OFFICE OF STATE ENGINEER
DATABASE UPGRADE

Certified Public Manager Program Project

February 2011

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STATE DOCUMENTS

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PROBLEM STATEMENT

The Office of State Engineer is the central source of information for state construction, other than roads. Because of this, OSE is frequently asked for information and data from state legislators and government officials, local authorities and the general public on different aspects of state construction. When these requests come from state lawmakers, OSE must stop everything and spend a great amount of time trying to collect the information requested, because it is rarely found in the OSE database. Additionally, the legislature passed an energy efficiency law in 2007 that requires OSE and the Energy Office to collect certain information on state buildings and report that annually to the legislature. None of this required information is currently stored in the OSE database.

The database currently in use by the Office of State Engineer was created approximately 15 years ago (early 1996) using Microsoft Access. Minor updating was done in 2002, during which the information technology division of the Budget and Control Board assisted OSE is creating numerous additional queries which could be used to obtain more accurate data for the Annual Accountability Report. Also, adjustments were made when OSE updated their computer software to Microsoft Office 2003. In December 2010 through February 2011, the database had so many failures; it was unusable by the OSE Admin Assistant and caused a tremendous amount of backlog in paperwork and frustration by OSE staff and State Agencies.

The software used for the OSE database is not only outdated, but the set up for information to be collected is not adequate to meet the needs of OSE, State Government Officials, State Agencies, Architects, Engineers or Contractors.
DATA COLLECTION

My goal of data collection for this project was as follows:

1. Analysis of our existing processes, if needed, for information needed for the new database;
2. Talk with as many of our customers and other stakeholders as possible to see how the new database can better serve them, since they are the users of our system;
3. Hold in-depth discussions with the OSE staff as to how to improve the organization of the information we are now collecting, and determine what new information we need. Because they work with the system daily, only they can provide this detailed analysis.
4. Research websites of other states to see how they present their construction information for public use and if any of them have interactive components.

EXISTING PROCESSES (#1)

I have been with the Office of State Engineer for 22 years and was closely involved in establishing the procedures we use today to accomplish our mission. In 2007 and 2008, our staff had numerous meetings with Sara Pope of the Budget and Control Board Office of Internal Operations/Human Resources, during which she assisted us in mapping our processes with flow charts. (Appendix A). Because little has changed since our processes were so thoroughly examined, I chose not to revisit how we do what we do, but rather to try to organize the information we collect so that it can be readily accessed.

INTERVIEWS (#2 & #3)

The majority of data used for this project came from interviews and discussions with various groups and individuals, because they are the best resource for information on how our new database should work to serve them. (Interview questions in Appendix B.)

1. I started my interviews with my direct supervisor, John White, State Engineer. John has been an advocate of a paperless office since his arrival at OSE in 2007. He has great interest in us providing an interactive website for our customers and staff to use, and would like for us to work toward providing on-line bidding, similar to SCDOT.
2. Next, I talked with John's direct supervisor, Voight Shealy, Materials Management Officer along with Delbert Singleton, Director of Procurement Services Division. Both Voight and Delbert have been in their positions for numerous years and are very familiar with the Office of State Engineer's procedures and our antiquated database. Because of their positions of authority within the Board and their role in prioritizing funding for our Division, I thought it was important that they were supportive of this project and had input into what direction it would go. They expressed very similar ideas to John White.

3. The OSE staff was critical to the detailed development of this project, as they are the individuals who work with the data on a daily basis. Our Admin Assistant, Rachel Langdon, has been at OSE longer than anyone and has extensive knowledge of the current database and all of the problems it continues to cause. The Project Managers in the office are all too familiar with what information is NOT being gathered in our current system and the time it takes for us to collect it when required. When the time comes to analysis the details of what is to be part of the new database, the OSE staff will be essential to its final development. (OSE Staff Input in Appendix D.)

4. The customers OSE deals with on the daily basis are very big stakeholders in what we do with our database, as they will be affected by any changes that are made. State agency personnel, architects, engineers and contractors interact with us frequently and their input is important as to the effectiveness of our system. In 2008, based on a recommendation by the GEAR Committee, the State Engineer formed an OSE Study Group (Appendix C) made up of representatives from the OSE staff and each of our customer groups. As a member of that committee, I had the opportunity to talk with each of committee members about all of our processes and the way we do business with them. Also, in the process of doing my job, I interact frequently with all of our customers. Over the last few months, I have taken the opportunity to discuss the concepts of my project with many of them to get their feedback.
Almost every state in the country has a different way of dealing with state construction. From Departments of Administration and/or Construction to Departments of Insurance to Facilities Management Offices, there is no consistency in the way the states handle it. Even the name "State Engineer" is used anywhere from the State Highway Engineer (DOT) to the Department of Natural Resources. This makes it very hard to research state websites, as it can take a long time to find the office similar to our Office of State Engineer. John White recommended that I look at the website for the State of Missouri, and in doing so; I found that they are one of the few that do have interactive components, such as on-line vendor registration and on-line bidding. However, after spending a lot of time looking at different state websites, I did not find any that I thought would serve as a good model for what we want to do, and believe we would be better served to work with our own website design and incorporate the interactive components into it.
DATA ANALYSIS

In all of the interviews and conversations I had recently and previously with Budget and Control Board leaders, OSE staff and OSE customers, there were two recurring themes: “Interactive” and “Paperless”. In a lot of ways, these two items are redundant, but there are ways we should be able to go paperless even before we go interactive. However, because we have no method of storing forms and documents electronically where others can access them, we still have to print hard copies for our files, thus eliminating the “paperless” concept.

Going paperless has obvious advantages, including the following:

1. Cost Savings: OSE and customers will save money on paper and printer use (ink and wear & tear) and well as the cost of staff to move the paper (mailing, filing, etc.).

2. Time Savings: The OSE Admin Assistant and OSE Project Managers now spend a lot time moving paper between each other and through the mail (interagency or US Mail) to Agencies. Incorrect forms are returned and then resubmitted causing additional delays.

Going interactive has even more advantages beyond what is listed above:

1. Accuracy: Computer processing of information greatly reduces the possibility of human error.

2. Space Savings: Closed files will be stored electronically in very little space rather than in large boxes filling up warehouses. The savings for this alone would be enormous.

3. Accessibility of Information: Information on all construction projects can be made available to all interested parties on the OSE website rather than searching for hard copies in our office. We will be able to post a list of projects out for bid, bid results, contract awards and general project information for anyone to view.

4. Transparency and Accountability: The costs of state construction projects can be readily obtained if we publicly post construction project budgets, architects’ and engineers’ fees and contractors’ bid amounts. This level of information cannot be made available now with our current system and size of staff.
IMPLEMENTATION PLAN

ACTION STEPS

1. OBTAIN ADEQUATE FUNDING FROM THE BUDGET AND CONTROL BOARD.

To determine how much money is adequate, we would need to consult with the Division of State Information Technology for their professional expertise in this area. This project is too large for them to handle in-house; however, they would be able to assist us in establishing a schedule, a budget and writing the appropriate specifications to obtain what we are looking for in a system.

LEADER: Delbert Singleton, Director of Procurement Services, Voight Shealy, MMO

TIMEFRAME: Due to the current budget situation the state, this is unknown at this time. It could take years before the money becomes available, and there are several bills in the legislature this year that could make a significant difference in our processes, should they pass and become law. Therefore, it is recommended that no additional work beyond this project, be done prior to authorization by the leaders of the Board, or another agency that we may be transferred to.

2. ADVERTISE FOR A QUALIFIED CONSULTANT TO CREATE THE DATABASE.

Specifications must be written and give to the State Procurement Office to assign a project manager and then advertise in South Carolina Business Opportunities. During this time period a selection committee would be formed with qualified individuals familiar with the process.

LEADER: State Engineer & Project Manager from State Procurement Office

TIMEFRAME: 2 months

3. SELECT AND CONTRACT WITH A QUALIFIED CONSULTANT.

When the proposals are received, the selection committee will review them in accordance with the State Procurement Offices’ procedures and select the best value for the state. Once selected, negotiations will begin with that consultant until an agreement is reached and a contract is signed.

LEADER: State Engineer & Project Manager from State Procurement Office

TIMEFRAME: 2 to 3 months. This item involves several different people, so their availability will be the determining factor in meeting any time schedules.
4. CREATE THE DATABASE.
For this task, the State Engineer will identify those people that he feels are knowledgeable enough to participate with him and the consultant in charting the direction of the new database. This group should include OSE staff for the majority of the work because they are ones that use and/or create the data in the database on a daily basis. We may also want include some of our customers – agencies, architects, engineers and contractors. In my meetings with the OSE staff, we have developed a general outline for the organization of data. This information is located in Appendix C. This would be a starting point for the database consultant to build upon using input from the selected committee. Also, during this time period, it would be helpful to do an electronic solicitation to our customers for input into the new system. Because a large number of our customers have been approached with this issue before, we would hope they would be responsive when they know that it will become a reality.

**LEADER:** State Engineer & Database Consultant

**TIMEFRAME:** The time for this stage of the process is unknown due the fact that we do not have a consultant on board and do not what database will be used or how long it will take to produce a final product.

5. TEST RUN THE DATABASE.
Once the database has been created, it will then be time to test it out. This would be performed best by the OSE Staff. The database consultant would provide training to a few or all of the staff and, if needed, then staff would train other staff. They would need adequate time to test the database while still performing their regular duties. Regular meetings would take place to discuss the good and bad aspects and determine any corrective action that needs to take place.

**LEADER:** State Engineer & Database Consultant

**TIMEFRAME:** 60-90 days
6. INTRODUCING THE DATABASE AND TRAINING.

Once the State Engineer has determined the database is ready to run, we would set up training sessions throughout the state to gather all of our customers. This will be similar to what we have done in the past when we have provided training for our Manual for Planning and Execution of State Permanent Improvements, Part II. We will hopefully be able to provide live, interactive training that will show them exactly how the system will work.

LEADER: State Engineer & Selected OSE Staff

TIMEFRAME: 2 – 4 weeks, based on availability of training facilities and number of locations scheduled. NOTE: Prior to beginning the training, all of our existing data will have to be moved to the new system. The time required to accomplish this cannot be estimated until it is known what the new system is and what will be involved in the cross-over.

7. POST ROLL-OUT CUSTOMER SUPPORT.

After the data has been transferred and the training is complete, the system will go live. This will be a very hectic time as we will have to provide continuous support for all of customers using the system to make sure they are comfortable with the process and can operate it properly. All of the OSE staff will be on call during this time to assist.

LEADER: State Engineer & OSE Staff

TIMEFRAME: 6 months of intense support – continuous support at a lower level.
EVALUATION METHOD

INTERACTIVE DRY-RUN – OSE STAFF

Prior to our training sessions, the OSE staff should be given a set amount of time to work with the new system and try out all the different aspects of it. There are many ways that only the OSE staff will be using the database and if those areas are not functioning properly, the entire system could be compromised by not accepting and/or storing data accurately or in the correct places. This could be difficult to detect because many area will have similar types of data (dollars, days, etc.) and without someone knowing what should be that area, it could appear to be correct.

INTERACTIVE DRY-RUN – CUSTOMERS

During our training sessions throughout the state, it would be ideal to have our customers be able to work on-line with us to see how well they understand the instructions given and the layout of the system on their computer. Nothing we can tell them will take the place of them being able to have hands-on experience.

FEEDBACK FROM USERS

Also during our training sessions, it will be important to obtain constant feedback from our customers. Although the new database will be close to completion at this time, it will be important to listen to each customer as they actually use the system. No matter how much we have reviewed each step of the application, if it is not working in a way that the customer can easily use, it is not a successful product.

SURVEYS

After we have completed the training, we must provide surveys for each of the users to complete anonymously. Over the years I have learned that many agency personnel will not give us negative responses directly; however, when given the opportunity to be anonymous, they will provide some valuable insight into their feelings about what we are doing/providing. I recommend this be done with paper copies at the training sessions. Although we would like to be paperless, may people still don’t trust that going to a computer website will truly be anonymous.
SUMMARY AND RECOMMENDATIONS

The goal of the Office of State Engineer is to create an interactive database that can be used as follows:

1. By OSE internally to organize all of the current forms and paperwork that are now overwhelming the office, and to access large amounts of information in various formats;

2. By State Agencies to submit forms for approval and to search for the status of their projects (drawing reviews and form approvals);

3. By Architects and Engineers to search for the status of projects submitted to OSE for review and to find solicitations for future project design work; and

4. By Contractors to search for the status of projects they have bid and to search for other state projects preparing to bid.

To accomplish this goal, OSE will need to hire a consultant who specializes in creating large, interactive databases. However, before this can be done, the money must be made available by the SC Budget and Control Board. Although this project has been given a high priority within the Procurement Services Division, until the current state budget situation is resolved, the likelihood of obtaining adequate funding for this project is very low.

After talking with all the stakeholders in the project, the need of and support for a new database for OSE is obvious - from the Division Director to the OSE staff to customers who need to obtain construction information. The lack of money is a situation that we can do nothing about, but hope that the economic recovery of the state comes quickly. Until that time, it will be prudent to continue to tweak the information in this project as changes to our processes occur and to do our best to be “shovel ready” when the money comes our way.
APPENDIX A

FLOW CHARTS OF THE OFFICE OF STATE ENGINEERS’ PROCESSES

Developed in 2008 by the OSE Staff with the aid of Sara Pope of the Budget and Control Board Office of Internal Operations/Human Resources
PIP and Non-PIP Projects

OSE

Project Manager (PM) is assigned based on scope, agency, location, workload

(1) Project established in database (admin)

(3) PM sets up file for reference/tracking (PM sending copies to admin for paper file)

(4) Has Agency requested alternative administration?

Agency

Agency submits A-1 through Budget Office or requests Non-PIP

(2) Paper file created and provided to PM (admin)

(5) Agency goes to RFP process (See RFP Map)

3/21/2008
PIP and Non-PIP Projects

OSE

Agency

Fr 6, 8, 9 & 11

(14) Agency works directly with A/E

(15) Is project above agency code review authority?

Y

N

(16) Sends plans to OSE

(17) See Plan Review map

(18) Is Project Design-Build

N To 19

To 43

3/21/2008
PIP and Non-PIP Projects

OSE

<table>
<thead>
<tr>
<th>(19) Is project $50K or less?</th>
<th>(20) Is project to be constructed using IDC?</th>
<th>(21) Is project with the construction contract award certification?</th>
<th>(22) Agency sends in SE310 (Invitation to bid)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Fr 15</td>
</tr>
<tr>
<td>To 24</td>
<td></td>
<td>To 43</td>
<td>To 15</td>
</tr>
</tbody>
</table>

(23) Notify agency of approval

3/21/2008
PIP and Non-PIP Projects

OSE

- PM routes to admin for data entry (Fr 23)
- Has agency requested pre-qualification (N)
- Did agency contract with CM at-R7? (N)
- Receives bid set, sends copies to SCBO, Agency, and AE (admin) (28)

Agency

- Fr 15, 19, 20 & 21
- Will there be a pre-bid conference? (Y)
- Agency holds pre-bid meeting. (PM may or may not attend) (30)
- Agency opens bids and awards contract (32)

- Go to Pre-qualification map (26)
- Solicitation may be protested. See protest map (31)

3/21/2008
Is there a protest of the award?

PM attempts to resolve

Is it resolved?

Entered into database. Forward to PM (Rachel)

Is it complete?

PM approves

Agency submits request to authorize construction contract

Agency makes corrections/additions and resubmits

Agency procures services. Proceed to Construction Phase Map Node 44-1
Agency requests approval for alternative means of procurement of construction

(5-1) Agency requests approval for alternative means of procurement of construction

(5-2) Is request justified?

(5-3) Provides justification to agency to turn down

(5-4) Does agency challenge to Board

(5-5) Board hears agency argument

(5-6) Proceed with standard procedures PIP/Non-PIP Map Node 6

(5-7) Does Board overturn decision?

(5-8) Is it CM/C

(5-9) Agency creates committee (PM assigned as chair, OSE approves membership)

A/E Selection runs parallel. See A/E Selection Map

To 5-10
Develops a shortlist (5-16)

Committee conducts interviews (5-18)

Select successful proposal and negotiates contract (5-20)

Final review may include: Request for addit. Info., Best and final offers

RFP Node 5
RFP Node 5

OSE

Agency

(5-21) Post Notice of Award – Starts 10 day protest period

(5-22) Is there a protest

(37) Agency submits request to authorize contract

(38) Entered into database, Forward to PM (Rachel)

(40) Is it complete?

N

(41) Agency makes corrections/ additions and resubmits

Y

(5-23) Execute Contract & Go to plan review map (Node 17)

Y

(42) PM approves

Go to Protest Map (Node 31)
# Architect / Engineer Selection – Node 11

<table>
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<tr>
<th>OSE</th>
<th>Agency</th>
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<tbody>
<tr>
<td>(11-2) Routed to PM</td>
<td>(11-1) Agency sends in SE210 (request for advertisement)</td>
</tr>
<tr>
<td>(11-3) Is it complete?</td>
<td>(11-4) Agency supplements SE210</td>
</tr>
<tr>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>(11-5) Approve and send back to OSE admin</td>
</tr>
<tr>
<td></td>
<td>(11-6) Enter into database and route to SCBO for advertisement. Send copy to agency</td>
</tr>
</tbody>
</table>

Solicitation may be protested. See protest map to 11-7.
Architect / Engineer Selection – Node 11

<table>
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<tbody>
<tr>
<td>Agency</td>
<td></td>
</tr>
<tr>
<td>Fr 11-6</td>
<td>(11-7) Selects short list from responses and posts Notice of Selection for Interview</td>
</tr>
<tr>
<td>(11-8) Interview and select. Posts Notice of Intent to Negotiate a Contract</td>
<td>(11-9) Negotiates contract with selected firm</td>
</tr>
<tr>
<td>(11-10) Send in Request for authorization to execute contract with all associated forms</td>
<td>(11-11) Admin enters into database and routes to PM</td>
</tr>
</tbody>
</table>

Selection may be protested. See protest map.
Plan Review Detail (large projects) – Node 17

OSE

(17-2) Are all components included?
Y
N

(17-3) PM logs into database

(17-4) PM reviews for Life/Safety

(17-5) Is it acceptable?
Y
N

(17-6) AE corrects major issues

(17-7) Prepare comment sheet and return to Agency/AE

To 17-8

Agency

(17-1) AE submits schematic design

N

3/21/2008
## Plan Review Detail (large projects) – Node 17

<table>
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<tr>
<th>OSE</th>
<th>Agency</th>
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<tbody>
<tr>
<td>Fr 17-7</td>
<td>(17-8) Log out in database (actual return date)</td>
</tr>
<tr>
<td></td>
<td>(17-10) Is it complete?</td>
</tr>
<tr>
<td></td>
<td>(17-11) PM logs in and assigns discipline review</td>
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<tr>
<td></td>
<td>(17-12) Perform code review for discipline, Review budget</td>
</tr>
<tr>
<td></td>
<td>(17-13) Discipline routes comments to PM</td>
</tr>
<tr>
<td></td>
<td>(17-14) PM assemble comments and returns to Agency/ AE</td>
</tr>
<tr>
<td></td>
<td>(17-9) A/E submits Design Development Documents</td>
</tr>
<tr>
<td></td>
<td>To 17-15</td>
</tr>
</tbody>
</table>

Log out in database (actual return date) is followed by a question to check if it is complete. If the answer is yes, PM logs in and assigns discipline review. After that, the discipline reviews the code, routes comments to PM, and returns to Agency/AE. If the answer is no, the process goes back to the previous step.
Pre-Qualification – Node 26

OSE

(26-2) Is project over $10 million or unique in nature?

(26-3) Provides justification to agency to turn down

Agency

(26-1) Agency requests approval to pre-qualify bidders

(26-5) Agency creates committee w/ PM as chair (OSE approves)

(26-6) Committee develops pre-qualification criteria

(26-7) Reviews criteria

(26-8) Advertise for interested contractors

(26-4) Proceeds w/o pre-qualification (Return to PIP/Non-PIP Map Node 27)
Pre-Qualification – Node 26

OSE

Agency

(26-9) Send out questionnaire to contractors

(26-10) Committee reviews submittals

(26-11) Are interviews necessary?

Y

(26-12) Conduct Interviews

N

(26-13) Bidders are pre-qualified and notified

3/21/2008
Pre-Qualification - Node 26

<table>
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<th>Agency</th>
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(26-14) Did agency contract with CM at-R?

(CM at-Risk submits bid packages to pre-qualified bidders, awards contracts and proceeds to construction (Go to Construction Phase Map Node 44)).

(26-15) Agency submits bid packages to pre-qualified bidders.

N

Return to PIP/Non-PIP Map, Node 29

3/21/2008
Offeror Protest (Solicitation or Intent to Award): Node 31

OSE

(31-2) State Engineer receives - procurement process stops

(31-3) PM assigned to investigate and try to resolve

(31-4) Is it resolved?

N

(31-5) State Engineer conducts admin review (looks at documents from invest)

(31-6) Will there be a hearing based on review?

Y

Offer

(31-1) Offeror protests solicitation or intent to award or negotiate

Offeror has 15 days from any change

Project Continues Return to PIP - Non-PIP Map at point of departure

3/21/2008
Offeror Protest (Solicitation or Intent to Award): Node 31

流程图示意图：

1. **Procurement Review Panel**
   - N, Fr 31-6
   - Y, Fr 31-6

2. **OSE**
   - Y, Fr 31-6
   - Conduct hearing for all interested parties
   - (31-7)
   - (31-8) Issue Determination
   - (31-9) Is the determination in favor of the protester?
     - Y
     - (31-11) Does agency appeal?
       - N
       - (31-12) Does agency cancel project?
         - N
         - (31-13) Project continues (under new conditions)
         - Y
         - Project ends
         - Return to PIP – Non-PIP Map at point of departure
       - Y
       - Project continues Return to PIP – Non-PIP Map at point of departure
     - N
   - (31-10) Does Offeror appeal?
     - N
     - (31-14) Procurement Review panel hears issue
     - To 31-15
Offeror Protest (Solicitation or Intent to Award): Node 31

Circuit Court

Procurement Review Panel

OSE

Agency

Offeror

- If the determination is in favor of the protester, go to (31-18) Does agency appeal?
- If not, go to (31-20) Project continues (under new conditions)

(31-15) Panel issues decision

(31-16) Is the determination in favor of the protester?

Y

N

(31-17) Does Offeror appeal?

Y

N

Project continues
Return to PIP - Non-PIP Map at point of departure

(31-18) Does agency appeal?

Y

N

(31-19) Does agency cancel project?

Y

N

(31-20) Project continues (under new conditions)

(31-21) Circuit Court hears issue and issues a ruling

Cycle of appeal can continue until Supreme Court either declines to hear or issues a final order
Construction Phase - Node 44

OSE

(44-1) Is project with Agency construction code review authority

Y

(44-3) Project proceeds w/out OSE involvement unless CO causes project to exceed Agency code review authority

N

(44-2) Construction approved Bldg permit issued

(44-4) Agency issues notice to proceed

(44-5) Agency holds pre-construction conference

(44-7) PM reviews inspection reports (on-going)

(44-8) Are there issues that remain non-compliant

Y

N

To 44-10

(44-9) Contractor makes necessary changes/corrections

To 44-10

Contractor

Agency

3/21/2008
Construction Phase - Node 44

OSE

(44-18) OSE reviews

(44-19) Is it approved? N

(44-22) Return to agency for information or additions

Agency

(44-17) Submits change order for approval

(44-23) Agency provides additional information

(44-25) Agency, Contractor, A/E, Bldg Inspectors inspect property

(44-21) Contractor proceeds with construction as amended

(44-24) Contractor requests substantial completion inspection

Contractor

Fr 44-14

Fr 44-15

Fr 44-16

Fr 44-27

3/21/2008
Construction Phase – Node 44

OSE
Fr 44-33

Agency
(44-34) Agency begins move-in

(44-37) A/E, Agency review punch list
(44-38) Are all corrections made?
Y
(44-40) Project Complete
N

Contractor
(44-35) Contractor continues to final completion
(44-36) Contractor requests final inspection
(44-39) Contractor makes corrections
Agency or Contractor files formal complaint (Request for resolution)

State Engineer assigns PM to investigate

Attempt mediation

Are both parties willing to mediate?

Y: Mediation takes place

Is it resolved?

Y: 

N: 

N
Contract Controversy

OSE
- Issues written settlement and project proceeds
- State Engineer conducts hearing
- Issues written determination
- Review Panel hears issue
- Review panel issues decision

Agency or Contractor
- Does Agency or Contractor appeal?
  - Yes: Project proceeds
  - No: Process continues

3/21/2008
Land Acquisition

OSE

Agency

SBO

Assigned to PM in charge of Land Acquisitions

Agency submits A-1 (10-20K approval for preliminary study)

Agency hires from pre-approved list to do environmental assessment

Is there an existing Bldg agency wants to use? Y

Hires one of the 4 contracted firms to do a bldg condition assessment

Receives Bldg assess. report from contractor

OSE prepares list of firms "qualified to perform Env. Assess. annually"

3/21/2008
Land Acquisition

OSE

Agency

SBO

OSE reviews Bldg Assess. report and makes recommendation to Budget Office

Y

Sends applicable report(s) to Budget Office.

Is there a Bldg Assess. Report?

Budget Office presents to 5 member Board

N

Board makes final decision

3/21/2008
APPENDIX B

INTERVIEW QUESTIONS
INTERVIEW QUESTIONS

John White, State Engineer

1. What is your commitment to this database upgrade and seeking funding for it within the Budget and Control Board?
2. What are your thoughts on how a new database will impact and improve the processes of the Office of State Engineer?
3. What is your general concept of how the new database will work within OSE and by OSE staff and with OSE customers?
4. What information do you think we need to collect that we are not collecting now?
5. Who do you think should have access to this information and how much?
6. What is your top function priority for a new OSE database and what would you like for it to do that it does not do now?

Voight Shealy, Materials Management Officer & Delbert Singleton, Procurement Services Division Director

1. What is your commitment to this database upgrade and seeking funding for it within the Budget and Control Board?
2. What are your thoughts on how a new database will impact and improve the processes of the Office of State Engineer?
3. Based on requests that have come down through the Board, what information do you think we need to collect that we are not collecting now?
4. Is there any specific information you would like for the OSE database (through our website) to provide to OSE customers or to the general public?
5. Who do you think should have access to this information and how much?

OSE Staff (Nick Autry, Allen Carter, Lyth Clark, Andrew Cohen, Stan Gailey, Phil Gerald, Rachel Langdon, Jim McVey)

1. What are the main problems you face day to day using the OSE database?
2. What information do you think we need to collect that we are not collecting now, and in what format?
3. Who do you think should input information (and what kind of information) into the database?
4. Who should be able to access information in the database and how much?

OSE Customers (State Agency Personnel, Architects, Engineers & Contractors)

1. How could an improved OSE database help make doing business with OSE easier?
2. What information would you like to be made available to you from OSE?
3. Would you be interested in completing and submitting forms on our website?
4. Other than construction plans and specifications, would you like OSE to become paperless?
5. If acceptable by OSE, would you like to submit construction plans and specifications electronically for review?
APPENDIX C

OSE STUDY GROUP CHARTER & COMMITTEE MEMBERS

Established in 2008 from a recommendations in the GEAR Committee Report
OSE STUDY GROUP CHARTER

I. RATIONAL FOR THE STUDY GROUP:

GEAR Committee Report

Recommendation Twenty-Two

The State Engineer along with the agencies and other stakeholders should conduct a comprehensive review of all of its statutes, policies, and processes.

Background
There are many approval processes required for State Engineer transaction. Agencies usually find these processes to be cumbersome, time-consuming and labor intensive. Most importantly, the myriad of approvals are costly. One agency estimates that the approval of one of their projects took approximately one year from start to finish. The lengthy approval significantly increased the costs of the project as the prices of building materials skyrocketed during that year’s time frame.

Some of the cause for lengthy approval times lies with the laws that govern construction contracts. Much of the cause is due to policies and processes that need to be streamlined and updated using technology that is available.

Rationale
The State Engineer is planning to conduct meetings with its agency customers and other stakeholders. That process should be formalized. An official study group should be named and should be comprised of agencies as well as other State Engineer customers and stakeholders. A charter outlining the purpose of the group as well as a report delivery date should be indicated. Much can be done to address agency certification and delegation of construction procurements. Technology can eliminate the manual approval processes and there are legislative changes that could reduce the time consuming approval process.

II. PURPOSE OF THE STUDY GROUP

1. Examine OSE’s processes and the laws and/or policies behind those processes.
2. Examine comments received from agencies.
3. Gather and examine comment from other stakeholders concerning actual or perceived issues with OSE’s policies and processes.
4. Make recommendations for improvements to OSE’s policies and process.
5. Develop list of barriers to change and recommendations for getting past the barriers.

III. PROPOSED REPORT DELIVERY DATE:
May 1, 2008
OSE STUDY GROUP MEMBERS

OSE
John White – State Engineer
Margaret Jordan – OSE
Phil Gerald – OSE

B&C B ADVISORS
Barbara Bailey – B&C/IS
Sara Pope – B&C

AGENCIES
Richard Byrd – SC Department of Natural Resources
Joan Cooper – SC Department of Disabilities & Special Needs
Walter Hardin – Winthrop University
Dale Wilson – Piedmont Technical College

ARCHITECTS/ENGINEERS
Jerry Timmons – Davis & Floyd (ACEC-SC)
Michael Watson – Watson Tate Savory Architects (AIA)
Joes Jones – ACEC-SC/SCSPE

CONTRACTORS
Bill Caldwell – Waldrop (MCASC)
Charles Tyler – Tyler Construction (AGC)
APPENDIX D

OFFICE OF STATE ENGINEER
STAFF INPUT FOR DATABASE UPGRADE

Compiled by OSE Staff in December 2010 and January 2011
OSE STAFF INPUT FOR DATABASE UPGRADE

PREFACE

The existing OSE database is made up of two separate sections: 1) An Administrative Section in which all the information is input by the OSE Admin Assistant and contains project names and numbers and information on forms processed through OSE; and 2) A Drawing Review Section in which all information is input by the OSE Project Managers and contains dates and information on construction plan submittals and reviews by Project Managers. The only connection between the two is the project name and number.

In discussing the format of the new database, we all realized that by the time this project is funded and implemented, several of our procedures will probably have change, as well as form names and numbers. Therefore, we decided to not be specific as to form names and numbers, but only to reference the type of information the forms transmit.

Because both the OSE Admin Assistant and the OSE Project Managers will need to input information into the database, each item of information has an “A” and/or a “PM” that indicates who should input this data.

GENERAL FORMAT INFORMATION

The general concept of the new database is that it will hold all information on all projects in one place. It is intended to be interactive, in that information can be input from the OSE office or through our website, transmitted back and forth between the parties and then stored in the database. On all forms or other input screens, all blanks must be completed for the information to be properly submitted. The system will allow “N/A” in certain areas, but not all. This will require agencies to obtain the required information rather than putting that burden onto the OSE staff.

The screens are called “Primary” and “Secondary”. The Primary Screen for every project will have the same template; however, not all information will be filled in each time. The Secondary Screens will be organized something like tabs shown below. The actual finished produce may be very different, depending on the software used.

Minimal description is provided, as, once again, too many things may change before implementation. The general purpose of the information is provided and will be expanded upon when the time comes. Most areas of information, thought not shown here, will incorporate a “comment” section either on the same screen or on the next layer.
The project number is the primary input category by which all projects are filed. The primary input page would contain information that we believe to be necessary for every project and would be similar to the following:

1. **Project Number (A)**
   If the project is a Permanent Improvement Project (PIP) approved by the Budget and Control Board, the number will be found on the B&CB approval form – A-1. If the project is a Non-PIP or Indefinite Delivery Contract, the agency would fill in all of the remaining information on the primary page and submit it as a request for a project number. When OSE Admin Assistant has assigned a number, the complete information would go back to the agency and be stored in the database. Format for Project Number is “Agency Code (3 spaces) – Project Number (4 spaces) – Project Manager’s Initials (2 spaces) – Phase (2 spaces).

2. **Project Name (A)**
   If the project is a PIP, the name will be found on the B&CB approval form – A-1. If the project is a Non-PIP or Indefinite Delivery Contract, the agency would fill in the project name as part of their request for a project number. A line must be included to add a phase identifier to multi-phased projects.

3. **PIP/Non-PIP/IDC/Temporary (A)**
   This identification will be automatic based on the project number (PIP – 4 numbers, Non-PIP – “N” and 3 numbers, IDC – “D” and 3 numbers, Temporary – “T” and 3 numbers).

4. **Agency Name and Type of Agency (A)**
   Both of these will be on pull-down screen for selection.

5. **Agency Point of Contact/Contact Information (PM)**
   This information will need to be input by the Project Manager, as it can change for each agency project.

6. **PIP Level of Approval – Phase I or Phase II (A)**
   This information will be on the A-1 form approved by the B&CB.

7. **Date of approval (PIP)/Establishment (Non-PIP/IDC) (A)**

8. **Funding (A)**
   a. **Amount approved (PIP)**
      For PIP’s, this is found on the A-1 form. For Non-PIP, agencies will have to fill this in.
   b. **Source of Funds (PIP)**
      For PIP’s, this is found on the A-1 form. For Non-PIP, agencies will have to fill this in.

9. **Project Delivery Method (PM)**
   This will be a pull-down list of all methods listed in the Procurement Code.

10. **Type of Project (A)**
    This will be a pull-down list coordinated with the Capital Improvements Office so it will be same as what will be on the A-1 form; however, it will apply to all projects, PIP and Non-PIP.

11. **Location of Project (A)**
    The basic location information will be input by the Admin Assistant (#1 & #2), but the more detailed information will be input by the Project Manager.
    a. **Address/Latitude & Longitude**
    b. **County/City**

12. **A-1 Forms – PIP Projects Only (A)**
    a. **Date of Approval**
    b. **Action Taken**
SECONDARY SCREENS
There will be numerous secondary screens identified by tabs and sub-screens beneath them. There are many ways to organize this information. What is presented is one method, but may be modified based on the final analysis of information. The majority of this information will be input by the Project Manager, other than the forms.

CONTRACT INFORMATION (tab)
1. Architect/Engineer of Record (PM)
   a. Prime
      i. Firm/Individual
      ii. Contact Information
      iii. Contract Original Amount
      iv. Amendments
      v. Start/Completion Dates
   b. Consultants to Prime
      i. Firm/Individual
      ii. Contact Information
2. Contractor (PM)
   a. Prime
      i. Company Name/Superintendent/Project Manager
      ii. Contact Information
      iii. Contract - Original Amount
      iv. Change Orders
      v. Start/Completion Dates
   b. Subcontractors/Contact Information
      i. Company Name/Subcontract Area of Work
      ii. Contact Information
3. Project Inspectors/Material Testers (PM)
   a. Chapter 1 Building Inspections
      i. Firm/Contact Information
      ii. Amount of Contract
   b. Chapter 17 Special Inspections
      i. Firm/Contact Information
      ii. Amount of Contract
   c. Material Testing
      i. Firm/Contact Information
      ii. Amount of Contract

FACILITY/INFRASTRUCTURE INFORMATION (tab)
1. Location of Project (PM)
The basic location information will be input by the Admin Assistant (#1 & #2), but the more detailed information will be input by the Project Manager.
   a. Historic District – Yes/No
      i. Name of District
   b. Fire District – Yes/No
      i. Name of District
   c. Wetlands – Yes/No
      i. Permit Approval Status
   d. Floodplain – Yes/No
      i. Floodplain map information
      ii. Permit Approval Status
2. Facility/Property Owner & Agency relationship to them (Foundation, etc.) (PM)
3. Authorities Having Jurisdiction (PM)
   For each area, list the name of the jurisdiction and the status of any permits and approvals.
   a. Zoning
   b. Utilities
   c. Storm water
   d. Fire
   e. Historic
   f. Easements
   g. Other

4. Required to be LEED Silver or Green Globes – 2 Globes by law (PM)
   a. Yes/No
   b. Registered with USGBC/Green Globes (date)
   c. Certified by USGBC/Green Globes (date)
   d. LEED Certification and Edition
   e. Building Square Footage
   f. Completion Date

5. Building Code Information (PM)
      This will be edition of the Building Code adopted by OSE at the time the Architect begins design work and will remain the same throughout the project.
   b. Building Classification(s)
      This information comes directly from the Building Code.
   c. Site Area/Area of Disturbance
   d. Building Square Footage
      i. Gross/Net
      ii. Conditioned/Unconditioned
      iii. Area of Renovation – Existing Buildings
   e. Building Height/Number of Stories
   f. Building Occupancy
      This information comes directly from the Building Code.
   g. Building Sprinkler System
      i. Required – Yes/No
      ii. Provided – Yes/No
   h. Fire Alarm System
      i. Required – Yes/No
      ii. Provided – Yes/No

DRAWING REVIEW (tab)
1. Drawing Submittal and Review (PM)
   a. Project Phase & Identifying Name
   b. Document Stage
      i. SD
      ii. CD
      iii. BD
   c. Submittal Complete – Yes/No
   d. Assign Discipline Review to Other OSE Project Managers
      i. Discipline
      ii. Project Manager
      iii. Date of Review
   e. Date Plans Received
   f. Date Plans Returned
   g. Comments
FORMS (tab)

All forms submitted on-line must be filled in completely or they will be rejected by the system. All forms submitted on-line will be routed to both the OSE Admin Assistant and the Project Manager (if known) and dated. If the Project Manager rejects the form, they return with comments and the system will delete the Received Date. If returned approved, the return date will be recorded as the Approved Date.

1. Invitation for Professional Services
   When approved by OSE Project Manager, provide routing to South Carolina Business Opportunities (SCBO)

2. Approval of Professional Services Contract
   a. Small Contract (<$25,000)
   b. Large Contract (>=$25,000)

3. Amendment to Professional Services Contract

4. Invitation for Construction Bids
   When approved by OSE Project Manager, provide routing to South Carolina Business Opportunities (SCBO)

5. Bond Forms
   a. Bid Bond
   b. Performance Bond
   c. Labor and Material Payment Bond

6. Bid Form
   a. Lump Sum Bid
   b. Unit Price Bid

7. Request to Post Notice of Intent to Award

8. Notice of Intent to Award

9. Notice to Proceed

10. Change Directive

11. Change Order

12. Building Permit
    a. Date of Issue
    b. Full/Temporary
    c. Special Conditions

13. Certificate of Occupancy – Date
    a. Date of Issue
    b. Full/Temporary
    c. Special Conditions

PROTESTS/CONTRACT CONTROVERSY (tab)

1. Protest Filed – Yes/No (A)
   a. Solicitation Protested
      i. Mediation
      ii. Hearing
      iii. Result
   b. Bid Protested
      i. Mediation
      ii. Hearing
      iii. Result

2. Contract Controversy Filed – Yes/No (A)
   a. Mediation – Yes/No
   b. Hearing – Yes/No
   c. Result