**UTILITIES UNIT**

**TIP PROJECT PROCESS (R, U, High Impact Bridge)**

**ACTIVITY**

**I. Request for Feasibility Study (UCS)**

Feasibility Studies are requested by the Feasibility Studies Unit in an effort to analyze conceptual designs. Our Unit is responsible for going to the study area and review utility impacts, which includes utility inspection and compiling a Utility Inventory List

**II. Utility Inventory (UCS except as noted)**

**A. Utility Inspection of project site (make use of available mapping, GIS, or site visit if necessary)**

**B. Consist of identifying existing utilities/and utility owners and include in UARR**

Description: Document all known utilities and companies within project corridor limits putting an emphasis on utilities with long duration relocation timeframes and costly relocation expenses.

**C. Attend field scoping meeting (UCS & UES)**

**D. Emphasize "Show Stoppers" to share with units**

Description: Attend field scoping meeting and provide documentations and explanations emphasizing "Show Stoppers" such as Transmission lines, substations, pipelines, sewer treatment plants, large capacity gas regulator stations, major telecommunication conduit runs, major outfall sewer lines and large capacity water mains. Be prepared to discuss possible options on accommodating utilities in-place / avoidance techniques using retaining walls, alternative drainage designs or structures to span over major pipelines or sewer outfall lines.

**III. Estimates for Various Alternatives (UCS)**

This is the request that we receive from various units within DOT to estimate the utility relocation cost on each project. This is broken down into the cost that will be covered under the Right of Way funding portion of the project and the utility construction that is covered under the construction funding of the project. All requests are sent to a central point of contact to enter this information in an access database for the utility coordinators to complete the estimate. We are given a time frame to complete this information and the coordinator of the utility estimate process keeps a spreadsheet of all estimate requests with the due date. A task is sent to the coordinator to help them keep up with all of the estimates have been assigned to complete.

This can involve a large number of alternatives on the larger projects that have to be estimated compared to the bridge projects that may have two or three alternatives that have to be looked at. Each project has its own challenges based on the type of information that is provided to complete the estimate request. We get hearing maps to use functional design plans, preliminary plans what is available at the time the request is made. This will involve the coordinator going to the project site to see what is own the project that may have been added since the survey was completed on this project. They also use google maps to help with gathering information.

**A. PDEA**

**B. RDWY**

**C. Program Development**

**D. Contract Standards**

*PE Manday Estimate #2*

**Prepare manday estimates for PE funding**

Using the estimating form, estimate the Preliminary Engineering funded mandays needed by UES and UCS for in-house work. The Utility Coordinator should fill in the form and send to the Regional Utility Coordinator, who will adjust and send to the Regional Utilities Squad Leader for further adjustment. After the estimate is complete, transmit to Barry Whitaker for uploading of the information and transmittal to the PDEA. Properly name the form and store on the R drive.

**IV. Preparation for Public Hearing Review Meeting**

**A. Expand easements for utilities 15'-20' back of R/W on public hearing map (UCS & UES)**

The Utility Agent will provide the Roadway Engineer with projected utility easement needs for inclusion on the public hearing map. Typically, a utility easement will be shown 15ft – 20ft behind proposed ROW.

◆ **PUBLIC HEARING HELD**

*PE Manday Estimate #4*

**Update PE Manday Estimate #2**

Update using latest information

**V. If needed, hire Utility Coordination PSF for Task Order 1 (UARR), (UCS & UES)**

Make a determination whether to hire a PSF for Task Order 1 (Phase 1).

**UTILITIES UNIT**
**TIP PROJECT PROCESS (R, U, High Impact Bridge)**

◆ **PLANNING DOCUMENT COMPLETE**

**Preliminary Utility Plans/UARR (UCS or PSF & UES)**

**All submittals from Utility Owners must be in Microstation format**

The intent of this requirement is to ensure that UO and UC plans can be compiled using the Utility Unit workspace and in a format that is compatible with the roadway plans.

**A. Provide Kickoff packages to Utility Companies (UCS or PSF)**

Utility Coordination (or PSF) is to provide current roadway plans and cross sections and profiles to the utility owners. Also will be provided will be a checklist of questions regarding existing easements beyond our R/W, verifying materials, as-builts, correct location, duration of relocation activities. Standard questionnaire can be modified for individual utility owners.

**B. Conduct Kickoff meeting w/utility owners, R/W, Div Construction Engineer, PSF (meeting to be scheduled by UCS or PSF)**

Coordination (or PSF) will establish time and place and invite attendees. Coordination will contact owners and verify that they received plans and questionnaire and are prepared to address questions

**1. Determine preliminary alignment and schedule for each utility company**

Each utility company will be prepared to discuss preliminary routing at the kick-off meeting with respect to all utility installations. Duration of relocation activities will also be discussed at this meeting. Utility Coordination (or PSF) and Utility Engineering (or PSF) will compile meeting minutes and notes (to include plan markups) to be used in completing the UARR(p).

**2. Determine if project schedule needs to be adjusted due to R/W duration and NEU permit issues**

**a. To relocate all utilities prior to let date (preferred)**

At the conclusion of the kick-off meeting, the Utility Unit representative will assess the time required to complete utility relocations and compare that information to the ROW schedule to determine if the project schedule will require adjustment, and determine if the NES utility permit drawings will have to be provided earlier in the project schedule.

**b. To relocate prior to/after let date (for UBO & UC worked in the contract)**

Utility Unit will determine if work can be completed prior to date of availability (dependent on the type of work involved). If the work cannot be completed prior to the DOA the utility owner must provide a date when the proposed work will be completed.

**3. Discuss cost responsibilities**

Utility Coordination (or PSF) will advise the utility owners if there are compensable interests based on information provided by the utility owners prior to the kick-off meeting

**C. Complete UARR (p) (send to all attendees, Hydraulics, Signal Design Section, Roadside Environmental) (UES, UCS or PSF)**

Utility Unit (or PSF) will complete the UARR and provide copies of the preliminary UARR to all attendees as well as affected NCDOT units. Send out copies electronically if possible. Once complete, the UARR will be placed on the R drive (project stores).

**D. Receive comments from utility owners**

The Utility Coordination Section (or PSF) will receive all comments from the utility owners and after reviewing the comments provide copies to the Utility Engineering Section. If comments reveal that changes to the routing, project schedule, durations, etcetera proposed by the utility owner, the UARR and associated utility plans will be revised to reflect those changes.

**E. Provide UCR (Utility Construction Request) to UES (UCS or PSF)**

Utility Coordination (or PSF) will provide the UCR to the Utility Engineering Section with a copy placed on the R drive (project stores). The UCR will clearly define ownership of utilities on the project and cost responsibility of the same. The UCR should also reflect the owner's desire to utilize NCDOT limited services PEF, a firm selected by the owner, or the owner's engineering staff.

**F. Request Higher Level SUE (Level A, etc.) (Receive preliminary drainage plans)**

Utility Engineering (or PEF/PSF) will contact Hydraulics Unit to obtain the horizontal alignment of proposed drainage prior to requesting level A SUE data. Request to L&S must be issued by engineering squad leader.

**G. Attend CP-4B Meeting**

Utilities Unit (or PSF/PEF) will attend 4B meeting with Hydraulics Unit to identify major utilities and proposed utilities so that impact can be assessed. Need to identify potential conflicts that can be mitigated.

**H. Provide preliminary PUE's**

Preliminary PUE locations will be determined by the Utility Coordination Section and the Utility Engineering Section (PSF/PEF) based on information provided by the utility owners. This information will not be provided to the Roadway Design Unit until final relocation plans have been received from the utility owners. PUE locations will be placed in the design file using Microstation and provided to RDU in that format.

**I. Receive final Drainage Plans from Hydro**

Utilities Coordination will receive final drainage plans and will provide those plans to each utility owner.

**J. Receive Utility Owner Relocation plans**

The Utility Coordination Section will receive plans from the utility owners and place those files on the R drive (project stores). These files must be microstation files that can be referenced into the design files being compiled by the Utilities Unit.

**K. Finalize PUE's & critical parcels (UES or PSF will provide electronic plans to Roadway for PUE locations)**

After all relocation plans have been received from the utility owners and checked for accuracy and completeness, the proposed PUE, locations will be verified and if required, additional/modified PUE's will be finalized and provided to RDU in Microstation format. Critical parcels, necessary for early utility relocations will be identified by the Utility Unit (PSF/PEF) and provided to ROW for accelerated acquisition.

**L. Attend Final Design Field Inspection and revise PUE's**

Utility Unit will attend the FDFI with checked and verified PUE and proposed utility relocations plans and be prepared to discuss relocations with respect to duration, location and any special requirements such as clearing, rough grading, etcetera.

**M. Provide UARR (f) and Preliminary Utility Construction and Utilities by Others Plans (UES, UCS or PSF)**

Utility Unit (PSF/PEF) will provide the final UARR to all utility owners and NCDOT design sections. The final document and associated plans, estimates, and other documents will be placed on the R drive (project stores)

**VI. Hire Utility Coordination PSF for Task Order 2 and Utility Engineering PSF for Task Order 3 (UCS & UES)**

Upon completion of Task Order 1, the UARR will be utilized to either hire a PSF or in the case where a PSF successfully performed Task Order 1, Task Order 2 services can be supplemented. The UARR will also be utilized to hire a PSF to perform Task Order 3, which includes water and sewer relocation work.

◆ **RIGHT OF WAY PLANS COMPLETE**

*PE Manday Estimate #6*

**Update PE Manday Estimate #4**

Update using latest information

**VII. Authorize Utility Relocations (UCS)**

**A. Utility Companies submit Utility Relocation package**

The utility relocation package should include the following:

If the cost to relocate the utility is NCDOTs cost: The utility company would submit two (2) copies completely filled out and executed (with original signatures) 16.8 Utility Relocation Agreements, Three (3) hard copy sets of color-coded relocation plans showing their existing and proposed relocation work, an electronic file (micro station preferred) of the color-coded relocation plans, three (3) copies of the company's detailed non-betterment estimate and the company's Right of Way verification (affidavit of adverse possession or copies of recorded easements for their facilities).

If the cost to relocate the utility is the company's cost: The utility company would submit four (4) copies completely filled out and executed (with original signatures) of the appropriate Encroachment Agreement (16.1 or 16.2 Encroachment Agreement), four (4) hard copy sets of color-coded relocation plans showing their existing and proposed relocation work, and an electronic file (micro station preferred) of the color-coded relocation plans.

**B. Approve Utility Relocation package from utility companies contingent on R/W Acquisition (cc Attendees)**

Once the utility relocation package has been reviewed the assigned Utility Agent will write and mail out a utility authorization to the utility company authorizing them to proceed with the necessary relocation work (contingent on R/W acquisitions) and once a relocation meeting has been held with the appropriate Resident Engineer's office.

**C. Notify Utility Companies when Utility Relocations can begin**

If all the Right of Way was acquired at the time the authorization letter was sent to the utility company they can begin their utility relocation work as soon as they have the necessary field meeting with the Resident Engineer's office as stipulated in the authorization letter. If all the Right of Way was not acquired when the authorization letter was sent, then the Utility Agent would need to track Right of Way's progress and notify the utility company once all the Right of Way was acquired in order for their relocation work to begin.

## VIII. Prepare Environmental Permit drawings/narratives (UES/UCS)

The Utility Engineering and Coordination Sections will prepare the environmental impact plans and narrative.

**A. Obtain hydro's permit drawings if available**

Minimize the impacts to the streams, rivers, buffer zones and wetlands caused by utility relocations. Verify the utility relocations and hydraulics environmental impact areas don't overlap.

**B. Confirm that environmental permits will be obtained to meet utility relocation schedule**

A separate environmental permit may be required for utility companies starting work a year or more before the letting.

**C. CAMA counties**

1. **No impacts ( provide utility relocation plans and narrative to NEU)**
2. **Show profiles for all utility crossing for stream, wetlands and buffers**
3. **Impacts – prepare permit plans and narrative**

**D. Non-CAMA counties**

1. **No impacts (narratives for utility relocations)**
2. **Impacts- prepare permit plans and narrative**

CAMA Environmental Permit Plans:

1. No Impacts

Environmental permit plans - show all utility relocations and profiles for trenchless installations crossing streams, rivers, buffer zones and wetlands. Division of Coastal Management doesn't require profiles on certain type streams and wetlands. NES will determine which streams and wetlands don't require profiles.

The narrative includes the owner names and contact information, a description of the existing utilities and proposed utilities to be relocated for each owner. Identify proposed utility lines for future development.

2. Impacts

Environmental permit plans with impacts - show all utility relocations and profiles for trenchless installations crossing streams, rivers, buffer zones and wetlands. Division of Coastal Management doesn't require profiles on certain type streams and wetlands. NES will determine which streams and wetlands don't require profiles. Show different impacts using

the standard symbology and legends. Calculate the impacts to the (buffer zones in square feet) and (wetlands in acres). Show the number of impacts to the buffer zones and wetlands on the plans and in the standard spread sheets provided from hydro. List the property owner names and parcel numbers with impacts.

The narrative includes the owner names and contact information, a description of the existing utilities and proposed utilities to be relocated for each owner. Identify proposed utility lines for future development.

Corp of Engineers Environmental Permit Plans:

1. No Impacts

Environmental permit plans - not required.

The narrative includes the owner names and contact information, a description of the existing utilities and proposed utilities to be relocated for each owner.

2. Impacts

Environmental permit plans with impacts – show only proposed utility relocations impacting the rivers, streams, buffer zones and wetlands. Show different impacts using the standard symbology and legends. Calculate the impacts to the (buffer zones in square feet) and (wetlands in acres). Show the number of impacts to the buffer zones and wetlands on the plans and in the standard spread sheets provided from hydro. List the property owner names and parcel numbers with impacts.

The Corp of Engineers does not currently require profiles for trenchless installations crossing rivers, streams, buffer zones and wetlands, but NCDOT may start asking utility companies to provide profiles.

The narrative includes the owner names and contact information, a description of the existing utilities and proposed utilities to be relocated for each owner.

## IX. Prepare Utility Construction Plans, Special Provisions, and Estimates (UES or PSF except as noted)

### A. Provide Utility Construction Agreement Plans to UCS (UES)

Utility Construction Agreement Plans differ from the UC plans turned in to Roadway. They show cost responsibility by depicting the proposed work in color and a color key is added to the title sheet. Additionally, they do not include profile, detail, or note sheets, only title and plan sheets are included. However, those sheets should be complete with the exception of the PE seal. Also included with the UtAg Plans is an estimate that lists pay items, quantities, and a lump sum cost, individual unit prices are not shown. As this is a budget estimate for the owner, 10% (or appropriate) is added. If necessary, include an estimate for betterment. Label the Special Provisions as Exhibit A, the Budget Estimate as Exhibit B, and the Utility Agreement Plans as Exhibit C.

### B. Submit Utility Agreement Package to Owner (UCS)

The Utility Agreement Package consists of the Plans and Estimate (described in B) and the applicable agreements (Use and Occupancy or Reimbursable and Encroachment). This package is presented to the appropriate authority in order to convey the proposed utility

relocations, explain legal responsibilities of both parties, and acquire appropriate signatures to make this a binding contract between the Department and the owner.

### C. Turn in PS&E to Roadway

UtAg Plans become final plans by removing the cost responsibility additions, adding remaining sheets (notes, symbology, details, profiles, etc.), and sealing/signing all sheets. Special Provisions will be written in accordance with guidance posted on the Utilities Unit Connect site. The estimated items, quantities, and unit costs will be entered into Transport. Two estimates will be produced, one with unit prices, one without. If the owner is responsible for any portion of the UC, a breakdown estimate will also be run (no unit prices). The plans, specifications, and estimate(s) (without unit prices) are turned in to Roadway. The estimate with unit prices is submitted to the estimating office.

For more info: https://connect.ncdot.gov/municipalities/Utilities/Pages/Construction-Plans-Development.aspx

## X. Finalize Utilities by Others Plans and Special Provisions (UES or PSF)

### A. Turn in UbO plans and special provisions to Roadway

Description: The UbO plans are developed to show all proposed utilities, within the project limits, that will be constructed by someone other than the highway contractor. The special provisions include completion dates, coordination required of the contractor, and any other pertinent information.

For more info: https://connect.ncdot.gov/municipalities/Utilities/Pages/UbO-Plans-Development.aspx

## XI. Utility Agreement Package signed (UCS)

Description: This Utility agreement is used when a utility entity is responsible for reimbursing the DOT for relocation work within the Roadway Contract. The utility entity approves the package (agreement, plans, estimate & provisions); the signed agreement is then forwarded back to the DOT for final Board approval and execution.

## ◆ LETTING

### XII. Prepare information using actual bid prices

**A. UCS documents expenditures for entities covered under GS 136-27.1 using actual bid prices and estimated quantities**

Description: The UCS will document on a yearly basis all expenders for entities covered under GS 136-27.1. This information is periodically provided to the NC General Assembly upon request.

**B. UCS forwards actual bid prices to entities responsible for utility relocation expenses**

Description: With the majority of the utility agreements, entities participating in relocation cost are responsible for paying actual bid prices and actual quantities used. The utility agreement reflects estimated cost, not contractor bid prices. After project letting, the actual bid prices are forwarded to the entity for their documentation and budgeting purposes.

**Note – UCS (Utilities Coordination Section) UES (Utilities Engineering Section) UbO (Utilities by Others)**