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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 [Innovative 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 3rd 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.
- 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 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 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.

8.03.08 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.

8.03.09 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.

8.03.10 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 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.

8.03.11 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 3rd 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.

8.03.12 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 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.

8.03.13 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.

8.03.14 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).

8.03.15 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](#) 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](#) 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 3rd 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 3rd 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 contractors 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 (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-Stations, 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 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 requesting an update to utility information received during the Planning Phase (provided the Potential Utility Impact Questionnaire 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.), 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 for submittal to the DUE at the UPI Meeting. **Refer to Form - Utility Analysis Report 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; 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
- Copy of the Potential Utility Impact Questionnaire (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.
- 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 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 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 3rd 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 3rd 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 3rd 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 3RD PARTY WORK](#) for additional guidance.

If the Utility 3rd 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 3rd 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 for submittal to the DUE at the USF Coordination Meeting. **Refer to Form - Utility Analysis Report 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; 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 (the Utility Company provided at the UPI Meeting).
- A Utility Analysis Report 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 (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 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 3rd 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 3rd 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 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 for submittal to the DUE at the UFR Coordination Meeting. **Refer to Form - Utility Analysis Report 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; and the (QL-B/QL-A) Utility Designation.
- The updated Utility Conflict Matrix.
- A copy of the initial Utility Analysis Report (the Utility Company provided at the USF Coordination Meeting).
- A Utility Analysis Report 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 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

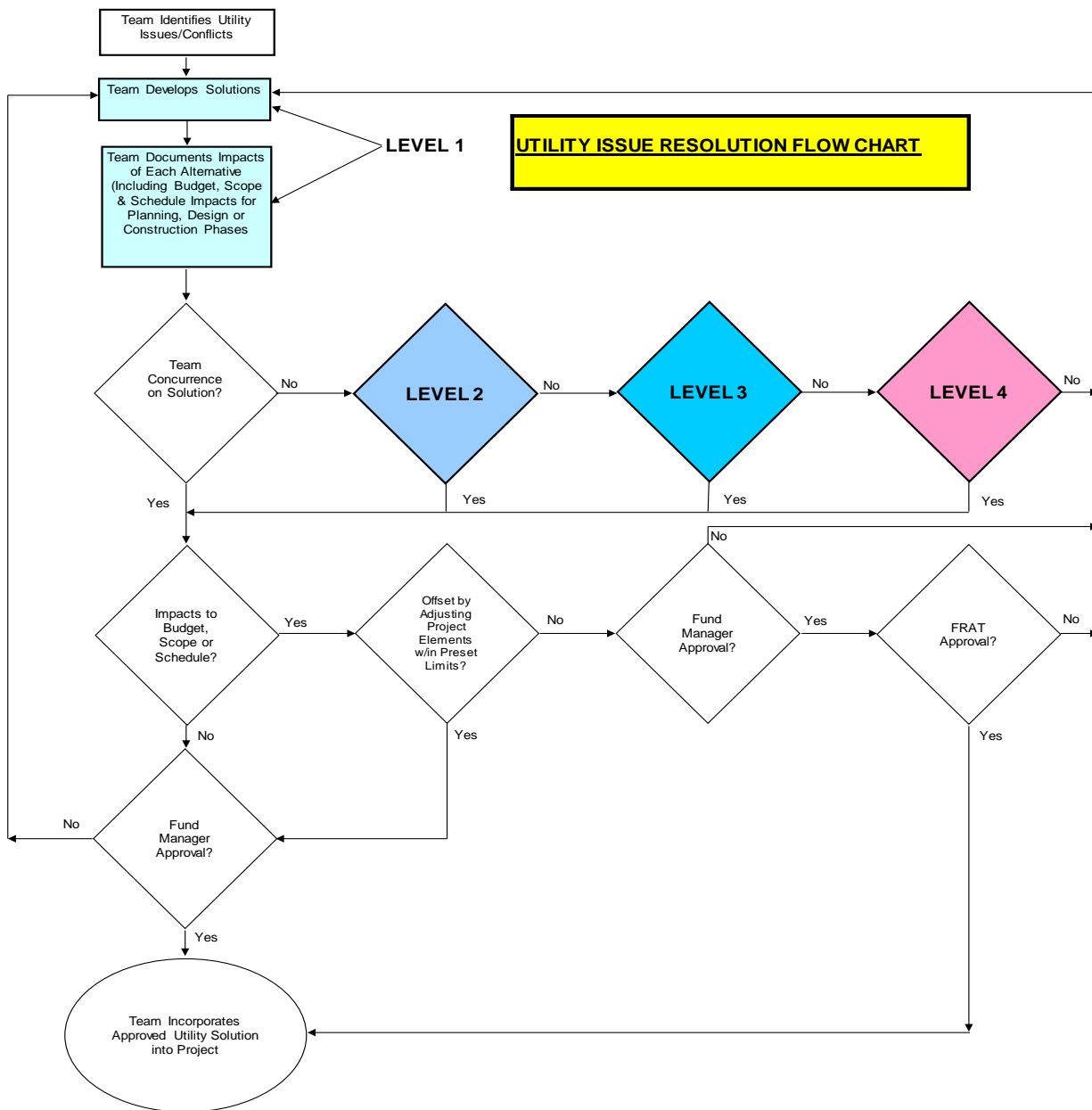
Issue resolution is a key element in the success of a project. Issues must be identified, communicated in a timely and effective manner. This means that issues must be evaluated & resolved by the appropriate decision makers. Team members must be aware that issues may affect scope, schedule, and budget 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

UTILITY ISSUE RESOLUTION CONTACT LIST				
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
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

9.01 GENERAL

- A) Installations on or near any of the following highway structures require review and written approval by MDOT SHA's Office of Structures (OOS) unless otherwise specifically identified differently in this Chapter prior to any permit being issued by the appropriate District Engineer or their approved designee or project approval by the Project Engineer:
- **Bridges**
 - **Approach slabs**
 - **Retaining walls**
 - **Noise walls**
 - **Tunnels**
 - **Box culverts**
 - **Pipe arches**
 - **Pipes Greater Than 3' Diameter**
- B) Requests to install facilities near or attach facilities to a structure shall be submitted, in writing, to the appropriate District Engineer or their approved designee unless otherwise directed by the appropriate District Engineer or their approved designee. See [Section 9.07 - STRUCTURES REVIEW PROCESS](#) for further guidance.
- C) Compliance with the installation or attachment requirements of this CHAPTER 9 – BRIDGES AND OTHER STRUCTURES does not constitute automatic approval for said installation or attachment.
- D) Any permit, project approval or OOS approval allowing a Utility or Permittee to install facilities near any or attach to any highway structure does not constitute any permanent right for such installation or attachment. Any removal, rehabilitation, maintenance, or relocation of the installation or attachment, whether required by MDOT SHA or not, shall be promptly accomplished by the Utility or Permittee at no cost to the MDOT SHA.
- E) Installations or attachments that deviate from the preapproved submittal requests without prior approval from the OOS shall be subject to removal at no cost to the MDOT SHA.
- F) Provisions for a utility attachment may be included during the design of a structure. See [Section 9.06 - STRUCTURES PROJECT COORDINATION](#) for further guidance.
- G) Utility and Permittee facilities, when permitted, are to be installed, serviced, and maintained without access from the bridge deck.
- H) In all cases, the utility or Permittee is responsible for restoration and repair of damage to the structure and/or the highway as a result of the construction, maintenance, and/or operation of the utility or facility.

9.02 GUIDANCE DOCUMENTS for HIGHWAY STRUCTURES

- A) Any utility work in connection with Highway Structures shall be in complete conformance with specifications, standards, provisions and policies of [Section 1.08 - GENERAL GUIDANCE DOCUMENTS](#).
- B) In addition to the documents referenced in the previous paragraph, design and construction associated with Highway Structures shall be performed in complete conformance with, and particular attention to, the most recent version of the following publications:
- [Book of Standards For Highway & Incidental Structures](#)
 - [Office Of Structures General Notes](#)
 - [Standard Specifications For Construction And Materials](#)
 - [Structural Standards and Details](#)

- [Supplemental Specifications and Provisions](#)
- [AASHTO Technical Manual for Design and Construction of Road Tunnels – Civil Elements](#)
- [AASHTO LRFD Movable Highway Bridge Design Specifications](#)
- [COMAR - Title 20 Public Service Commission, Subtitle 55 SERVICE SUPPLIED BY GAS COMPANIES](#)
- [DOT PHMSA Pipeline Safety Regulations Part 192](#)

- C) Whenever MDOT SHA's [Standard Specifications For Construction And Materials](#) is referred to in this Chapter or this Utility Manual, the latest version of the [Supplemental Specifications and Provisions](#) shall be reviewed to ensure the most current specification is used.

9.03 AERIAL INSTALLATIONS NEAR STRUCTURES

- A) For bridge rehabilitation, maintenance and inspection purposes, aerial utility crossings should not be placed underneath the deck and superstructure of any structure. Installations of aerial utility facilities proposing to cross underneath any structure shall submit a request for review and approval by both the OOS and the appropriate District Engineer or their approved designee.
1. All requests for these installations shall be made to the appropriate District Engineer unless otherwise directed by the appropriate District Engineer.
 2. Approval for these installations shall be from the appropriate District Engineer or their approved designee via the Utility Permit.
- B) Proposed installations of aerial utility facilities longitudinally to a structure of a controlled access right-of-way highway are prohibited.
- C) Aerial utility facilities placed longitudinally to a structure of a non-controlled access highway crossing over controlled access rights-of-ways; aerial utility facilities placed longitudinally to a structure within non-controlled access rights-of-ways; and aerial utility crossings over structures may be allowed at the discretion of the appropriate District Engineer or their approved designee. (See [Section 6.03 - FULLY CONTROLLED ACCESS ROADWAYS](#), [Section 6.04 - PARTIALLY CONTROLLED ACCESS ROADWAYS](#), and [Section 6.05 – NON-CONTROLLED ACCESS ROADWAYS](#) for further guidance.)
1. Installations shall be installed to accommodate bridge maintenance and inspection operations; and to the extent possible, future bridge rehabilitation.
 2. Approval for these installations shall be from the appropriate District Engineer or their approved designee via the Utility Permit.
- D) Aerial installations shall comply with all other sections and requirements of this Utility Manual including, but not limited to, [CHAPTER 4 - UTILITY CONSTRUCTION](#) and [Section 6.11 - VERTICAL CLEARANCES](#).

9.04 UNDERGROUND INSTALLATIONS NEAR STRUCTURES

- A) Installations of underground utility facilities within 100 feet of any structure shall submit a request for review and approval for both the OOS and the appropriate District Engineer or their approved designee.
1. All requests for these installations shall be made to the appropriate District Engineer unless otherwise directed by the appropriate District Engineer.

2. Approval for these installations shall be from the appropriate District Engineer or their approved designee via the Utility Permit unless work is Utility 3rd Party Work incorporated into MDOT SHA's construction project.
- B) All underground installations near structures, when permitted, shall meet the following requirements:
1. Installations shall be above footings, seals, or pile groups.
 2. Installations shall be outside the 45-degree Zone of Influence from the bottom of any edge of a structures footing or foundation. [Figure 9.04-1 – Bridge Structure Zone of Influence](#), illustrates these limits.

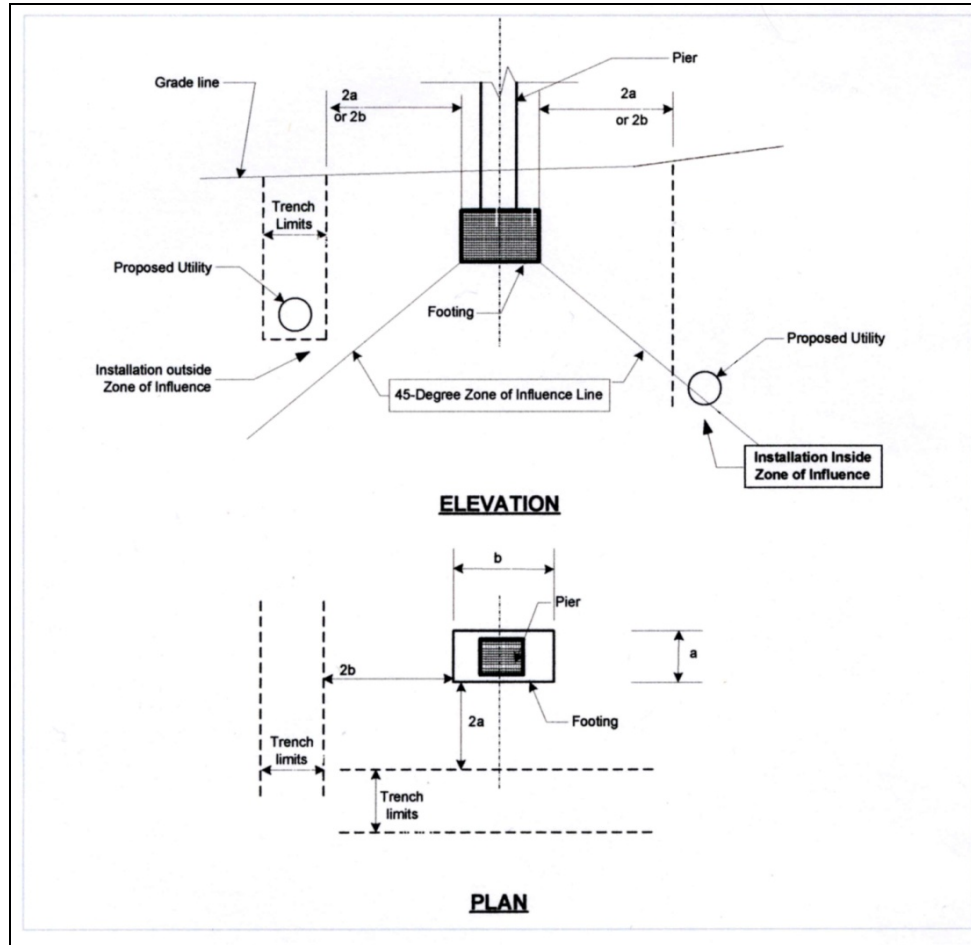


Figure 9.04-1 – Bridge Structure Zone of Influence

3. The proposed method of installation shall not, in any way, be detrimental to the structure or foundation.
4. Carrier pipes of all pressurized utilities shall be pressure tested before start-up in accordance with the latest edition of applicable industry codes, or appropriate regulations of an agency of the federal government.
5. Pressurized utilities shall be sleeved to minimize undermining of the substructure in the event of damage or rupture to the carrier pipe. Casing pipes are to be designed to accommodate all externally applied loads. (See [Section 6.08 - Sleeves and Casings](#), for further guidance.)

a) Underground gas lines near Structures

- i. Where casings are required, the casing pipes are to extend for the full width of the right-of-way and/or sufficiently beyond the structure foundation/footings, as determined by OOS, so that the transmittants from a broken carrier pipe will be safely discharged away from the footing.
- ii. The casing pipe is to be sealed to the carrier pipe at each end.

b) Underground pressurized liquid (water, sewer force mains, etc.) near Structures

- i. Casing pipes are to extend for the full width of the right-of-way and/or sufficiently beyond the structure foundation/footings, as determined by OOS, so that the transmittants from a broken carrier pipe will be safely discharged away from the footing.
- ii. The casing pipe shall be sealed to the carrier pipe at the high end and open into a man-hole at the low end. The casing may be either steel or reinforced concrete, and shall be designed for all externally applied loads and for the internal pressure from a ruptured carrier pipe. A shut-off valve is to be installed on the pressure side of the right-of-way.

9.05 ATTACHMENTS TO HIGHWAY STRUCTURES

- A) Attaching utility lines to a highway structure can materially affect the integrity and appearance of the structure, the safe operation of traffic, future modifications, and the efficiency of maintenance. Therefore, the MDOT SHA has adopted a general requirement of discouraging attachments to bridge structures except where there is no other feasible and reasonable place to locate utility lines. Where it is feasible and reasonable to locate utility lines elsewhere, attachments to highway structures will not be permitted.
- B) Gas lines with diameters which would affect the integrity of any of the structural elements of a highway structure (stiffeners, diaphragms, beams, etc.); and pipelines carrying explosive, corrosive or flammable fluids will not be permitted to be installed on highway structures.
- C) Electrical lines with voltage in excess of 98 kilovolts rms to ground shall not be installed on structures.
- D) However, where other locations prove to be difficult, unsafe and/or unreasonably costly, consideration may be given for attaching a utility to a highway structure and only when all of the following conditions exist:
 - 1. No other practicable alternative is available, including private easement
 - 2. The attachment will not create a hazard to the public
 - 3. The public interest will suffer if approval is not granted
 - 4. The structural integrity of the structure will not be threatened by the attachment
 - 5. None of MDOT SHA's basic interests will be substantially compromised by the attachment, including reasonable ease of bridge inspection and maintenance.
- E) Since highway structure designs and site conditions vary, the adoption of standardized methods to accommodate utility facilities on structures is not feasible. Each proposed bridge attachment will be considered on its individual merits and shall be separately designed.

- F) Attachments to concrete structures, if permitted, must conform to the general structural, aesthetic and other specific requirements as for steel structures but the details thereof shall be determined on a case by case basis and tailored to the particular concrete structure.

9.05.01 General Requirements

In addition to the specific requirements that concern communication systems and specific guidelines for pipelines which are presented in subsequent adjacent subsections, the following are examples of requirements generally applicable to utility attachments:

- A) Where appreciable live or dead loads (not provided for in the original design) are to be added to an MDOT SHA structure, stress calculations signed and sealed by a professional engineer registered in Maryland must show that the structure can safely withstand the additional stress which shall include the following considerations:
1. Utility supports shall be designed such that any loads imposed by the utility installation do not overstress the conduit, the supports, or the bridge members.
 2. All utilities and utility supports shall be designed not only to support their dead load but also to resist other forces from the utility, such as surges, wind, or earthquakes. The Utility Company may be asked to submit one set of calculations to verify utility design forces.
 3. Utility locations and supports shall be designed so that a failure, such as a rupture, will not result in damage to the bridge or the surrounding area, nor become a hazard to traffic.
- B) Utility facilities are to be designed in accordance with all governing codes.
- C) All utility installations will be isolated and insulated from the structure to avoid causing corrosion
- D) No utility facilities will be allowed in a location where they would be vulnerable to damage or rupture by a traffic accident and thus create a traffic hazard
- E) Any changes in the transmittant or pressure beyond that reviewed and approved in the original installation must be subjected to an additional review process for approval from MDOT SHA.
- F) Where similar, competing utilities (for example, telecommunication companies) desire attachment to a structure, the MDOT SHA normally requires that they consolidate facilities to jointly share use of conduits, ducts or sleeves in order to minimize the impact to MDOT SHA's structure. Joint use requires advanced planning and coordination on the part of the utilities.
- G) Acceptable utility attachment methods are hangers and/or roller assemblies supported by diaphragms between the exterior and first interior [stringers](#).
- H) No part of the Utility's facility installation (carrier pipe, brackets, hangers, etc.) may project below the bottom flange of the highest adjacent [stringer](#).
1. Refer to [Figure 9.05.01 – Facilities Next to Highest Adjacent Stringer](#) for additional guidance.
 2. To comply with the requirement, it may be necessary to raise or replace existing diaphragms with smaller diaphragms, and to place additional diaphragms as necessary to support the installation and to equal the strength of the diaphragms removed.

- a) Removal and replacement shall be carried out progressively.
- b) All connections shall be bolted.
 - i. Welded connections shall not be permitted.

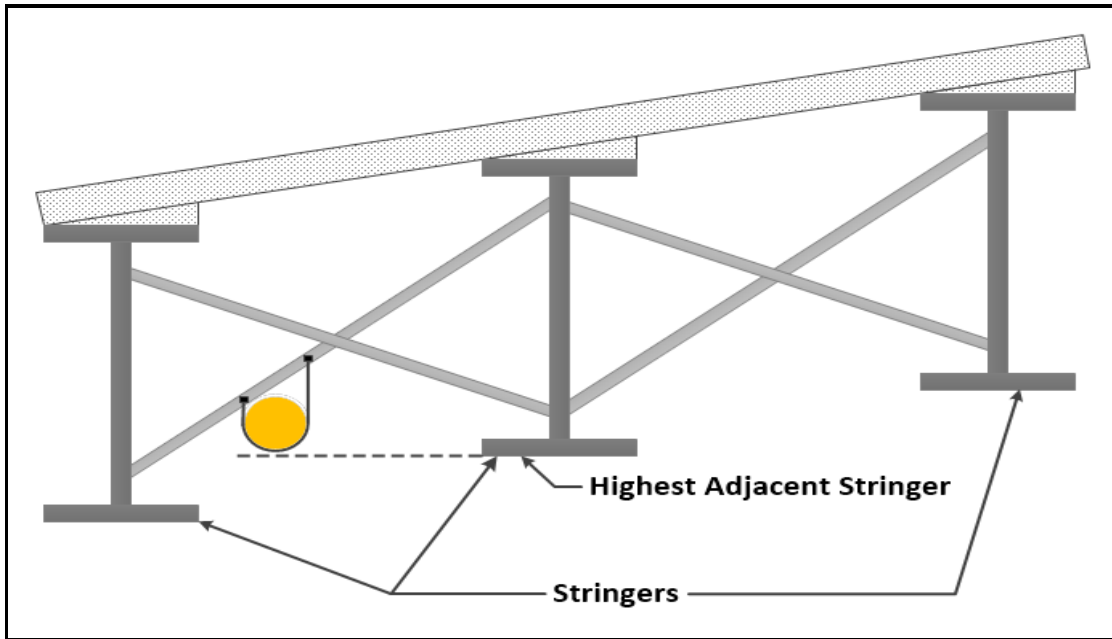


Figure 9.05.01 – Facilities Next to Highest Adjacent Stringer

- I) On site drilling of bridge concrete or welding to existing steel shall not be allowed.
- J) The design of a utility facility attached to a highway structure must include provisions for the lineal expansion and contraction of the facility, due to temperature differentials. The attachment must be independent of, and compatible with, the expansion and contraction design of the bridge. The attachment must be adequately supported and prevent other longitudinal forces from being transferred to bridge members. Bridge structures shall not be used as thrust blocks for utility facilities under pressure. Concrete buttresses are to be placed as appropriate at each end of the structure.
- K) Manholes, handholes, or similar utility elements shall not be installed in the bridge deck on overcrossings.

9.05.02 Aesthetics

- A) Utility facilities attached to the outside of bridges are unsightly and susceptible to damage.
 - 1. Utilities shall not be attached above the bridge deck or to railing or rail posts.
 - 2. Utility facilities attached to structures shall be hidden from public view.
- B) Utility facility mountings are to be of a type which will not rattle due to vibrations caused by traffic. The support rollers, saddles or hangers shall be coated or padded with neoprene or otherwise equipped to muffle vibration noise and minimize wear.
- C) All utilities and utility support surfaces, including any galvanized utilities, shall be painted in accordance with [Section 9.02 - GUIDANCE DOCUMENTS for HIGHWAY STRUCTURES](#) and as approved by OOS. The final coat shall match the color of the bridge or structure.

- D) Coating systems for Utilities must be compatible with the life expectancy of coating systems of bridge members.
 - 1. All painted surfaces damaged during construction shall be cleaned and painted as noted above.
 - 2. Any and all paint splatters and overspray shall be removed from the structure to the satisfaction of MDOT SHA.

9.05.03 Clearances

- A) Utility facilities attached to bridge structures shall maintain a vertical clearance at least equal to that of the structure at any point. Entire installation including supporting brackets, etc., must be above the bottom of the highest adjacent stringer.
 - 1. Refer to [Figure 9.05.01 – Facilities Next to Highest Adjacent Stringer](#) for additional guidance.
- B) Utility location on a structure which would inhibit access to any part for bridge inspection, painting or repair shall not be allowed. Clearances of the utility facility from bridge members shall conform to all governing codes; and at a minimum provide 18” of horizontal clearance from the edge of the girder flange.
- C) Generally, acceptable utility installations are those which will occupy a position beneath the structure's deck between the outer girders or beams, or within a cell.
- D) New utility installations on an existing bridge shall be placed a minimum of 18 inches from existing utilities.

9.05.04 Materials

- A) All materials used for attaching a utility facility to the structure must be compatible with the structural material to eliminate the possibility of corrosion.
- B) All metal components shall be in accordance with governing codes.
- C) All material used in the utility facility attachments to the bridge structure must be approved by OOS.

9.05.05 Pipelines

- A) All pipes carrying transmittants that are flammable, corrosive, expansive, energized, or unstable shall be cased throughout the length of the structure. (See [Section 9.05.06 – Sleeves & Casings for Structures](#), for further guidance.)
 - 1. Casing pipes may be omitted if approved by OOS.
- B) The carrier pipe must be pressure tested before start-up in accordance with the latest edition of applicable industry codes, or appropriate regulations of an agency of the federal government.
- C) Pipelines carrying liquids subject to freezing must be protected to prevent the liquids from freezing.
- D) Gas Pipelines - Placement
 - 1. Gas mains shall be located between beams so that no gas will be trapped in pockets between beams and diaphragms or installed with casing pipes that are vented to the atmosphere through screened vents.

- a) The casing pipe may be omitted, but the area between beams shall be vented by suitable methods acceptable to the MDOT SHA whose design does not allow deck concrete and steel to be attacked by deicing salts.
- 2. Gas mains are to be supported by existing diaphragms where possible. Additional supports between diaphragms are to be placed as required. On existing structures these additional supports are to be attached to the beams by bolting. Welding to existing steel beams shall not be permitted. Where a gas main must be hung below the diaphragm, it is to be supported by hangers specially designed for this use.

E) Water and Sewer Pipelines - Placement

- 1. Water mains and sewer lines on structures are usually placed between beams, preferably between the fascia beam and the first interior beam. This will permit placing the pipe in the shoulder on the approaches to the bridge.
- 2. Piping is to be supported, if possible, by the existing diaphragms. Additional supports may be placed as required. They must be attached to the existing beams by bolts. Welding to existing beams shall not be allowed.
- 3. The piping may be placed on top of the diaphragms with U bolts or other suitable means to hold the pipe in place.
- 4. Hangers, if used, shall be of a type especially designed for this use.
- 5. Expansion joints for the piping shall be compatible with the expansion and contraction design of the bridge. The piping shall be fitted with Dresser Couplings, or approved equal, to enable adjustments for expansion, contraction, and deflection.
- 6. A crows-foot restraining device placed at each joint of sufficient length to facilitate removal of any section of pipe without damage or removal of an adjacent section is recommended.

9.05.06 Sleeves & Casings for Structures

- A) Since a pipeline carrying a volatile fluid or gas under pressure can cause damage or injury if there is a leak, it poses a certain element of risk when mounted on a bridge. Likewise, attachment of a pipeline carrying a non-volatile fluid, such as sewer or water line, also poses a certain element of risk, with respect to leakage, where mounted on a bridge crossing a freeway, other highway or street, railroad, or water. In either case, when such a carrier is placed in a casing pipe of leak proof construction, leakage can be detected and exhausted at vents or drains and the casing becomes a "second line of defense" against damage to the structure.
- B) All carrier pipes shall be cased throughout the length of the structure. The casing pipe shall be carried beyond the back of the bridge abutments and approach slabs and be effectively opened or vented at each end to a point beyond the approach slabs to prevent possible build-up of pressure and to detect leakage of gases or fluids. These vents shall be located outside the shoulder line behind the guard rail. (See [Section 9.05.10 - Approaches & Transitions To and From Structures](#), for further guidance.)
- C) Casings shall be approximately 3 inches larger than the outside diameter of the carrier pipe.
- D) All piping systems under pressure shall state the maximum operating pressure and test pressure on the plans and on the label. (See [Section 9.05.10 - Utility Facility Identification](#), for further guidance.)

- E) Casing pipes should have provision to drain condensate.
- F) The casing pipe must be designed to withstand the same internal pressure as the carrier pipe.
- G) Exceptions to this requirement may be considered and approved by the OOS.
 1. When sleeves or casings are not required for a pipeline attachment to a bridge, additional protective measures shall be taken. Such measures may include, but not limited to, carrier pipes having heavier than usual wall thickness, or higher yield strength for steel pipe, superior design and construction, radiograph testing of welds and hydrostatic testing.

9.05.07 Shut-Off Valves

- A) On all facility attachments carrying gas or liquid under pressure, which, by nature of the transmittant or its pressure, might cause damage or injury if escaping on or in the vicinity of the highway structure, there shall be emergency shut-off valves.
- B) Such valves shall be placed within an effective distance on the pressure side of the structure, unless the facility is equipped with nearby shut-off valves or operates under effective control by automatic devices.
- C) If there is no shut-off valve on the pressure side of the main within 1000 feet of the structure, the MDOT SHA may require the installation of a valve closer to the structure.

9.05.08 Cathodic Protection

- A) Utility facilities, such as gas, water, etc., which are attached to bridge structures shall be free of any impressed direct current for cathodic protection or shall be electrically isolated from the steel of the bridge.
- B) When utility lines containing impressed direct current are to be attached to a bridge structure, the following precautions shall be taken unless other suitable protection is detailed on permit plans and details:
 1. Insulating flanges or connections shall be installed beyond each backwall of the bridge structure for the purpose of insulating or isolating the section of the facility attached to the bridge structure from the underground sections of the facility containing impressed direct current for cathodic protection.
 2. If necessary, the direct current shall be continued across the bridge through an insulated wire attached to the underground facility at each end of the bridge. This insulated wire shall be enclosed in metallic conduit. Both this conduit and the facility or its casing shall be insulated from the bridge structure. This conduit shall be grounded to a ground rod at each end of the bridge.

9.05.09 Power & Communication Lines

- A) Power and communication lines to be attached to structures must be installed in conformance to National Electric Code and National Electric Safety Code requirements.
- B) Electric power and communication lines attached to a highway structure must be insulated and isolated from the structure.
- C) Electric power and communication lines attachments shall be carried in protective conduit or pipe throughout the length of the structure.

- D) All conduits shall be installed in accordance with the UL listing information, the manufacturer's instructions (in regard to use of fittings and cementing of joints), and the applicable requirements in the National Electrical Code and National Electric Safety Code.
- E) Metal sleeves through the abutment backwalls are to be provided for passage of the conduits.
- F) The protective conduit or pipe shall be carried beyond the back of the bridge abutments and approach slabs to manhole at points beyond the approach slabs located at each end of the structure. (See [Section 9.05.10 - Approaches & Transitions To and From Structures](#), for further guidance.)
- G) Telephone and other low voltage (50 Volts or less) lines may be placed in plastic, fiberglass, or P.V.C. conduits.
- H) High voltage lines may be placed in steel conduits, in UL listed schedule 40 or schedule 80 PVC conduit, or fiberglass reinforced epoxy conduit (not the type that is limited to underground use).
- I) Exposed metallic conduit carrying electrical cables must be grounded separately from the structure.
- J) Attachments for electric power and communication lines must provide sufficient clearance for convenience and safety during maintenance and repair of bridge structure or other utility installations on the bridge.
- K) For the safety of persons using the bridge; signing to warn all users of the voltage shall be provided as set forth herein under [Section 9.05.10 - Utility Facility Identification](#).

L) Power and Communication Lines – Placement

1. In Sidewalks (or Parapets)

- a) On new structures and rehabilitated structures, the power or communication lines placed in conduits may be installed within the sidewalk or parapet area.
- b) On an existing structure, removal and replacement of existing sidewalk and/or parapet to accommodate the lines in these areas may be acceptable, should this be the feasible alternative without cost to the Administration and with minimal inconvenience to traffic.
- c) Installations in the sidewalk or parapet areas shall conform, to the extent applicable, with OOS, [Structural Standards and Details](#), latest revision.

2. Between Beams

- a) Power and communication lines to be installed on structures are to be placed in conduits.
- b) Conduits are to be supported by existing diaphragms where possible. When additional supporting members are required, they are to be attached to the beams by bolts. No welding to existing steel shall be permitted.
- c) Conduits are to be placed between the fascia and first interior beam, if possible.

9.05.10 Approaches & Transitions To and From Structures

- A) Where the utility facility is to pass through a bridge abutment or end wall of an existing bridge, the Utility Company shall neatly restore the disturbed areas by methods which will prevent any leakage of water or backfill through the substructure elements.
1. Pipes and conduits installed through backwalls, or endwalls are to be extended through sleeves.
 2. Where such construction is allowed, the hole created in the bridge endwall or abutment for the sleeve shall be of the minimum size.
 3. The sleeve shall be tight-sealed into the opening and annular space between endwall or backwall and sleeve shall be completely filled with non-shrink grout, then caulked to seal such opening and effectively prevent the leakage of any moisture or backfill material through the abutment.
 4. The annular space between the pipe conduit and the sleeve sealed as approved by OOS.
- B) Where a utility facility is carried beyond the back of an endwall or backwall, generally it shall be required to extend beyond the approach slab and curve or angle so as to align outside the roadbed structure in as short a distance as is operationally practicable. Preferably it should be located in the first or closest bay of the structure (i.e. - not on the outside of the bridge).
1. Where attachment is considered, coring or cutting of edge beams or approach slabs shall not be allowed.
 2. On endwalls, whose primary purpose is to retain the end fill, approval may be granted to core reasonable sized holes provided critical reinforcement is not cut.
- C) Where manholes or vents are installed beyond the back of the bridge abutments and approach slabs of the structure, said manholes and vents shall be coordinated with the placement of any guardrail of the structure.

9.05.11 Utility Facility Identification

- A) Any new or replacement utility facility installed from the date of this manual shall include an identification marker within the first and last 50 feet of the facility, and at intervals in-between not to exceed 100 feet.
1. The spacing shall be adjusted to have at least one marker in every bay of the bridge through which the utility passes.
 2. Refer to [Figure 9.05.11 - Markers within Bays of Bridges](#), for additional information.

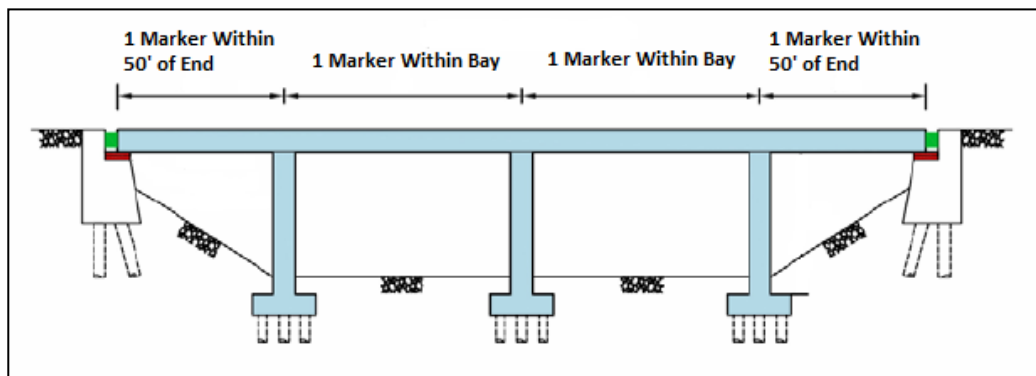


Figure 9.05.11 - Markers within Bays of Bridges

- B) The marker shall consist of decals or stenciling onto the pipe or carrier conforming to industry standard color coding with high quality black or white print. See [Figure 9.05.10 – Utility Markers](#), for examples color codes and print to be used.
1. Lettering height shall be one third the pipe diameter, but not smaller than one inch nor larger than four inches.
 2. The marker shall include the name of the Utility and a description of the contents including pressures, voltages, and any other pertinent information required by industry standards.
- C) Refer to [Standard Specifications For Construction And Materials](#), Section 470 - UTILITIES ON STRUCTURES, for additional guidance

Label Background Color/ Lettering Color	Content
RED	<i>Electrical Power</i>
YELLOW	<i>Gas, Oil Steam, Petroleum or Gaseous Materials</i>
ORANGE	<i>Communication, CATV, Alarm, or Signal</i>
BLUE	<i>Potable Water</i>
PURPLE	<i>Reclaimed Water, Irrigation, or Slurry</i>
GREEN	<i>Sewer and Storm Drain</i>

Figure 9.05.10 – Utility Markers

9.06 STRUCTURES PROJECT COORDINATION

- A) In addition to the requirements in this Section 9.06 – STRUCTURES PROJECT COORDINATION, utility design and construction associated with Highway Structures shall be performed in complete conformance with [CHAPTER 8: PROJECT COORDINATION](#).
- B) Where the MDOT SHA plans to construct a new bridge structure, the design of the structure may, upon request of a Utility Company, be reviewed for accommodation of existing or proposed utility installations consistent with the requirements set forth herein this Utility Manual Manual.
1. The proposed method of attachment should be described with preliminary drawings detailing the proposed horizontal and vertical alignment. Detailed plans will not be required at this point in time. (See [Section 9.07.01 - Submittals](#), for further guidance.)
 2. If OOS approves or conditionally approves the proposal, the Utility will be notified through the appropriate District Engineer or their approved designee. Quality full size plans shall be developed and submitted with electronic files. (See [Section 9.07.01 - Submittals](#), for further guidance.)
 3. The cost of the utility facility installation, including the additional bridge engineering and modifications, shall be borne by the Utility Company.
- C) Where utility work is included in MDOT SHA's construction project, the coordination of utility work and bridge work will usually be minimal because both jobs will usually be performed by one contractor.
1. The Utility shall submit a Utility 3rd Party Work PS&E to the MDOT SHA for inclusion in MDOT SHA's construction project.
 - a) Refer to [Section 7.09 - UTILITY 3RD PARTY WORK](#) for additional guidance.

2. The Utility must commit to having the facility installed by the MDOT SHA contractor at the price assigned to this bid item within the MDOT SHA construction project bid, when the utility work is being accomplished as part of MDOT SHA's construction project.
- D) Where work is performed directly by the Utility or its contractor, the Utility must coordinate with the MDOT SHA contractor in order that the project schedule shall not be affected.
1. A Utility shall be responsible for claims against the MDOT SHA if those claims were brought about through neglect and/or delays on the part of the Utility which caused the Contractor to incur expenses.

9.07 STRUCTURES REVIEW PROCESS

A) Submittals

1. Requests for bridge attachments and/or underground installations near a structure shall be submitted to the District Utility Engineer for transmittal to OOS unless otherwise directed by the appropriate District Engineer or their approved designee.
2. Submittals for review and approval of bridge attachments and/or underground installations near a structure must include enough information to clearly illustrate how the utility is to be installed.
3. Plans submitted to the MDOT SHA shall be as follows:
 - a) All plans must be referenced to NAD 83/91 and NAVD 88.
 - b) Only preliminary plan submittals may be submitted as full sized hard copy plans.
 - c) All other plan submittals shall be quality full-sized plans and shall include an electronic file with plans in 3D.dgn or MicroStation compatible format.
4. Submittals shall be considered incomplete until enough information is received to allow for a meaningful review.
5. Generalized, vague, or incomplete information will delay the review process and could potentially result in MDOT SHA's rejection of the request.

B) General Requirements

All submittals for review should, as a minimum, include the following:

1. State Route number and Milepost
2. Bridge number
3. As-built bridge details
4. Cross sections and/or elevation views
5. Description of proposed utility facility (type of utility, size/dimensions/voltage, etc.)
6. Other pertinent information

C) Submittals for Underground Installations Near Structures

In addition to general submittal information, utilities proposing installations near a structure shall include the following documents with the review transmittal:

1. A plan and elevation profile of the proposed utility location with references identifying adjacent bridge piers or retaining walls by MDOT SHA bridge name, and bridge, pier, or wall number.
2. A location cross section showing the horizontal and vertical relationship between the proposed installation and any adjacent bridge pier footings, wall footings, or existing utilities.
3. Specific information showing the relationship between the proposed utility and the 45-degree zone of influence from the bottom of any edge of a footing.
4. Information regarding the proposed method of installation.
5. Any Datum equations used to compare utility elevations to bridge as-built elevations.
6. Supporting documentation verifying compliance with the requirements of [Section 9.04 - UNDERGROUND INSTALLATIONS NEAR STRUCTURES](#)

D) Submittals for Bridge Attachment

In addition to general submittal information, utilities requesting attachments to a structure shall include the following documents with the review transmittal:

1. Requests for attachment must be accompanied by a complete explanation of the circumstances creating the need for the proposed attachment. Also, it must include a detailed breakdown (Labor-Equipment-Material) of estimated costs for all alternate location studies done of getting the facility over, under, or around the obstacle; and all reasons (with sufficient specificity and supporting detailed explanations for each reason) why none are feasible.
2. A description of the facility including the transmittant and the weight per lineal foot.
3. Details relative to the transmittant such as pressure, voltage, current, flammability, freeze point, and temperature
4. Appropriate devices to protect the bridge and the facility such as valves, circuit breakers, and pressure sensors should be provided and explained.
5. Bridge attachment details. (Utility hanger details, etc.)
6. Engineering calculations for attachments involving pressurized pipe systems, heavily loaded utilities, or as requested by the OOS.
7. A plan and elevation view showing the proposed utility location on the structure.
8. Horizontal dimensions from all bridge primary members (girder, stringer, beam, edge of slab, etc.).
9. Utility line expansion joint details and proposed locations.

10. Detail of bridge abutment showing the method of transitioning the utility on and off the bridge. Any excavations or borings at these locations should include a cross section with horizontal and vertical offsets.
11. Supporting documentation verifying compliance with the requirements of [Section 9.05 - ATTACHMENTS TO HIGHWAY STRUCTURES](#).

9.08 BLASTING NEAR STRUCTURES

Blasting is generally not permitted within 100' of a bridge. When blasting is to be performed, the following criteria must be adhered to:

- A) In addition to the requirements in this Section 9.08 - BLASTING NEAR STRUCTURES, any blasting shall be performed in complete conformance with [Section 4.07.06 - Blasting](#).
- B) Before any blasting is permitted, the Contractor, accompanied by a MDOT SHA Engineer, must inspect the existing structure, photographing, marking and noting any cracks, fractures and/or other signs of existing damage.
 1. After the completion of the blasting the structure is to be reinspected by the Contractor together with the MDOT SHA Engineer.
- C) Any enlargement of existing cracks, new cracks or other damage to the structure shall be considered to have been caused by the Contractor's blasting.
 1. This additional damage shall be repaired or replaced at the Contractor's expense.
 2. These repairs shall be made to the satisfaction of the MDOT SHA Engineer.
- D) A seismograph is to be placed on the pier or abutment footing nearest to the point of blasting.
 1. The seismograph is to be operated by a person qualified to read and interpret the information obtained.
- E) Test shots using small charges and time delays are to be set off, noting the particle velocity as recorded by the seismograph.
 1. A maximum of two (2") inches per second will be permitted.
 2. The sizes and time delays of the main shots will be determined by the test shots, bearing in mind that the particle velocity shall not exceed 2" per second.
- F) Even though the MDOT SHA specifies the maximum readings on the seismograph, this does not relieve the Contractor of responsibility for any damage sustained by the structure.

9.09 OUT-OF-SERVICE & DEACTIVATED FACILITIES

- A) When a utility facility is no longer required on a structure, the Utility shall notify the appropriate District Engineer or their approved designee in accordance with [Section 6.14 - OUT-OF-SERVICE & DEACTIVATED UTILITIES, Subsection C\) Placing Facilities Out-of-Service](#).
- B) At the discretion of the appropriate District Engineer or their approved designee, the MDOT SHA may:
 1. Approve the request to allow the utility facility out-of-service or deactivated left in place;

- a) The Utility shall comply with [Section 6.14 - OUT-OF-SERVICE & DEACTIVATED UTILITIES](#), [Subsection D\) Out-of-Service and Deactivated Facilities Left In Place](#).
- 2. Require the removal of out-of-service or deactivated utility facilities and restoration of the right-of-way.
 - a) The removal and restoration shall be accomplished within six (6) months unless the Utility and the MDOT SHA agree on a different mutually agreeable timeframe.
 - b) The Utility shall restore MDOT SHA's right-of-way in accordance with [Section 4.08 - RESTORATION](#).
 - c) The cost shall be the responsibility of the Utility Company.
- 3. Assume ownership of the out-of-service or deactivated utility facility, in its entirety or any portion or segment thereof.
 - a) If in the opinion of the appropriate District Engineer or their approved designee, the out-of-service or deactivated utility facility, in its entirety or any portion or segment thereof, may be used by the MDOT SHA for a transportation purpose or need or future transportation purpose or need.
 - b) The MDOT SHA may require the Utility to remove the cable, wire, carrier pipe or transmittant.
 - c) The Utility shall not be compensated by the MDOT SHA for assuming ownership of any out-of-service or deactivated utility facility, in its entirety or for any portion or segment thereof.
- C) Refer to [Section 6.14 - OUT-OF-SERVICE & DEACTIVATED UTILITIES](#) for further guidance.

CHAPTER 10

SIGNALS, SIGNS

AND

OTHER TRAFFIC STRUCTURES

- 10.01 GENERAL**
- 10.02 GUIDANCE DOCUMENTS for TRAFFIC STRUCTURES**
- 10.03 AERIAL INSTALLATIONS NEAR SIGNALS**
- 10.04 UNDERGROUND INSTALLATIONS NEAR TRAFFIC STRUCTURES**
- 10.05 ATTACHMENTS TO TRAFFIC STRUCTURES**
 - 10.05.01 General**
- 10.06 OFFICE OF TRAFFIC & SAFETY PROJECT COORDINATION**
- 10.07 OFFICE OF TRAFFIC & SAFETY REVIEW PROCESS**
- 10.08 OUT-OF-SERVICE & DEACTIVATED UTILITY FACILITIES; AND TERMINATION OF SERVICE TO MDOT SHA FACILITIES**

10.01 GENERAL

- A) Installations on or near any of the following signals, signs, and other traffic structures require review and written approval by MDOT SHA's Office of Traffic & Safety (OOTS) unless otherwise specifically identified differently in this Chapter 10 prior to any permit being issued by the appropriate District Engineer or their approved designee or project approval by the Project Engineer. Traffic Structures and associated equipment include but are not limited to:
- **Traffic Signals**
 - Cabinets - Lighting Arms - Span Wire
 - Handholes - Luminaires - Hand boxes, Conduits/Cable
 - Poles - Traffic Signal Indications - Service Pedestals
 - Mast Arms
 - **Roadway Signing**
 - Overhead/Cantilever sign structure foundations and supports
 - Ground Mounted signs
 - Bridge Mounted signs
 - **Lighting**
 - Cabinets - Luminaires
 - Manholes - Service Pedestals
 - Poles - Hand boxes, Manholes, Conduits and Cable
 - Lighting Arms
 - **ITS Equipment**
 - Dynamic Message Signs (DMS) - Side-Fire Vehicle Detectors (SFVD)
 - Traveler Advisory Radio (TAR) - Roadway Weather Information Systems (RWIS)
 - Closed Circuit Television (CCTV) - Service Pedestals
 - Automatic Traffic Recorders (ATR) - Manholes, Conduits and Cable
- B) Requests to install facilities near or attach facilities to a structure shall be submitted, in writing, to the appropriate District Engineer unless otherwise directed by the appropriate District Engineer. See [Section 10.07 - OFFICE OF TRAFFIC & SAFETY REVIEW PROCESS](#) for further guidance.
- C) Compliance with the installation or attachment requirements of this CHAPTER 10 – SIGNALS, SIGNS AND OTHER TRAFFIC STRUCTURES does not constitute automatic approval for said installation or attachment.
- D) Any permit, project approval or OOTS approval allowing a Utility or Permittee to install facilities near any or attach to any traffic structure does not constitute any permanent right for such installation or attachment. Any removal, rehabilitation, maintenance, or relocation of the installation or attachment, whether required by MDOT SHA or not, shall be promptly accomplished by the Utility or Permittee at no cost to the MDOT SHA.
- E) Installations or attachments that deviate from the preapproved submittal requests without prior approval from the OOTS shall be subject to removal.

- F) Provisions for a utility attachment may be included during the design of a structure. See [Section 10.05 - OFFICE OF TRAFFIC & SAFETY PROJECT COORDINATION](#) for further guidance.
- G) The utility company shall ensure that MSHA underground facilities are designated and shall remain operational throughout construction. In all cases, the utility or Permittee is responsible for restoration and repair of damage to the structure and/or the highway as a result of the construction, maintenance, and/or operation of the utility or facility.

10.02 GUIDANCE DOCUMENTS for TRAFFIC STRUCTURES

- A) Any utility work in connection with Traffic Structures shall be in complete conformance with specifications, standards, provisions and policies of [Section 1.08 - GENERAL GUIDANCE DOCUMENTS](#).
- B) In addition to the documents referenced in the previous paragraph, design and construction associated with Traffic Structures shall be performed in complete conformance with, and particular attention to, the following MDOT SHA publications:
- [Maryland Manual on Uniform Traffic Control Devices \(MdMUTCD\)](#)
 - [Traffic Control Devices Design Manual](#)
 - [Maryland Standard Sign Book](#)
 - [Book of Standards for Highway & Incidental Construction](#)
 - [Standard Specifications For Construction And Materials](#)
 - [Supplemental Specifications and Provisions](#)
 - SHA Traffic Signal Design Training *
 - SHA Electrical Training *
 - SHA Lighting Training *
 - SHA Lighting guidelines *
 - SHA ITS Design Manual †
 - Installation & Attachment of Non-SHA Devices Application Guidelines †
 - EmPOWER Maryland Database and Procedures Manual †

* † These documents can be obtained from the MDOT SHA at:

MDOT SHA Office of Traffic and Safety

* Traffic Engineering Design Division (TEDD)

† Traffic Development and Support Division (TDSD)

7491 Connelley Drive

Hanover, MD 21076

- C) Whenever MDOT SHA's [Standard Specifications For Construction And Materials](#) is referred to in this Chapter or this Utility Manual, the latest version of the [Supplemental Specifications and Provisions](#) shall be reviewed to ensure the most current specification is used.

10.03 AERIAL INSTALLATIONS NEAR TRAFFIC STRUCTURES

- A) Aerial installations shall comply with all other sections and requirements of this Utility Manual including, but not limited to, [CHAPTER 4 - UTILITY CONSTRUCTION](#), [Section 6.11 - VERTICAL CLEARANCES](#), [Section 6.12 – HIGH VOLTAGE LINE ACT](#), [Section 2.01.01 – GUIDANCE DOCUMENTS FOR DESIGN](#), and [Section 10.02 – GUIDANCE DOCUMENTS FOR TRAFFIC STRUCTURES](#).
1. The utility owner assumes all risk and liability for above ground and aerial installations that are installed near traffic structures with breakaway bases and transformers.

B) Aerial utility facilities shall not be placed near traffic structures at distances less than those listed below:

1. Transmission Electric (>180kV)
 - a. 10 feet + 0.4 inches for kV above 180 kV
 - b. Transmission Electric (>470kV)
 - i. In addition, the Utility shall coordinate with the MDOT SHA to determine any additional clearance distance requirements.
2. Primary Electric (>750V to 180kV)
 - a. 10 feet radial from conductor to traffic structure
 - b. Includes spun primary
3. Secondary Electric, excluding power service feeds to traffic structures (<750V)
 - a. 5 feet radial from conductor to traffic structure
4. Communication, Guys, Messengers
 - a. 3 feet horizontal
 - b. 2 feet vertical

C) Refer to [Figure 10.03-1 Aerial Utility Clearances from MDOT SHA Traffic Structures](#), [Section 2.01.01 – GUIDANCE DOCUMENTS FOR DESIGN](#), and [Section 10.02 – GUIDANCE DOCUMENTS FOR TRAFFIC STRUCTURES](#) for additional guidance.

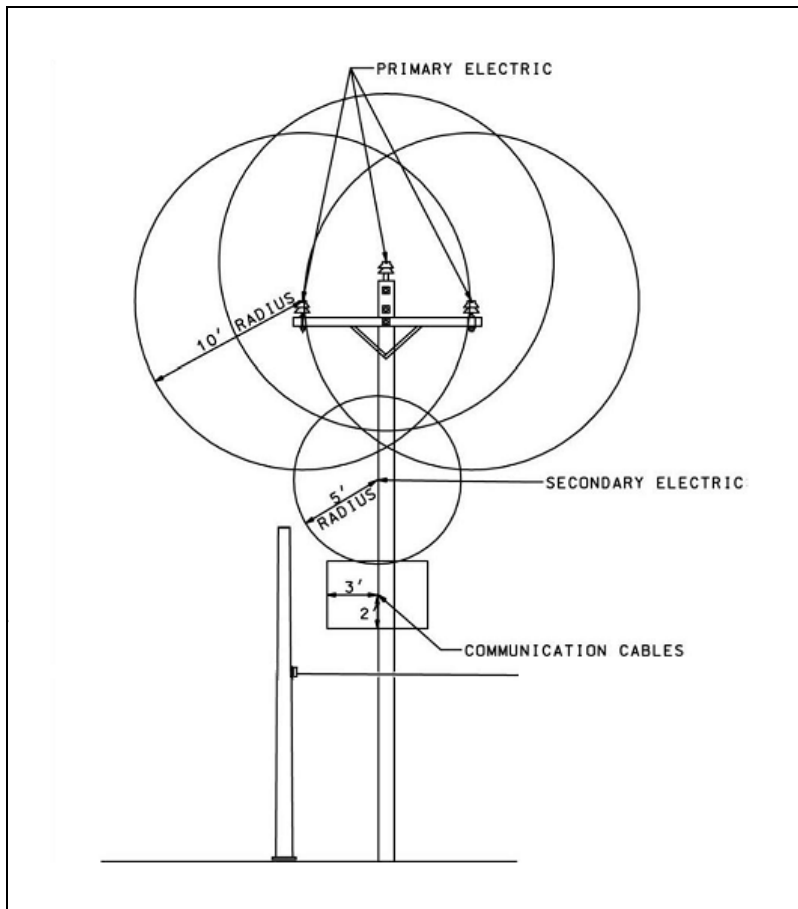


Figure 10.03-1 – Aerial Utility Clearances from MDOT SHA Traffic Structures

- D) Installations of aerial utility facilities proposing to cross underneath any traffic structures shall be prohibited unless approved by MSHA.
 - 1. All requests for these installations shall be made to the appropriate District Engineer unless otherwise directed by the appropriate District Engineer.
 - 2. Approval for these installations shall be from the appropriate District Engineer (or approved designee) via the Utility Permit.
- E) Aerial utility facilities shall not obstruct the view or performance of traffic control devices and ITS equipment listed in [Section 10.01 \(A\)](#). The following are strictly prohibited:
 - 1. Aerial utility facilities that obstruct and/or affect the performance of traffic control devices.
 - a) These installations can result in hazardous conditions for the traveling public. Such installations may result in the utility installer and/or owner being held legally responsible for adverse consequences.
 - b) Partial obstructions are also not considered acceptable.
 - 2. Cables resting on traffic structures and associated equipment.
 - 3. Cables obstructing view of signal heads, signs or other traffic control devices that must be seen.
- F) Aerial utility facilities installed at signalized intersections shall have a minimum vertical clearance of 23 feet.
 - 1. If the aerial utility facility is within the Clearance Zone of the National Electric Safety Code (NESC), the minimum vertical clearance shall be 23 feet **plus** the required clearance of the NESC.
 - 2. Refer to [Section 6.11 \(D\) Vertical Clearances](#) and [Figure 6.11 Signalized Intersection Vertical Clearances](#) for additional guidance.

10.04 UNDERGROUND INSTALLATIONS NEAR TRAFFIC STRUCTURES

- A) For installations of underground utility facilities within ten feet of MDOT SHA traffic structures, the Utility shall submit a request for installation for review and approval from both the OOTS and the appropriate District Engineer or their approved designee.
 - 1. All requests for these installations shall be made to the appropriate District Engineer unless otherwise directed by the appropriate District Engineer.
 - 2. Approval for these installations shall be from the appropriate District Engineer or their approved designee via the Utility Permit unless work is Utility 3rd Party Work incorporated into MDOT SHA's construction project.
 - 3. Refer to [Section 10.07 - TRAFFIC STRUCTURES REVIEW PROCESS](#) for additional guidance.

C) All underground installations near structures, when permitted, shall meet the following requirements:

1. Installations shall be outside the 45-degree Zone of Influence from the top of any edge of a traffic structure footing or foundation. [Figure 10.04-1 – Traffic Structure Zone of Influence](#), illustrates these limits.

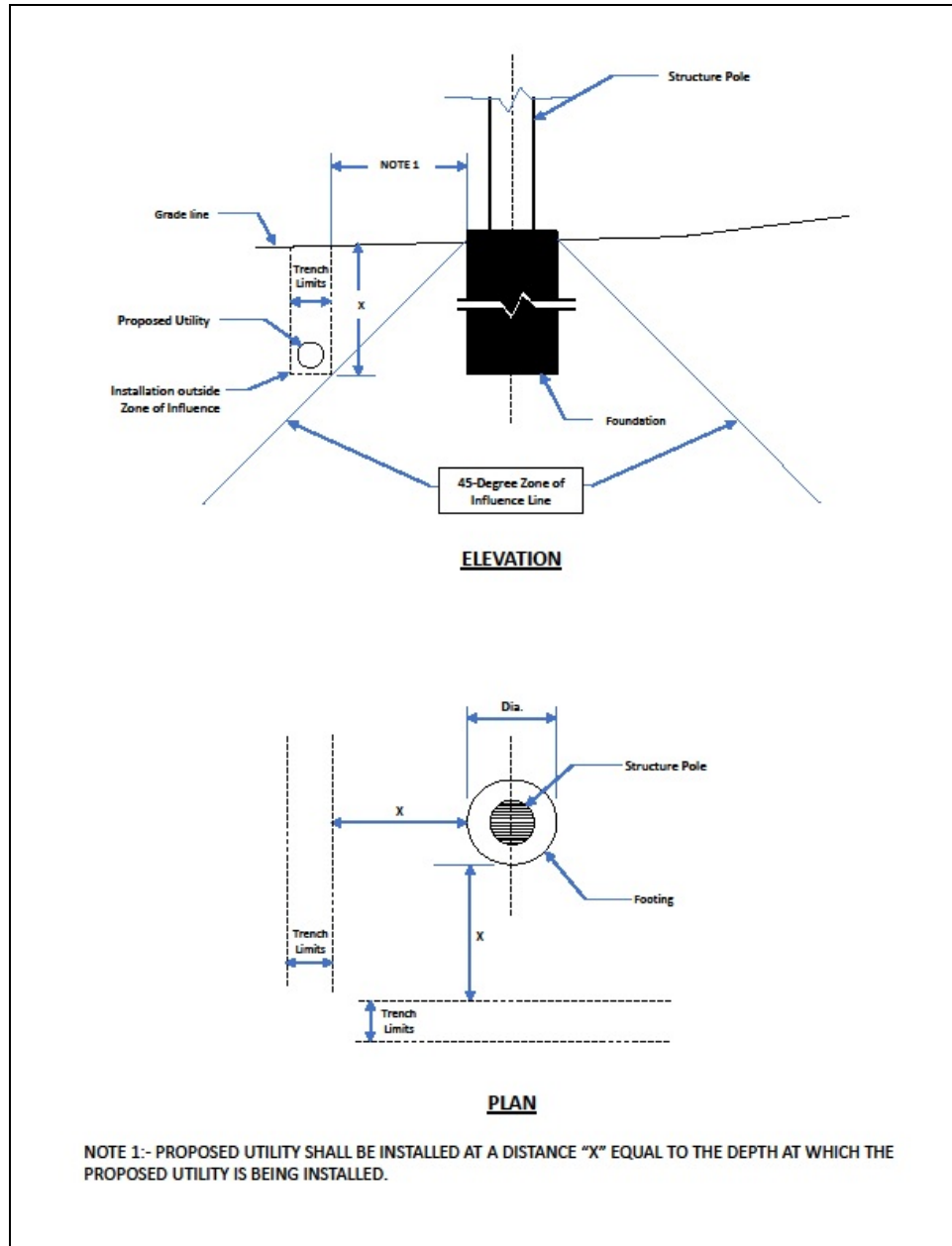


Figure 10.04-1 – Traffic Structure Zone of Influence

2. The proposed method of installation shall not, in any way, be detrimental to the structure or foundation.
3. Carrier pipes of all pressurized utilities shall be pressure tested before start-up in accordance with the latest edition of applicable industry codes, or appropriate regulations of an agency of the federal government.

- D) Excavation around traffic structures and installation of underground utilities shall not jeopardize the structural integrity of any traffic structure.
- E) The proposed method of installation shall not, in any way, be detrimental to the traffic structure or foundation.

10.05 ATTACHMENTS TO TRAFFIC STRUCTURES

- A) Attaching utility lines to a traffic structure can materially affect the integrity and appearance of the structure, the safe operation of traffic, future modifications, and the efficiency of maintenance. Therefore, the MDOT SHA has adopted a general requirement of discouraging attachments to traffic structures except where there is no other feasible and reasonable place to locate utility facilities. Where it is feasible and reasonable to locate utility facilities elsewhere, attachments to highway structures will not be permitted.
 - 1. Traffic signals primary function is for safety. Therefore, any attachment to traffic signals are strictly prohibited.
- B) However, where other locations prove to be difficult, unsafe and/or unreasonably costly, consideration may be given for attaching a utility to a highway structure and only when all of the following conditions exist:
 - 1. No other practicable alternative is available, including private easement
 - 2. The attachment will not create a hazard to the public
 - 3. The public interest will suffer if approval is not granted
 - 4. The structural integrity of the structure will not be threatened by the attachment
 - 5. None of MDOT SHA's basic interests will be substantially compromised by the attachment, including reasonable ease of bridge inspection and maintenance.
- C) Refer to **Installation & Attachment of Non-SHA Devices Application Guidelines** for additional guidance.

10.05.01 General

- A) When it is not feasible to avoid the installation of non-MDOT SHA devices, at MDOT SHA's sole discretion, that are owned and operated by other agencies within MDOT SHA ROW, construction of a separate structure for non-MDOT SHA devices should be considered.
 - 1. The location of this new structure will require prior approval from the MDOT SHA and must meet all the design and construction standards of the MDOT SHA.
 - 2. Any such device must be in compliance with any applicable FHWA rules and regulations regarding installation of devices on federally funded roadways.
- B) The device owner shall submit a request that includes the design specifications and installation details of the device, along with justification for placement of the device in the ROW to the appropriate District for attaching non-SHA device to SHA TCD structures.
 - 1. Refer to [Section 10.07 - TRAFFIC STRUCTURES REVIEW PROCESS](#) for additional guidance.

- C) The device owner shall enter into an MOU with the MDOT SHA for each device installation or set of devices that sets forth responsibilities for device maintenance, inspection, removal, emergency responses, construction, and relocation. SHA shall bear no cost for any of these items.
- D) Attaching devices on MDOT SHA signal posts or signal structures and wiring to cabinets shall not be permitted.
- E) Non-MDOT SHA devices shall not be placed in, on, above, or under the travelled portions of the roadway or within the safety recovery area of the roadway.

Review and approval of any mounting system, method of attachment to the structure, safety regarding the mounting system, and location of the attachment shall be by the Office of Traffic & Safety, Traffic Engineering Design Division.

- F) Non-MDOT SHA devices shall meet all SHA operational and design standards and criteria including, but not limited to the following:

1. Power supply should be independent of any SHA power.

- a) **Power Feed**

- i. The device owner shall install a metered service pedestal near the existing traffic signal cabinet and obtain power from this location for its device.
 - ii. The SHA is responsible for coordination of the new power feed to the proposed metered service pedestal with the appropriate power company.
 - iii. The installation and all costs associated with the installation of the proposed power feed will be the responsibility of the device owner.
 - iv. The power usage charges will continue to be paid by the current party responsible for all power consumption charges.
 - v. The device owner is responsible for providing conduit and electrical cables (per SHA Standards) from the metered service pedestal to the signal cabinet.

- b) **Grounding**

- i. The device owner shall use a No. 6 A.W.G. Stranded Bare Copper Ground Wire to connect all of its structures to the ground rod located in the metered service pedestal.
- 2. There should be non-interference with or inhibiting existing or future SHA equipment or device installation.
- 3. Device owner must be responsible for all electric costs, and all communication costs.
- 4. Safety hazards must not be created.
- 5. The devices must be installed and/or attached appropriately to the SHA structures, and meet NCHRP 350/Manual Assessing Safety Hardware (MASH) crashworthiness guidelines where applicable.
- 6. The device must contain an inscription of the phone number of the device owner. That number should be accessible around the clock.
- 7. Non-SHA devices shall be in conformance with in conformance with:
 - a) [Maryland Manual on Uniform Traffic Control Devices \(MdMUTCD\)](#)
 - b) [Standard Specifications For Construction And Materials](#), as revised and supplemented from time to time.

- c) [Traffic Control Devices Design Manual](#), as revised and supplemented from time to time.
 - d) [AASHTO's Policy on Geometric Design of Highways and Streets](#), as revised and supplemented from time to time.
 - e) The [AASHTO Roadside Design Guide](#), as revised and supplemented from time to time.
 - f) The [High Voltage Line Act](#) (Article 89, Sections 58 to 63, inclusive, of the Annotated Code of Maryland).
 - g) The [National Electric Code](#) and the [National Electric Safety Code](#), as each is revised and supplemented from time to time.
 - h) The Illuminating Engineering Society of North America's American National Standard Practice for Roadway Lighting [ANSI/IESNA RP-8-00](#); as revised and supplemented from time to time.
 - i) [Book of Standards for Highway & Incidental Construction](#)
 - j) [AASHTO Standard Specifications for Structural Support for Highway Signs, Luminaries and Traffic Signals](#).
 - k) All other applicable codes.
- G)** The design and installation of non-SHA devices may utilize SHA existing facilities; if all the wires associated with the device is placed in an orange protective sleeve. The protective sleeve shall separate the device wires from existing SHA cables/wires at all times, including but not limited to handholes, conduit, signal structures, and span wire.
- H)** Where additional lighting is required for the operation of the device, the device owner shall be required to follow current SHA lighting standards. All requests for modifying the existing roadway lighting shall be reviewed and approved by SHA.
- a) Photometric data for roadway luminaires shall be submitted. Point by point lighting calculations shall be provided. The printouts shall show predicted horizontal foot-candles and veiling luminance ratios for the roadway. All calculated lighting levels for roadway lighting shall be not less than the levels specified in I.E.S.N.A. RP-8-00 American Standard Practice for Roadway Lighting.
- I)** Final inspections shall be required for the installation of each non-SHA device location.
- a) The device owner shall contact the Traffic Control Device Inspection Division (TCDIS) at 410-787-7643 to request a final inspection at least seventy-two (72) hours prior to the final inspection.
- J)** In the event that the device requires removal, the device owner shall be responsible for the removal of the old electrical service and all old meters and disconnects.
- a) Refer to [Section 10.08 - OUT-OF-SERVICE & DEACTIVATED UTILITY FACILITIES; AND TERMINATION OF SERVICE TO MDOT SHA FACILITIES](#) for additional guidance.
 - b) The cost of the removal shall also be the responsibility of the device owner.
- K)** In the event that the device requires relocation during reconstruction, the device owner will be asked to remove the device at no cost to SHA.

10.06 OFFICE OF TRAFFIC & SAFETY PROJECT COORDINATION

- A) In addition to the requirements in this Section 10.06 – OFFICE OF TRAFFIC & SAFETY PROJECT COORDINATION, utility design and construction associated with Traffic Structures shall be performed in complete conformance with [CHAPTER 8 – PROJECT COORDINATION](#).
- B) Where the MDOT SHA plans to construct a new traffic structure, the design of the structure may be revised due to the most feasible location for power and/or communications service from the Utility Company existing facilities.
 - 1. Refer to [EmPOWER Maryland Database and Procedures Manual](#) for additional guidance.

10.07 TRAFFIC STRUCTURES REVIEW PROCESS**A) Submittals**

- 1. Requests for aerial installations near a traffic structure; underground installations near a traffic structure; and or an attachment to a traffic structure shall be submitted to the District Utility Engineer for transmittal to OOTS unless otherwise directed by the appropriate District Engineer or their approved designee.
- 2. Submittals for review and approval of traffic structure attachments must be made to the appropriate District Engineer (or approved designee) for transmittal to OOTS and include enough information to clearly illustrate how the utility is to be installed and show proposed distances from existing traffic structures.
- 3. Plans submitted to the MSHA shall be as follows:
 - a) All plans must be referenced to NAD 83/91 and NAVD 88.
 - b) Only preliminary plan submittals may be submitted as full sized hard copy plans.
 - c) All other plan submittals shall be quality full-sized plans to scale and shall include an electronic file with plans in 3D.dgn or MicroStation compatible format.
- 4. Submittals shall be considered incomplete until enough information is received to allow for a meaningful review.
- 5. Generalized, vague, or incomplete information will delay the review process and could potentially result in MDOT SHA's rejection of the request.

B) General Requirements

All submittals for review should, as a minimum, include the following:

- 1. State Route number and Milepost
- 2. Traffic Structure number (if applicable)
- 3. As-built traffic structure details
- 4. Cross sections and/or elevation views
- 5. Other pertinent information
- 6. Support for excavation details
- 7. Protection of existing equipment
- 8. Description of proposed utility facility (type of utility, size/dimensions/voltage, etc.)

- 9. Limit of Disturbance
- 10. North Arrow
- 11. Scale of Drawing
- 12. Supporting calculations

C) Submittals for Underground Installations Near Traffic Structures

In addition to general submittal information, utilities proposing underground installations near a traffic structure shall include the following documents with the review transmittal:

- 1. A plan and elevation profile of the proposed utility location with references identifying adjacent foundations by MSHA foundation name.
- 2. A location cross section showing the horizontal and vertical relationship between the proposed installation and any adjacent foundations or existing utilities.
- 3. Information regarding the proposed method of installation.
- 4. Any Datum equations used to compare utility elevations to TCD and ITS structure as-built elevations.
- 5. Supporting documentation verifying compliance with the requirements of [Section 10.04 - UNDERGROUND INSTALLATIONS NEAR TRAFFIC STRUCTURES](#).

D) Submittals for Aerial Installations Near Traffic Structures

In addition to general submittal information, utilities proposing aerial installations near a traffic structure shall include the following documents with the review transmittal:

- 1. A plan and elevation profile of the proposed utility location with references identifying adjacent traffic structures.
- 2. A location cross section showing the horizontal and vertical relationship between the proposed installation and any adjacent traffic structures or existing utilities.
- 3. Information regarding the proposed method of installation.
- 4. Any Datum equations used to compare utility elevations to traffic structures as-built elevations.
- 5. Supporting documentation verifying compliance with the requirements of [Section 10.03 – AERIAL INSTALLATIONS NEAR TRAFFIC STRUCTURES](#).
- 6. Documentation that the view or performance of traffic control devices and ITS equipment will not be obstructed.

E) Submittals for Attachments to Traffic Structures

- 1. The MDOT SHA will only accept requests made from the entity that owns and operates the non-MDOT SHA devices.
- 2. In addition to general submittal information, utilities proposing installations on a traffic structure shall include the following documents with the review transmittal:

- a) Location study report that will be used to justify the request
 - b) The specific location of each proposed or substantially revised device for installation or attachment
 - c) A statement of the purpose and technical specifications of the device and installation methods
3. The device owner shall submit request packages for review to the appropriate District Office for transmittal to Office of Traffic & Safety, Traffic Engineering Design Division and shall include, or conform to, the following items:
- a) All plans shall follow TEDD CADD Standards
 - b) Five paper copies of the plans
 - c) A plan which includes existing field measured lighting levels, if necessary
 - d) All associated electronic files
 - e) Estimated utility installation fee

10.08 OUT-OF-SERVICE & DEACTIVATED UTILITY FACILITIES; AND TERMINATION OF SERVICE TO MDOT SHA FACILITIES

- A) When a utility facility is no longer required on a structure, the Utility shall notify the appropriate District Engineer or their approved designee in accordance with [Section 6.14 - OUT-OF-SERVICE & DEACTIVATED UTILITIES](#), [Subsection C\) Placing Facilities Out-of-Service](#).
- B) At the discretion of the appropriate District Engineer or their approved designee, the MDOT SHA may:
 - 1. Approve the request to allow the utility facility out-of-service or deactivated left in place;
 - a) The Utility shall comply with [Section 6.14 - OUT-OF-SERVICE & DEACTIVATED UTILITIES](#), [Subsection D\) Out-of-Service and Deactivated Facilities Left In Place](#).
 - 2. Require the removal of out-of-service or deactivated utility facilities, including wiring, and restoration of the right-of-way.
 - a) The removal and restoration shall be accomplished within six (6) months unless the Utility and the MDOT SHA agree on a different mutually agreeable timeframe.
 - b) The Utility shall restore MDOT SHA's right-of-way in accordance with [Section 4.08 - RESTORATION](#).
 - c) MDOT SHA reserves the right to ask for a list of equipment to be removed.
 - d) The cost shall be the responsibility of the Utility Company.

CHAPTER 11

MAINTENANCE OF TRAFFIC

- 11.01 GENERAL**
 - 11.01.01 Traffic Signals, Signs and Pavement Markings**
- 11.02 GUIDANCE DOCUMENTS for MOT**
- 11.03 WORK ZONE TRAFFIC PLAN**
- 11.04 TRAFFIC MANAGER**
- 11.05 BICYCLIST & PEDESTRIAN TRAFFIC**
- 11.06 DEVICES**
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 - 11.07.01 Specific Signing Instructions**
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 - 11.08.01 Holidays**
- 11.09 LANE CLOSURES**
- 11.10 FLAGGING**
- 11.11 PAVEMENT EDGE DROP-OFF**

11.01 GENERAL

- A) This Chapter 11- Maintenance of Traffic (MOT) sets forth the requirements necessary for the safe and continuous traffic control throughout the area affected by the work, and is intended to minimize inconveniences to the traveling public, while providing for the safety of motorists, pedestrians, and workers.
- B) The Utility shall develop MOT based on MDOT SHA's [Work Zone Safety and Mobility Policy](#); and on any specific directions received from the appropriate District Engineer or their approved designee.
- C) When developing the MOT for any work to be performed within MDOT SHA rights-of-ways, the Utility shall use the roadway type that best fits the descriptions contained in Standard No. MD 104.01-01 of the [Book of Standards for Highway & Incidental Structures](#).
 - 1. The MDOT SHA shall review and approve all changes, modifications or alterations to the Utility's MOT.
 - 2. The MDOT SHA may modify and/or expand the Utility's MOT if in the opinion of the appropriate District Utility Engineer or Permit Inspector; the Utility's operations are a detriment to the safe and efficient flow of traffic, bicyclists, or pedestrians.
 - 3. In the event that the MDOT SHA is required to provide traffic control due to the Utility's failing to maintain a safe work zone, all costs and applicable overheads shall be billed directly to the Utility.
 - a) In the event that a 3rd party caused a situation or emergency which required the MDOT SHA and/or the Permittee to provide traffic control, all costs and applicable overhead shall be billed directly to the 3rd party that caused the situation or emergency.
- D) All applicable Maintenance of Traffic equipment shall conform to [NCHRP Report 350](#) criteria for test Level 3.
- E) When no longer needed, all items used for temporary MOT shall be removed from the project site.
- F) Traffic Control signs or devices identified as unsatisfactory by the District Utility Engineer or his representative shall be replaced immediately.
- G) The use of emergency crossovers is strictly prohibited.
- H) Precautions shall be taken, particularly in freezing temperatures, to keep water off travel lanes.
- I) Vehicular access to private and public driveways, entrances and roadways is to be maintained at all times.
- J) Access to fire hydrants, firehouses, hospitals and mailboxes is to be maintained at all times.

11.01.01 Traffic Signals, Signs and Pavement Markings

- A) The Utility shall exercise extreme caution when in the vicinity of signalized intersections so as to protect and maintain all traffic signal poles, wires, conduits and equipment associated with traffic signalization in good working order.

- B) Traffic signs are not to be removed or relocated without permission of the District Utility Engineer.

C) Pavement Markings

1. The utility shall inventory existing pavement markings in the work area prior to application.
2. All pavement markings and symbols shall be completely replaced immediately upon the completion of milling or resurfacing, prior to the reopening to traffic.
3. Pavement marking material shall be submitted to MDOT SHA for approval prior to application.

11.02 GUIDANCE DOCUMENTS for MOT

- A) MOT shall be in complete conformance with specifications, standards, provisions and policies of [Section 1.08 - GENERAL GUIDANCE DOCUMENTS](#).
- B) In addition to the documents referenced in the previous paragraph, design and construction associated with Work Zone Traffic Control shall be performed in complete conformance with, and particular attention to, the following MDOT SHA publications:

- [Work Zone Safety and Mobility Policy](#)
- [High Visibility Apparel Policy](#)
- [Maryland Manual on Uniform Traffic Control Devices \(MdMUTCD\)](#)
- [Traffic Control Devices Design Manual](#)
- [Lane Closure Analysis's Guidelines](#)
- [Maryland Standard Sign Book](#)
- [Book of Standards for Highway & Incidental Structures](#)
- [Standard Specifications For Construction And Materials](#)
- [Supplemental Specifications and Provisions](#)
- [SHA's Accessibility Policy & Guidelines for Pedestrian Facilities along State Highways](#)
- [SHA Bicycle and Pedestrian Design Guidelines](#)

Note: Copies of the above mentioned publications can be obtained from the Maryland State Highway Administration's website: <http://www.marylandroads.com/> in the drop down menu: Business Center > Business Standards and Specifications

- C) Whenever MDOT SHA's [Standard Specifications For Construction And Materials](#) is referred to in this Chapter or this Utility Manual, the latest version of the [Supplemental Specifications and Provisions](#) shall be reviewed to ensure the most current specification is used.

11.03 WORK ZONE TRAFFIC CONTROL PLAN

- A) An approved WZTC Plan is required for all work performed within MDOT SHA right-of-way.
- B) The Utility is responsible to submit a carefully designed Work Zone Traffic Control (WZTC) Plan to the appropriate District Engineer or their approved designee for any relocation or permit work affecting a highway.
- 1) The WZTC plan shall be in complete accordance with the documents in [Section 11.02 – GUIDANCE DOCUMENTS for MOT](#) and any specific directions received from the appropriate District Engineer or their approved designee.

- 2) The WZTC plan shall address vehicular, bicycle and pedestrian traffic on or along any transportation facility in accordance with MDOT SHA's [Work Zone Safety and Mobility Policy](#); and on any specific directions received from the appropriate District Engineer or their approved designee.
- 3) The WZTC Plan should indicate the time during which work is to be done as well as the proposed placement of signs and layout of traffic control devices.
- 4) The MDOT SHA may modify and/or expand the Utility's WZTC Plan.
- C) When speed of traffic is noted, this means the posted speed or prevailing travel speed; whichever is higher, unless otherwise specified.
- D) All changes, modifications or alterations to the approved WZTC Plan shall be submitted in writing to the District Utility Engineer in advance for review and approval.

11.04 TRAFFIC MANAGER

- A) A certified Traffic Manager shall be specifically designated for each permit application or Project within MDOT SHA rights-of-ways. This identification shall include a 24-hour contact telephone number. The Traffic Manager will be responsible for ensuring the proper implementation and maintenance of the WZTC Plan as well as conducting regular day and night inspections of the traffic control devices and overall traffic operations.
- B) Utility Personnel may obtain an approved Traffic Manager certification from Maryland Transportation Builders and Materials Association (MTBMA). Information on Traffic Manager certification can be obtained from MTBMA's website at <http://www.mtbma.org/>

11.05 BICYCLIST & PEDESTRIAN TRAFFIC

- A) Maryland public policy states that best engineering practices regarding the needs of bicyclists and pedestrians shall be employed in all phases of transportation planning, including highway design, construction, reconstruction, and repair as well as expansion and improvement of other transportation facilities.
- B) In an effort to maintain accessibility for both bicyclists and pedestrians, the MDOT SHA has developed guidelines for providing space for cyclists and pedestrians through work zones. This is especially important where the adjacent land use supports bicycling and walking such as residential, commercial, education, and employment centers as well as transit stations. Closing or detouring a roadway for construction impacts more bicyclists and pedestrians in urban areas; however there are typically more options available in these areas to provide alternate routes. In rural areas there may not be a large population of bicyclists or pedestrians, however, because of the open space and separation between communities, closing or detouring a roadway may increase a person's route significantly. Consequently, all permits and projects should be reviewed and evaluated on a case-by-case basis to determine what impact construction might have on bicycle and pedestrian access.
- C) The Utility shall provide for bicycle and pedestrian access through work zones for all permits and projects where applicable and to the maximum extent feasible.
 - 1. Provisions for bicycle and pedestrian access shall be clearly shown on the WZTC plan.
 - 2. Refer to the documents identified in [Section 11.02 – GUIDANCE DOCUMENTS for MOT](#) for additional information and guidance.

- D) The Utility shall submit plans for all proposed road closings or detours to MDOT SHA's Bicycle and Pedestrian Coordinator for review and comment.

11.06 DEVICES

- A) All traffic control devices shall comply with performance criteria published in the National Cooperative Highway Research Program (NCHRP) Report 350, "[Recommended Procedures for the Safety Performance Evaluation of Highway Features](http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_350-a.pdf)." Which can be found at http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_350-a.pdf.
- B) Channelizing devices shall have at least 80 percent of the reflectivity over 90 percent of the reflectorized surface as specified in Section 950.03 of the [Standard Specifications For Construction And Materials](#).
- C) At least 90 percent of all reflective barrier markers, warning lights, and raised pavement markers shall be operational at any given time.
 - 1. The Utility shall correct deficiencies within 24 hours after notification.
- D) High performance wide-angle retro-reflective sheeting for signs, fluorescent orange in color, shall be used on projects along interstate highways and other freeways, unless otherwise specified.
- E) Type VI (vinyl microprismatic) retro-reflective sheeting conforming to [ASTM D 4956](#) is acceptable for use on roll up signs and channelizing devices.

11.07 SIGNS

- A) Upon initial installation, temporary traffic control signs shall have at least 70 percent of the reflectivity over 90 percent of the reflectorized surface as specified in Section 950.03 of the [Standard Specifications For Construction And Materials](#).
- B) The Utility shall replace damaged traffic control signs within four hours of notification and take necessary corrective action, as approved, to adequately warn and protect the public until the signs are replaced.
- C) When temporary traffic control signs are not indicative of actual conditions (e.g. temporary shut downs, overnight, or other periods when work is not being performed) the signs shall be removed, turned away from traffic, or completely covered.
- D) Sign details are available from MDOT SHA's Office of Traffic & Safety, Traffic Engineering Design Division.

11.07.01 Specific Signing Instructions

- A) **Signing: Steel Plates**
 - 1. "STEEL PLATE" warning signs, W8-8(4), shall be 48" x 48" and shall conform to [MdMUTCD](#) and [Maryland Standard Sign Book](#).
 - 2. When steel plates are used to bridge open cut excavations within MDOT SHA pavement areas, signs shall be placed approximately 500 feet in advance of the steel plates.
 - 3. Location and spacing of these signs will depend on field conditions and is subject to approval by the MDOT SHA's Permit Inspector.

4. The identification of the Utility Company, contact individual and 24-hour telephone number shall be clearly marked on the rear face of the “STEEL PLATES” warning sign.
5. In addition, from October through April, steel plates shall be identified by the placement of a grade stake located at the pavement edge immediately adjacent to the steel plates for identification during snow events. The stake is to be at least three feet high, painted international orange and shall be visible to the traveling public.

B) Utility Identification Signs

1. The Utility is required to provide or install signs identifying their organization and telephone number. Signs shall provide all of the following information:
 - a) the name of the owner of the utility
 - b) the name of the contractor that is performing the work
 - c) a 24-hour telephone number for the contractor
 - d) Overall dimensions may be modified to fit the name of the Utility with approval of the appropriate District Engineer or their approved designee.
 - e) The number and spacing of these identifying signs shall be subject to the approval of the MDOT SHA District Utility Engineer.
2. MDOT SHA facilities will not be used to provide or install the signs or their supports. Identifying signs shall be erected immediately before the start of the Utility’s work operations and must be removed immediately upon completion of permanent construction and restoration.

11.08 WORKING HOURS

- A) Work is permitted Monday through Friday only. Working hours for roadway and shoulder closures are typically restricted to between 9:00 AM and 3:00 PM and 9:00 PM and 5:00 AM. Work not adjacent to travel lanes is permitted between 7:00 AM and 7:00 PM.
 1. Exceptions to these hours may be specified in the individual permit.
 2. All requests for additional special exceptions shall be provided in writing to the Office of the District Utility Engineer.
- B) Night work is prohibited in residential areas.
- C) Work may also be restricted for special events occurring along specific routes. Information regarding specific special event restrictions can be obtained from the Office of the District Utility Engineer prior to any special event.
 1. Additional work restrictions, if any, will be noted in the individual Work Order Utility Permit.
- D) Any deviation from the approved traffic control standard for the Individual Work Order Utility Permit, such as when construction plans are revised, or differing site conditions encountered, shall be approved by the MDOT SHA Permit Inspector prior to the commencement of work.
- E) The MDOT SHA reserves the right to modify and/or restrict working hours, or deny permission to work within MDOT SHA rights-of-way at any time if, in the opinion of the Engineer or Inspector, the Contractor's operations are a detriment to the safe and efficient flow of traffic.

11.08.01 Holidays

- A) No work is allowed on the day(s) of major holidays or holiday weekends, or days preceding and following said holiday(s) or holiday weekends. Holiday restrictions may vary by location. Information regarding specific holiday restrictions can be obtained from the Office of the District Utility Engineer prior to each holiday. The National holidays mentioned are listed as follows: (These may or may not be the same as the State holiday).

NATIONAL HOLIDAYS:

New Year's Day, January 1
 Martin Luther King's Birthday, the third Monday in January
 President's Day, the third Monday in February
 Memorial Day, the last Monday in May
 Independence Day, July 4
 Labor Day, the first Monday in September
 Columbus Day, the second Monday in October
 Veteran's Day, November 11
 Thanksgiving Day, the fourth Thursday in November
 Christmas Day, December 25

11.09 LANE CLOSINGS

- A) The MDOT SHA is committed to the continuous movement of traffic through all work zones by the elimination or reduction of delays. To minimize the severity and duration of mobility impacts on the traveling public resulting from the work zone, all roadwork projects shall be adequately evaluated and analyzed. Planned lane closures that do not cause traffic flow bottlenecks and result in only minor levels of congestion are an effective traffic management strategy.
- B) Compliance with these requirements will likely benefit the traveling public and the Utility by reducing work zone crashes and delays.
- C) The Utility shall apply for and obtain a Traffic Control Permit from the appropriate District Office prior to closing any lanes.
1. Any modifications to the mandatory conditions contained in the guidelines require approval by the appropriate District Engineer or their approved designee.
- D) The appropriate District Engineer or their approved designee will approve the time schedules and numbers of lanes involved for lane closings.
1. Full or temporary roadway closures for non-emergency situations are not permitted without prior approval of the District Utility Engineer.
- E) All lane closures will be during off peak hours.
- F) Flashing arrow panels, as early warning devices, shall be used whenever a lane is closed unless considered unnecessary by the appropriate District Engineer or their approved designee.
- G) The Utility shall provide a minimum of two Portable Variable Message Signs (PVMS) for any temporary roadway detour or roadway closure.
1. Sign messages shall be approved by the District Utility Engineer prior to display.
- H) Under certain circumstances, a Portable Variable Message Signs (PVMS) may be required.

1. The corresponding job-specific permit will provide details about what message shall be displayed, how much advance notice shall be given, etc.
- I) Travel lanes and shoulders shall be restored immediately in the event of the following:
 1. Precipitation - Lane and shoulder closures on wet roadways are strictly prohibited.
 2. Accident or emergency within or adjacent to the work area.
 3. Specific direction of any representative of the MDOT SHA.
- J) The Utility is responsible to coordinate all lane closure activities with adjacent contractors.
- K) When a lane, ramp or shoulder closure is in effect, work shall begin within one hour after the lane is closed.
- L) Once work is completed, travel lanes and shoulders are to be restored immediately.
- M) The Utility is responsible for coordinating Maryland State Police assistance for any temporary roadway closure.
 1. No temporary roadway closure can exceed 15 minutes in duration.
- N) Delay to motorists traveling through work zone lane, ramp or shoulder closures shall not exceed the thresholds in accordance with MDOT SHA's [Lane Closure Analysis's Guidelines](#).
- O) No travel lane shall be reduced to less than ten (10) feet in width at any time.
- P) Prior to reopening, all travel lanes and shoulders shall be completely cleared of all materials, equipment and debris.

11.10 FLAGGING

- A) All flagging operations are to be performed by individuals who have successfully completed MDOT SHA's Approved Flagger training course.
 1. Utility Personnel may obtain an approved Flagger certification from the American Traffic Safety Services Association (ATSSA). Information on Flagger certification can be obtained from ATSSA's website at <http://www.atssa.com/>
- B) Each flagger is to have in their possession an approved SHA flagger training card at all times.
- C) Flagging is to be conducted utilizing stop/slow paddles in complete accordance with Part VI Section 6F of the current edition of the [MdMUTCD](#).
- D) Flaggers are to be appropriately attired at all times.
- E) Flaggers shall wear a reflective vest, meeting the requirements of MDOT SHA's [High Visibility Apparel Policy](#), at all times while flagging.

11.11 PAVEMENT EDGE DROP-OFF

- A) All MOT which includes pavement drop-offs shall be in compliance with this CHAPTER 11 - MAINTENANCE OF TRAFFIC and the Complete Authorized Utility Permit.
- B) During construction and maintenance activities involving pavement surfacing and resurfacing work, including shoulders, it often becomes necessary to maintain traffic along side or near lanes and shoulders having different elevations (drop-offs). Special traffic control devices are needed to safely protect and guide traffic through such areas. The following are the traffic control requirements for pavement drop-off situations:

C) Pavement Edge Drop-offs of 2 ½ Inches or Less

1. Pavement edge drop-offs of 2 ½ inches or less shall be in compliance with [Book of Standards for Highway & Incidental Structures](#), Standard Nos. MD 104.06-15 or MD 104.06-16 as appropriate.
2. Adjacent pavement elevation differences, drop-offs, of 2 ½ inches or less may be freely crossed by traffic.
3. Uneven joints where traffic can be anticipated to cross are to be tapered with a minimum of two feet of a bituminous concrete product for the entire width of the travel lane crossing.
4. Temporary transverse tie-in transitions during the paving operation shall be in accordance with [Standard Specifications For Construction And Materials](#) Section 504.03.09 - Tie-In. The transverse tie-in shall be completed prior to traffic being allowed on the pavement.

D) Pavement Edge Drop-offs of Greater Than 2 ½ inches But Equal to or Less Than 5 inches

1. Pavement edge drop-offs greater than 2 ½ inches shall be in compliance with [Book of Standards for Highway & Incidental Structures](#), Standard No. MD 104.06-17.
2. Adjacent pavement elevation differences, drop-offs exceeding 2 ½ inches shall be paved to match with the abutting lanes or shoulders on the same working day in accordance with [Standard Specifications For Construction And Materials](#) Section 504.03.08 - Edge Drop-off. As a result of this, the complete pavement section including shoulders shall be at the same elevation at the end of each working day.
3. Drop-offs between lane and shoulder or shoulder and earth grading, exceeding 2½ inches, but equal to or less than 5 inches shall be provided with an abutting wedge with a slope of 4:1 or flatter at all times while no work is being performed. See [Book of Standards for Highway & Incidental Structures](#), Standard No. MD 104.01-28 for wedge detail.
4. Temporary transverse tie-in transitions during the paving operation shall be in accordance with [Standard Specifications For Construction And Materials](#) Section 504.03.09 - Tie-In. The transverse tie-in shall be completed prior to traffic being allowed on the pavement.

E) Pavement Edge Drop-offs Greater Than 5 Inches

1. Pavement edge drop-offs exceeding 5 inches which are next to or within 12 feet of a lane of traffic shall be provided with a temporary concrete barrier or other suitable barrier as approved by the MDOT SHA, to preclude crossing the drop-off throughout its entire length.
 - a) Pavement edge drop-offs exceeding 5 inches which are next to or within 12 feet of a lane of traffic shall be in compliance with [Book of Standards for Highway & Incidental Structures](#), Standard No. MD 104.06-18.
2. Pavement edge drop-offs exceeding 5 inches which are greater than 12 feet away from traffic (and not protected with an approved barrier) shall be provided with an abutting wedge with a slope of 4:1 or flatter at all times while no work is being performed.
 - a) Pavement drop-offs exceeding 5 inches which are greater than 12 feet away from traffic (and not protected with an approved barrier) shall be in compliance with [Book of Standards for Highway & Incidental Structures](#), Standard No. MD 104.06-19.

APPENDIX

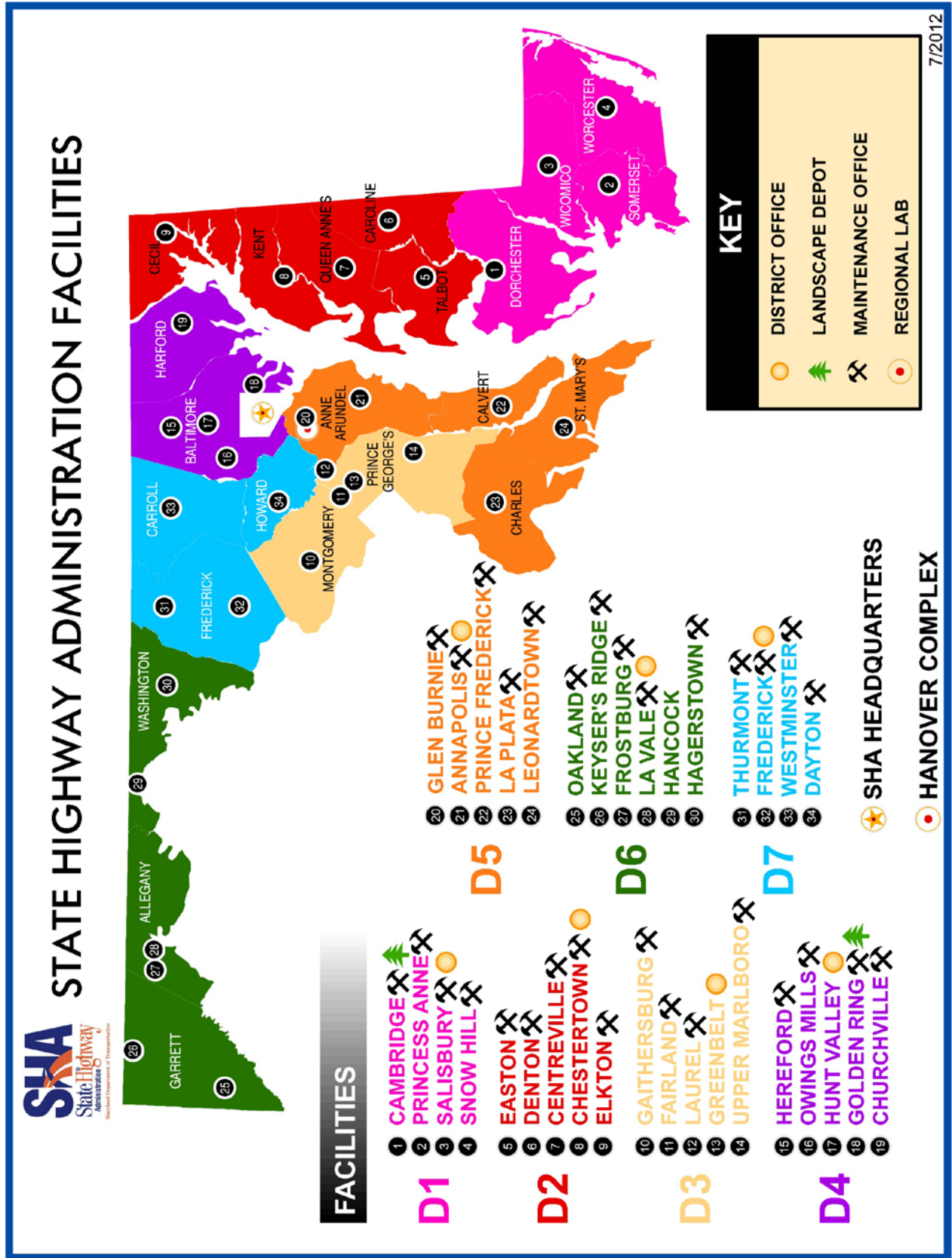
ENGINEERING DISTRICTS MAP

DISTRICT OFFICE CONTACT INFORMATION

UTILITY EMERGENCY INFORMATION CHECKLIST

UTILITY TABULATION (RW-57) FORM

FUNDING CATEGORIES & UTILITY COORDINATION



DISTRICT OFFICE CONTACT INFORMATION

MARYLAND STATE HIGHWAY ADMINISTRATION, [DISTRICT #1](#)
660 West Road
Salisbury, MD 21802
Phone: 410-677-4000 or 800-825-4742
FAX: 410-543-6598

MARYLAND STATE HIGHWAY ADMINISTRATION, [DISTRICT #2](#)
615 Morgnec Road
Chestertown MD 21620
Phone: 410-778-3061 or 800-637-9740
FAX: 410-778-0851

MARYLAND STATE HIGHWAY ADMINISTRATION, [DISTRICT #3](#)
9300 Kenilworth Avenue
Greenbelt, MD 20770
Phone: 301-513-7300 or 800-749-0737
FAX: 301-513-7415

MARYLAND STATE HIGHWAY ADMINISTRATION, [DISTRICT #4](#)
320 West Warren Road
Hunt Valley MD 21030
Phone: 410-229-2300 or 1-866-998-0367
FAX: 410-527-4690

MARYLAND STATE HIGHWAY ADMINISTRATION, [DISTRICT #5](#)
138 Defense Highway
Annapolis, MD. 21401
Phone: 410-841-1000 or 410-841-5450 or 800-331-5603
FAX number: 410-841-5309

MARYLAND STATE HIGHWAY ADMINISTRATION, [DISTRICT #6](#)
1251 Vocke Road
LaVale, MD 21502
Phone: 301-729-8400 or 800-760-7138
Fax: 301-729-6968

MARYLAND STATE HIGHWAY ADMINISTRATION, [DISTRICT #7](#)
5111 Buckeystown Pike
Frederick, Maryland 21704
Phone: (301) 624-8100 or 800-635-5119
FAX: (301) 624-8225

UTILITY EMERGENCY INFORMATION CHECKLIST

Company Name: _____ Phone #: _____

Contact Person: _____ E-mail: _____

County: _____ Route Number: _____

Location: _____

Emergency Description: _____

Are there any injured at the location? _____

Is there anything that might be hazardous to 1st responders at the location? (Energized down lines, Explosive gas, etc.)

Provide details for any additions or exclusions on the back of this checklist.

Underground Services (Pipelines, Conduits, Power, Cables or Other Facilities)

What type of facility (Water/Sewer/Gas/Power/Cable): _____ What size is the facility (Inches): _____

When was the problem first noticed: _____ Is it a main or service line: _____

Type of material the facility is made of: _____ How deep is the facility (Feet): _____

Are any travel lanes going to be shut down: _____ If so how many: _____

Will the pavement be cut: If so how big of an opening (Area): _____

Pressure (PSI): _____ Does it involve a MDOT SHA Structure (Bridge, Wall or Sign Structure):

Above Ground Services (Poles, Hydrants, Cabinets or Other Facilities)

Reason for replacement (Wind Damage, Hit by Vehicle, other): _____

Description of facility: _____ Height of facility (Feet): _____

Will the facility be replaced at the same location: _____ If yes, consider an improvement to clear zone to prevent future damages to facility.

Will the facility be replaced closer to the roadway: _____ If so, distance from E.O.P. (Feet): _____

Are any travel lanes going to be shut down: _____ If so how many: _____

Will any transfers be needed by other attendees: _____ If so, who: _____

S.H.A. 63.39-57 11/16/16

STATE HIGHWAY ADMINISTRATION
 OFFICE OF REAL ESTATE
 PUBLIC UTILITY SECTION
 707 N. CALVERT STREET
 BALTIMORE, MARYLAND 21202

UTILITY TABULATION FORM

NAME OF UTILITY _____ CONTRACT NUMBER _____
 ADDRESS _____ FILE NUMBER _____

Prepared By: _____ Checked By: (MDOT SHA) _____ (Utility)

FACILITY DESCRIPTION POLE #	DISTANCE L--LEFT R--RIGHT	STATION	DATE OF GRANT TO UTILITY	UTILITY TITLE ACQUIRED FROM	TITLE REFERENCE	→	LOCATION			SHA RESPON- SIBILITY	REMARKS
							In	On	Out		
						→					
						A					
						D					
						J					
						U					
						S					
						T					
						M					
						E					
						N					
						T					
						S					
						E					
						C					
						T					
						I					
						O					
						N					
						O					
						N					
						L					
						Y					
						→					
						→					

Funding Categories & Utility Coordination

Major Projects Funding Categories:

<u>Fund</u>	<u>Title</u>	<u>Description</u>	<u>Utility Coordination</u>
70	Primary	New construction or major reconstruction on primary roads.	Generally moderate to major utility impacts.
71	Secondary	New construction or major reconstruction on non-primary roads.	Generally moderate to major utility impacts.
72	Interstate	New construction or major reconstruction on interstate system highways.	Generally minimal to moderate utility impacts unless at interchanges with primary or secondary roads.

System Preservation/Other Funding Categories:

<u>Fund</u>	<u>Title</u>	<u>Description</u>	<u>Utility Coordination</u>
24	Environmental Preservation	Landscaping, wildflower seeding, reforestation and rest areas.	Generally minimal utility impacts.
25	Transportation Enhancements	Includes urban greenways, rail-trail conversions, preservation of certain historic sites, landscaping and pedestrian/bicycle improvements.	Generally minimal to moderate utility impacts usually with pole relocations.
26	Sound Barriers	Retrofit sound barriers along existing highways, barrier rehabilitation and noise berms.	Generally minimal to moderate utility impacts usually with utility crossings.
29	Facilities & Equipment	Construction and repair of buildings, building improvements, etc.	Generally minimal to moderate utility impacts usually with utility services.
33	ADA Retrofit	Sidewalks, crosswalks, ramp retrofit to address compliance and avoid sanctions.	Generally minimal to moderate utility impacts usually with pole relocations.
74	Drainage	This fund consists of improvements to areas of recurring flood damage or road closures.	Generally minimal to moderate utility impacts.
76	Safety & Spot Improvements	Includes safety improvements at high accident locations, intersection capacity improvements, slide repairs, roundabouts, ramp modifications and R/R crossings.	Generally moderate to major utility impacts depending on location.
77	Resurfacing & Rehabilitation	Resurfacing, including concrete patching, joint sealing and pavement markings.	Generally minimal utility impacts usually with surface structures. Should coordinate with Utilities if facilities need replacement before paving.

Funding Categories & Utility Coordination

79	Sidewalks	Includes the construction of retrofit sidewalks along state highways and the reconstruction/replacement of existing sidewalks if part of a revitalization effort in an officially designated urban revitalization area.	Generally minimal utility impacts usually with pole relocations or surface structures.
80	Bridge Replacement & Rehabilitation	Includes bridge replacements, deck replacements, major rehabilitations, deck overlays, parapet modifications, bridge repainting/spot painting and all structure condition inspections.	Usually no utility impacts for painting, overlays, or parapet type of projects. Rehabilitation or replacement projects will have moderate to major utility impacts.
82	TMDL Compliance	Plan, design, and construct stormwater controls and alternative water quality improvement strategies in Maryland Phase I and Phase II Counties in order to meet the US EPA's Chesapeake Bay TMDL requirements by the year 2020.	Generally, no utility impacts unless with underground utilities.
83	Urban Street Reconstruction	Rehabilitation through urban areas including pavement and drainage reconstruction. Projects may include local participation for sidewalks, street furniture, landscaping and other urban amenity.	Major aerial and underground utility impacts. Significant coordination required.
84	Community Safety & Enhancements	This fund consists of improvements where the emphasis is on enhancing the existing infrastructure to promote economic revitalization such as resurfacing, reconstructing drainage, curb and gutter, landscaping, signing, parking bays and lighting.	Major aerial and underground utility impacts. Significant coordination required.