GDOT-AC EC
Design/ Environmental Discussion:

ESB (Environmental Survey Boundary)
A3M (Avoidance & Minimization Measures Meeting)
2018 USACE Regional Permits

March 2019
Improving communication and collaboration

Internal look at interactions amongst project delivery team – reduce rework & project delays
Communication & Collaboration
Multi-disciplinary team

• Georgia Tech study on communication
• Aligning design & environmental activities
  • Environmental Survey Boundary
  • Avoidance & Minimization Measures Meeting (A3M)
  • Lockdown Plans
• Improving procedural discussions with consultants
  • Approx. 80% of work is outsourced
Design-Environmental Discussions

Inaugural discussion – week of March 11

- Environmental Survey Boundary
- A3M roles & responsibilities
- 2018 Regional Section 404 Permits

We need your input ➔ Future topics?
Environmental Survey
Boundary Guidance

GDOT-ACEC Design/Environmental Discussions
March 13th, 15th, & 18th 2019

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Outline

• PDP Appendix O - Record Plan Sets
• Environmental Survey Boundary (ESB)
  • What is an ESB?
  • Goals & Implications of the ESB
  • How to define/develop an ESB
  • Alternatives Analysis considerations
  • What information to include on an ESB layout
  • ESB examples

• Questions and Open Discussion
Outline

• PDP Appendix O - Record Plan Sets
  • Environmental Survey Boundary (ESB)
    • What is an ESB?
    • Goals & Implications of the ESB
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    • Alternatives Analysis considerations
    • What information to include on an ESB layout
    • ESB examples
  • Questions and Open Discussion
# Record Plan Sets

## Revision History:

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<td>This is a PDP Committee Review and Update (or Revision) of the entire PDP Manual to bring it up to date with current GDOT policies, practices, and processes</td>
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- Appendix O. Design & Environmental Coordination ................................................................. O-1
  - O.1 Design & Environmental PDP Overview .................................................................................. O-1
  - O.2 Record Plan Set Guidance ................................................................................................... O-1

## Definitions:

**Record Plan Set** – Project plans or layouts that serve as a snapshot of the design at a particular project milestone. Record plan sets will be stored in the project’s electronic file in a specific location in ProjectWise for project team members to easily locate and use. A record plan set submission will include PDF files (plan sheets or layouts) along with design files (CAD, etc.) used to create the PDFs. Record plan sets should set the context for coordination among the project team, particularly between the design and environmental practitioners. See Appendix O for additional information.
Record Plan Sets

0007047 - Murray - Bridges - SR 52 Alt @ Town Branch
- Contract
- CST (Construction)
- Incoming RFI documents
- Maintenance
- Outgoing RFI responses
- PE (Preconstruction)
- Print Job
- Record Plan Sets
  - 01 - Environmental Survey Boundary
  - 02 - Concept Report Layout
  - 03 - Public Meeting Layout
  - 04 - Geometry QC Plans
  - 05 - PFPR Plans
  - 06 - Corrected PFPR Plans
  - 07 - ROW Plans Approval
  - 08 - Permit App Plans
  - 09 - FFPR Plans
  - 10 - Corrected FFPR Plans
  - 11 - Final Plans
  - 12 - Bid Set - Letting
  - 13 - Design-Build Costing Plans
  - 14 - Design-Build Released for Construction Plans
  - 15 - As Built Plans
- Submittal documents
- Transmittal responses
- Saved Searches

0007047_Env_Study.Area.Layout.UPDATED.pdf
- Acrobat PDF

0007047_Env_Study.Area.Layout.UPDATED.dgn
- MicroStation

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# Record Plan Sets

## Plan Development Process

### APPENDIX O. Design & Environmental Coordination

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<td>O.2</td>
<td>Record Plan Set Guidance</td>
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Record Plan Sets

Million Dollar Question: “What’s Changed?”

Find at least 6 differences between the panels -- If you can!
Record Plan Sets

Million Dollar Question: “What’s Changed?”
# Record Plan Sets

## Appendix O.2 - Record Plan Set Guidance

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<th>Record Plan Set</th>
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<td>See Environmental Plan Lockdown Schedule for required plan sheets</td>
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*NOTE: Reference DGNs should include the following files (if applicable): DRIV, ENVV, ENVP, ITS, LGTH, LIMIT, MAIN, PROP, RECQ, SIGN, SIGN, SITE, TCPD, UTOLE, & UTIIP*
Record Plan Sets

ProjectWise

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Record Plan Sets

Record Plan Set Process

NOTE:
PM = Project Manager
DPL = Design Phase Leader

The documentation below reflects PM/DPL. The intent is that if the project is being designed in-house, the GDOT Design Phase Leader (DPL) will handle this task. If the project is being designed by a Consultant, the Project Manager (PM) will handle this task.

NOTE:
Record plan sets are project plans or layouts that serve as a snapshot of the design at a particular project milestone. Record plan sets will be stored in the project’s electronic file in a specific location for project team members to easily locate and use. A record plan set submission will include PDF files (plan sheets or layouts) along with design files (CAD, etc.) used to create the PDFs. Record plan sets should set the context for coordination among the project team, particularly between the design and environmental practitioners. The record plan sets are:

01 – Environmental Survey Boundary
02 – Concept Report Layout - see “Concept Report Approval Process” workflow for details
03 – Public Meeting Layout
04 – Preliminary Plans to GDOT Offices (or 04 – Geometry QC Plans)
05 – PPFR Plans - see “PPFR Packages” workflow for details
06 – Corrected PPFR Plans - see “PPFR Packages” workflow for details
07 – ROW Plans Approval - see “Right-of-Way Plans Approval and Revision Process” workflow for details
07a – Interim FPR Plans – see “Interim FPR Process” workflow for details (folder to be created)
08 – Environmental Lockdown Plans (or 08 – Permit App Plans)
09 – PPFR Plans - see “PPFR Packages” workflow for details
10 – Corrected PPFR Plans - see “Corrected PPFR Packages” workflow for details
11 – Final Plans - see “Final Plans Submission Process” workflow for details
12 – Bid Set – Letting – see “Advertisement/Letting/Award Process” workflow for details

For all record plan set submissions that do not have separate workflows (01 – Environmental Survey Boundary, 03 – Public Meeting Layout, 04 – Preliminary Plans to GDOT Offices, and 08 – Environmental Lockdown Plans), the PM/DPL should follow the steps below within the appropriate record plan set folder.

PFPR Packages

PM = Project Manager
DPL = Design Phase Leader

The documentation below reflects PM/DPL. The intent is that if the project is being designed in-house, the GDOT Design Phase Leader (DPL) will handle this task. If the project is being designed by a Consultant, the Project Manager (PM) will handle this task.

EDG QA Check – Consultant Designed Projects Only

NOTE: For Consultant Designed projects, the following steps must be completed BY THE PM before submission of the PPFR package to Engineering Services.

1. Using the link in the PWDM email received, navigate to the Submittal folder containing the files.
   a. Open the email and copy/paste the ProjectWise Explorer link into the address bar in ProjectWise Explorer and press Enter.
   b. The new submittal package will be highlighted. Click the link to the package.
   c. In the bottom right corner of the dialogue box, Acknowledge the package. This will import all files to the ProjectWise Client into the project’s pre-configured folder for the organization that sent the package.
   d. Click on the Documents tab and click on the Go To Folder button in the bottom right corner to be taken to the folder where the files reside.

2. Complete the document properties for the submitted plans in the Submittal folder.
   a. Select all the files in the folder.
   b. Right-click and select Assign Document Type
   c. Select the following:
      - Document Group: Preliminary Engineering
      - Document Category: Design Plans
      - Document Type: Plans Image
      - Click on OK
   d. With the files still selected, right-click and select Modify.
   e. Select the GDOT Environment tab.
   f. Scroll down to Plan Document Type and select Working Plans from the drop-down.
   g. Click on Apply and then Close.

3. Create a document set of the submitted files.
   a. PPFR: Move the submitted files from the ProjectWise submittal folder for the organization that sent the package to the Record Plan Set folder PM|Record Plan Sets|05 – PPFR Plans.
   b. Supplemental PPFR (if necessary): Create a subfolder under PM|Record Plan Sets|05 – PPFR Plans and name it Supplemental. Then, move the submitted files from the ProjectWise submittal folder for the organization that sent the package to the Record Plan Set folder PM|Record Plan Sets|05 – PPFR Plans|Supplemental just created.
Record Plan Sets: Take-Aways

- **Layouts are available prior to plans be developed**
- **Project plans are continuously evolving**
- **For your project, ask yourself:**
  - What is the most recent Record Plan Set I have? 
  - What is the next Record Plan Set I should receive?
- **Key milestones for Design-Env Coordination:**
  - Environmental Survey Boundary
  - A3M
  - Submit Plans to OES
  - Lockdown Plans
- **Overall: major challenge – how can we improve?**
Outline

- PDP Appendix O - Record Plan Sets
- **Environmental Survey Boundary (ESB)**
  - What is an ESB?
  - Goals & Implications of the ESB
  - How to define/develop an ESB
  - Alternatives Analysis considerations
  - What information to include on an ESB layout
  - ESB examples
- Questions and Open Discussion
5.8 Concept Development Considerations

It is essential that a high quality, comprehensive Concept Report be prepared as early in the process as possible. The benefits to be derived from a detailed concept include critical coordination with the planning process, better environmental analysis, and better right-of-way, utility, and construction cost estimates. In addition, earlier and better decisions on local government participation can be made.

Concept decisions shall be sensitive to environmental resources. To initiate the identification of environmental resources, the Design Phase Leader will develop an environmental survey boundary (study area) based on concept-level assumptions about the future footprint of the project (see Appendix O for additional information). Wherever possible, environmental resources are to be avoided, but where avoidance is not prudent, the impacts are to be minimized and mitigated. For those projects that are on new alignment or involve major new location sections, avoidance and minimization alternatives shall be coordinated with FHWA (for federally funded projects) and consulting agencies prior to the finalization of the Concept Report. Concept decisions shall also consider compatibility with adjacent land use (context - rural vs. urban section, historic area, etc. for example), address community issues if present, satisfy the Project Justification Statement for the project, be consistent with the STIP, and provide for logical termini.
Environmental Survey Boundary (ESB)

Enclosed boundary shape which represents a concept level approximation of the project’s footprint (right-of-way and easement) and a 100ft buffer/offset.

ESB = Conceptual Footprint (ROW/ESMT) + 100ft Buffer

- Provided early in Concept Development to allow Environmental to conduct studies so that resources can be considered in concept development.

- Developed by the Design Team
  - P6 Activity #19322 (In House)

- Primary users are environmental SMEs, Required to start Environmental Resource Identification
  - P6 Activity #11412 (In House & Consultant)

Analogous to a topographic survey boundary – developed by design so that the environmental team can collect resource data within a clearly defined boundary.
ESB = Conceptual Footprint (ROW/ ESMT) + 100ft Buffer
ESB Guidance

ESB = Conceptual Footprint (ROW/ESMT) + 100ft Buffer

• Conceptual ROW Footprint accounts for all potential required ROW and easements needed for construction of a project.

• Consider potential for cut/fill, erosion control, staging, tie-ins, signage, pavement removal, etc. in development of footprint.

• ESB includes footprint and 100ft buffer to account for uncertainty of design and resource agency identification requirements. Each SME will survey per their respective requirements.

• Existing ROW should be considered the minimum Conceptual ROW Footprint for any project not anticipated to require new ROW or easements.
ESB Guidance

Balance of potential design needs and level of environmental survey effort

• Goal is to avoid addendum surveys later in project development (i.e. schedule, cost, etc.)
  - **Too large** – increased field time, reporting, and agency consultation efforts (resource allocation, cost)
    - More survey area = more resources
  - **Too small** – addendum surveys, reports, and agency consultation required later in project (schedule delays, additional cost, etc.)
    - Any additional required surveys have impact on project schedule, regardless of size
Too Large

- Consider project scope.
- Very large boundaries may exceed assumptions for level of survey in existing task order.
Too Small

- Consider side street tie-ins.
- Any design outside of the original ESB, regardless of size, may result in additional studies requiring procurement, fieldwork, reporting, and agency concurrence.
Alternatives Analysis

- Larger scale projects (widenings, new locations, etc.) may require project meeting with PM, Design, and Environmental to determine level and timing of surveys in relation to alternatives analysis.
  - What does environmental survey and when?
  - How does this affect the project schedule?

- Design should clearly note whether an ESB includes multiple concept alternatives, or just the assumed preferred alternative.
Outside ESB - Addendum
Survey Required
ESB Guidance

What to Include on an ESB Layout:

• Legend
• Aerial Photography Background
• Graphic Scale and North Arrow
• Road Names
• Conceptual ROW/ESMT Footprint Line
• ESB Line - clearly defined and labeled as “Environmental Survey Boundary”
• Dimensions and notes to assist specialists in the field, e.g.:
  - ESB 250’ from existing edge of pavement
  - ESB 500’ beyond intersection of SR 1
• Anticipated begin/end project callouts
• Transmit in both PDF and DGN format
ESB Guidance

Additional Considerations:

• Side road tie-ins
• Signing and Marking
  • Interstate Guide Signs, associated guardrail, etc.
**ESB Guidance**

**Additional Considerations:**

- ESBs should not be “revised” if preliminary plans go beyond the original boundary.

- Construction Plans should be used by specialists and buffered as required to determine need for additional surveys.
ESB Guidance

“Results” from ESB and Next Steps

• Environmental Resource Identification and Transmittal of Resource Boundaries to Design
  • ESA delineation on project plans
    • Environmental P6 Activities #11499 (In House), #02469 (Consultant)

• Required prior to A3M Meeting
  • P6 Activity #20937
Outline

• PDP Appendix O - Record Plan Sets
• Environmental Survey Boundary (ESB)
  • What is an ESB?
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  • How to define/develop an ESB
  • Alternatives Analysis considerations
  • What information to include on an ESB layout
  • ESB examples
• Questions and Open Discussion
Questions & Feedback

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Avoidance & Minimization Measures Meeting (A3M)

18-Month Check In

Carla Benton-Hooks, Office of Environmental Services
Doug Chamblin, Office of Environmental Services
Fletcher Miller, Office or Roadway Design
Robert Elam, Office of Roadway Design
Debbie Cottrell, Office of Program Delivery
Roadmap

• Background
• Roles and Responsibilities
• Case Study
• Discussion
Why avoid & minimize? Federal Aid

Clean Water Act
Section 6(f) of the Land & Water Conservation Fund

Fish & Wildlife Coordination Act
Endangered Species Act

National Historic Preservation Act
Coastal Zone Management Act of 1972
Title VI of the Civil Rights Act
Archaeological Resource Protection Act
Georgia Wildflower Act
Native American Grave Protection & Repatriation Act

Magnuson-Stevens Act
Noise Abatement – 23 CFR 772

E.O. 12898 – Environmental Justice

E.O. 11990 – Protection of Wetlands
Rivers & Harbors Act of 1899

Georgia Endangered Wildlife Act
National Pollutants Discharge Elimination System

Surface Transportation & Uniform Relocation Assistance Act

E.O. 11988 – Floodplain Management
Clean Air Act

National Environmental Policy Act
Why avoid & minimize?
State funded

Clean Water Act
Fish & Wildlife Coordination Act
National Historic Preservation Act
Endangered Species Act
Title VI of the Civil Rights Act
Georgia Wildflower Act
Archaeological Resource Protection Act
Georgia Endangered Wildlife Act
Native American Grave Protection & Repatriation Act
Magnuson-Stevens Act
Clean Air Act
Georgia Environmental Policy Act
Section 6(f) of the Land & Water Conservation Fund
Coastal Zone Management Act of 1972
Rivers & Harbors Act of 1899
National Pollutants Discharge Elimination System
Surface Transportation & Uniform Relocation Assistance Act
Why an A3M?

• **Predictable time for team collaboration**
  - One conversation among all disciplines
  - Ensure accuracy of ESA delineations on plans
  - Discuss ESA avoidance/minimization

• Document efforts for reports and permits

• Standardize existing requirements
When in the P6 Schedule?

- **AFTER** Environmental Resource ID
- **EARLY** in the Preliminary Plans Phase
  - **AFTER** first run of prelim cross sections
  - **BEFORE** QA of Preliminary Geometry

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<td>Conduct Avoidance and Minimization Meeting (AMM)</td>
<td>20937</td>
<td>0d</td>
<td>0d</td>
</tr>
<tr>
<td>Request/Receive Preliminary Lighting Plans</td>
<td>20940</td>
<td>20d</td>
<td>20d</td>
</tr>
</tbody>
</table>
Who Should Attend?

- GDOT Project Manager
- Designer
- Environmental Analyst ("doer")
- Environmental SMEs with resources present (the "doer" - GDOT or Consultant)
- OES “reviewer” SMEs – at their discretion
- Bridge design – if bridge present
- Utilities – if relocations a concern
- Construction – if staging a concern
Roles - Handout!
Environmental Role - Before the Meeting

✓ “Doer” Environmental SMEs:
  - Identify resources in the field
  - Complete Resources Reports and gets OES approval, then agency concurrence
  - Provide delineations to Design
  - Enter resources in A3M Tracking List (OES SharePoint site) at least 10 business days prior to the meeting
  - Review Layout/ESA delineations
Environmental Role - Before the Meeting

✓ GDOT Environmental Analyst

- Provides PM & designer with “Schedule P6 Activity: A3M” Letter
- Coordinates with PM on invitee list

---

Interoffice Memo

DATE: Click to enter date.

FROM: Eric A. Duff, State Environmental Administrator

TO: Kimberly Nesbitt, State Program Delivery Administrator
    Attn: Debbie Cottrell

SUBJECT: Please Schedule P6 Activity: A3M (20937)

This letter provides notification that the Office of Environmental Services has completed Environmental Resource Identification, activity ID 11499, as of 3/6/2019 and has submitted all delineations to design. Per the schedule, the baseline finish date is 4/5/2019.

Once you receive the A3M layout from design please schedule an Avoidance & Minimization Measures Meeting (A3M) to allow time for Activity 13417, Receive Preliminary Plans to Begin Technical Studies to meet the baseline start date. Meeting this baseline start date is critical for environmental technical studies to remain on schedule, as shown below.
Environmental Role - During the Meeting

✓ Environmental SMEs

- Participate with PM and Designer as each resource is discussed sequentially
- Describe their resource and implications of avoiding vs. impacting
- Weigh trade-offs for competing resources
- Considerations: Permits, Mitigation, Schedule, Budget, etc
Environmental Role - After the Meeting

✓ Environmental SMEs
  o Review meeting notes from PM
  o Follow up with Design on AMM, as needed
  o Complete the final fields in the A3M Tracking Sheet
PM Role – Before the Meeting

• Identify A3M date during team meetings
  o Note: A3M may not be in your schedule

• Confirm consultant access to A3M tracking sheet

• Logistics – work with project team to determine:
  o Where – OGC is preferred
  o When – send meeting invite at least 20 working days before meeting
  o Who – refer to previous slide
  o How – in person is preferred, video/conference call if needed

• Provide link to meeting materials 10 days before meeting
  o A3M layout, plans
  o Project photos, drone video, .kmz file
  o Link to approved Concept Report

• Prepare Agenda
PM Role – During the Meeting

Sample Agenda

1. Introduction
   • Introductions
   • Project overview, Status of roadway/bridge design
   • Review schedule and upcoming milestones

2. Discuss Environmental Resources – follow A3M tracking sheet – NEPA lead to assist
   • Resource: PS1
     o Locate on the layout
     o Discuss how the resource is being impacted based on A3M Plans
     o Discuss potential design changes to avoid or minimize impacts to the resource
   • Repeat for each Resource

3. Discuss Constructability Issues – input from CST and UTL staff in attendance
   • Additional impacts to resources due to utility relocations?
   • Additional impacts to resources due to bridge removal?
   • Additional impacts to resources due to required staging areas?

4. Meeting Recap
   • Review requested design changes
   • Review major action items
PM Role – During the Meeting

- Moderate all discussions, especially the SME/Designer discussion
- Ensure every Resource is addressed
- Take notes – line up assistance if needed
- Ensure virtual attendees are engaged
- Utilize monitor for additional visual support (Google Earth, photos, etc.)
- Schedule multiple meetings for bundled projects
PM Role – After the Meeting

• Update P6 Activity

• Prepare Meeting Notes
  o send draft to attendees and allow time for comment
  o Compile comments and issue final minutes
  o Include actions items

• Follow up on actions items at your next team meeting or individually
  o Some issues can be resolved quickly
  o Others may take more time, depending on the progression of preliminary design activities
Design Role - Before the Meeting

- Confirms that all ESAs received & adds to plans
- Begins preliminary “first run” cross sections
- Inputs ESA details on A3M Tracking Sheet
- Provides layout(s) to PM 10 business days prior to meeting
- Inputs Pre-A3M avoidance measures on A3M Tracking Sheet
Process

Design confirms ESAs

1. Convert ESA dgn/shp file to ENVE.dgn
   
   ![Diagram showing ESA dgn/shp to ENVE.dgn]

2. Cross-check delineations against list of resources
   
   ![Diagram showing ENVE.dgn equals A3M Tracking List]
Design inputs A3M details

<table>
<thead>
<tr>
<th>Pk #</th>
<th>County(ies)</th>
<th>Resource Label</th>
<th>Resource Type</th>
<th>Env Notes</th>
<th>Env Specialist</th>
<th>Register Station #</th>
<th>End Station #</th>
<th>Date</th>
<th>AMM Meeting Held?</th>
<th>AMM Meeting Date</th>
<th>AMM Results</th>
<th>GDOT Env Analyst</th>
<th>Permitted Construction Activity (For EHDR)</th>
<th>Comments (For EHDR)</th>
<th>AMM Additional Notes</th>
<th>Resource Impacted?</th>
<th>Impact Avoided/Mitigated due to A3M?</th>
<th>CR Impact Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>123456</td>
<td>Bacon</td>
<td>PS #1</td>
<td>Stream</td>
<td>This is a perennial stream; bottomless structures need to be considered.</td>
<td>M. Pulver</td>
<td>255+24</td>
<td>184+10</td>
<td>R1</td>
<td>6/15/2016</td>
<td>Yes</td>
<td>A. B Mogno</td>
<td>25 ft, 0.1 ac of riprap</td>
<td>NA</td>
<td>Yes</td>
<td>No effect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>123456</td>
<td>Bacon</td>
<td>Duff House</td>
<td>Archaeology Site</td>
<td>This is a 25-foot buffer around PS #1. Impacting this resource for anything other than culvert/bridge work will require a buffer variance.</td>
<td>M. Pulver</td>
<td>175+45</td>
<td>185+00</td>
<td>R1</td>
<td>6/15/2016</td>
<td>Yes</td>
<td>A. B Mogno</td>
<td>Activities related to culvert replacement within 50 feet of culvert replacement are exempt.</td>
<td>NA</td>
<td>Yes</td>
<td>No effect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>123456</td>
<td>Bacon</td>
<td>PS #1 Buffer</td>
<td>25' Buffer</td>
<td>Any work within this ESA would require extensive and timely consultation with resource agencies.</td>
<td>L. Falvey</td>
<td>96+20</td>
<td>101+50</td>
<td>Both</td>
<td>6/15/2016</td>
<td>No</td>
<td>A. B Mogno</td>
<td>Roadway construction</td>
<td>NA</td>
<td>Yes</td>
<td>No Adverse Effect</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Design inputs A3M details

<p>| # | County[es] | Resource Label | Resource Type | Env Notes | Env Specialist | Designer | Begin Station # | End Station # | Date | AMM Meeting Held? | Date of AMM Meeting | AMM Results | GDOT Env Analyst | Permitted Construction Activity (for EDI) | Comments (for EDI) | Additional Notes | Resource Impacted? | Impact Avoided | Maximized due to A3M? | CR Impact Type |
| 123456 | Bacon | PS.41 | Stream | This is a perennial stream; bottomless structures need to be considered. | M. Pulver | F. Flanders | 255+24 | 184+10 | Rr | 6/15/2016 | This resource will be bridged. Flers in the channel cannot be avoided due to... | A. Burgos | 25 ft; 0.1 ac of riprap | NA | NA | No | No effect |
| 123456 | | | | | A. Shea | F. Flanders | 175+45 | 185+00 | Et | Yes | 6/15/2016 | This resource will be completely avoided. | A. Burgos | No activity | NA | No | No | No effect |
| 123456 | | | | | M. Pulver | F. Flanders | 123+42 | 130+00 | Both | Yes | 6/15/2016 | This resource will be impacted by 16 for culvert construction. | A. Burgos | Activities related to culvert replacement within 50 feet of culvert replacement are exempt. | NA | Yes | NA | No Adverse Effect |
| 123456 | | | | | L. Falley | F. Flanders | 96+20 | 101+50 | Both | Yes | This resource cannot be avoided due to... | A. Burgos | Roadway construction | NA | Yes | NA | No Adverse Effect |</p>
<table>
<thead>
<tr>
<th>Designer Name</th>
<th>Enter the name of the designer who is coordinating the AMM effort for this resource. Enter as &quot;Last Name, First Name&quot;. Do not use initials.</th>
<th>Lannon, Teresa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designer Firm</td>
<td>Enter the name of the firm that employs the project designer. If the designer is a GDOT employee, enter &quot;GDOT&quot;.</td>
<td>GDOT</td>
</tr>
<tr>
<td>Begin Station #</td>
<td>Enter the station number where the resource first enters the project.</td>
<td>81+28.21, 170.45'RT EXCHANGE BLVD</td>
</tr>
<tr>
<td>End Station #</td>
<td>Enter the station number where the resource leaves the project.</td>
<td>85+19.06, 175.13'LT EXCHANGE BLVD</td>
</tr>
<tr>
<td>Side</td>
<td>Enter the side of the project where the resource is located. Both</td>
<td></td>
</tr>
<tr>
<td>Discussed at A3M?</td>
<td>Was this resource discussed at the A3M?</td>
<td>Yes</td>
</tr>
<tr>
<td>Date of A3M</td>
<td>Enter the date the initial A3M was held. If no A3M was held, leave blank.</td>
<td>1/7/2019</td>
</tr>
<tr>
<td>A3M Results</td>
<td>1/10/19: We have investigated utilizing a wall at the shoulder break point and included room for ditches, erosion control, and room to work. See the cross section insets on the revised A3M layout. We coordinated with Bridge Design for recommendations on the ditches and footing. Additional risks are listed on the layout due to the location in a swamp area.</td>
<td></td>
</tr>
</tbody>
</table>
A3M Results

1/10/19: We have investigated utilizing a wall at the shoulder break point and included room for ditches, erosion control, and room to work. See the cross section insets on the revised A3M layout. We coordinated with Bridge Design for recommendations on the ditches and footing. Additional risks are listed on the layout due to the location in a swamp area.

Results:

- Wetland 2 (& PS1) near pond: Adding the $1,430,000 walls with the recommended ditch features reduced the impact area to 2.16AC. To get under 2AC, we would need to pull in each side by approx. 5’. This is a risk for a swamp area that requires adequate drainage in general and also to prevent damage to the walls. Additional costs/needs for piles or load transfer platforms would not be known until either the soil survey or the WFI is completed.

The results of the hydraulic study will aid in the decision of a bridge vs a culvert. If a bridge is recommended, we can recalculate the impact area at that time.

Include a description of what COULD and COULD NOT be done to avoid or minimize impact to the resource. *When something changes, enter any new notes at the beginning of the comment field, record the date. Save old comments with dates. (DESIGN: Draft notes can be entered here prior to the A3M.)

AMM prior to A3M:
Record any early stage project decisions that were made to avoid or minimize impacts to this resource.
Using 12’ shoulders instead of 16’ on Exchange Blvd Ext; Using...

Design Archive Notes:
Save any previous notes from other fields that have been updated. Enter the date and author of the comment.
<table>
<thead>
<tr>
<th>PI #</th>
<th>County</th>
<th>Resource Label</th>
<th>Resource Type</th>
<th>Begin Station #</th>
<th>End Station #</th>
<th>Side</th>
<th>Permitted Construction Activity (for ERIT)</th>
<th>Comments (for ERIT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>123456...</td>
<td>Bacon</td>
<td>PS #1</td>
<td>Stream</td>
<td>155+24</td>
<td>164+10</td>
<td>Rt</td>
<td>25 ft./0.1 ac of riprap</td>
<td>NA</td>
</tr>
<tr>
<td>123456...</td>
<td>Bacon</td>
<td>Duff House</td>
<td>Archaeology Site</td>
<td>175+45</td>
<td>183+00</td>
<td>Lt</td>
<td>No activity.</td>
<td>NA</td>
</tr>
<tr>
<td>123456...</td>
<td>Bacon</td>
<td>PS #1 Buffer</td>
<td>25' Buffer</td>
<td>123+42</td>
<td>130+00</td>
<td>Both</td>
<td>Activities related to culvert replacement within 50 feet of culvert replacement are exempt.</td>
<td>NA</td>
</tr>
<tr>
<td>123456...</td>
<td>Bacon</td>
<td>Cultural Resource ESA</td>
<td>Archaeology Site</td>
<td>96+20</td>
<td>101+50</td>
<td>Both</td>
<td>Roadway construction</td>
<td>NA</td>
</tr>
</tbody>
</table>
Design provides layout

What needs to be included?

**Existing information**
- ✓ ESA delineations
- ✓ Existing ROW & property lines
- ✓ Topo
- ✓ Env Survey Boundary

**Proposed information**
- ✓ Alignments
- ✓ Edges of pavement
- ✓ Construction limits (cut/fill)
- ✓ Required ROW (concept level)
Layout similar to Public Layouts - Large Scale Roll Plot
A3M:
- USING 12' SHOULD ON EXCHANGE BLVD EXT
- TO AVOID IMPACTS TO HISTORIC BROWN HOUSE PARCEL, WE DECIDED AGAINST LINING UP EXCH BLVD EXT ACROSS FROM THE CHURCH/SCHOOL DRIVEWAY
- USING MINIMUM DISTANCE TO FACE OF GUARDRAIL TO REDUCE LIMITS

UNKNOWN AT THIS TIME:
- HYDRAULIC STUDY/FLOOD PLAIN
- DETENTION/DRAINAGE NEEDS

SHIFTS FROM CONCEPT ESTIMATE:
- HORIZONTAL CURVE AT CELL TOWER HILL
- END PROJECT LIMITS
Design Role - During the Meeting

✓ Discusses potentially foreseen impacts
  ○ Discusses what it would take to fully avoid each resource
  ○ Learns priority of potentially competing resources
Determine if each ESA can be avoided
- If the impact can be avoided, records efforts made to avoid in the A3M Tracking List
- If impact cannot be avoided, records
  - Why the resource cannot be avoided and
  - Impact minimization measures

Records A&M measures in A3M Tracking List

Confirms Record plans
• Project team works TOGETHER, instead of independently
• Designer has context for competing resources
• Clarifies an existing responsibility
• Documents and tracks efforts which informs Env. Reports
• We can take credit for our work
A3M Case Study

Ramp Fill Impacts to Intermittent Stream
A3M Case Study

Design Avoidance/Minimization Options Presented at the A3M

1. Change the proposed slopes to be steeper than 2:1 to minimize impacts by tying into the existing slope at the existing culvert headwall. This option would require a Soil Survey report exemption for this area of the project.

2. Raise the existing headwall to minimize impacts. This option would propose to dowel into the existing headwall and wing walls, and pour concrete to raise or extend the headwall and wing walls to an elevation that would allow the proposed 2:1 slope to be intercepted, limiting impacts to the stream to only the contractor’s form work and slope backfill and compaction work.
A3M Case Study

Design Avoidance/Minimization Options Presented at the A3M

3. Add a wall at the top of the slope on the SR 316 shoulder, which would tie on both ends to the proposed and existing guardrail. While this option would avoid impacts to the stream, a rigid barrier would be introduced in the roadway clear zone, which with regards to safety is less desirable than a semi-rigid barrier (i.e., a guardrail). (PREFERRED OPTION)

4. Revise the Ramp B alignment to tie into SR 316 further from the stream. During the 2nd QA Geometric Review, it was determined that taper guidelines require specific taper lengths, which would minimize impacts to the stream. Discussion was held that the implementation of this option would be dependent on the review of the existing culvert’s condition to both convey the proposed drainage area runoff and the Area Maintenance office’s recommendation to retain the existing culvert.
A3M Case Study

Design Avoidance Option Implemented
Thank you!
2018 USACE Regional Permits

Hannah Pruett
OES, Ecology Team Leader

http://www.sas.usace.army.mil/Missions/Regulatory/Permitting/General-Permits/Regional-General-Permits/
Presentation Overview

• Regional Permit Thresholds
• When a PCN is not required
• Special Conditions
  o Project Managers
  o Design
  o Environmental
• RP Appendices
# 2018 Regional Permit Thresholds

<table>
<thead>
<tr>
<th>Permit type†</th>
<th>Document and/or Project type</th>
<th>Area* each crossing</th>
<th>Area* per HUC</th>
<th>Linear feet** each crossing</th>
<th>Linear feet** per HUC</th>
</tr>
</thead>
<tbody>
<tr>
<td>RP 30†</td>
<td>Maintenance, Repair, Rehabilitation, and Replacement</td>
<td>No threshold</td>
<td>No threshold</td>
<td>Stream modifications only within 100 ft of existing x-ing.</td>
<td>No threshold</td>
</tr>
<tr>
<td>(cf. NW 3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RP 31†</td>
<td>Temporary Impacts</td>
<td>No threshold</td>
<td>No threshold</td>
<td>Stream modifications only within 100 ft of existing x-ing.</td>
<td>No threshold</td>
</tr>
<tr>
<td>(cf. NW 25, NW 33)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RP 32</td>
<td>Replacement of a Bridge with a Bridge</td>
<td>No threshold</td>
<td>No threshold</td>
<td>Stream modifications only within 100 ft of existing x-ing.</td>
<td>No threshold</td>
</tr>
<tr>
<td>(cf. NW 14, NW 23, RP 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RP 33</td>
<td>Replacement of a Culvert with a Culvert or a Bridge</td>
<td>No threshold</td>
<td>No threshold</td>
<td>Stream modifications only within 100 ft of existing x-ing.</td>
<td>No threshold</td>
</tr>
<tr>
<td>(cf. NW 14, NW 23, RP 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RP 34</td>
<td>Construction on Existing or New Alignment</td>
<td>≤ 2 ac North</td>
<td>≤ 8 ac North</td>
<td>≤ 1,500 lf North</td>
<td>≤ 2,000 lf North</td>
</tr>
<tr>
<td>(cf. RP 96)</td>
<td></td>
<td>≤ 3 ac South</td>
<td>≤ 10 ac South</td>
<td></td>
<td>≤ 1,500 lf South</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RP 35</td>
<td>Construction on New Alignment</td>
<td>≤ 4 ac North</td>
<td>≤ 12 ac North</td>
<td>≤ 2,000 lf North</td>
<td>≤ 5,000 lf North</td>
</tr>
<tr>
<td>(cf. IP)</td>
<td></td>
<td>≤ 5 ac South</td>
<td>≤ 15 ac South</td>
<td></td>
<td>≤ 4,000 lf South</td>
</tr>
</tbody>
</table>

Note: Thresholds for RP 34 and RP 35 are only for permanent losses, not temporary impacts.

† PCN not required as long as impacts are below 100 linear feet and 0.1 acre AND no effect on resources under Section 7 (ESA) and Section 106 (NHPA).

* Area of jurisdictional wetlands, open waters, and perennial, intermittent, and ephemeral streams.

** Linear feet of jurisdictional perennial, intermittent and ephemeral streams.
“Permanent aquatic losses of other jurisdictional waters of the U.S. (e.g., open water, ephemeral streams, and ditches) are limited to the minimum necessary to accomplish the primary activity.”
Regional Permits 34 and 35

- RP 35 - PAR required to determine LEDPA (V.4)
- RP 34 - Alternatives Analysis (VII.7.c)
  
  “For all proposed uses of RP34, the PCN shall include information concerning the basic project purpose, alternatives considered, and aquatic resource avoidance and minimization measures.”

- VI.4 and VI.5 - EPD Water Quality Certification (WQC) and CRD Georgia Coastal Management Program (GCMP) Concurrence: Required for any New Location under RP 34 and 35.
PCN May Not Be Required

Non-notifying RP 30 or 31

- < 100 linear ft. or 0.1 acre impact (no mitigation required) (V.2)
- No effect to species and cultural resources (V.2)
- Not in a trout watershed (VII.2)
- Not < 2000’ from special conservation lands (VII.3)

- Single page form to EPD (attached to the RPs; Appendix E)
- Projects in 11 coastal counties must also submit form to CRD
Special Conditions for Project Managers

- **V.5 - Conditional Re-Authorization**: Although these RP’s expire in five years, if an RP is obtained prior to the expiration date it is eligible for automatic re-authorization until October 5, 2028.

- **V.10 - Altering Civil Works**: 408 permission must be issued before a 404 permit is authorized.

- **V.20.e - Seasonal Restrictions**: Certain species of fish require restrictive dates for spawning in the Oconee, Ocmulgee, Savannah, Hudson, and Broad River systems.

- **VII.7.k - Utility Relocations**: PCN package shall include owner’s name and contact info, verify their awareness of project, and provide general info on utility relocation.
Special Conditions for Designers

• V.6 and V.7 – **Navigable Waters**: structures over navigable waters must be approved by the US Coast Guard.

• V.16 - **Fish Passage**: New culverts in perennial streams must be embedded for fish passage (details required for PCN listed in V.II.7.j).

• V.17 - **Temporary Dewatering**: Channel constriction must be less than 33% of channel width.

• V.20.e - **Anadromous fish waters**: Avoid directly impacting bedrock or other suitable spawning habitat.

• V.22 - **Best Management Practices**: All BMP’s are recommendations, not requirements.

• VII.7.k - **Temporary Dewatering**: Hydraulic analysis is required for structures occupying >25% of cross-sectional area of critical flow.
Special Conditions for Environmental

- **V.11 - Anadromous Fish**: USACE will need to coordinate with FWS/NMFS if project is in or within 1000’ of those waters identified in Appendix B.
- **V.18 - SOP Tables**: Use 2018 versions.
- **V.20.b - Protected Species Lists**: Although the RP’s refer applicants to the traditional websites hosted by FWS and DNR, GDOT will be operating under our new protocol by referring to GNAHRGIS and HUC-10 Lists.
- **V.22 - Best Management Practices**: Review these recommendations for possible inclusion in SP 107.23.
- **VII.6 - Units of Impact**: The minimum units of measurement for impacts is linear feet (no fractions or decimals) and tenths-of-an-acre (unless impact is <0.1 ac).
- **VII.7 - PCN Package Requirements**
Appendices to the RPs

A. North/South Georgia Map
B. Anadromous Fish Waters in Georgia
C. Photos and diagrams of different culvert designs (fish passage do's and don'ts)
D. Tidal Waters in Georgia Map
E. Non-reporting Form for RP 30/31
F. PCN form for Regional Permits (differs from Nationwide Permit PCN form)
Questions?

Contact an Ecology Team Leader

Hannah Pruett
H Pruett@dot.ga.gov

Jeffrey Garnett
J Garnett@dot.ga.gov
Questions, Feedback, & Future Discussion Topics?

Sam Woods, P.E.
GDOT Office of Roadway Design
Asst. State Roadway Design Engineer
swoods@dot.ga.gov | 404-631-1628

Gail D’Avino, PhD
GDOT Office of Environmental Services
Asst. State Environmental Administrator
gdavino@dot.ga.gov | 404-631-1075