternatives																										100%
37	Bituminous Adhesive Testing Updates (Pull-off and Flexibility Tests)																										100%

Materials Laboratory Strategic Directions 09-11

7/14/2011

Construction Materials

Marilyn Olson		2009			2010						2011															
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter			
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
38	Fly Ash / Metals Data																									35%
39	Review of all current test procedures AASHTO/ASTM/WSDOT - Write New Procedures																									90%

Dwight Carlson		2009			2010						2011															
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter			
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
40	NTPEP Acceptance for Traffic Devices																									1%
41	Electric Service Cabinet Quality Improvement				100%																					
42	Update Std Spec Section 9-29																									80%
43	Solar Energy Project																									1%
44	Specification for LED Roadway Luminaries																									100%
45	UPS Test Method																									100%
46	Non- Slip Junction Box covers																									50%
47	Performance Specification for UPS																									0%

Materials Laboratory Strategic Directions 09-11

7/14/2011

Construction Materials

Kyle Caufman		2009						2010						2011											
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter		
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
48	Annual Plant Approval Process				100%																				
49	Cross-training TE2 in all Aspects of Inspection				100%																				
50	NTPEP Review Related to Reinforcing Steel													100%											
51	NTPEP Review Related to HDPE Plastic Pipe																								10%
52	Develop QSM Standard Practice Procedures for Plan Approvals																								80%
Mike Polodna		2009						2010						2011											
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter		
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
53	Low Degradation Aggregates in Concrete																								90%
54	Update Construction Manual																								75%

Materials Laboratory Strategic Directions 09-11

7/14/2011

Construction Materials

Task	Description
1	<p>Examination of N-design: Nationwide research underway to validate the Superpave HMA design levels (compaction tables) for volumetric mix designs. The question is: are current standards giving us the best possible pavement performance? This study to include: Review of WSDOT Equivalent Single Axel Loads (ESAL) and HMA design levels; Collect production data for comparison to mix design data; Identify candidate projects to evaluate pavement performance; Provide recommendations for future Superpave HMA design levels.</p> <p>Status: Since implementation of the Superpave volumetric mix design process in 2004 the Bituminous Materials Section has been collecting test data using both the Hveem stability and Superpave HMA mix design processes on every project paved in the state. This review started in January 2005 and will continue until national standards are changed and/or WSDOT alternative is identified. Mix design testing completed, working with Pavement Management Section to identify candidate projects to measure pavement performance. The Research Office, Pavement Management and Construction Materials Sections are meeting on January 26th to finalize the next steps of this research. Meeting to be rescheduled, no change since last reporting.</p>
2	<p>Identify and Implement New Moisture Susceptibility Procedure. The implementation of Superpave volumetric mix design process and the phasing out of the Hveem mix design process facilitates the need for a new moisture susceptibility test procedure. This new procedure must include: A process to evaluate variable quantities of liquid antistripping additives; Use test specimens that replicate volumetric properties of HMA mix design.</p> <p>Status: Surveyed other states to identify alternative moisture susceptibility test procedures. Research indicates that the Hamburg Wheel Tracking Device (HWTD) could provide alternative moisture susceptibility test in addition to predicting rutting potential of HMA. Use of gyratory compacted specimens for moisture susceptibility testing meets requirements as defined above, this process will be used until alternative can be determined. This task is considered completed, HWTD research to be continued under HMA Rutting and Moisture Susceptibility Research Study (task 7).</p>
3	<p>Performance Prediction Testing (PPT) Study - Part 2 (Hamburg Wheel Tracking Device). Research project to identify potential of HWTD to measure rutting susceptibility of HMA mixtures in Washington State. Project to include: Review for existing research; Training with TxDOT; Fabricate samples for testing WSDOT mixes by TxDOT; Develop recommendations for WSDOT to implement the HWTD. On completion of project a report will be written and distributed with recommendation to purchase device and potential specification for design and production testing.</p> <p>Status: Research and literature search completed. Working with TxDOT to identify mix design and production specification applications and coordinate on-site training. Research proposal completed and HWTD has been purchased, see HMA Rutting and Moisture Susceptibility Research Study (task 7) for developing HWTD technology.</p>

Materials Laboratory Strategic Directions 09-11

7/14/2011

Construction Materials

Task	Description
4	<p>Aggregate Specific Gravity Study - Part 1 (Mechanical vs. Human). Part one of this study is an evaluation of mechanical methods for the determination of coarse and fine aggregate specific gravity compared to conventional test methods. This study includes: Corelok automatic vacuum sealing device and the Thermolyne SSDetect testing system; AASHTO T84 & T85 aggregate specific gravity test methods.</p> <p>Status: Project terminated, aggregate specific gravity no longer used in measuring material quality and acceptance criteria for hot mix asphalt.</p>
5	<p>Aggregate Specific Gravity Study - Part 2 (Variation in Production). Part two of this study is an effort to measure the variability of aggregate specific gravity in quarry and gravel sources throughout production on select paving projects. This study includes: Identification and selection of candidate projects for evaluation; Scheduling and acquisition of samples; Testing analysis and reporting.</p> <p>Status: Project terminated, aggregate specific gravity no longer used in measuring material quality and acceptance criteria for hot mix asphalt.</p>
6	<p>Performance Graded (PG) asphalt binder (Plus Specifications). Where is the nation going and where is WSDOT going? Currently some states use and an elastic recovery test to confirm the presence of polymer modification while other states use a forced ductility or toughness and tenacity test but there is no consensus for the detection and/or performance of asphalt binder modification. What tests should be used to verify performance of asphalt modification?</p> <p>Status: In 2007 and 2008 WSDOT used an elastic recovery specification as part of the asphalt binder acceptance testing on trial projects in the Eastern Region. The elastic recovery test does confirm the presence of polymers in asphalt binder but does little to measure its performance. Through the research efforts of the FHWA the Multiple Stress Creep Recovery (MSCR) test was developed for testing the presence and performance of polymer modification. The Bituminous Materials Section has performed extensive informational MSCR testing on all the asphalt binders used on WSDOT projects since 2007. Based on recently established provisional standards for the MSCR specification and test procedure by the American Association of State and Highway Transportation Officials (AASHTO) the Bituminous Materials Section is moving forward with a plan to implement this new procedure. See the Multiple Stress Creep Recovery Asphalt Binder Specification (task 7) for this developing technology.</p>

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7/14/2011

Construction Materials

Task	Description
7	<p>Multiple Stress Creep Recovery (MSCR) Asphalt Binder Specification. Collect informational test data from production samples of performance graded (PG) asphalt binders in 2010 using the provisional MSCR protocol, use this data and previously gathered information to develop and implement a new WSDOT specification for acceptance of PG binders.</p> <p>Status: Summary of previously collected MSCR testing completed and samples from 2010 paving projects are now being tested. After the 2010 paving construction season a complete analysis of the test data from all projects will be used to determine feasibility of implementation of the MSCR in 2011 or 2012. Results from a national inter-laboratory study (ILS) provided precision and bias statements that will result in a delay of implementation of this test. Construction Materials is implementing an Elastic Recovery (ER) asphalt binder test and specification for use in 2012 until MSCR test can be refined to improve precision and bias.</p>
8	<p>HMA Rutting and Moisture Susceptibility Research Study. What can the Hamburg Wheel Tracking Device (HWTD) tell us about the HMA mixes used in Washington State? Can this device predict premature failure of HMA from rutting and/or moisture induced damage? Can the HWTD be used for acceptance of Paving Contractor's HMA mix designs and production material?</p> <p>This study to include: Test mix design verification samples with and without antistripping additive, test production mix design conformation samples and roadway cores from select projects; write specifications and provide recommendations for implementation if warranted.</p> <p>Status: Project on schedule, all 2010 mix design and production sample testing complete, currently analyzing 2010 data and testing 2011 mix design and production samples. Roadway core sample testing delayed until winter of 2011, required purchase of core saw and post construction sample acquisition. Test data will be used to evaluate material quality and identify potential specification.</p>
9	<p>"HMA Density Study. WSDOT is one of only two states in the nation that using the direct transmission method for testing in-place density of HMA when using the nuclear density gauge. There is actually three different methods that can be used to test in-place density with the nuclear gauge; however, it is unclear which method would provide the most accurate and consistent results.</p> <p>This study to include: Perform testing using all three methods on select projects, compare results with roadway cores, analyze data to determine accuracy and reproducibility, provide recommendations for changes to current methods if warranted."</p> <p>Status: Testing on three projects completed, plan to include several more project during 2011 construction season.</p>
10	<p>Develop a plan for integrated computer applications for Construction /Materials. Requirements for MATS is currently underway and expect to have an overall plan for future work to be complete by January 2007. Due to delays, this project has been extended to June 2008.</p> <p>Status: MATS HMA mix design now is directly inputted into SAM. Have added the automatic uploading of test reports from MATS to MTP by bid item number and the test data to SAM. Still working on miscellaneous document storage in MTP and field testing in disconnected mode in MATS.</p>

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7/14/2011

Construction Materials

Task	Description
11	<p>Replace RegTec with Mats within 1 year and continue to develop the remainder of Mats. Development is underway and expect to have the first phase of deployment in January 2007 with the complete deployment of MATS by January 2008.</p> <p>Status: MATS deployed phase 1 in April 07. All acceptance testing is now being done in MATS.</p>
12	<p>Work on MTP to satisfy people's need to achieve 100% usage. The plan is to identify the problems in late 2005 and fix the problems in 2006 with 100% usage of the MTP system by January 2007. Due to delays in programming, this project has been extended to April 2008.</p> <p>Status: MTP is mandatory for the 2010 construction season. Every PE office is now using MTP to some point. With the changes we made to MATS and MTP, they will want to use MTP.</p>
13	<p>Add statistical aggregate acceptance to the standard specifications.</p> <p>Status: The statistical aggregate acceptance criteria will be defined and added to the standard specifications. The statistical specification has been written. We will start to revise the other sections in the Standard Specifications to allow statistical aggregate acceptance. No work on this strategic direction this quarter. Drafted chapter 3 with the aggregate statistical specifications, waiting to have a meeting with the construction office. Had meeting and finished draft. Will be meeting with WACA and WAPA. Will have final finished by June 2011 to go into the 2012 spec book.</p>
14	<p>Develop requirements for a HMA mix design submittal program.</p> <p>Status: As part of the MATS program, we will have a way for the HMA mix designs to be electronically filled out and requested by the contractor. These mix designs will be sent through the project office to the State Materials Laboratory for verification. This strategic direction will be to develop the requirements for programming the HMA mix design submittal process. The initial layout is complete. We discussed this with industry as to the requirements that they would like. We will be developing the requirements based on this discussion. No work on this strategic direction this quarter. This is on hold for the MATS program at this time.</p>
15	<p>Development requirements for a concrete mix design submittal program.</p> <p>Status: As part of the MATS program, we will have a way for the concrete mix designs to be electronically filled out and requested by the contractor. These mix designs will be sent to the project office for approval. This strategic direction will be to develop the requirements for programming the concrete mix design submittal process. When we get the HMA submittal program, it will be easy to make it work for concrete mix designs. No work on this strategic direction this quarter. This is on hold for the MATS program at this time.</p>

Materials Laboratory Strategic Directions 09-11

7/14/2011

Construction Materials

Task	Description
16	<p>Development requirements for MTP to allow for document storage.</p> <p>Status: As part of the ongoing improvements to the Materials Tracking Program, and with the completion of MATS, we need to have an electronic way to store approval documents, acceptance documents, test reports, and other materials documentation in a logical meaningful location with easy access. This strategic direction will be to develop the requirements for programming the document storage process in MTP. Materials test reports from MATS are now automatically filed in MTP. Still working on miscellaneous document storage in MTP. This quarter we have put the process into testing. It needs a few more things and it will be put into production next quarter.</p>
17	<p>Finish the Materials Testing Program</p> <p>Status: The materials testing program, MATS, is about 95% programmed. Working with the chem lab for the last few tests to be programmed. The program will not be completely finished by June 2011. The remaining work, 10 chemical tests will be finished under maintenance.</p>
18	<p>Quality Control Plans for Aggregate Materials Producers & Suppliers, to include recycled materials (glass, rap, pcc rubble, blast furnace slag, foundry slag, foundry sand, and so on.)</p> <p>Status: The development of this standard will be to establish and set protocols for evaluating all aggregate materials to determine their approval status. It will capture all aggregate types of materials and develop methodologies and processes to allow expanded use of recycled materials that are not identified in our specifications such as: foundry sand and roofing tiles. Have not started as of 12/31/10. No change this quarter.</p>
19	<p>Specifications for Large Aggregates/Rocks used in Hydraulic Applications.</p> <p>Status: WSDOT has had many challenges adequately protecting its bridge structures from erosion and scouring. This is a team effort between the Materials Documentation section and HQ Hydraulics to develop specifications for large aggregates to address the performance concerns of hydraulic applications. The specification is completed and has been adopted as of Oct 1, 2010.</p>
20	<p>Revision to Division 3 of the Standard Specs.</p> <p>Status: Division 3 of the Standard Specification currently deals with production aggregate sites and does not reflect today's and tomorrow's way of mining and producing aggregate materials. This section will be revised to include current technology, statistical acceptance of aggregates, and requirements for getting on the ASA database. There will be requirements for recycled materials, and blending facilities included in this section. The statistical specifications have been written. Have started pencil drafting the specification. Will address approval of aggregate materials (recycled included) and inclusion of the statistical specification. No change this quarter.</p>

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7/14/2011

Construction Materials

Task	Description
21	<p>Development of the requirements for a materials approval (RAM) process program.</p> <p>Status: The development of a materials approval computer program will be another step to achieving the fully electronic Project Engineer's Office. The goal is develop requirements to have the RAM process fully electronic (no paper) and tie into MTP. Have not started yet as of 12/31/10. No change this quarter.</p>
22	<p>Develop and implement a plan for the re-evaluation of QPL products.</p> <p>Status: One of the recommendations from the FHWA national audit of other State Highway Agencies was to re-evaluation of materials, systems, and processes listed on the Qualified Products Lists. In an effort to address this recommendation the Materials Documentation section will develop a plan and process for re-evaluating materials, systems, and processes identified in WSDOT's QPL. Have not started yet as of 12/31/10. No change this quarter. Have drafted the process for re-evaluation of Bituminous Materials (PG, Cationic Emulsions), and Cement. Currently classifying the process for geosynthetics (NTPEP, Temporary, and other). 6/14/11</p>
23	<p>Develop traffic specification for trailer mounted attenuators.</p> <p>Status: The current specifications only identify truck-mounted attenuators. As team effort and direction from the Construction Materials Engineer the materials documentation section will assist Traffic Operations in the development of a standard specification that will allow the use of both truck and trailer mounted attenuators. Completed 11/2009, this requirement is in 2010 amendment package.</p>
24	<p>Review and incorporate into the standard specification the requirement that HDPE Plastic pipe manufactures participate in the NTPEP audit program to be accepted by WSDOT.</p> <p>Status: This task has been started. Initial contact has been made with hydraulics. 95% complete specification has been drafted and approved by hydraulics. Currently confirming time it will take a thermoplastic pipe manufacturer to become a full participant of NTPEP. Completed and revision submitted on 3/15/11.</p>
25	<p>Americans with Disability Act (ADA) Warning systems</p> <p>Status: The ADA warning systems have the following challenges; #1 No material specifications, this has lead to bias evaluations of these materials. This issues had been brought to Paul Hammonds attentions from a ADA warning system supplier. #2 An environmental group has determined that the WSDOT is wasting 1/2 billion dollars in ten year by the use of plastic ADA warning systems. This issue had gotten the attention of the House of Representatives and the WSDOT has been directed to address it. #3 WSDOT has documented plastic ADA warning systems losing color contrast in two years. Report is almost done. Estimated to complete 7/1/11.</p>

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7/14/2011

Construction Materials

Task	Description
26	<p>Comparison Study of the sampling frequency of aggregate type materials</p> <p>Status: Comparing business models of other DOTs. This study the WSDOT comparing it criteria for sampling aggregate materials (including HMA and PCC). The states selected where the following; Oregon, Texas, Virginia, and Minnesota. The specific areas are frequency and whom is doing the sampling and testing. Completed this task on 6/2/11.</p>
27	<p>Develop a basic statistical class that teaches our specification and calculations.</p> <p>Status: This course is intended to be a brief synopsis of the specifications and calculations used to determine pay factors for statistical acceptance of materials. This course will aid in reducing phone calls to the Materials Laboratory concerning why pay factors are low. All updates have been made and the course is in review. The course should be posted to the web by August.</p>
28	<p>Write a materials documentation guide for design build offices.</p> <p>Status: This guide is being developed to aid the Design-Builder's QA personnel and the DOT's Quality Verification personnel in Material's approval, acceptance and verification. The shift of these Material's approval, acceptance and verification responsibilities from WSDOT to the Design-Builder has had word of mouth guidance up to this time. The guide goal is to clarify roles and responsibilities to both owner and design-builder. Product is nearly ready for initial review by Bob Briggs.</p>
29	<p>Develop Materials section for the Design Build Manual.</p> <p>Status: In a Design Build project, Sections 1-06, 2.25 and 2.28 of the RFP's deal with the quality assessment, methods of acceptance and the quality process. The goal of the materials section of the WSDOT Design-Build manual is to give the DOT Quality Verification organization a path for start up to project closure within the RFP time frames. Lessons learned are being used to facilitate this guidance. The most recent Design-Build projects have moved section 1-06 in to section 2.25. The materials portion of the manual will facilitate that transition. Lessons learned have been updated.</p>
30	<p>Write a Desk Manual for Cats Software.</p> <p>Status: This software needs a desk reference for when the incumbent Design Build QV Oversight Engineer retires and a successor has update the checklists. CATS training over the past three months have highlighted areas for software revision that should be added to future requirements.</p>
31	<p>Review and modify the paint specifications, Section 9-08 Paint. Review and subsequent revision of the specifications started in January 2008.</p> <p>Status: Pigmented sealer samples are presently being tested for gloss in order to establish an appropriate range on the 60 degree gloss meter. The specification 9-08.1(8) is being re-written to incorporate this gloss range. Task is 99% complete.</p>

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7/14/2011

Construction Materials

Task	Description
32	<p>Reducing the replacement schedule for the ICP and replace it with x-ray florescence.</p> <p>Status: Presently sorting thru X-Ray equipment types and CCRL/ ASTM applicable methods. Task is 50% complete.</p>
33	<p>The technique of Infrared Spectroscopy (IR) is being employed to analyze the uniformity of a specific company's epoxy coating system formula over time. Our objective is to test and evaluate the uniformity of these epoxy systems and determine whether we can correlate spectrum differences (chemical formula variations) samples with failing physical testing and whether there was a change to the formulation of the same product.</p> <p>Status: Presently samples are being analyzed resulting in no correlation between failing samples and formulation changes. Samples are being scanned as they come in. Due to a low sample volume this will be an ongoing task. Task is 65% complete.</p>
34	<p>The new instrument Ion Chromatograph (IC) is being set up to test Chlorides and Sulfate in liquids as well as concrete and soil slurries. This will replace the outdated titration methods.</p> <p>Status: Currently the calibration and MDL studies are being completed. Comparison studies titration/IC are also being done. The methods for extraction procedures are being worked through and samples are being tested. Task is nearly complete, a few more comparison samples are needed. Task is 98% complete.</p>
35	<p>Development of a standard specification for silicone joint sealants used to span joint openings in road and bridge construction that will replace Section 9-04.2(2) Poured Rubber Joint Sealer.</p> <p>Status: Researching appropriate tests and properties are being researched. Task is 90% complete.</p>
36	<p>Traffic Striping Paint Metal-free Alternatives- The purpose of this task is to research options for paint used in traffic markings that is free of heavy metals.</p> <p>Status: Review and re-write of traffic paint specification. Task is 100% complete.</p>
37	<p>Updating test methods of bituminous adhesive for Flexibility and pull-off testing. Equipment is being built to facilitate automation of the pull-off test. A mandrel was built to more closely adhere to the Specification and to assist in consistent test results for flexibility. Comparison studies are being done.</p> <p>Status: Mandrel is complete and has been incorporated into testing procedure. The machine for automated pull-off testing is complete and the comparison studies are complete. The new equipment is in use. The task is 100% complete.</p>

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7/14/2011

Construction Materials

Task	Description
38	<p>Fly Ash, Slag and other Materials- Adding documentation of heavy metals- The purpose of this task is to write a requirement in QC1/QC2 specifications for the periodic requirement of documentation of heavy metals in fly ash samples received by the materials laboratory. Also look at other materials we tests to see if WSDOT needs to require periodic information on heavy metals.</p> <p>Status: Starting date about March 2010 35% complete.</p>
39	<p>Starting date August 2010. Review all current test procedures for compliance with ASSHTO/ASTM/WSDOT methods and write procedures as needed.</p> <p>Status: In progress. Making steady progress in this task, about 90% complete.</p>
40	<p>This task includes looking at the NTPEP testing for traffic devices and change WSDOT specification and allow for NTPEP acceptance.</p> <p>Status:</p>
41	<p>Electric service cabinet quality improvement project. Develop an inspection scheme to improve the quality of electrical service cabinet. Electric service cabinet manufacturers are now performing their own quality control inspection on electrical cabinets. WSDOT electrical inspectors are checking cabinets for QC checklist.</p> <p>Status: Complete</p>
42	<p>Update Standard Specifications Section 9-29 Illumination, Signal, Electrical. This section in the Standard Specifications has not been updated in a number of years and needs to be updated to remove outdated requirements and updated to include the latest standards. Need to identify and assemble Expert Task Group to review specifications (ETG Members identified). 17 of 25 section completed at the end of this reporting period.</p> <p>Status: With the completion of 9 section of 9-29 this task is 80% complete.</p>
43	<p>The purpose of this strategy is to investigate how WSDOT can contribute to the use of renewable energy in the daily operation of the highway system. The investigation will include research into how the use of solar energy can reduce the amount of and/or the cost of commercial electrical energy WSDOT consumes, through the use of existing resources or developing resources, in partnership with industry, which would have a predictable pay back. The title of this item was changed to Energy Project and includes other forms of energy production such as wind generation, as well as other efficiencies that can be achieved.</p> <p>Status:</p>

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7/14/2011

Construction Materials

Task	Description
44	<p>Research and develop a specification and photometric acceptance for LED based roadway luminaries.</p> <p>Status: Research has shown that with the diversity of thought concerning LED roadway lighting and the low light levels produced by LEDs, application of this technology is not practical at this time.</p>
45	<p>The purpose of this task is to produce a test method for testing Uninterruptable Power Supplies.</p> <p>Status: This task is complete with the successful testing of 9 UPSs.</p>
46	<p>Prepare a performance specification for a non-slip cover for Junction Boxes</p> <p>Status: Research into available test instruments is continuing for this task. There are several approaches to testing for non-slip surfaces NFPA 1901 has a specification fire truck running boards which may apply, in addition Regan Scientific has a test instrument that may apply.</p>
47	<p>Prepare a performance specification for Uninterruptable Power Supplies.</p> <p>Status:</p>
48	<p>Improve and streamline Annual Plant Approval document submittal and review process through email and scanning results in the finished approved documentation prior to meeting with fabricators for the annual plant approval meeting. July 2007 to June 2009.</p> <p>Status: Streamlining of Annual Plant Approval process to result in approved documentation. 100%</p>
49	<p>Cross-training of our E-2's in prestress, precast, crosshole sonic logging testing and miscellaneous materials inspection and documentation for uniformity. July 2007 to January 2009.</p> <p>Status: Cross training E-2's in prestress, precast, crosshole sonic logging testing and miscellaneous materials inspection and documentation for uniformity is 100% complete.</p>
50	<p>Review NTPEP as a potential requirement for approval of manufacturers of reinforcing steel and its influence on the HQ Materials Laboratories reinforcing steel sampling and testing program if required.</p> <p>Status: 100% Complete</p>

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7/14/2011

Construction Materials

Task	Description
51	<p>Review and incorporate into the standard specification the BTPEP HDPE Plastic pipe audit program as a requirement.</p> <p>Status: 10% Complete. Task transferred to Bob Briggs due to Al Gabo's retirement.</p>
52	<p>Develop Quality Systems Manual Standard Practice Procedures for approval of fabrication plants. Standard Practice Procedures will be separated into standard plant approvals and annual plant approvals. Development will include incorporating Standard Practice Procedures into the WSDOT Standard Specifications.</p> <p>Status: Materials Manual Standard Practice QC 6, QC 7, and QC 8 have been written and sent to Kurt Williams for review. QC 6 is Annual Plant Approval process for Prestress Plants, QC 7 is Annual Plant Approval process for Precast Plants, and QC 8 is the process for approval of manufacturing plant fabrication and coatings facilities. Proposed revisions to Standard Specification Section 6-02.3(25), and 6-02.3(28) to incorporate QC 6, and QC 7 have been written and sent to Kurt Williams for review. Proposed new Standard Specification 1-06.1(5) to incorporate QC 8 has been written and sent to Kurt Williams for review. Rob Molohon is going to work on a rewrite of proposed Specification Standard Specification 1-06.1(5) and QC 8 with Kyle Caufman. Kyle Caufman is going to send Standard Practice QC 6, and QC 7 out to industry in the month of July (2011) for industries review and comment. 80% Complete.</p>
53	<p>WSU study on the use of low degradation aggregates in concrete.</p> <p>Status: Status: The first round of testing has been completed. Second round is under way.</p>
54	<p>The WSDOT Construction Manual needs to be updated on how to check concrete mix designs. The construction manual needs to be updated with specific information on what needs to be checked on concrete mix designs so WSDOT Project Offices can independently check concrete mix designs.</p> <p>Status: Recent amendments to the Standard Specifications require further revision to the checklist.</p>

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7/14/2011

Administration

Colleen Reynolds		2009			2010						2011															
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter			
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
1	Remedy 7 Upgrade																100%									
2	MatsLab Software Audits																									94%

Ed Bellinger		2009			2010						2011															
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter			
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
3	Disaster Recovery																									90%
4	New Conference Room Upgrade													100%												
5	Disaster Recovery Implementation																									0%

Shannon Huber-Lusk		2009			2010						2011															
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter			
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
6	MatsLab Webpage Conversion to CMS																									100%

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7/14/2011

Administration

Kathy Brascher		2009			2010						2011															
Task	Description	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			5th Quarter			6th Quarter			7th Quarter			8th Quarter			
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
7	Define MATS Requirements																									100%
8	RegTec Application Replacement				100%																					
9	Smartware Application Replacement																									70%

Materials Laboratory Strategic Directions 09-11

7/14/2011

Administration

Task	Description
1	Upgrade Remedy Software to 7.5 Status: This software is the backbone for our Helpdesk and asset management as well as inventory. We have completed the conversion June 15th and are now working on bugs and reports. This task is complete.
2	Internal/External Software Audit Status: Adobe compliance review is complete, we will continue with other software manufacturers until all software has been identified and purchasing records are attached.
3	Disaster recovery Status: OIT and DOT Server administrators group have made a decision on an enterprise backup/DR solution. FalconStor software backed by XioTech hardware. The Materials Laboratory will be integrating it's disaster recovery with OIT. With the current economic trend this may be tabled for some time.
4	New Conference Room Upgrade Status: Complete.
5	Disaster Recovery / Business Continuity Implementation Status: Currently doing DR/BC analysis. With the data center consolidation to OIT it is likely all DR/BC will be handled at OIT. This is also dependant on funding.
6	Materials Lab Webpage Conversion to CMS Status: Complete.
7	Develop and document requirements and plan for MATS for Phase 5, 6, 7, 8, 9 Status: Requirements are complete for Phase 1, 2, 3, 4 and the plan is a living document. Requirements are complete.

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8	Replace RegTec with MATS and continue to develop the remainder of MATS. Coring Tests are not complete and IAI comparison. Miscellaneous testing is complete. Once Coring and IAI comparison is done. Status: RegTec is replaced. This task is 100% complete.
9	Replace Smartware with MATS and continue to develop the remainder of MATS. Status: Remaining replacement includes Chem Lab, Liquid Asphalt Lab and Electrical Lab.