

# MDOT SHA Utility Manual - Aug 2018

## Chapter 8 – Project Coordination



## CHAPTER 8

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## **8.01 GENERAL**

### **8.01.01 Introduction**

This Chapter - PROJECT COORDINATION details utility relocation best practices, through Communication, Cooperation, and Coordination (CCC), regardless of the project delivery method. The partnership of MDOT SHA and the Utility Companies will foster a collaborative environment whereby the team can achieve goals that otherwise cannot be achieved working in a “silo.”

The milestones, steps, and processes outlined in this guideline are intended to assist in the coordination of utilities impacted by MDOT SHA projects. Specifically, the milestones, steps, and processes will aid in timely estimate costs, develop relocation strategies, establish relocation durations, and determine right-of-way needs during the major stages of MDOT SHA’s project development process. This guideline will focus on facilitating consensus for utility designs and commitment from Utility Companies based on the MDOT SHA’s current Project Development Process Manual Milestones, Utility Manual, and Utility Procedures. Successful utility coordination relies heavily on efforts made by all stakeholders to identify and resolve utility conflicts through avoidance, minimization, and mitigation in the early phases of project development. Assessing these impacts at early stages of design offers a better opportunity to: take the necessary steps to minimize utility conflicts; identify right-of-way and critical parcels for utility relocation needs; set and maintain schedules in order to avoid project delays; and control costs. Implementation of disciplined, well documented, and executable processes for Utility Coordination throughout the design and construction process will result in projects that are advertised with clear stakeholder responsibility for utility relocations. This will provide accountability for both the MDOT SHA and the Utility Companies, and will result in improved project delivery.

This guideline is not intended to serve as a complete Utility Coordination Process or to address all items necessary in a Utility Manual. It is, however, intended to highlight the interaction and responsibilities between the MDOT SHA internally and the Utility Companies externally to result in timely and accurate relocations of existing utilities impacted by highway projects. This guideline will address **both roles and responsibilities** of major stakeholders involved in the Utility Coordination Process; and the important Utility Coordination items that need to be addressed throughout the various milestones of the project development process. When these are followed, they will ensure a successfully designed and constructed project.

#### **8.01.01.02 Coordination, Cooperation, and Communication**

Delivering an MDOT SHA project can seem challenging at times. Issues with design, drainage, utilities, the environment, and specific project requirements are complex and interwoven. As a result, coordinating between the Utility Owners impacted by MDOT SHA’s projects and the MDOT SHA represents a significant effort by all stakeholders.

It is essential for all parties to Communicate, Cooperate, and Coordinate (CCC) in partnering at the beginning of the project development process. CCC should include essential design and construction personnel who are familiar with the project as well as other offices or support sections. The Utility Owner’s cooperation is critical. Project utility coordination efforts typically focus on preliminary project design issues; however, it is essential for CCC to continue into construction.

Effective coordination requires both sincere cooperation and constant communication between all stakeholders. Early coordination efforts using CCC between impacted utilities and the MDOT SHA will help minimize miscommunication; prevent potential for project delays; and avoid project cost overruns.

CCC will foster a productive environment in which the affected utilities and the MDOT SHA can exchange mutual concerns and establish realistic objectives can yield mutually beneficial results by avoiding the setting of unrealistic expectations that can be difficult to achieve. Successful facilitation of utility conflict resolution issues involves an understanding that both parties share responsibility in the mitigation of utility impacts.

### **8.01.02 Risk Management Approach to Utility Coordination**

The Utility Coordination Process identified in this chapter is intended to be modified to meet the needs of the individual project. No two projects are identical. Site conditions, magnitude of utility impacts, or the type of project delivery can vary from one project to another. Projects that are high profile or environmentally sensitive can affect the level of utility coordination required. As such, the MDOT SHA has taken the approach of Risk Management to Utility Coordination to determine the level of coordination needed for any specific project.

Risk management is the process of identifying risk, assessing risk, and taking steps to reduce risk to an acceptable level. The risk management approach determines the processes, techniques, tools, and team roles and responsibilities for a specific project.

This Chapter 8 – Project Coordination has been developed to address the “typical” Design-Bid-Build type of project needing extensive utility coordination. However, the project stakeholders need to: evaluate each project on a case by case basis; come to a consensus as to how much coordination is needed; and what, if any, modifications are needed to the “typical” process identified in this chapter.

To assist in this risk management approach, refer to the Appendix - [FUNDING CATEGORIES & UTILITY COORDINATION](#) for guidance on the funding categories for projects, the general type of work for these projects, and the “typical” level of utility impacts to start a Risk Management approach to Utility Coordination for an individual project.

In addition, refer to [Alternative Project Delivery Methods at https://\\_\\_\\_\\_\\_](#) for information on some of the alternative methods of Project Delivery such as Design-Build, Contract Manager at Risk (CMAR), Progressive Design-Build, etc. Alternative project delivery methods will require modifications in how the Utility Coordination Process will be applied to that specific project.

### **8.01.03 Definitions**

**Designating or Designation:** The process of using surface geophysical methods to determine the presence of a subsurface utility and to mark its approximate horizontal position (its designation) on the ground surface.

Note: Some Utility Owners and/or contractors may call this “locating” in reference to Miss Utility.

**Locating:** The process of exposing and recording the precise vertical and horizontal location of a utility. Locating is SUE QL-A process of exposing (i.e. test holes, not pits). Not to be confused with Miss Utility Maryland locates, (i.e. calling Miss Utility to mark underground utilities)

**Miss Utility:** A one-call notification center that informs subscribing facility/utility owner-members of proposed excavation (Locate Tickets) or of requests for projects in the planning phase (Designer Tickets). The following are a few of the types of “tickets” available from Miss Utility:

- **Locate Tickets:** The facility/utility owner–member marks their underground facility if the proposed excavation or demolition is within 5 feet of the horizontal plane of the underground facility.
- **Designer Tickets:** The utility owner-member has the option of sending records to the designer or designate and mark on the ground surface the existing indications of some or all of the utilities that may be present.
- **Information Tickets:** This is similar to Designer Tickets except that the ticket is cancelled before it is sent. This will provide a list of utility owner-members with contact information that may have facilities present in the area to the requesting designer. No tickets are transmitted to the utility owner-members. Note: The list of utility owner-members must be copied and saved prior to cancelling the ticket.

**Subsurface Utility Engineering (SUE):** A branch of engineering practice that involves managing certain risks associated with utility mapping at appropriate quality levels, utility coordination, utility relocation design and coordination utility condition assessment, communication of utility data to concerned parties, utility relocation cost estimates, implementation of utility accommodation policies, and utility design.

**Utility Depiction:** A visual image of existing utility information using a computer-aided design and drafting system or on project plan sheets.

**Utility Quality Level (QL):** A professional opinion of the quality and reliability of utility information. Such reliability is determined by the means and methods of the professional and is established by different methods of data collection and interpretation.

There are four different quality levels of utility information as defined by the American Society of Civil Engineers Standard [CI/ASCE 38-02](#) which are as follows:

- **Quality Level A (QL-A)** – Precise horizontal and vertical location of utilities obtained by actual exposure or verification of previously exposed surveyed utilities and subsequent measurement of subsurface utilities, usually at a specific point (e.g. test hole). Minimally intrusive excavation equipment is typically used to lessen the potential of utility damage. A precise horizontal and vertical location, as well as other utility attributes, is shown on plan documents.
- **Quality Level B (QL-B)** – Information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities. QL-B data should be reproducible by surface geophysics at any point of their depiction. This information is surveyed to the applicable tolerances defined by the project and reduced onto plan documents.
- **Quality Level C (QL-C)** – Information obtained by surveying and plotting visible above ground utility features and by using professional judgment in correlating this information to QL-D information.
- **Quality Level D (QL-D)** – Information derived from existing records or oral recollections.

**Utility Relocation Strategies:** Are educated decisions regarding how to relocate utilities based on specific project requirements. Refer to [Section 8.04.03 Strategies](#) for more information.

## **8.02 GUIDANCE DOCUMENTS for PROJECT COORDINATION**

The following documents and training links should be utilized to more fully understand, implement and facilitate coordination, cooperation and communication on MDOT SHA projects:

- [Viewing and Discussion Guide CCC: Making the Effort Works!](#)
- [NHI - Introduction to Utility Coordination for Highway Projects--WEB-BASED](#)
- [S2-R15B-RW-1: Identification of Utility Conflicts and Solutions Training Materials \(Utility Conflict Matrix\)](#)
- [Consolidated Transportation Program \(CTP\)](#)
- MDOT SHA's Monthly Advertisement (AD) Schedule

## **8.03 ROLES AND RESPONSIBILITIES**

The following are identified as critical positions for utility coordination in the project delivery process. The personnel filling these positions are the key coordinators, facilitators, and decision makers for utility coordination on MDOT SHA projects. These comprise the core of the Project Development Team for utility coordination. The positions described are not intended to be all inclusive of the positions necessary for the Project Development Team, but the team should include these individuals or groups at a minimum.

This is an attempt to provide guidance for the positions described below. These descriptions are not meant to be all inclusive or indicative of all roles, responsibilities, or duties of a position, or be the sole position description for anyone, but it is intended to clarify expectations to better coordinate and collaborate with regard to utility issues. In addition, the positions listed below are in alphabetical order as some positions, responsibilities and organizational locations may overlap on a project by project basis.

The Project Delivery Team should identify potential conflicts and proactively work to avoid utility conflicts, minimize the magnitude of the impacts with utilities and coordinate utility relocation efforts to eliminate potential project delays. In order to avoid costly utility relocation delays during the construction phase of the project, regular and meaningful coordination with the Project Development Team is essential.

### **8.03.01 Assistant District Engineer for Construction and/or Area Engineer**

The ADE for Construction and Area Engineer maintain overall administrative QA/QC oversight for the construction phase for all projects and are part of the MDOT SHA Project Utility Issue Resolution chain. The ADE for Construction and Area Engineer are responsible for:

- Providing expert guidance in determining the most appropriate means and methods for utility relocations.
- Working with Project Managers, Project Engineers, Utility Companies, DUE's, etc., to evaluate sequence of construction and constructability.
- Recommending the appropriate relocation strategies (i.e. utility breakout project, utility relocations prior to NTP, Utility 3<sup>rd</sup> Party work, concurrent utility work) for the project.
- Reviewing preliminary construction schedules and timeframes for utility work required prior to the construction contract NTP, concurrent utility work, and its work flow with the MDOT SHA contract.
- Providing input and concurrence on timeframes (utility & MDOT SHA construction), sequence of construction, and constructability.

- Attending project level meetings and monthly District Engineer meetings.

### **8.03.02 Assistant District Engineer for Project Development**

The Assistant District Engineer (ADE) for Project Development is the direct supervisor of the District Utility Engineer (DUE) and is part of the MDOT SHA Project Utility Issue Resolution chain. The ADE for Project Development:

- May act as Project Manager (see project manager).
- May supervise District Project Designers and Project Managers.
- Attends all monthly District Engineer meetings.

### **8.03.03 Designers**

Designers (lead and support as appropriate) may be from various disciplines related to the project including, but not limited to geometric design, drainage/stormwater management/erosion and sediment control, traffic, etc. These positions are responsible to assist the Project Manager in evaluating potential utility conflicts, provide recommendations and determine if they can be reduced, minimized, or eliminated at the Project Manager's discretion. They are responsible for:

- Assisting, maintaining, and developing the Utility Conflict Matrix (UCM) at the project level.
- Assisting the Project Manager in evaluating potential utility conflicts.
- Providing recommendations and determine if utility conflicts can be reduced, minimized, or eliminated at the Project Manager's discretion.
- Attending project level meetings.

### **8.03.04 District Engineer**

The District Engineer (DE) is key decision maker and is part of the MDOT SHA Project Utility Issue Resolution chain. The District Engineer:

- Is the key facilitator for monthly District Advertisement schedule review meetings which should identify utility issues.
- Provides information and guidance to other key decision makers to investigate and develop potential resolutions or mitigation.

### **8.03.05 District Right-of-way Chief**

The District Right-of-way (R/W) Chief is a key decision maker in feasibility for right-of-way acquisition related to utilities. The R/W Chief is responsible for:

- Providing input and guidance on the appropriate type of right-of-way (e.g. fee right-of-way, perpetual easement for utility purposes, etc.) to be acquired as part of MDOT SHA acquisitions to accommodate utility relocations.
- Coordinating and developing, along with the Project Manager, realistic right-of-way clearance dates related to utility work required prior to the construction contract NTP so as to minimize concurrent utility work.
- Attending project level meetings and monthly District Engineer meetings.

### **8.03.06 District Utility Engineer**

The DUE is MDOT SHA's key facilitator for utility coordination with the Utility Companies on all MDOT SHA projects and is part of the MDOT SHA Project Utility Issue Resolution chain. The DUE is responsible to:

- Transmit project level information and decisions to and from the Utility Companies and the MDOT SHA.

- Ensures all environmental commitments and any nearby sensitive resources are communicated to Utility Companies.
- Attends all project level meetings and District Engineer meetings as required.
- Attends utility status meetings conducted by the Statewide Utility Engineer.
- Assists in the development and maintenance of the Utility Conflict Matrix (UCM) for all projects.
- Schedules and conducts utility coordination meetings as needed throughout the plan review process which includes but not limited to: Utility Preliminary Investigation (UPI); Utility Semi-Final (USF); Utility Final Review (UFR); and ensures attendance by all utilities impacted, documents issues and decisions discussed, and resolutions needed, prepares and distributes the Utility Reports.
- Identifies and requests needed information from Utility Companies.
- Ensures the Utility Companies provide information needed for cost estimates, schedules, and right-of-way needs to the MDOT SHA in a timely manner.
- Coordinates with the Project Manager to identify when and what Utility Designation Quality Level is needed based on the project scope, existing data, etc. (NOTE: Quality Level C minimum, Quality Level B/A as required).
- Coordinates with the Project Manager early in design to determine the need for the MDOT SHA to develop utility concepts for Preliminary Investigation.
- Initiates and facilitates the Prior Rights process.
- Collaborates with Utilities to develop Utility Analysis Reports (Form [UC-3](#)) as they relate to each project and provides the information to the Statewide Utility Engineer.
- Processes the Utility Relocation PS&E package which includes reviewing property rights and cost break downs if it is a joint funded project.
- Provides utility cost estimates to the Project Manager for inclusion in the Project Form 42 and setting up utility relocation funding Form 30.
- Revises Form 42's for any changes to utility relocation costs after the final Form 42 has been approved.
- At the PI, DUE requests any As-Built Plans not provided to the Utility Survey Supervisor at the time of the initial designation and/or make Utility Representative aware a request for As-Built Plans will be on the way if designation hasn't taken place.

NOTE: DUE does not coordinate SHA owned utility facilities. (SHA communication lines, OOTS/street lights, signs and signals, weather stations, Automated Traffic Recorders)

### **8.03.07 Environmental Manager**

The role of the Environmental Manager (EM) is to determine the whether any sensitive environmental resources are located within the utility areas, complete the required environmental technical analyses, and obtain environmental approvals in a timely manner. Once the scope of work and LOD are received, the EM is responsible for:

- Conducting an environmental inventory to identify any environmental resources within the utility LOD;
- Notifying the PM/Design Engineer (DE) of the location of these environmental resources;
- Working with the PM/DE to avoid/minimize potential sensitive areas;
- Coordinating with EPLD technical leads to determine the level of environmental analyses required (ie., cultural resources, hazardous materials, rare/threaten endangered species) and the timeframe needed to complete these analyses;
- Completing the environmental analyses;

- Coordinating with the appropriate regulatory agencies to obtain their comments/clearance/approval;
- Compiling the results of the analyses and agency coordination efforts and preparing the appropriate environmental document;
- Communicating any special provisions to the PM/DE for inclusion in the plans and IFB.

### **8.03.08 Independent Construction Engineer**

Independent Construction Engineers (in-house or consultant) may be provided by the Lead Design Office or the District Office as needed. Independent Construction Engineers are responsible for:

- Providing engineering reviews, constructability reviews, and input to identify utility impacts (based on both design plans and construction activities/requirements) and develop avoidance alternatives.
- Developing possible alternatives for utility impact avoidance, sequence of construction, utility phasing (utility work to be performed prior to MDOT SHA's NTP and/or utility work concurrent with MDOT SHA's project), construction schedules, etc. to accommodate project requirements.
- Lead and/or support the development and updating of the Utility Conflict Matrix.

### **8.03.09 Plats & Surveys - Utility Survey Supervisor**

The Utility Survey Supervisor initiates the Subsurface Utility Engineering (SUE) work based on the Project Manager's requests and is responsible for:

- Requesting necessary consultant resources who will perform the utility designations.
- Reviewing consultant utility deliverables.
- Working with the Project Manager and District Utility Engineer to review and/or develop Quality Level A needs.

### **8.03.10 Plats & Surveys - Plat Engineer**

This position incorporates Utility Company right-of-way needs into plat development at the project level. The Plat Engineer:

- Provides input and guidance on the appropriate right-of-way type (e.g. fee right-of-way, perpetual easement for utility purposes, etc.) to be acquired as part of MDOT SHA acquisitions to accommodate utility relocations.
- Attends project level meetings upon request to provide expertise and assist with issue resolution.

### **8.03.11 Project Manager**

The Project Manager (Design - District, OHD, OOS, OOTS, etc.) is MDOT SHA's leader for project delivery and incorporates the key elements related to utility costs and schedules into the overall project costs and schedule. The Project Manager is responsible:

- To be the key facilitator of project design meetings (monthly, milestone), discuss how utilities are to be coordinated for utility design and relocation at the project level.
- For documenting issues and resolutions that need to be resolved at the project level.
- For ensuring the utility relocation costs are accurately incorporated into the overall project costs.
- For ensuring utility relocations are incorporated into the overall project schedule.
- For ensuring and facilitating early participation and coordination by critical utility coordination staff.

- For ensuring any nearby sensitive resources are identified for the utility companies to avoid or minimize impacts.
- For ensuring all environmental impacts from utility relocations are accounted for in the overall project impacts discussed in the environmental document.
- For initiating any requests for utility identification and determining the Utility Quality Level necessary in collaboration with the District Utility Engineer.
- For identifying the need for utility relocation concepts at an early stage in project development in cooperation with the District Utility Engineer and project team.
- To be the key decision maker in determining the sequence of construction.
- To work with the Designers to evaluate potential utility conflicts and determine, to the maximum extent practicable, if those conflicts can be reduced, minimized, or eliminated based on the purpose and need of the project and assess any safety implications.
- For the initial development of the Utility Conflict Matrix (UCM) at the project level and for providing cost and schedule information for the UCM updates that are completed by the District Utility Engineer.
- For developing the Form 42's to include utility relocation costs received from the District Utility Engineer.

### **8.03.12 Statewide Utility Engineer**

The Statewide Utility Engineer is a key facilitator for utility coordination with the Utility Companies and is part of the MDOT SHA Project Utility Issue Resolution chain. The Statewide Utility Engineer is responsible for:

- Establishing and maintaining MDOT SHA's Utility policies and procedures.
- Ensuring MDOT SHA's Utility policies and procedures are implemented and executed consistently statewide by the District Utility Engineers.
- Providing information and decisions to and from the Utility Companies and the MDOT SHA.
- Overseeing utility coordination activities with the District Utility Engineers.
- Reviewing and discussing the UPI Reports, USF Coordination Meeting Reports, UFR Coordination Meeting Reports, and Utility Status Reports prepared by the District Utility Engineer on each project.
- Providing the utility clear dates or months required for the Advertisement Schedule on all projects (financial and production) based on input from the District Utility Engineers.
- Conducting regular utility coordination meetings with the Utility Companies by geographic area as needed.
- Reviewing and processing Utility Relocation PS&E's and Utility 3<sup>rd</sup> Party Work PS&E's which includes determining final utility costs, betterments and salvaged materials.
- Submits Utility Relocation PS&E's to FHWA for federal funding, as needed, if  $\geq$  \$100k.

### **8.03.13 Utility Companies**

The owner of a utility located within the MDOT SHA's right-of-way has an obligation to contribute to the project delivery process and relocate its facilities to a location in a timeframe that is mutually agreeable and beneficial to both the MDOT SHA and the Utility Owner. However, Utility Owners also have a reasonable and justified expectation that they will be kept informed of pertinent project details, so they can schedule the necessary time and resources to meet their relocation requirements.

Utility Companies are critical in the project development process and are key Stakeholders and are responsible for:

- Providing utility relocation cost and time estimates for design and construction as well as other pertinent information to the MDOT SHA through the District Utility Engineers and the Statewide Utility Engineer.
- Reviewing MDOT SHA project plans and utility concepts from other Utility Companies.
- Providing early input on any additional right-of-way needs to accommodate utility relocations.
- Providing input on utility locations, potential utility impacts, and relocation requirements.
- Developing utility concepts for MDOT SHA projects in coordination with the Project Manager and the District Utility Engineer early in MDOT SHA's design process.
- Assisting in the development and maintenance of the Utility Conflict Matrix (UCM) for all projects.
- Providing pertinent information and collaborating with the District Utility Engineer to develop Utility Analysis Reports (Form [UC-3](#)) as they relate to each project.
- Attending Utility Preliminary Investigation (UPI) Meetings, Utility Semi-Final (USF) Coordination Meetings, Utility Final Review (UFR) Coordination Meetings, and monthly Statewide Utility Engineer meetings to identify needs, provide information, and discuss issues and resolutions including costs, schedules, concurrent vs. work performed prior to MDOT SHA's NTP, work requirements, inclusion in the MDOT SHA contract, etc.
- Providing guidelines, requirements, specifications, and approved plans for utility work to be included in the MDOT SHA contract.
- Providing information for and facilitating the Prior Rights process.
- Providing plans for utility work to be performed prior to the MDOT SHA's NTP or utility work concurrent with MDOT SHA's project.
- Providing plans for utility work to be included in MDOT SHA's project advertisement package.
- Providing utility relocation and betterment As-Built Plans to the MDOT SHA after construction.

#### **8.03.14 Utility Coordinator - Construction**

On MDOT SHA projects, the Contractor is responsible for coordinating its sequence of construction with the utility owners and with utility work to be performed by or on behalf of utility owners. As such the contractor's superintendent will assume the responsibilities of the Utility Coordinator – Construction for the project. On major projects requiring complex or significant utility coordination, the contractor will have an individual specifically assigned as the Utility Coordinator – Construction. The Utility Coordinator – Construction shall be responsible for:

- Keeping utility owners well informed of construction schedules and notifies the utility owners at least 3 business days in advance of any work near the utility owners' facilities (other than on the utility owner's own facilities) and providing all other notifications to utility owners of utility owner obligations, Contractor activities, etc. as required by the Utility Agreements.
- Keeping utility owners well informed of changes that affect their own Utility facilities.
- Providing the utility owners at least 14 business days prior notice of potential impacts to service.
- Ensuring that utility owners are involved in making the decisions that affect their own facilities so that utility owners can provide uninterrupted service to customers or to minimize interruption of those services.
- Coordinating the Contractor's sequence of construction and utility relocations with the temperature, seasonal or other constraints associated with any required outages of utility services.

- Cooperating with the utility owners to solve relocation/installation issues consistent with the scope of the Contractor’s work as otherwise set forth in the Contract Documents and without causing the MDOT SHA to incur any unnecessary expense to the Project, or the utility owners;
- Acting diligently in continuing the positive relationship that the MDOT SHA has developed with the utility owners.
- Coordinating with those utility owners who perform their own utility work (either with their own forces or through a contractor) by scheduling adequate time to accomplish the utility work.
- Reviewing each utility facility and consider its effect on the Project. If necessary, physically confirm the presence of underground facilities in areas of potential conflict by test pits or other means/methods prior to the start of work.
- Developing procedures for addressing utility conflicts discovered during construction.
- Developing, negotiating and providing a schedule in coordination with the utility owners for the design and construction of all Relocations. Identifying critical activities and sequences as they affect the utility owners and plan to effectively mitigate impacts.
- Coordinating, cooperating, and working with the individuals on the Contractor’s utility contact list.
- Notifying the MDOT SHA in advance of any meeting with a utility owner’s representative scheduled by the Contractor and allow the MDOT SHA the opportunity to participate in the meeting. The Utility Coordinator – Construction shall also provide to the MDOT SHA copies of all correspondence between the Contractor and any utility owner, within seven (7) business days after receipt of sending, as applicable.
- Monitoring the progress of utility owner work and notifying the MDOT SHA if the Contractor has cause to believe that the utility owner will not meet specified time frame(s) for construction, relocation, abandonment, or removal of utility-owned facilities. (which notice shall be provided to the MDOT SHA within 24 hours of discovery).
- Providing support to the MDOT SHA as requested.

### **8.03.15 Utility Coordinator - Design**

From time to time MDOT projects may require significant or extensive coordination which exceeds the staffing resources of the MDOT SHA District Utility Teams. This may arise from extensive utility impacts on major Design-Bid-Build projects or significant coordination required for the construction phasing of a project with concurrent utility relocation work. This may also arise for specialty projects such as Design-Build or Public–Private Partnership (PPP, 3P or P3) projects. A Utility Coordinator may be solicited by a consultant contract source for a qualified individual as a task assignment(s) to provide additional utility coordination assistance for: MDOT project(s); the District Utility Team; and/or the design Project Manager. A Utility Coordinator would report to the DUE and perform the functions similar to a Utility Relocation Specialist. The main difference between the Utility Relocation Specialist and the Utility Coordinator would be the Utility Coordinator remains on the task assignment(s).

### **8.03.16 Utility Relocation Specialist**

This is typically a member of the District Utilities staff and the position duties may also be performed by a consultant under MDOT, MDOT SHA, or other TBU’s contracts. The Utility Relocation Specialist reports to the MDOT SHA DUE and is responsible for:

- Being assigned by the DUE as the contact for coordination between the MDOT SHA and Utility Owner on Project(s).

- Performing the initial review of the MDOT SHA Production Ad Schedule to start the Potential Utility Impact Questionnaire (Form [UC-2](#)) process with Utility Owner Representatives.
- Coordinating Utility Meetings with Projects Managers, District Utility Team members and the Utility Owner Representatives for: UPI (30%), Semi-Final (65%), and if warranted, Final (90%)
- Having Utility Owner Representatives complete and submit the Utility Analysis Report (Form [UC-3](#)) at each Milestone.
- Recording minutes from meetings and notifying the DUE and OOC – Utilities Team of any “out of the normal” facilities restraints or requirements.
- Performing field reviews as required for the UPI meetings and verifying all utilities facilities are accounted for in project limits, as well as recording on the RW-57 forms.
- Preparing RW-57 Form for submittal to ORE - Records and Research Department.
- Tracking Utility 3<sup>rd</sup> party requests for Utility Relocation work to be included in the project; developing the Agreements Checklist as assigned by the DUE; and notifying the OOC – Utilities Team.
- Preparing the USR(s) with utility relocation timelines for design, construction, and any type of lead time that may require additional scheduling, material ordering, contract procurement, etc. including any complications.
- Updating Utility Status Reports as needed and delivering to OOC – Statewide Utilities monthly as assigned by DUE.
- Any other duties as assigned regarding utility relocations for an MDOT TBU.

#### **8.04 SCHEDULES, GOALS, STRATEGIES, and DOCUMENTATION**

The Project Development Team should approach utility relocations systematically during the development phase of highway projects. Developing a Utility Conflict Matrix (UCM) early in the project development process allows the development of goals, strategies, and expected milestones that will facilitate appropriate and timely utility conflict resolution throughout the process. It also serves as a template for measuring the progress and success of utility conflict resolution early in the project and helps prioritize and focus resources at later project stages.

Involvement beginning at the Project Initiation meeting provides opportunities to work with various project stakeholders to discuss utility conflict goals and strategies. Some projects will have few utility conflicts and will require little effort to resolve them. Other projects will have extensive utility conflict resolution issues and will require more involvement and effort by the Project Development Team. Establishing conflict resolution goals and strategies early will also assist in forecasting the resources that will be necessary to meet those goals.

##### **8.04.01 Schedules**

Relocations of even a short section of buried utility line or a small number of utility poles can easily result in a utility construction project whose scope is larger than anticipated by the MDOT SHA. This may in turn have an adverse effect on the project delivery schedule.

The Project Development Team should incorporate utility relocation requirements into the overall project schedule to avoid project delays and provide a realistic project schedule. This includes providing Utility Owners enough time to plan and engineer utility relocations, budget funds, comply with environmental and permit requirements, negotiate real estate transactions, order and receive

materials, and schedule construction crews. Like the MDOT SHA, Utility Companies often must advertise and award bids for relocation work.

#### A) **Highway Project Schedule and Design Changes**

The effects upon utility relocations should also be taken into account when considering highway improvement project scheduling and design changes. Design changes that affect expected relocations add time and expense to Utility Owners' relocation plans. It should be noted that some design changes occur which are beyond the Project Development Team's control. Therefore, maintaining regular communication throughout the project development process is vital in facilitating both the MDOT SHA and the affected Utility Owners needs to minimize the effect on the project's scheduled Advertisement Date.

If there are any significant project scheduling and design changes that affect the Project Schedule, the issue(s) should be escalated as per the Utility Issue Resolution Flowchart so issue(s) are evaluated & resolved by the appropriate decision makers.

#### **8.04.02 Goals**

The primary goal of any unavoidable utility conflict should be to relocate the utility before construction begins. However, this is often not possible when utility relocation is dependent upon the acquisition of right-of-way or the construction of a highway element such as a utility conduit on a bridge, major earthwork, or environmental permitting. Regardless of the utility conflict, solutions should be identified, and goals established as early as possible for each conflict resolution.

#### **8.04.03 Strategies**

Developing an effective strategy to deal with various utility elements helps to facilitate the overall conflict resolution objective. The following may help in developing strategies to achieve the goals:

- What needs to happen in order to achieve a specific utility conflict resolution?
- Does a strategy include advancing certain design work to minimize or avoid a utility conflict?
- Will changing a design element minimize the conflict?
- Does the strategy benefit the state?

Many variables may be present and available to influence overall goals and strategies and will differ considerably between projects. Other issues that may influence utility conflict resolution strategy include the following:

- Multiple utilities
- Right-of-way limitations
- Project schedules
- Political commitments
- Environmental requirements
- Tree trimming and/or grading requirements
- Agreements/Commitments

The following are a few, but not all, possible strategies for relocating utilities:

- **Advanced Utility Work/Relocation** is utility relocation work that has excessive lead times or construction duration requirements and requires relocations begin prior to MDOT SHA's funding of the project for construction. This strategy requires careful review and MDOT SHA Senior Management approval as it requires advancing funding into the Preliminary Engineering or Right-of-Way Phases of a project.

- **Breakout Project:** is a project where a portion of the work contained in the main contract is advertised separately and in advance of the main contract. Work contained in the Breakout Project is necessary in order for the utilities to begin relocations. Breakout Projects may also contain Utility 3<sup>rd</sup> Party Work.
- **Utility Work/Relocations Prior to NTP:** is utility relocation work performed by the Utility prior to the Notice to Proceed (NTP) given to MDOT SHA's contractor. This is considered as the **standard utility relocation strategy**.
- **Contract Included Utility Work/ Utility 3rd Party Work:** is utility relocation work included into the MDOT SHA contract and performed by MDOT SHA's contractor.
- **Concurrent Utility Work:** is utility relocation work performed by the Utility Company which is concurrent with the MDOT SHA contractor's operations. This requires careful review and coordination to ensure that both the Utility work and the MDOT SHA contractor's operations are compatible.

Developing an effective utility strategy involves the consideration of all variables within a project and represents a contingency approach that can offer the greatest and most efficient project benefit for resolution of utility conflicts.

#### **8.04.04 Documentation**

To ensure success, it is important to approach the utility relocation process with a cooperative attitude and clearly document all phases of the utility relocations. To assist in this effort, the MDOT SHA has adopted the use of the Utility Conflict Matrix to identify and track utility conflicts to resolution. However, all correspondence, diaries, plans, meeting notes, and other information should be organized and maintained in the project/ProjectWise files. These documents should clearly illustrate and support the steps the Project Development Team has taken in the Utility Conflict Matrix to resolve any utility conflicts.

### **8.05 PROJECT MILESTONES**

#### **8.05.01 Planning Phase**

Early recognition of utilities located within the project limits is crucial to the overall success of an MDOT SHA project. It is likely that all proposed MDOT SHA projects will involve some type of a utility facility within the highway right-of-way. Utilities have the potential to impact the project; therefore, early recognition will help avoid schedule and budgetary impacts in later stages when the project is more established and recovery from unexpected project redesign or utility relocation coordination conflicts can be more difficult to overcome.

Utility coordination is frequently overlooked in the Project Planning phase of a proposed project by the MDOT SHA and the Utility Companies because proposed construction dates tend to be so far into the future that the information may not seem relevant.

By initiating research during the planning phase to identify basic information on existing utility facilities along with **potential** estimates on relocation costs, design and construction timeframes, the Utility Companies can provide vital utility information early in the project development. This greatly assists the MDOT SHA in establishing realistic project delivery schedules and cost estimates as projects progress from Project Planning through Highway Design. These planned projects are generally found in the [Consolidated Transportation Program \(CTP\)](#).

The DUE shall periodically request utility coordination information for projects in planning from the Utility Companies. The DUE should compile a list of potential utilities within the proposed project by submitting a Miss Utility Information Ticket to identify the underground utilities, and requesting pole inventories as described in [Section 8.05.02.01 \(c\) – Aerial Facilities](#) to identify the aerial utilities.

#### **8.05.01.01 Potential Utility Impact Questionnaire**

Upon compiling the list for both the aerial and underground Utility Companies, the DUE shall send a letter with the project location and scope of work; the Potential Utility Impact Questionnaire (Form [UC-2](#)) (with as much information as the DUE has available) to each Utility within the project limits; and request the following basic and estimated information from the Utility:

- Estimated Cost
- Estimated Design Time
- Estimated Construction Time
- Describe the type and amount of facilities your company has within the project limits. (number of poles, cables, pipes, conduit; sizes or voltages; etc.)
- Presence of any unique/special facilities or situations within the project which would require special attention. (Controlled Environmental Vaults, Sub-Station, Transmission Towers, seasonal requirements, long lead times for outages, etc.)

The Utility Company shall provide the information regarding the Utilities' facilities, and any other additional information which may be relevant to the project, to the DUE within 40 business days.

The intent of the Potential Utility Impact Questionnaire (Form [UC-2](#)) is to gather only basic information from the Utility to assist the MDOT SHA in establishing realistic project delivery schedules and cost estimates. The Utility Company is only providing **potential** ballpark cost and time estimates to the best of their knowledge and ability; and it is understood that these estimates are not based on the accuracy obtained from fully designed plans. The Utility Company responses will be recorded on the Utility Status Report by the DUE and provided to the Statewide Utility Engineer and the Project Manager no later than 10 business days after receipt of the Utility Company's response.

#### **8.05.02 Design Initiation (0%) to Preliminary Investigation (30%)**

For a project to be successful, utility coordination must start concurrently with initiation of design as utility identification is the necessary foundation for future utility coordination.

##### **8.05.02.01 Design Initiation (0% - 5%) Utility Investigation**

All projects which propose disturbance with the potential to impact existing utility facilities must request utility designation through the Plats and Surveys Division, Utility Survey Supervisor (USS), concurrently with the topographic survey and the existing right-of-way mosaic or work map.

The Utility Designation may be completed through various methods. Regardless of the method chosen, it is imperative that it be initiated and completed concurrently with the project's topographic surveys. These methods are:

a) **SUE – Consultant Performed**

When the MDOT SHA can perform SUE work with Consultant Utility Investigation Contracts (SUE or Multi Service), the MDOT SHA performs QL-B Utility Designations, as the consultants are tasked with obtaining the As-Built Plans from the Utility Owners and performing a QA/QC review before submission. The USS initiates the utility identification by way of SUE Work based on the PM’s request and is responsible for:

**At Quality Level – B (QL-B):**

- Generating a non-submitted MISS Utility Design Ticket to identify the Utility Owners in the Limits of Disturbance (LOD) of the projects and provides a copy of the list of identified the Utility Owners to the DUE.
- Assigning the task to a SUE Consultant Firm, through the Engineering Resource Division (ERD) process to obtain a .dgn utility designation (mUT-D000\_) and As BUILTs.
- If there is not an absence of underground utilities and an “Absent of Utilities” letter is not submitted, the USS is responsible for reviewing the Deliverables and As BUILTs. Items for review are as follows: correct DATUM, Utility lines Z axes are at the elevation of the land, except for gravity sewer pipes; check for proper label and color identification; pipe/cable sizes; sewer inverts; and comparison against the topography surface features.

**At Quality Level – A (QL-A):**

- Reviewing the PM’s UCM, Test Hole Boring Box file .dgn against the QL-B Designation. Eliminating any gravity sewer Test Holes where inverts are available and any MDOT SHA electric.
- Reviewing the Northing and Easting/Station and Offset targets.
- Assigning the task to a SUE Consultant Firm, through the ERD process.
- Reviewing the deliverables to confirm the Test Hole Boring Box file .dgn (mUT-T000\_), and Test Hole Data Forms elevation findings stated on the Test Hole Data Forms are reflected on the Test Hole Boring Box file .dgn and the line work on the mUT-D000 file are revised to reflect the horizontal findings.

b) **SUE – MDOT SHA Performed**

If the MDOT SHA is without consultant resources to perform SUE work, the USS initiates the utility identification by way of submitting a MISS Utility Design Ticket.

**At Quality Level – C (QL-C):**

- Works with DUE to obtain Utility Owner As-Built Plans in the LOD of the projects.
- Confirms response from all utilities on the Miss Utility Design Ticket have responded.
- Seeks PSD Area Engineers availability to utilize Survey Contracts to survey the Miss Utility Marks.
- Assist with assigning the task to a Consultant Firm, through the ERD process.
- If there is not an absence of underground utilities and an “Absent of Utilities” letter is not submitted, the USS is responsible for reviewing the Deliverables and As-Built Plans. Items for review are as follows: correct DATUM, Utility lines Z axes are at the elevation of the land, except for gravity sewer pipes; check for proper label and color identification; pipe/cable sizes; sewer inverts; and comparison against the topography surface features.

c) **Aerial Facilities**

Upon notification of the Design Initiation of a project by the Project Manager, the DUE compiles a list of the aerial Utility Companies within the proposed project. The DUE, or designee, visits the proposed project and identifies two poles within the project limits, one pole owned by the electric company and a different pole (preferably on the opposite side of the roadway and/or at a different location within the project) owned by the telecommunication company. The DUE then submits a request to the electric company and the telecommunication company for the inventories of facility owners and/or lessees attached to the identified poles. The electric company and the telecommunication company shall send a list of the utilities that have facilities on their respective poles within 20 business days to the DUE. The DUE then compares and compiles a complete list of aerial facility Utility Companies.

#### **8.05.02.02 District Utility Investigation**

Upon completion of the request for the inventory of existing facility owners and/or lessees attached to poles owned by the electric and telecommunication Utility Companies; and receipt of the list of the identified underground Utility Owners from the Utility Survey Supervisor, the DUE will send the Potential Utility Impact Questionnaire (Form [UC-2](#)) requesting an update to utility information received during the Planning Phase (provided the Potential Utility Impact Questionnaire (Form [UC-2](#)) was sent and information received during the Planning Phase); to assist the MDOT SHA in establishing realistic project delivery schedules and cost estimates. With this information, the Project Development Team including the DUE will determine how much coordination will be needed for the project as per [Section 8.01.02 - Risk Management Approach to Utility Coordination](#); and develop the initial project schedule and milestones.

#### **8.05.02.03 Plan Development (5% - 25%)**

Upon completion of the QL-B utility designation, base plan sheets showing existing utilities in color along with topographic features and existing right-of-way shall be provided to MDOT SHA's various design sections as directed by the Project Manager.

Plan Development shall include preliminary line/grade/typical section, concept drainage design (structures type, size, and location), preliminary stormwater management, preliminary traffic concepts as required for major structures (overhead, cantilever, signals, etc.), preliminary type, size and location for structures, (bridges, retaining walls, sound barriers, etc.), and preliminary right-of-way (R/W) needs. As part of this design, each design section of the project team shall identify potential utility impacts resulting from their respective concept design and evaluate avoidance and minimization options where prudent and feasible to meet the project's purpose and need while still providing safe conditions for all users.

#### **8.05.02.04 Initial UCM Development (25% - 30%)**

Plans shall be considered at PI stage when preliminary line/grade/typical section, concept drainage design (structures type, size, and location), preliminary stormwater management, preliminary traffic concepts as required for major structures (overhead, cantilever, signals, etc.), preliminary type, size and location for structures, (bridges, retaining walls, sound barriers, etc.), environmental (with any nearby sensitive resources identified), preliminary R/W needs and existing utilities (QL-B minimum) are shown on the plans.

Once the PI Plans have been completed, the Project Manager will conduct a Project PI meeting with MDOT SHA's Project Development Team and discuss the status of all project element updates. The Project Manager will develop an initial Utility Conflict Matrix (UCM) based on the PI Plans, the Utility Designation, and the Project PI meeting. With this information, the Project

Development Team including the DUE will revise the project schedule and milestones along with the level of coordination required, if needed. Within 20 business days of the Project PI meeting, the Project Manager will revise the PI plans and send the DUE the following:

- A) A cover letter with a written project scope to demonstrate the project's purpose and need,
- B) Revised PI plans with utilities in color,
- C) Pipe profiles,
- D) An initial Utility Conflict Matrix.

These PI plans may be provided electronically or via hard copy. The DUE, the Project Manager, and necessary Designers, must meet to review the UCM and ensure that all potential conflicts are recorded and addressed.

The Project Manager will coordinate with the DUE to determine the number of PI plan sets needed for transmittal to the utilities, PI plan sets needed with color coded utilities, and copies of the UCM. The DUE shall compile a list of all Utility Companies for both the aerial and underground facilities within the project. The list of Utility Companies shall be from the aerial inventories in [Section 8.05.02.01 \(c\) – Aerial Facilities](#) and from the list provided by the Utility Survey Supervisor in [Section; 8.05.02.01 \(b\) SUE – MDOT SHA Performed](#); or [Section 8.05.02.01 \(a\) – SUE Consultant Performed](#).

### **8.05.03 Preliminary Investigation (30%) to Semi-Final (65%)**

#### **8.05.03.01 Utility Preliminary Investigation Meeting Preparation**

Within 15 business days after receiving the UCM's and PI Plan sets from the Project Manager, the DUE will set a date for a separate Utility Preliminary Investigation (UPI) Meeting with the Utility Companies; send the UPI Plan Packages to the Utility Companies; and request the Utility Company Project Manager to complete the Utility Analysis Report (Form [UC-3](#)) for submittal to the DUE at the UPI Meeting. Refer to the [Utility Analysis Report](#) (Form [UC-3](#)) for additional information.

The Utility Companies shall be provided a minimum of 20 business days and not more than 30 business days to review plans and prepare the requested information prior to the UPI Meeting. In addition, the date shall be coordinated with the Project Manager and include other Designers as needed.

The DUE will request the Utility Company Project Manager to be prepared to discuss the following items at the UPI Meeting:

- Verify that all existing facilities have been identified on the plan sheets and if not, provide any additional information which may be missing.
- Comment on utility impacts and the Utility Conflict Matrix.
- Needs for additional QL-B and/or QL-A utility information.
- Utility relocation estimated costs. These costs will be estimated at 100% MDOT SHA responsibility at this point. Final/actual costs will not be available until utility design is complete and prior rights have been completed.
- Schedules for work (design and construction) are required before the construction contract is issued Notice to Proceed and detailed timeframes for any concurrent work to be performed by the Utility Company after the MDOT SHA Notice to Proceed.
- Any request for the MDOT SHA to design utility relocations and/or include the utility relocations/construction in project.
- Identification of additional Right-of-Way which may be needed for the project to accommodate utility relocations.

- Concurrence in any MDOT SHA utility concept, if provided.
- Any advance work required to facilitate utility relocations which may require MDOT SHA assistance.
- Any permitting issues (MDE, Army Corps of Engineers, County, etc.) related to the utility relocations.

The UPI Plan Package the DUE sends to the Utility Companies will consist of the following items:

- PI Plans showing MDOT SHA's preliminary line/grade/typical section; environmental (natural, cultural/historic and community) resources shown in project area; concept designs for drainage, stormwater management, structures, traffic; and the Utility Designation.
- The initial Utility Conflict Matrix reviewed by the Project Manager and the DUE.
- Utility Analysis Report (Form [UC-3](#))
- Copy of the Potential Utility Impact Questionnaire (Form [UC-2](#)) (if completed during Planning)
- Any other pertinent project information.

### **8.05.03.02 Utility Preliminary Investigation (UPI) Meeting**

The UPI Meeting should consist of two parts; both a field and an office meeting. The first part of the UPI Meeting should be at a location where plans and other documents can be displayed and discussed in detail. At this part of the UPI, the following issues should be discussed:

- Potential impacts to utilities including the conflicts defined in the Utility Conflict Matrix.
- Evaluating alternatives that will resolve the conflicts, including relocation of the utility or re-design of the MDOT SHA facility, and any difficulties that may result from each option.
- Additional utility identification required for QL-B and/or QL-A which may be needed to both further determine impacts and complete utility design.
- Right-of-Way needs to accommodate any potential utility relocation.
  - If additional Right-of-Way is needed for the relocation, then it should be noted so the MDOT SHA can build a schedule to clear necessary Right-of-Way in time for utility relocations to be completed prior to the MDOT SHA construction Notice to Proceed.
- The strategy for utility relocations for the project:
  - Utility work to be completed prior to MDOT SHA's NTP.
  - Utility work to be completed concurrent with the project by the Utility Company.
  - Including the utility work into the MDOT SHA contract.
- The Utility Company would need to submit a letter to the DUE requesting inclusion of the utility work into MDOT SHA's contract.
- What party will be responsible for leading the design (MDOT SHA, consultant, or Utility Company)?
  - The need for a separate MDOT SHA Breakout contract.
- Advance work required for the project including utility relocations by the Utility Company and other work (such as clearing, grubbing, and tree trimming) needed to facilitate the relocations.
- Environmental permitting and approval issues raised by the environmental divisions within OED OHD and OPPE.
- Other permitting issues.
- The utility relocation schedules which should include:
  - The estimated time needed for design and for relocation of each utility.
  - The required sequence of all utility work prior to the MDOT SHA Construction's Notice to Proceed.
- Utility relocation concepts.

- For projects where it is easily identifiable that major utility relocations will be part of the project and have major impact on project schedule, the MDOT SHA may complete utility relocation concepts as part of the PI. Projects of this nature may be urban interchanges with major utilities, major roadway widening, dualizations, etc.
- The need for utility concepts at PI should be identified at Design Initiation with the Project Development Team and DUE. These concepts will be discussed with the Utility Companies for concurrence including Right-of-Way requirements at the Utility PI.

The second part of the UPI Meeting should be conducted in the field on the same day, weather permitting, where the Utilities and the MDOT SHA can walk the project, discuss specific relocation issues, and physically see specific problem areas which may not be apparent by just reviewing plans in the office.

During the field meeting, the DUE and/or the Utilities shall complete the first portion (identifying existing utility facility locations) of the RW-57 form. The DUE and/or the Utilities shall complete RW-57 form as per [Section 7.03.01 \(C\)](#) in order to generate the Prior Rights Report in a timely manner.

After the UPI Meeting, the DUE will prepare a UPI Report which shall consist of: the UPI Meeting minutes; the Utility Analysis Reports (Form [UC-3](#)) provided by the Utility Companies; and any other information provided by the Utility Companies. The DUE will also prepare a [Utility Issue Resolution Contact List](#) from the Utility Analysis Reports (Form [UC-3](#)) provided by the Utility Companies. The DUE will distribute the UPI Report and the [Utility Issue Resolution Contact List](#) within 10 business days from the date of the UPI to all attendees to ensure all communications are understood correctly. The Utility Companies will have 15 business days to respond with any corrections if necessary as required. The DUE shall take the UPI Report with any revisions from the Utility Companies and provide it to the Statewide Utility Engineer, Project Manager and ADE-Project Development no later than 10 business days after receipt of the Utility Company's response.

### **8.05.03.03 Plan Development (30% - 65%)**

#### **A) General**

Plats and Surveys will be drafting and issuing Right-of-Way Plats to allow the Right-of-Way Acquisition process to begin. It is important to note that the Utility Company, the DUE, the Project Manager, the District Right-of-Way Chief, and the Plat Engineer attend the Right-of-Way PI at this point to coordinate; and ensure any right-of-way needed for utility relocations can be addressed in a timely manner. Refer to [Section 2.04.04 - Determining Utility Right-of-Way and/or Easement Needs](#) and [Section 2.04.05 - Acquiring Utility Right-of-Way and/or Easements](#) for further guidance.

Once the Project Manager receives the UPI Report from the DUE, the Project Development Team including the DUE will determine how much coordination will be needed for the project as per [Section 8.01.02 - Risk Management Approach to Utility Coordination](#); and the Project Manager will revise/finalize the project schedule and milestones considering: Right-of-Way acquisition; utility relocation; permitting requirements; and the anticipated construction sequence and duration. It is important to provide an integrated and optimized schedule which accommodates all project development phases. The DUE will issue a Notice to Proceed for design to the Utility Companies and request the Utilities to submit a concept relocation design within 30 business days. On complex projects or projects requiring potential extensive relocations, the utility may request additional time which may be considered on a case by case

basis.

The MDOT SHA will complete further QL-B and/or request QL-A utility identifications (test holes) and provide the information to the Utility Companies once complete. The MDOT SHA will fully develop the maintenance of traffic, drainage, stormwater management, erosion and sediment control, final structures, traffic, and landscape plans along with any utility relocation plans being completed by the MDOT SHA. These designs will further consider utility avoidance and minimization options where prudent and feasible.

The DUE should schedule Utility Progress Meetings with the Utility Companies, the Project Manager, and the Project Development Team as needed to review and discuss any issues with right-of-way, maintenance of traffic, drainage, stormwater management, erosion and sediment control, final structures, traffic, landscape plans, and the utility design. Some of these meetings may require multiple field visits to effectively develop resolutions. If the resolutions result in design changes in the plans, the Project Manager, the DUE, necessary Designers, and the Utilities should meet to collectively revise the UCM accordingly and ensure that all potential conflicts are recorded.

## **B) Utility 3<sup>rd</sup> Party Work**

For utility work to be included in the MDOT SHA construction contract, typically the Utility Company will submit a letter to the DUE requesting to include the utility work into the MDOT SHA construction contract. This letter should be sent within 20 business days after the UPI Meeting. The DUE will prepare and send the Utility 3<sup>rd</sup> Party Work request to the Project Manager and the Statewide Utility Engineer for concurrence within 10 business days from the receipt of the Utility Company's letter. The Statewide Utility Engineer and the Project Manager shall reply in writing no later than 15 business days after receipt of the DUE's request. In the event both the Project Manager and the Statewide Utility Engineer concur with the DUE's submittal of the Utility's request, the "Request for Agreement/ MOU" and the "Agreements Checklist" will need to be completed and submitted to the Office of Procurement & Contract Management Agreements Team to initiate an agreement with the Utility Company. **Refer to Form - Agreements Checklist for additional information.**

If the Utility 3<sup>rd</sup> Party work is for a Utility Company or other non-governmental entity, the DUE will prepare and submit these documents to the Agreements Team. Refer to [Section 7.09 - UTILITY 3<sup>RD</sup> PARTY WORK](#) for additional guidance.

If the Utility 3<sup>rd</sup> Party work is for a municipality, local government, or other governmental entity, the Project Manager will prepare and submit these documents to the Agreements Team.

Frequently, municipalities, local governments, and other governmental entities will send requests for utility work to be included in the MDOT SHA construction contract to the Project Manager. This is generally done in conjunction with the addition of other work for the municipality, local government, or other governmental entity such as decorative street lighting, brick paver sidewalks, etc. In this situation the Project Manager will prepare and send a notification of the 3<sup>rd</sup> Party work inclusion to the DUE and the Statewide Utility Engineer within 10 business days from the receipt of the municipality, local government, or other governmental entity request. The Project Manager will prepare and submit, the "Request for Agreement/ MOU" and the "Agreements Checklist" to the Agreements Team.

### **8.05.04 Semi-Final (65%) to Final Review (90%)**

#### **8.05.04.01 Plan Development (65% - 70%)**

At Semi-Final, the Project Manager will conduct a Project Semi-Final Review meeting with MDOT SHA's Project Development Team and discuss the status of all project element changes and updates. Within 20 business days of the Project Semi-Final Review meeting, the Project Manager will revise the SF plans and send the DUE the following:

- A) A cover letter identifying the specific plan sheets which were revised/changed and detailing any plan revisions/changes affecting utilities,
- B) Revised SF plans with utilities in color,
- C) Pipe profiles,
- D) Any test hole results (not previously sent to the DUE), and
- E) An updated Utility Conflict Matrix.

If there are design changes in the plans, the Project Manager, the DUE, necessary Designers, and the Utilities should meet to collectively revise the UCM accordingly and ensure that all potential conflicts are recorded and addressed.

It should be noted that any significant changes the MDOT SHA makes in the plan design, from this point forward, may result in utility redesign starting over. As a result, the utility design and project delivery schedules will be affected respectively. If there are any significant project scheduling and design changes that affect the Project Schedule, the issue(s) should be escalated as per the Utility Issue Resolution Flowchart so issue(s) are evaluated & resolved by the appropriate decision makers.

#### **8.05.04.02 Utility Semi-Final Coordination Meeting Preparation**

Within 15 business days after receiving the UCM's and SF Plan sets from the Project Manager, the DUE will set a date for a Utility Semi-Final (USF) Coordination Meeting with the Utility Companies if required; send the USF Plan Package to the Utility Companies; request the Utility Company Project Manager to update the Utility Analysis Report (Form [UC-3](#)) for submittal to the DUE at the USF Coordination Meeting. Refer to Form - [Utility Analysis Report](#) (Form [UC-3](#)) for additional information.

The Utility Companies shall be provided a minimum of 20 business days and not more than 30 business days to review plans and prepare the requested information prior to the USF Meeting. In addition, the date shall be coordinated with the Project Manager and include other Designers as needed.

The DUE will request the Utility Company Project Manager to be prepared to provide updates and current status on all the items discussed at the UPI Meeting. Refer to [Section 8.05.03.01 - Utility Preliminary Investigation Meeting Preparation](#) for items discussed at the UPI Meeting.

The USF Plan Package the DUE sends to the Utility Companies will consist of the following items:

- SF Plans showing MDOT SHA's line/grade/typical section; environmental (natural, cultural/historic and community) resources shown in project area; drainage designs, stormwater management design, structures, traffic; and the (QL-B/QL-A) Utility Designation.
- The updated Utility Conflict Matrix.
- A copy of the initial Utility Analysis Report (Form [UC-3](#)) (the Utility Company provided at the UPI Meeting).
- A Utility Analysis Report (Form [UC-3](#)) to be completed by the Utility Company with the current utility information for the USF Coordination Meeting.
- Any other pertinent project information.

### **8.05.04.03 Utility Semi-Final Coordination Meeting**

The USF Coordination Meeting should consist of an update of all the information presented at the UPI Meeting. Specifically, the following items should be discussed:

- Utility conflicts identified in the revised Utility Conflict Matrix.
- Conflict resolutions, including any specific difficulties encountered or additional test holes needed.
- The utility relocation schedules including how much time is needed for design (plan submittal and PS&E submittal) and relocation of each utility and the sequence of any utility work required prior to the MDOT SHA's construction Notice to Proceed.
- Any outstanding right-of-way issues.
- Any outstanding environmental issues (natural, cultural, historic {agreements on how historic resources are to be treated}, community, stormwater, erosion and sediment control approvals, etc.).

At the USF Coordination Meeting, the DUE should direct the Utility Company to complete utility relocation design (the MDOT SHA's 65% semi-final plans should have been reviewed by all team members and any modifications required should have been completed and provided to the Utility Company). After the USF Coordination Meeting, the DUE shall prepare a USF Coordination Meeting Report which shall consist of the updated Utility Analysis Reports (Form [UC-3](#)) from the Utility Companies and the USF Coordination Meeting minutes. The DUE will distribute the USF Coordination Meeting Report within 10 business days from the date of the USF Coordination Meeting to all attendees to ensure all communications are understood correctly. The Utility

Companies will have 15 business days to respond with any corrections. The DUE shall take the USF Coordination Meeting Report with any revisions from the Utility Companies and provide it to the Statewide Utility Engineer, Project Manager, and ADE- Project Development no later than 10 business days after receipt of the Utility Company's response.

If there are any significant outstanding issue(s) which may affect the Project Schedule, the issue(s) should be escalated as per the Utility Issue Resolution Flowchart.

### **8.05.04.04 Plan Development (70% - 90%)**

#### **A) General**

The Utility Company will provide final plans for the utility relocations to the DUE for the MDOT SHA to review and comment as mutually agreed to by the Project Manager, the DUE, and the Utility Company at the USF Coordination Meeting.

It should be noted again that any significant changes the MDOT SHA makes in the plan design, from this point forward, may result in utility redesign starting over. As a result, the utility design and construction schedules will be affected respectively. If there are any significant project scheduling and design changes that affect the Project Schedule, the issue(s) should be escalated as per the Utility Issue Resolution Flowchart so issue(s) are evaluated & resolved by the appropriate decision makers.

The DUE should schedule Utility Progress Meetings with the Utility Companies, the Project Manager, and the Project Development Team as needed to review and discuss any issues resulting from any revisions with right-of-way, maintenance of traffic, drainage, stormwater management, erosion and sediment control, final structures, traffic, landscape plans, and the utility design. Some of these meetings may require multiple field visits to effectively develop resolutions. If there are design changes in the plans, the Project Manager, the DUE, necessary

Designers, and the Utilities should meet to collectively revise the UCM accordingly and ensure that all potential conflicts are recorded. With the revision of the UCM, test holes may be required to verify an actual conflict.

At this phase, the Right-of-Way Acquisition process is substantially underway. It is important that the Utility Company, the DUE, the Project Manager, the District Right-of-Way Chief, and the Plat Engineer meet to coordinate and ensure any right-of-way needed for utility relocations is being addressed to allow sufficient time for the Utilities to begin and complete their relocation work in order to meet MDOT SHA's project schedule.

Once comments from the MDOT SHA have been addressed, the Utility Company will submit its Plans, Specifications, and Estimate (PS&E) package to the DUE who will process and forward the PS&E package to the Statewide Utility Engineer's staff for review (and, if required, preparation and submittal for federal aid). Refer to [Section 7.07.02 - Utility Plans, Specifications, Estimates Package](#) for additional guidance. The Utility Relocation PS&E Package should be submitted to the Statewide Utility Engineer's staff so that there is adequate time for the Statewide Utility Engineer's staff to process the Utility Relocation PS&E Package; and for the Utilities to begin and complete their relocation work prior to the MDOT SHA NTP date. Refer to [Section 7.07 - UTILITY PERFORMED RELOCATIONS](#) for additional guidance.

The Utility owner must provide their utility relocation designs, specifications, and the Utility Relocation PS&E package a minimum of three months prior to the MDOT SHA Advertisement Date so that the DUE can effectively prepare the SECTION 875 - Utility Statement for the contract documents. The DUE will complete the SECTION 875 - Utility Statement and submit to the Project Manager for inclusion in MDOT SHA's Final Review package. Refer to [Section 7.10 - UTILITY SPECIAL PROVISIONS](#) for additional guidance.

The Utility Company will confirm the utility relocation schedule with the District Utility Engineer including the estimated calendar date for utility clearance. This will be forwarded to both the Statewide Utility Engineer and the Project Manager. In coordination with the Project Manager, all necessary PS&E activities will be completed which are required for the Utility Company to begin the relocations. The PS&E activities include certification of Right-of-Way and verification that the project is funded for utilities. Once the Statewide Utility Engineer's staff has completed processing and approving the Utility Relocation PS&E Package, the Statewide Utility Engineer's staff will send the [Form UC-7B](#) to the DUE. The DUE will issue the Notice to Proceed for construction to the Utility Company once the [Form UC-7B](#) has been received from the Statewide Utility Engineer's staff. Refer to [Form UC-7B](#) for additional information.

The Utility Company will then start relocation work. The DUE will assign personnel to inspect work done by Utility or if the project requires significant inspection resources the DUE will request the District Engineer to assign personnel to inspect work done by Utility as per [Construction Directive 07220.800.01](#). The DUE will hold regular Utility Status Meetings as needed and monitor progress of the relocations. Any delays incurred need to be communicated immediately to the DUE who would then forward the information to the Project Manager to determine how the delays impact the MDOT SHA project schedule.

## **B) Utility 3<sup>rd</sup> Party Work**

For work to be included in the MDOT SHA construction contract and designed by the Utility Company, the Utility Company shall provide its 3<sup>rd</sup> Party Work PS&E to the DUE and the

Project Manager to be incorporated into the MDOT SHA Final Review package and the signed (by the Utility Company) agreement or MOU to the Office of Procurement & Contract Management Agreements Team for execution by the MDOT SHA. The Office of Procurement & Contract Management Agreements Team will forward a copy of the executed agreement to the Statewide Utility Engineer. Refer to [Section 7.09.03 - Utility 3rd Party Work Plans, Special Provisions & Estimate Package](#) and [Section 7.09.03.04 - Utility 3rd Party Work Agreements](#) for additional guidance.

The DUE or Project Manager (depending on who initiated the Agreement Process with the Agreements Team) will forward a copy of the utility plans to the Statewide Utility Engineer for processing. The Project Manager will forward a copy of the utility items incorporated into MDOT SHA's project from Trns\*Port to the Statewide Utility Engineer. The Statewide Utility Engineer's staff will determine the cost responsibility and verify the quantity of each utility item in the estimate and prepare the Forms [UC-10](#) & [UC-11](#); then submit this information to the Project Manager to revise, if necessary, the items in Trns\*Port; and to the Office of Finance – Accounts Receivable for the contract estimate billing. Refer to Forms [UC-10](#) & [UC-11](#) for additional information.

The DUE and the Project Manager will jointly review the Utility Specific Special Provisions, Sections 876 thru 881 to ensure the Utility Special Provisions contains the utility standards and specifications needed by the contractor to properly construct, adjust, relocate and/or remove the utility facilities for the MDOT SHA project; and do not conflict with any other MDOT SHA Special Provision for the MDOT SHA project. Refer to [Section 7.10.02 - Utility Specific Special Provisions](#) for additional guidance.

The DUE will complete the SECTION 875 - Utility Statement and submit to the Project Manager for inclusion in MDOT SHA's Final Review package. Refer to [Section 7.10 - UTILITY SPECIAL PROVISIONS](#) for additional guidance.

### **8.05.05 Final Review (90%) to Plan, Specifications & Estimate (100%)**

#### **8.05.05.01 Plan Development (90% - 95%)**

Once the MDOT SHA's Final Review package has been completed, the Project Manager will conduct a Project Final Review meeting with the MDOT SHA's Project Development Team and discuss status of all project element changes and updates. Within 20 business days of the Project Final Review meeting, the Project Manager will revise the FR plans and send the following:

- A) A cover letter identifying the specific plan sheets which were revised/changed and detailing any plan revisions/changes affecting utilities,
- B) Revised FR plans with utilities in color,
- C) Pipe profiles,
- D) Any test hole results (not previously sent to the DUE), and
- E) An updated Utility Conflict Matrix.

If there are design changes in the plans, the Project Manager, the DUE, necessary Designers, and the Utilities should meet to collectively revise the UCM accordingly and ensure that all potential conflicts are recorded and addressed.

Any significant changes the MDOT SHA makes in the plan design at this point forward will result in utility redesign starting over. As a result, the utility design and construction schedules will be affected respectively. If there are any significant project scheduling and design changes that affect the Project Schedule, the issue(s) should be escalated as per the Utility Issue Resolution Flowchart so issue(s) are evaluated & resolved by the appropriate decision makers.

#### **8.05.05.02 Utility Final Review Coordination Meeting Preparation**

Within 15 business days after receiving the UCM's and FR Plan sets from the Project Manager, the DUE will set a date for a Utility Final Review (UFR) Coordination Meeting with the Utility Companies if required; send an UFR Plan Package to the Utility Companies; and request the Utility Company Project Manager to update the Utility Analysis Report (Form [UC-3](#)) for submittal to the DUE at the UFR Coordination Meeting. Refer to Form - [Utility Analysis Report](#) (Form [UC-3](#)) for additional information.

The Utility Companies shall be provided a minimum of 20 business days and not more than 30 business days to review plans and prepare the requested information prior to the UFR Meeting. In addition, the date shall be coordinated with the Project Manager and include other Designers as needed.

The DUE will request the Utility Company Project Manager to be prepared to provide updates and current status on all the items discussed at the UPI and USF Coordination Meetings. Refer to [Section 8.05.03.01 - Utility Preliminary Investigation Meeting Preparation](#) for items discussed at the UPI Meeting.

The DUE will send a UFR Plan Package to the Utility Companies which will consist of the following items:

- FR Plans showing MDOT SHA's final designs for line/grade/typical section, drainage design, stormwater management design, structures, traffic; environmental (natural, cultural/historic and community) resources shown in project area; and the (QL-B/QL-A) Utility Designation.
- The updated Utility Conflict Matrix.
- A copy of the initial Utility Analysis Report (Form [UC-3](#)) (the Utility Company provided at the USF Coordination Meeting).
- A Utility Analysis Report (Form [UC-3](#)) to be completed by the Utility Company with the current utility information for the UFR Coordination Meeting.
- Any other pertinent project information.

#### **8.05.05.03 Utility Final Review Coordination Meeting**

The UFR Coordination Meeting should consist of an update all of the information presented at the USF Coordination Meeting. Specifically, the following items should be discussed:

- Utility Companies shall provide updated schedules to the DUE for utility work to be completed prior to the MDOT SHA's Notice to Proceed in order for the DUE to revise the Utility Statement Special Provisions if necessary.
  - CADD files should be sent to the SHA Project Manager if available.
- Utility conflicts identified in the revised Utility Conflict Matrix.
- Any outstanding issues.

At the UFR Coordination Meeting, the Project Manager, the DUE, and the Utility Companies should be primarily focused on the utility relocation status. By the Final Review stage, relocation strategies should have been developed and major issues resolved. If there are any significant

outstanding issues which may affect the Project Schedule, the outstanding issue should be escalated as per the Utility Issue Resolution Flowchart.

After the UFR Coordination Meeting, the DUE shall prepare a UFR Coordination Meeting Report which shall comprise of the updated Utility Analysis Reports (Form [UC-3](#)) from the Utility Companies and the UFR Coordination Meeting minutes. The DUE will distribute the UFR Coordination Meeting Report within 10 business days from the date of the UFR Coordination Meeting to all attendees to ensure all communications are understood correctly. The Utility Companies will have 15 business days to respond with any corrections. The DUE shall take the UFR Coordination Meeting Report with any revisions from the Utility Companies and provide it to the Statewide Utility Engineer, the Project Manager and the ADE- Project Development no later than 10 business days after receipt of the Utility Company's response.

#### **8.05.05.04 PS&E Plan Development (95% - 100%)**

The Project Manager will complete final plans, specifications and estimates for constructability and technical reviews; Environmental and Highway Design PS&E submittals.

It should be noted that any significant changes the MDOT SHA makes in the plan design, from this point forward, will result in utility redesign starting over. As a result, the MDOT SHA's construction schedules will be impacted. If there are any significant project scheduling and design changes that affect the Project Schedule, the issue(s) should be escalated as per the Utility Issue Resolution Flowchart so issue(s) are evaluated & resolved by the appropriate decision makers.

The MDOT SHA Project Manager will then handle all the final necessary PS&E activities to advertise for bid the MDOT SHA Construction Contract.

#### **8.05.05.05 Utility Relocation Activities Prior to MDOT SHA's Advertisement**

The DUE shall continue to monitor progress of the relocations. Maintaining the schedule of the phased relocations is imperative to the MDOT SHA Contract's success. Any delays or issues incurred by the Utility Company need to be communicated immediately by the DUE for issue resolution. The DUE needs to notify the Design Project Manager and the Assistant District Engineer for Construction of any relocation delays that may impact the schedule of the MDOT SHA contract.

#### **8.05.06 Advertisement to MDOT SHA Construction Notice to Proceed**

Utility Companies shall provide updated schedules to the DUE for utility work to be performed prior to the MDOT SHA's Notice to Proceed. This shall be provided to the ADE - Construction and the Project Manager. The ADE - Construction coordinates the MDOT SHA Construction the Notice to Proceed (NTP) date with the Office of Construction to verify all necessary utility relocations will be complete to allow the MDOT SHA construction contract to begin. If the utility relocations will not be completed prior to the NTP, it is imperative the ADE - Construction and the MDOT SHA Office of Construction work closely with the DUE and the Utilities to ensure utility relocation activities are coordinated with the MDOT SHA's construction prior to the issuance of the NTP. If MDOT SHA's construction Notice to Proceed is issued prior to the completion of the utility relocation work, the contractor may file a delay claim to the MDOT SHA. As the Federal Highway Administration may not participate in delay costs associated with utility relocations, the Utility shall be responsible for claims against the MDOT SHA if those claims were costs incurred by MDOT SHA's Contractor which were caused by or which grew out of the failure of the Utility to carry out and complete its work in a timely and reasonable manner. Refer to [Section 7.11.02 Delay Claims](#) for additional information.

### **8.05.07 MDOT SHA Construction Phase**

The DUE shall continue to monitor all utility relocation work which may overlap and/or be concurrent with the MDOT SHA Construction Contract. Once the project is in construction, the Project Engineer will assign inspection personnel to inspect work done by Utility as per [Construction Directive 07220.800.01](#). In this case, an inspector may be assigned to their activities, but with their primary duty being daily visits to utility work site. If the utility relocation work will overlap and/or be concurrent with the MDOT SHA Construction Contract, the Project Manager, the DUE, necessary Designers, the MDOT SHA Construction Project Engineer, the Area Engineer, the Assistant District Engineer for Construction, and the Utilities should meet to collectively revise the UCM accordingly and ensure that all potential conflicts are recorded.

Utility relocation information should be provided to the MDOT SHA Construction Project Engineer, the Area Engineer, and the Assistant District Engineer for Construction. The Utility Companies, either performing concurrent work or included in the contract, shall be invited and involved in the MDOT SHA progress and partnering meetings. The DUE shall attend and be involved in the MDOT SHA progress and partnering meetings until the utility relocation work is complete. The Utility Company clearance dates shall be included and tracked in the Contractor's Schedule and updated as part of regular schedule updates. Any issues identified shall be escalated using the [Utility Issue Resolution Flowchart](#) and the [Utility Issue Resolution Contact List](#) for resolution to assure the MDOT SHA Construction Contract remains on schedule.

In the event during construction a Change Order is required relative to utility work, the Project Engineer, the Utility and the DUE shall follow the process as per [Construction Directive 07220.100.23](#).

### **8.06 MDOT SHA PROJECT UTILITY ISSUE RESOLUTION CHAIN**

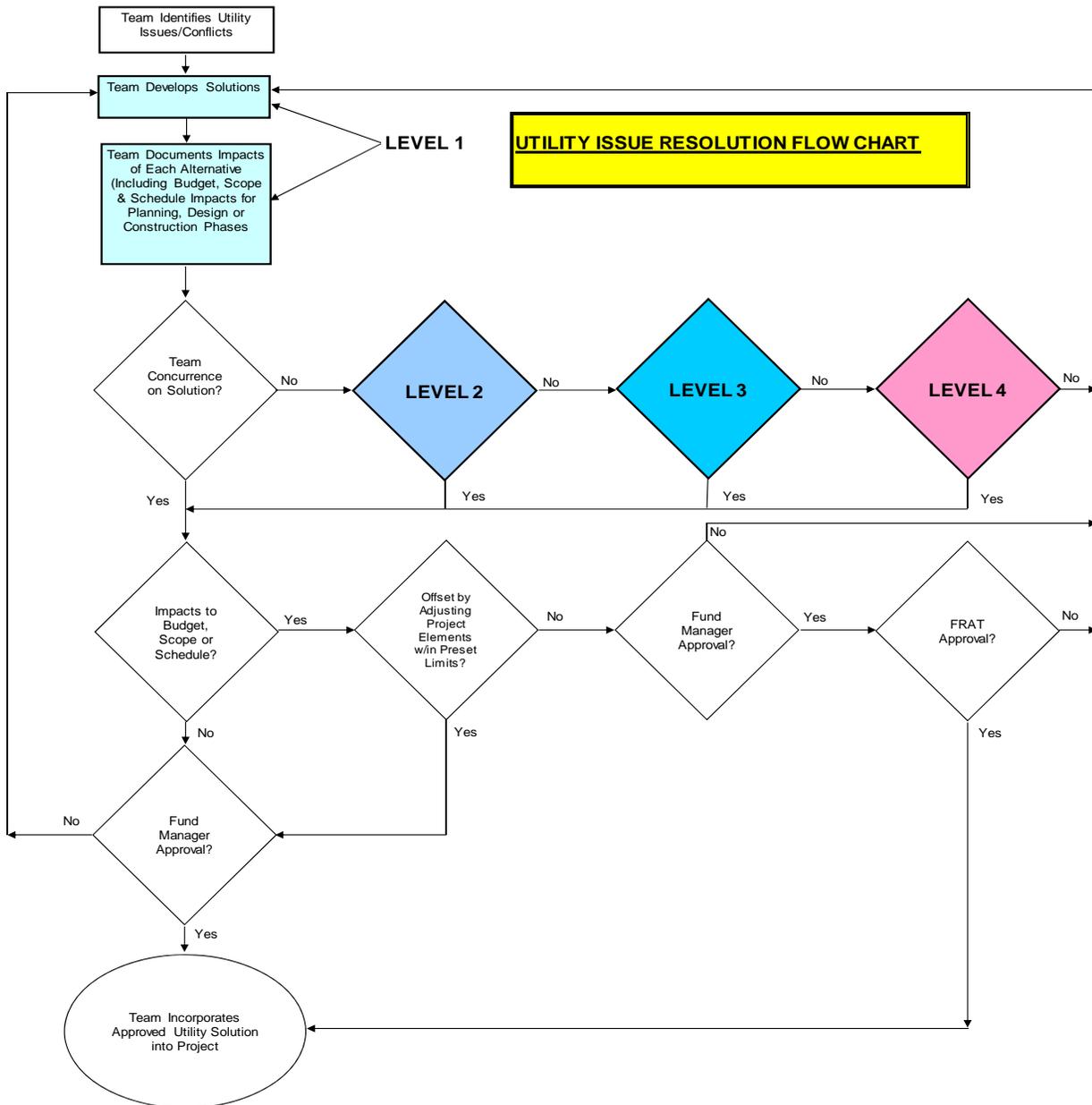
Issue resolution is a key element in the success of a project. Issues must be identified, communicated in a timely and effective manner. This means that issues must be evaluated & resolved by the appropriate decision makers. Team members must be aware that issues may affect scope, schedule, and budget may require review and approval at higher levels, including senior management. Two tools have been developed to assist in resolving issues:

- Utility Issue Resolution Flow Chart
- Utility Issue Resolution Contact List

The Utility issue resolution flow chart can assist the Project Team by providing a map to the development of solutions.

The Issue Resolution Contact List should be utilized to organize and maintain the contacts of the different entities involved in utility coordination on any project. At the start of each project the DUE will create this contact list populated for all levels of issue resolution to ensure proper coordination between the stakeholders.

### 8.06.01 Utility Issue Resolution Flow Chart



**8.06.02 Utility Issue Resolution Contact List**

<b>UTILITY ISSUE RESOLUTION CONTACT LIST</b>				
	<b>LEVEL 1</b>	<b>LEVEL 2</b>	<b>LEVEL 3</b>	<b>LEVEL 4</b>
Design Lead	Project Manager/Team Leader	Division Chief or ADC	Director or Deputy Director	DA/CE for Planning, Engineering, Real Estate and Env.
District Utilities	District Utility Engineer	ADE Project Development	District Engineer or Deputy District Engineer	DA/CE for Operations
District Construction	Area Engineer	ADE Construction	District Engineer or Deputy District Engineer	DA/CE for Operations
Office of Construction (OOC) - Utilities	Areawide Utility Engineer	Statewide Utility Engineer	Director or Deputy Director	DA/CE for Operations
Telephone Company	Engineer	Manager	Director	Senior Executive or CEO
Electric Company	Engineer	Manager	Director	Senior Executive or CEO
Cable Company	Engineer	Manager	Director	Senior Executive or CEO
Gas Company	Engineer	Manager	Director	Senior Executive or CEO
County DPW or Water/Sewer Responsibility center	Engineer	Manager	Director or Deputy Director	County Executive or CEO