

ACCOUNTABILITY

COMMUNICATION

COORDINATION and

COOPERATION

**REPORT OF THE UTILITY
RELOCATION TASK FORCE**

July 1, 2004

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INTRODUCTION

When highway improvements and utility relocation are not well coordinated, the public, utilities and highway contractors suffer delays and extra expense. Each year, many state and local highway improvement projects require the relocation of utility facilities. Within the limits of these highway projects lies a complex network of utility lines, including electric, telephone, cable TV, telecommunications, fiber optics, natural gas, water, sanitary and storm sewers. Finding practical solutions for the design and construction of new and expanded highways while minimizing the impact to this utility network is very challenging.

Issues regarding the location, coordination and relocation of utility facilities are a growing concern among public agencies, utility owners, construction contractors and designers. Improved coordination among these four entities is needed to reduce project delays, conflicts, safety risks, traffic congestion and added inconvenience and expense to taxpayers, motorists, contractors, utility companies and adjacent property owners.

These partners in the highway improvement process in the State of Indiana – working together as the Utility Relocation Task Force – have developed this report to identify the problem areas and offer recommendations to improve the current highway improvement process for those projects where utility facilities need to be relocated. The goal is to minimize and eventually eliminate delays and to reduce costs associated with highway improvement projects.

Under Indiana law, utility companies may place their facilities on the public highway right-of-way at no cost, provided those facilities do not interfere with the construction, maintenance or safe operation of the roadway. If relocation of those facilities is necessary to accommodate highway improvements, the facilities are normally moved at the utility company's expense. On the other hand, the relocation of utility facilities from land on which they have an easement or other property interest is paid for by the highway agency when this land is needed for a highway improvement.

The highway/utility relationship has existed for much of the past century. Both parties serve a public interest and find it makes sense to cooperate with one another in accommodating utility facilities within the public right-of-way. However, even with this long history and good intentions on both parts, utility companies and highway agencies do not always agree on their respective rights and responsibilities.

A proliferation of new and competing utilities in congested urban highway corridors, plus an increasing emphasis on the part of both utilities and governments to keep project budgets and staff expenses under tighter control adds further complications. In this environment, it is not entirely surprising that there are an increasing number of conflicts on highway improvement projects where utility facilities need to be relocated. Accommodating utility facilities within the right-of-way has never been a more complex task than presently exists. This Task Force seeks to clarify and redefine the relationship to the mutual benefit of both highway and utility interests, and ultimately to

better serve the public, many of whom are users of both the highway and utility services.

In the not too distant past, the utility coordination challenges of a highway improvement project were much simpler because emphasis was on the construction of new highways rather than the reconstruction or expansion of existing roads where the right-of-way adjoining the pavement serves as home for a host of above- and below-ground utility services. The number of utilities using the right-of-way has also grown as a result of an ever-growing population, growth of suburban communities, demand for additional services and developments in technology. For example, 33 million miles of fiber cable were installed in the United States in the year 2000 alone.¹

The current focus on improving and expanding existing highways also means inconvenience and delay for motorists, which, in turn, brings pressure to hasten construction. This environment, therefore, magnifies the impact of any delays when utility facilities need to be relocated.

Competitive pressures, shifts in utility company ownership from locally-based to out-of-state, and reductions in government and utility company staffs due to budgetary constraints have also contributed to the problems by reducing the staff resources available to address utility relocation issues. Frequent personnel changes, as a result of these factors, have further compounded these issues. All of these ingredients have made it more difficult to maintain communications as construction projects advance through the development process.

Issues arising from highway improvement projects involving the relocation of utility facilities are not unique to Indiana. A June 1999 report by the U.S. General Accounting Office found that about half of all federal-aid highway and bridge projects involved the relocation of utility facilities.² A study done by Penn State University for the American Association of State Highway and Transportation Officials (AASHTO) Highway Subcommittee on Construction found that highway improvement projects are more likely to be delayed or cost more than planned when utility facilities need to be relocated.³ Improved coordination, cooperation and communication among public agencies, utility owners, construction contractors and designers are needed to help minimize these delays and additional costs.

All these conditions, plus some highly-publicized events (delays on a very visible project in northwestern Marion County, a gas-line explosion related to road construction in Lafayette and an Indiana Court of Appeals decision regarding damages for delay) and concerns raised by some state legislators brought a diverse group together to form a task force in late 2002. Participants in the Utility Relocation Task Force included representatives from the Indiana Department of Transportation (INDOT), utility company representatives, highway contractors (represented through Indiana Constructors, Inc.), design consultants (represented through the American Council of Engineering Companies of Indiana), and the Federal Highway Administration. (Members of this Task Force are listed on pages three and four.) This joint effort has focused on

identifying problem areas and recommending changes to the current highway improvement process for those projects where utility facilities may need to be relocated. Part of these changes would be to establish accountability standards for all parties.

To foster a common understanding of the purpose for the Utility Relocation Task Force, a problem statement was first developed by the Task Force members as follows:

Delays in completing highway improvement projects due to utility relocation issues and conflicts create safety risks and traffic congestion, and add inconvenience and expense to taxpayers, motorists, contractors, utilities and adjacent property owners.

The Task Force members also agreed to the following mission statement:

To minimize and eventually eliminate delays in completion of highway improvement projects involving utility relocations and minimize unnecessary expense for contractors, utilities and public owners. Until this is attained, work with INDOT (and other public owners) to assure that contractors are fairly compensated for any delays that do occur and are not the contractor's fault.

Initial meetings of the Task Force focused on a thorough review of current procedures used by each partner and a discussion of how those procedures impacted other partners. Evident early in the discussion was that the partners were not fully aware of the processes each other used to address conflicts between existing utility facilities and highway construction plans.

Once the processes were discussed and analyzed, each group identified what it considered to be the key issues. Agreement was then reached on a list of problem areas that needed to be addressed. Those problem areas were grouped into three categories:

- Design/Planning/Project Management
- Right-of-Way Management/Acquisition
- Scheduling/Construction

Subcommittees were then formed to further discuss and analyze the issues in each category and subsequently to offer recommended solutions. This paper is a compilation of that effort.

A highway improvement project typically involves four key stages: (1) planning, (2) design, (3) right-of-way procurement and (4) construction. This paper offers solutions to address shortcomings identified by the Task Force in all four areas. Improved awareness and better communication, coordination and cooperation will suffice to implement some of the Task Force recommendations. Others will require a re-engineering of the procedures that are currently being used for these projects. The remaining recommendations may require policy changes or rules promulgated by

INDOT. The latter may especially be true for those recommendations pertaining to accountability and right-of-way acquisition that could have the greatest sustained impact on minimizing or eliminating issues which often plague highway improvement projects when utility facilities need to be relocated.

The recommendations offered in this report are viewed by the Task Force as a starting point for public discussion. While some of these ideas are sufficiently developed for implementation, further study is needed before others can be achieved. As the next step in this process, the Task Force will develop an implementation plan in which these ideas will be refined and developed in greater detail. That plan will also identify the persons or organizations that have the authority to implement the necessary changes. In order to solicit additional ideas and build support for these recommendations, the implementation plan will provide for educating a broader group of people who are impacted by issues regarding highway improvement projects where utility facilities must be relocated. Work on a communications plan has already begun.

While additional work is needed to finalize many of these ideas, **the problem areas detailed in this report are real and, absent any changes in procedures, likely to get worse. Thus there is a sense of urgency that a plan be finalized swiftly so improvements can be implemented as soon as possible.**

While the problem areas addressed in this report impact a wide range of public works improvements, the Task Force focused its efforts on the largest public works agency in the state – the Indiana Department of Transportation. The Task Force hopes that other government agencies in the State of Indiana will recognize the benefits of these recommendations and choose to take similar steps on their public improvement projects.

The recommendations included in this report would, if implemented, affect all INDOT-administered highway projects. These would include projects on state highways, work INDOT performs for other state agencies (such as road improvement projects in state parks for the Indiana Department of Natural Resources) and local road projects partly funded by federal highway dollars – commonly referred to as Local Public Agency (LPA) projects – that are administered by INDOT.

The terms highway, street, road and roadway are used interchangeably in this report. The term utility facility is used in a broad sense to refer to any transmission lines, pipes and other forms of physical equipment that are located in the road right-of-way to move utility services to or from a customer. This includes facilities operated by regulated utilities – gas, electric, telephone and water – as well as facilities of non-regulated entities such as sewers, oil pipelines, cable TV and fiber cable. Both underground and aboveground utility facilities are included. The operator of a utility facility is normally referred to as the utility company or utility owner. The term utility or utilities is sometimes used to refer to both the facilities and the companies that own and operate the facilities.

The groups involved in the Task Force recognize that the most important stakeholders were not directly involved in this process. These are the motorists, adjoining property owners and taxpayers who suffer when there are delays or added costs in completion of a road improvement project. Travel delays, inconvenience, loss of business and utility service interruptions are some of the problems they face. A key objective of the Task Force's recommendations is to minimize the total time and cost – both direct and indirect – for all stakeholders. While the time and costs of relocating utility facilities for a highway improvement project are important to INDOT (and other public owners), designers, construction contractors and utility companies, these delays and costs are ultimately borne by the general public. Completing highway improvement projects with the least amount of time and expense will best serve the citizens and communities of our state.

This report addresses 11 distinct – yet interrelated – issues. This document should be considered in its entirety. While improvements in one area might be helpful to the highway improvement process, significant improvement can result only if steps are taken to address each of the 11 areas of concern.

Issue 1: IDENTIFY WAYS TO MAKE EACH PARTY ACCOUNTABLE FOR THOSE MATTERS UNDER ITS CONTROL

While the several parties – utility, designer, INDOT, contractor – involved in a highway construction project are dependent on one another for coordination, cooperation and communication, there is no adequate mechanism to hold an entity accountable for failing to fulfill its responsibilities. In some cases, the responsibilities are not even clearly stated. Highway contractors believe that they unfairly shoulder much of the responsibility and costs for delays on projects where utility facilities need to be relocated. INDOT specifications allow contractors extra time for such delays but deny contractors any additional payment for extra costs incurred. INDOT and contractors may request utility companies to provide relocation plans and move facilities in a timely manner but, currently, there is no effective means to make a utility company accountable if the work is not completed in a timely manner.

INDOT sometimes experiences difficulty obtaining relocation plans from utility companies in time for inclusion in the highway contract documents. Utility relocation plans at times are received during or after the contract-bidding phase for a highway project.

Accountability is by no means a one-way street. Actions by INDOT and the contractor can and do impact the ability of a utility company to timely relocate its facilities. These parties need to also be held accountable when their actions cause harm to a utility or when those actions prevent a utility from being able to follow its relocation plan. From the utility's perspective, an unexpected request or order to move a utility facility means unscheduled work and unplanned expense. Even scheduled work on a highway project that is delayed due to a change in the highway department's program or project plan may mean that supplies purchased by a utility for that job can't be used, or equipment is mobilized to the wrong location.⁴

Responsibility for coordinating the utility relocation process needs to be defined. While the highway contractor is responsible by contract to INDOT for the completion of the work within the project time, there is no contractual relationship between the contractor and the utilities to enforce performance. The responsibility for requiring coordination between different utility companies and the highway contractor on the project has not been formally assigned. The legal relationship between INDOT, utility companies and the highway contractor on the project needs to be clarified. The rights and responsibilities of each party need to be clearly stated.

Clarifying responsibilities and defining consequences for failing to take appropriate action will provide accountability and produce positive results. Other states have addressed accountability and the Task Force identified the processes used in Wisconsin as a model. Under Wisconsin law and Wisconsin Department of Transportation rules, the roles of utility facility operators and Wisconsin's highway department in the development, review and approval of utility relocation plans are clearly defined. The Wisconsin processes establish basic ground rules for responsibility

and accountability. (Wisconsin's law and the companion Wisconsin DOT rules are shown in Appendices A and B.)

The consequences should include payment of adequate compensation to any party that incurs additional costs due to the failure of another party to perform. Current INDOT specifications hold contractors responsible for performance on a project even though contractors normally have little or no control over the coordination of utility facility relocations. INDOT specifications do not compensate contractors for the costs they incur with unanticipated delays in the relocation of utility facilities, but do allow additional time for completion of the contract based on proper documentation. This can lead to adversarial relationships on these projects.

Recommendation 1A:

INDOT should formalize a policy and promulgate rules for the relocation of utility facilities on state highway projects. These rules should ensure accountability of all parties. If necessary, legislation should be pursued to achieve this goal.

Recommendation 1B:

The role of each party in the design and construction phases of a project should be clearly defined.

Recommendation 1C:

The roles of the respective parties during construction could be clarified along the following lines:

- a) INDOT's Role
 - a. The INDOT Project Engineer is responsible for general oversight of the work on the project. The Project Engineer should be responsible for facilitating communications among parties involved with the contract, including the contractor, utility companies, INDOT departments and the affected public. The Project Engineer should seek assistance from the District Utility Engineer regarding issues that arise on the jobsite pertaining to utility facilities and work with that person to pursue solutions.
 - b. Each highway district office should have an experienced professional functioning as District Utility Engineer whose duties, as spelled out in a job description, reflect a high level of responsibility. The District Utility Engineer should have the expertise and resources to be able to deal with utility relocation and scheduling issues on projects within that district in support of the Project Engineer.
 - c. INDOT should require regular district utility meetings to keep utilities abreast of INDOT's letting schedule.

Contractor's Role

- a. The contractor should be responsible for coordinating its means and methods of construction with the utility companies' work plans, and for communicating with all parties in order to determine the most efficient means of construction.
- b. The contractor should be responsible for the preparation and management of a project schedule that identifies the interaction between contract construction work and utility company relocation work.

b)

c) Utility Company's Role

- a. It should be the responsibility of utility companies involved in the project to develop a suitable work plan that spells out the number of days required to complete the various relocation phases including right-of-way acquisition and permits, if needed.
- b. Utility companies should be responsible for completing their project work plans on schedule.
- c. Utility companies should work closely with the INDOT District Utility Engineers to resolve problems that arise during a construction project.

Recommendation 1D:

INDOT rules should provide a process through which one party can be reimbursed for expenses it incurs due to another party's failure to comply with its clearly-stated responsibilities. This would include compensating contractors for any provable damages when there are delays in the relocation of utility facilities that are beyond the contractor's control. Such provisions must recognize that emergency situations must be given priority. For example, restoring power would be a priority for an electric utility company following a tornado or hurricane and could occupy a significant portion of its available crews for days or even weeks.

Benefits:

- The clear winner of such laws and rules will be the public. Projects should be completed sooner with fewer unexpected delays and at less overall cost to the public.
- INDOT, designers, utility companies and contractors should also benefit from a framework of clearly-defined responsibilities that encourages closer working relationships and cooperation, and provides fair and equitable accountability if things go wrong. Communications and performance should be enhanced when all parties are accountable and consequences are understood.
- Holding regular meetings in the INDOT districts with utility companies should provide those companies with additional time to schedule projects, procure materials and manage the construction schedule.
- Increasing the level of responsibility and authority for INDOT's District Utility Engineer should assist in pre-construction coordination with utility companies, and problem solving during construction.

- Allowing compensation for losses sustained due to another party's non-performance should shift liability to the responsible party. The potential of such liability should enhance the likelihood that all parties will focus on their responsibilities.

Issue 2: IMPROVE THE PROCESS OF OBTAINING INFORMATION ON THE LOCATION OF UNDERGROUND UTILITY FACILITIES

Accurately locating underground utility facilities during the initial design stage of a highway improvement project is vital for coordinating the needs of the highway project with the needs of the underground utility operators.

The current One-Call locate system in the State of Indiana, sometimes referred to as Holey Moley, is managed by the Indiana Underground Plant Protection Service (IUPPS). All requests to mark the location of a utility facility for a highway project start with IUPPS. However, a request for design purposes does not always result in a facility being marked. Many times the request goes unanswered unless digging activities are reported. Priority is given to marking the facilities that will be impacted by construction. Although some utility companies may respond to a design-locate request, there is still no guarantee that all utility facilities in the highway corridor will be located and marked.

The lack of reliable information on the location of utility facilities during the design phase of a public works project may result in the needless relocation of those facilities. Identifying the location of all utility facilities during the early design stages may make it possible to design the highway improvements around those facilities.

In July 2003, the One-Call locate system was enhanced by Senate Enrolled Act (SEA) No. 438. This law requires all underground facility operators to join IUPPS by September 1, 2004. As a result, IUPPS anticipates its membership will triple from approximately 400 members to nearly 1200 members. In addition, IUPPS estimates that the number of calls for all locates – highway projects and other purposes – may increase significantly. (Indiana's One-Call law, including the provisions of SEA 438, can be found on the IUPPS website at www.iupps.org/Law.htm.)

While the changes made by SEA No. 438 should provide better information regarding the location of utility facilities in the highway corridor, the increase in construction-locate requests may make it difficult for utility companies to respond to design-locate requests. IUPPS acknowledges there is a need to determine how to handle the increased requests, and plans to hold stakeholder meetings to determine what changes may be needed to the current system.

Even when utility companies respond to a design-locate request, this only provides the highway designer with a horizontal location of those facilities within the highway corridor. In recent years, INDOT initiated a new program that uses technology to supplement the information obtained from IUPPS. Subsurface Utility Engineering (SUE) uses pipe and cable locators, metal detectors, ground-penetrating radar, acoustic pipe tracers and other techniques to determine the horizontal and vertical location of underground facilities. INDOT initiated the SUE program on urban highway reconstruction projects where multiple underground utility facilities may be present. SUE assists the designer and utility companies in determining potential conflicts between a utility facility and construction activities required for the highway

improvement. Identifying and remedying the conflicts during the design phase of the highway project can minimize or eliminate costly delays during construction.

Subsurface Utility Engineering is an expensive up-front investment for locating underground utility facilities. A typical per mile cost of SUE in Indiana for an urban highway is approximately \$150,000. INDOT currently invests approximately \$625,000 annually in the SUE program. This represents approximately 1% of the department's design services budget.

Recommendation 2A:

All utility facility owners should be required to respond to a design-locate request submitted through the Indiana Underground Plant Protection Service for a public improvement project.

Recommendation 2B:

As stakeholders in the highway improvement process, INDOT, contractors and designers should participate in stakeholder meetings planned by IUPPS.

Recommendation 2C:

INDOT should consider increasing the use of SUE on urban highway improvement projects.

Benefits:

- By providing better information on the location of their facilities during the design process, utility companies may not have to relocate their facilities.
- Contractors should benefit by having accurate information on the location of utility facilities and how those facilities could impact construction.
- INDOT should benefit by avoiding construction delays resulting from the relocation of utility facilities and getting bid prices from contractors that better reflect the impact of these relocations on construction.
- Motorists and adjacent property owners should benefit when a highway is completed on schedule.
- The benefit of stakeholder participation in the upcoming IUPPS meetings should be a One-Call system that fulfills the needs of the highway construction industry.
- SUE provides supplemental underground utility facility information that could minimize or eliminate problems during construction and thereby avoid costly delays. A Federal Highway Administration July 2002 report cites documentation to support project savings of \$4.62 for every \$1 invested in SUE.⁵

Issue 3: IMPROVE COORDINATION AMONG PUBLIC AGENCIES, DESIGNERS AND UTILITIES THROUGHOUT THE DESIGN PROCESS

Once the data collection process is complete and the utility facilities have been identified and located, highway improvement projects move through a design and plan development process established by INDOT. As the project design is developed, utility companies are contacted for input. When preliminary design information is available, plans are submitted for their review. As the preliminary design becomes a final product, utility companies are invited to attend field checks at the project site and other coordination meetings to discuss potential conflicts and relocation issues. These opportunities for coordination are critical and should be fully utilized for a highway project to be successful.

However, not all utility companies respond to correspondence related to the utility coordination process or attend on-site field checks or coordination meetings. These opportunities to communicate are vital to the design and utility coordination and accommodation process.

Construction project scheduling information is another key component in coordinating with utility companies. INDOT currently sends a list to utility companies providing information on the status of projects scheduled for construction letting over the next six months. INDOT also maintains a long-range list for projects that are expected to be bid in 6-12 months.

These INDOT project status reports are useful tools, but improvements are needed to make them more accessible and beneficial. From the utility company's perspective, an unexpected request to move a facility means unscheduled work and unplanned expense. Even scheduled work on a highway project that is delayed by INDOT may mean that supplies purchased for that job can't be used, or equipment is mobilized to the wrong location.⁴ More accurate and timely information on INDOT's project construction schedule should enable utility companies to make more efficient and cost-effective use of their resources.

A highway improvement project moves through several development phases – an engineering report that determines the scope of needed improvements, a data collection survey, engineering design, a determination of the land needed for the improvement, formal acquisition of that land and, finally, construction contract preparation. As the project moves from phase to phase, project management – at both INDOT and utility companies – is often passed from one person or department to another. In those instances, no one person or department retains responsibility or control throughout the entire process. The operational characteristics of INDOT, utility companies and design consultants create this situation. Project continuity and responsibility are compromised as contact persons change within these organizations.

Many urban highway projects take multiple years to proceed through the various phases. Installation of new utility facilities may occur in the highway corridor during these phases. Information on these installations, which require permitting, is not always known to the designer.

Recommendation 3A:

INDOT should adopt rules and procedures that define the roles of INDOT, designers, and utility companies during the project development process. A first step has been taken with legislation enacted in 2003 that requires all utility companies to join the IUPPS. The next step is to define each party's role in this process. Specific time frames should be established for communications and the exchange of information among INDOT, designers and utility companies with consequences for non-performance.

Recommendation 3B:

INDOT should make the project status report available on-line where utility companies can access it easily. INDOT should continue to monitor the listing and make updates as needed. The updates should provide a means to determine what has changed and when it changed.

Recommendation 3C:

INDOT should assign a Project Manager from its staff or a contracted design consultant to be responsible for all utility facility coordination during the scoping, survey, design and land acquisition phases of projects where significant conflicts are anticipated. The INDOT Project Manager should request a single point of contact from each affected utility company, and the utility company should ensure that the Project Manager is notified of any change in the contact person.

Recommendation 3D:

Utility companies should attend the annual meeting INDOT conducts in each district to present its updated three-year plan. The INDOT District Utility Engineer should notify all utility companies operating within the district about these meetings.

Recommendation 3E:

INDOT needs to evaluate its internal coordination processes to make certain that information about new utility facility installations, which affect planned improvements, is provided to plan designers.

Benefits:

- The primary benefit of improved coordination during the design process should be fewer delays during construction.
- Accurate up-front information about utility facility locations may allow designers to design around those facilities and thereby avoid the need to relocate them. The benefactors are the utility companies, contractors, motorists, adjacent property owners and other stakeholders in the project.
- Giving utility companies immediate access to a current list of upcoming INDOT construction projects should allow them to better plan their relocation activities and to properly budget for the relocation work.

Issue 4: MODIFY HIGHWAY DESIGN TO MINIMIZE UTILITY RELOCATIONS

Utility companies have been maintaining facilities within and adjacent to the public road right-of-ways since the late 1800s. Beginning with distribution of basic municipal facilities (water, sewer and power), these right-of-ways now also contain natural gas, communications and cable television facilities. Since more than 90% of the roads currently in use were built prior to 1950, many of these roads have insufficient right-of-way to handle growing traffic demands and the proliferation of utility services. The underground environment has become increasingly congested as more and more utility facilities compete for limited space within and adjacent to the right-of-way.

As demand for the finite space in existing right-of-way increases, the difficulty and cost of adding new utility facilities and relocating existing utility facilities also increases. Just as significant is how utility service interruptions may add to public discontent with overall highway construction. It is therefore essential for planners, designers and builders of highway projects to minimize or avoid utility facility relocations.⁶

Highway designers have little motivation to avoid utility facility relocations under the typical highway design process. Designers are often faced with very tight schedules for completing highway designs, which leave little time to explore alternatives that could minimize the need to move utility facilities. Efforts to “design around” existing utility facilities to avoid relocation often involve consideration of several alternatives. This extra work extends the design time and increases the design budget. When the project design is based only on where the utility facilities might be, or where they ought to be, the likelihood of encountering an undocumented facility during construction is much higher.⁷

When the impact on utility facilities is not considered early in the design process, delays are likely later, either for redesign of the highway work to address relocation of utility facilities or during construction while waiting for utility companies to finish their design, land acquisition and relocation work. The costs of relocating utility facilities increase significantly when not considered during the early design process. This is especially so if they are discovered after construction begins. The utility company must have time to prepare construction drawings, obtain the required materials for relocation and mobilize its crews for traffic control and construction.⁸

Recommendation 4:

As part of project scope, which is often defined five to seven years before construction begins for a major project, INDOT should consider how existing utility facilities would be affected by the planned highway improvements. A project design that considers only highway needs without recognizing the impact on utility facilities is at best only half a solution. When that solution leaves utility companies with no practical alternative, it is no solution at all.

Assessing the impact on utility facilities at this very early stage offers the best opportunity to modify the design in ways that minimize how the project will affect those facilities. Some utility companies may be able to leave their facilities where they are with no changes; other utility companies may need to relocate facilities and prefer to remain within the public road right-of-way, while other utility companies may prefer to relocate facilities to their own right-of-way or easement, separate from the highway right-of-way.

Benefits:

- Considering the impact of a highway project on utility facilities at the scoping stage or early in the design process should lead to highway designs that better accommodate those facilities, reduce the costs for taxpayers and utility ratepayers, and lessen the impact of construction on the environment.

Issue 5: OBTAIN SUFFICIENT RIGHT-OF-WAY TO ACCOMMODATE UTILITY RELOCATION WORK

Road construction often cannot proceed until utility companies move their facilities out of the way. Those facilities cannot be moved without a place to move to. This is true whether INDOT acquires enough right-of-way to accommodate both the roadway and utility facilities, or whether each party acquires its own right-of-way and easements. Until there is sufficient space for both parties, construction of the highway improvements cannot proceed.

Utility companies have a right to place facilities on public right-of-way at no cost. In turn, they generally must relocate at their own expense if needed for construction, maintenance or safe operation of that roadway by INDOT. This relationship between INDOT and utility companies has existed for nearly 100 years. It began when utility companies gave up certain franchise rights in exchange for the right to occupy public road right-of-ways free of charge. This relationship has evolved over the years and is addressed by laws that are part of the Indiana Code and court decisions in Indiana and elsewhere.

Because right-of-way decisions have a significant impact on the relocation of utility facilities, now may be the time to examine INDOT's approach to right-of-way acquisition. Should the public road right-of-way be kept to the minimum width and expense needed to accommodate the roadway and shared with utilities only if space is available, or should the public road right-of-way be designed to accommodate both roadway and utility company needs? INDOT tends to favor a narrower answer to this question than utility companies although it is not a clear-cut issue. Some utility companies prefer to place their facilities on their own right-of-ways or easements rather than use public road right-of-way. There are pros and cons to both alternatives for both INDOT and utility companies, but it is an issue that merits further study.

This is a complex issue without any clear answers. Each roadway project may require a different solution. If INDOT buys enough public road right-of-way to accommodate both the roadway and utility facilities, INDOT would have higher initial costs to build roadways. This would reduce funding available for roadway improvements. By locating within the public road right-of-way, utility companies, however, could face future relocation costs if and when it becomes necessary to move facilities again to accommodate future roadway needs.

A related issue is INDOT's policy that generally prohibits placement of utility facilities in public road right-of-way for limited access highways. A limited access highway is either a freeway with limited points for entry and exit or a roadway that has limited intersecting roads and connecting driveways. INDOT's policy stems from a time when most limited access roads were rural in nature, with high speeds and few intersections or driveways. Utility facilities were excluded from these roads as a safety measure since drivers do not expect slow-moving or parked vehicles as might occur for maintenance of utility facilities. However, the designation of limited access highways in heavily developed

urban areas is not so much a safety issue as it is a tool to control proliferation of driveways and resulting turn movements that add to traffic congestion. In some cases, utility facilities are already located in a public road right-of-way that INDOT wants to convert to a limited access highway. In these situations, INDOT normally wants all utility facilities relocated off the right-of-way. Delays to the improvement of these highways may occur because a utility company either requests accommodation within the right-of-way of the limited access highway or proceeds to acquire its own right-of-way on private property.

INDOT's policy regarding the designation of limited access highways restricts utility companies from placing facilities in some highway right-of-ways and forces those companies to separately acquire land for the placement of those facilities. This additional land acquisition process could delay the relocation of utility facilities.

Recommendation 5A:

INDOT should consider revising its Utility Accommodation Policy (UAP) to be more flexible in accommodating utility facilities within the public road right-of-way for limited access highways. The UAP is a document that sets conditions and procedures for the placement of utility facilities in the public road right-of-way that are under INDOT's jurisdiction. In congested urban areas where there is little space for utility facilities outside the public right-of-way, allowing the placement of utility facilities within the right-of-way may be the only practical solution. Considering that motorists in those areas are already accustomed to slow moving, stopped, parked or turning vehicles, maintenance of utility facilities may not present any significant additional hazard. In rural areas, safety is more of a concern. However, other factors – such as requiring utility companies to place their facilities off the public right-of-way and into environmentally sensitive areas – should also be considered.

Recommendation 5B:

INDOT and utility companies should consider whether INDOT should acquire all right-of-way needed for both roadway and placement of existing utility facilities, whether INDOT and utility companies should each acquire their own right-of-way or easements, or whether each project should be considered individually. In any event, there must be sufficient space to accommodate utility facilities or the roadway improvements cannot take place. To help ensure that there is sufficient space, INDOT should consider the impact of its projects on utility facilities and the amount of space available for utility facilities within or adjacent to the public road right-of-way. This should be done in a preliminary way at the environmental and scoping stage of a project and be re-examined during the design stage when more detailed information is available. While INDOT and utility companies clearly have vested interests in who pays for the initial cost of right-of-way acquisition, it must be kept in mind that the public ultimately pays for all costs, whether at the gas pump or through their utility bills.

Benefits:

- New guidelines with more flexibility in accommodating utility facilities on limited access right-of-way should help ensure that sufficient space is available for both roadway improvements and placement of existing utility facilities. Flexible guidelines should reduce delays that result from the present policy and should reduce the amount of land taken from adjoining private property owners.
- Flexible guidelines should also minimize the total cost of land needed to accommodate both the roadway and utility facilities. Environmental and agricultural impacts should also be minimized in rural areas.
- If the roadway design process includes consideration of whether there is sufficient space on or adjacent to the public road right-of-way to accommodate utility facilities, projects should proceed with better cooperation between INDOT and utility companies, which should result in lower costs, fewer delays and less inconvenience for the public.
- These benefits could also be realized on local road projects if counties, cities and towns were also to adopt flexible right-of-way guidelines.

Issue 6: STREAMLINE THE RIGHT-OF-WAY ACQUISITION PROCESS

Acquisition of new right-of-way is a process that takes time, even when property owners are agreeable to the project and proposed right-of-way limits. If condemnation is needed, it becomes much more time consuming and adversely affects both INDOT and utility companies.

INDOT generally buys only enough right-of-way to accommodate the roadway work. If a utility company cannot be accommodated within that space, delays may occur because the utility company must acquire its own easement or right-of-way on private property separate from the public road right-of-way. Utility companies cannot proceed with their own land acquisition until the proposed new public right-of-way limits are firmly established. If the public right-of-way limits are still subject to change due to design reasons, concessions to property owners or condemnation proceedings, then the utility company is unable to proceed to any significant degree with its own design and property acquisition.

In fact, property owners often will not negotiate with utility companies until after all right-of-way issues are settled with INDOT. If INDOT had to resort to condemnation to acquire a particular land parcel, utility companies often face the same situation in dealing with that property owner. In that instance, two lengthy condemnation proceedings must be completed before the roadway can be built. At the time when INDOT has finally secured all needed right-of-way and is ready to proceed with roadway construction, the utility company right-of-way acquisition process may just be starting and can significantly delay roadway improvements. A roadway project requiring the acquisition of a hundred different properties can be delayed for years by a lengthy condemnation process for just a single property. Until all land is acquired, the project may not be constructible from the perspective of the highway contractor or utility companies.

Indiana's eminent domain laws do not recognize a process used in many other states that allows a public agency immediate access to needed property even while protecting a property owner's right to obtain a fair and reasonable settlement.

Recommendation 6A:

INDOT and utility companies should look for ways to streamline the process used to acquire new right-of-way and easements. INDOT and utility companies should also examine laws in other states that allow expedited access to land during the condemnation process to determine if any opportunity exists within current Indiana law for similar expedited access. If not, INDOT and utility companies should work with legislators to propose legislation that would allow expedited access in condemnation cases when there is a public need for the project. At the same time, the rights of property owners to obtain a fair and reasonable settlement must be protected.

Recommendation 6B:

INDOT clearly has the ability to purchase land needed for highway purposes. If highway work cannot proceed until adequate right-of-way is acquired for relocation of utility facilities, then it could be argued that the acquisition of sufficient additional road right-of-way to accommodate the relocation of utility facilities is a necessary and integral part of the roadway project and is within INDOT's authority. INDOT and utility companies should jointly consider allowing INDOT to acquire such additional public road right-of-way. One factor that will need to be considered is whether utility companies should share in the acquisition costs.

Benefits:

- Streamlining the processes used by INDOT and utility companies to acquire land should permit highway projects to be completed sooner with less uncertainty in project schedules and ultimately at lower costs since construction costs tend to increase with delays.
- Providing expedited access to property in condemnation cases should also help speed completion of projects without depriving property owners of their right to a fair and reasonable cost settlement.
- Allowing INDOT to acquire all the right-of-way for both highway and utility facility needs should enable the overall project to move forward faster because this would avoid the present two-step process. Currently, INDOT initially acquires right-of-way needed for the highway and then the utility company proceeds to acquire its easement or right-of-way.
- The public benefits because highway projects should get done faster with lower costs and less delay.
- Property owners should benefit because they are only subjected to the acquisition process once. All impacts are known up front, compared to the present process where property owners reach agreement with INDOT only to find out that they still have to deal with one or more utility companies.

Issue 7: INCLUDE ADEQUATE UTILITY RELOCATION WORK PLANS IN HIGHWAY IMPROVEMENT CONTRACT DOCUMENTS

The final product in improved coordination among INDOT, its designer and utility companies is a utility company work plan for relocation of its facilities. Each utility company coordinates its relocation needs with the highway design and prepares a relocation work plan. These plans are submitted to INDOT for review and coordination with other utility companies. These work plans are currently submitted to INDOT in a variety of forms, from simple free-hand drawings to complete computer-drafted drawings. INDOT then transforms these drawings into words and includes a brief description of each utility company's relocation plan in the highway construction contract documents.

Currently, an all-inclusive utility relocation drawing is not developed or included in the final highway plans for bidding and construction.

Recommendation 7A:

All utility companies should be required to provide INDOT with information that can be combined to provide a complete layout of all proposed utility facility relocations. The plan details should include a detailed schedule of how the relocation activities will proceed. INDOT should determine the format to be used for this information.

Recommendation 7B:

INDOT should create rules and procedures, based on the Wisconsin model, for the preparation, coordination and scheduling of realistic utility company relocation work plans that should be part of the contract documents. Work plans should define scheduling and timing for relocations. The work plans should be complete and included in the bidding documents for INDOT's highway improvement project. Contractors should be required to coordinate their work with the work plans and schedules included in the contract documents.

Recommendation 7C:

The highway plan designer should be responsible for coordinating the proposed utility company work plans with the proposed construction plans in order to minimize conflicts between those work plans and the construction plans.

Benefits:

- An all-inclusive relocation plan for all utility facilities should provide contractors with the necessary information to coordinate their operations with those relocations to minimize conflicts and delays. This, in turn, will reduce costs for all parties involved. This will also help in identifying conflicts between the planned utility facility relocation activities of the different utility companies and aid coordination between different utility companies in performing their relocations.

- Giving contractors access to utility company work plans as part of the bid documents that a contractor reviews prior to submitting its bid would allow contractors to reliably determine construction methods, schedules and project costs. Ultimately, this should minimize the construction and scheduling conflicts on a project that sometimes now occur because the contractor has either incomplete pre-bid information about utility company relocation plans or no such information.
- Utility companies should benefit by being able to prepare work plans that coordinate with the design of the project. Coordination with utility companies would start earlier in the design process, giving each utility company more advance notice of construction requirements for the project.
- INDOT should benefit by having bids prepared on the basis of accurate knowledge of the project requirements with respect to coordination with utility companies. Ultimately, bids that are prepared based on better pre-bid information should lead to lower costs for INDOT projects.
- The public should benefit from expedited completion of the work at lower costs. Businesses near the construction project should benefit from less disruption for their customers.

Issue 8: PREPARE THE RIGHT-OF-WAY TO EXPEDITE UTILITY RELOCATION WORK

Right-of-way preparation includes: (1) staking the right-of-way limits; (2) clearing trees and brush; (3) demolition and removal of buildings, driveways and other objects in the way of new construction; and (4) preliminary roadway grading and earthwork activities.

Utility companies could proceed with their relocation work sooner if the right-of-way was staked, cleared and graded earlier. While INDOT sometimes stakes the right-of-way in advance of a highway contract, this is not always the case. INDOT also sometimes has its highway contractor clear those parts of the right-of-way needed for utility company work – but not needed for highway work. However, this is not always the case.

Currently, a utility company is responsible for all aspects of right-of-way preparation if it either owns its own right-of-way, has an easement on private property, or places facilities on the highway right-of-way unrelated to a highway improvement project. This would include hiring a surveyor to mark the limits of the right-of-way, clearing trees and brush, and demolishing and removing buildings or other objects, along with all grading and earthwork, erosion control, environmental permits, clean up and revegetation.

However, when relocation of utility facilities is needed to accommodate a highway project, the situation is more complicated. As part of the highway construction contract, INDOT normally pays a contractor to do staking, clearing, demolition and grading needed for the highway work. A potential source of delay and disruption for a highway contract is eliminated if a utility facility is moved before a highway contract is awarded. However, to move earlier, the utility company must do staking, clearing and grading work that would otherwise have been done by the highway contractor. In many instances, such work by utility companies is not eligible for reimbursement.

To further complicate matters, staking the right-of-way early to accommodate the relocation of utility facilities is likely to result in the additional expense of staking the right-of-way a second time to accommodate the highway work. Some areas of the right-of-way may also need to be cleared to accommodate the relocation of utility facilities, but are outside the limits needed for highway work. The costs of the highway project are increased if the highway contractor does this additional clearing.

Planning and coordinating the construction of a major highway project that also involves relocation of multiple utility company facilities is a complex process. This process also presents significant risks for highway contractors who have little or no control over the relocation of utility facilities in most highway contracts. Because there are presently no practical mechanisms to hold utility companies accountable for their delays, the highway contractor at times cannot complete the highway work until all utility companies have relocated their facilities. The process is also prone to conflict because the contractor and utility companies must work in the same area at the same time, each with their own schedules and issues. The different crews tend to get in each other's way. This could

lead to delays, extra expense and work for all parties, and additional inconvenience for the public.

Even when all parties work closely together, an unexpected delay by one utility company may result in a cascading series of delays, rework and extra costs for the other utility companies and the highway contractor.

Recommendation 8A:

At a minimum, INDOT should develop clear, written guidelines for early preparation of the right-of-way. The guidelines should clarify what is reimbursable and what is not and the respective rights and responsibilities of each party. This should be followed with periodic training sessions for INDOT, designer, utility company and contractor personnel.

Recommendation 8B:

INDOT should consider taking responsibility for all staking, clearing, demolition and preliminary grading needed within the highway right-of-way to accommodate the relocation of utility facilities. INDOT could pay the utility company to do the work, let an early highway contract just for this purpose, or make it part of the regular highway contract. When appropriate, the possibility of early clearing and right-of-way staking to expedite the relocation of utility facilities should be investigated during the design process and incorporated into the bidding documents.

Recommendation 8C:

INDOT and utility companies should consider allowing the highway contractor to relocate some or all of the utility facilities as part of the highway construction contract, especially in congested urban areas where there is little room for multiple utility companies and the highway contractor to all work in the same space at the same time. However caused, a delay still affects the schedule and constructability of the overall project and means still more inconvenience and expense to the public. An alternate method would be to have a separate construction project to allow for relocation of utility facilities prior to the start of the main highway construction project. If contractors are to perform this work, a complete and accurate set of utility relocation plans must be provided by the utility companies.

Recommendation 8D:

If all of the right-of-way for a highway improvement project has not been acquired, the impact of any missing land parcels on timely relocation of utility facilities should be considered before the project is scheduled for letting. No highway contract should be let if there are right-of-way exceptions that preclude timely relocation of utility facilities, or where the utility company has not had time to acquire its own right-of-way or easements.

Recommendation 8E:

If a highway construction project proceeds with significant right-of-way exceptions, the construction bid documents for the highway project should note the status of land acquisition problems as well as the status and anticipated schedule of any needed utility company work so this information is available to contractors preparing their bids. If land acquisition problems or uncertainties about the relocation of utility facilities still exist once the bid process is concluded, a decision should be made on whether to delay construction. An update on the status of these outstanding issues should be discussed at the preconstruction conference.

Benefits:

- Paying utility companies for clearing and staking or letting a separate contract for this work should eliminate a potential source of delay and disruption for highway improvement work and should allow the work to proceed more efficiently and at lower cost.
- If the contractor is in charge of both the highway work and relocation of utility facilities, the contractor should be in a better position to identify and control critical schedule elements for the job. This should ultimately lead to getting the work done faster and, possibly, at a lower cost for both INDOT and utility companies.
- The public should benefit from a job done on time and at a lower cost.
- Alternate methods of construction should allow relocation of utility facilities to occur prior to the major INDOT project, which should shorten construction duration.
- Contractors should benefit by having the relocation of utility facilities scheduled in advance of the INDOT project, with those relocations either completed prior to the project or in better coordination with the INDOT project.
- The public should benefit by having construction durations for the INDOT project compressed, although separate contracts with utility companies could mean disrupting the roadway traffic twice – first for the utility company work, and then later for the highway construction work.

Issue 9: DETERMINE THE ROLE INDOT SHOULD TAKE IN MANAGING THE PUBLIC RIGHT-OF-WAY ALONG STATE HIGHWAY CORRIDORS

Judicious management of the right-of-way is the key to resolving most of the issues outlined in this report. This, in part, revolves around whether INDOT should acquire extra right-of-way for utility facilities when those facilities must be moved to accommodate a highway project. It is a key fundamental public policy issue.

Utility companies and INDOT both ultimately exist to serve public interests. Utility companies have the authority to acquire easements and right-of-way separate from any control or involvement by INDOT. If a utility company chooses to acquire its own easements and right-of-way, INDOT has no control over that acquisition. Multiple utility companies acting independently to acquire their own easements or right-of-way to accommodate a highway project is not a cost effective or efficient process. While utility companies serve a public interest, they do not necessarily all serve the same public interests and may even compete with one another in some situations.

If INDOT acquires all of the land needed for both the highway and utility facilities, it should be in a better position to manage the overall process, including relocation of utility facilities.

If INDOT does not adequately manage the public road right-of-way, utility companies are likely to compete with one another for the “best” location in the right-of-way. Coordination among utility companies is sometimes lacking. Some utility companies do not provide adequate information on their relocation plans or proceed with work that differs from their submitted relocation plan. There may also be a lack of information on where utility facilities are located within the right-of-way.

This lack of information occurs, in part, because INDOT has not compiled a database about the placement of utility facilities within the right-of-way even though utility companies must obtain permits to install or service facilities within the right-of-way. It also occurs, in part, because some utility companies do not always follow their own plans for placing facilities or in keeping records of the actual placement locations.

Recommendation 9A:

INDOT and utility companies should consider whether INDOT should use its authority to acquire and manage all the land needed for roadway improvements and placement of utility facilities. Consideration should be given to whether INDOT should acquire that land for every highway improvement project, or whether it is simply a policy decision for INDOT to make on a case-by-case basis. Implementing such a practice would require policy changes and promulgation of rules by INDOT to clarify the roles and responsibilities of each party. Consideration must be given as to whether utility companies must accept this practice or could still independently acquire their own easements and right-of-way.

Recommendation 9B:

INDOT and utility companies should work together to develop guidelines regarding which utility facilities go in which part of the right-of-way and why, and to resolve any conflicts among the various utility companies. The findings of a Joint Transportation Research Project conducted by Purdue University regarding INDOT's Utility Accommodation Policy should be considered in developing these guidelines.

Recommendation 9C:

INDOT should consider enhancements to its permit process that would allow it to develop a database that uses Geographic Information System (GIS) coordinates and provides information on the location of newly placed or maintained utility facilities.

Benefits:

- The total amount of land needed by INDOT and utility companies should be minimized if INDOT acquires the land needed by all parties and can establish who occupies which part of that land. This should also help make the overall process more efficient with fewer delays and lower costs. Property owners would conduct business with only one entity – rather than several – and should be able to retain more of their property.
- Guidelines on the placement of utility facilities within the right-of-way should help provide a basis for initial decisions and a way to resolve potential conflicts. Instead of an “each utility company for itself” approach, guidelines should help establish a closer working relationship, speed up the process and reduce potential conflicts during construction. Inconvenience for the motoring public should also be reduced.
- Collecting accurate horizontal and vertical location information when utility companies obtain permits to install new facilities or work on existing facilities within the right-of-way should allow INDOT to develop a database of such information. This database should help INDOT know when future planned improvements may conflict with existing utility facilities.

Issue 10: IMPROVE THE UTILITY RELOCATION COORDINATION PROCESS DURING CONSTRUCTION

The construction phase of a highway improvement project begins after all of the design, right-of-way acquisition and the letting processes have concluded with the award of a contract to the successful low-bid contractor. At that time, all of the previously unrelated parties of a project are first put together as the team to build the project. In this sense, the project team includes the designer (INDOT or consultant), INDOT's project engineer and staff, the contractor (along with material suppliers, subcontractors and craft workers) and the utility companies (represented by both their engineering and field construction staffs).

During the bid process, the contractor must rely on information about the status and timing of utility facility adjustments that may be based on minimal detail and assumptions since utility company work plans and proposed construction schedules are not usually a part of the bidding documents. While the contractor is contractually responsible to INDOT for the successful completion of the project, the contractor has no contractual relationship with the utility companies that are involved with the project. Coordination among the members of the project construction team is required for the successful completion of the project.

The highway contractor's schedule (and costs) may be impacted by utility company relocation schedules that are different than anticipated. On the other hand, a utility company's relocation activity might be impacted when the contractor's schedule changes. Improved communications are needed among all parties. Better coordination processes are particularly needed for major projects that have significant relocation of utility facilities.

INDOT has utilized a formalized communications process known as "partnering" on many contracts in recent years to maintain communications among all parties to the construction project. The initial meeting and continuing project meetings keep all parties informed as the project evolves. Partnering can aid communications among the utility companies involved with the project that may have work plans that need to be coordinated. This process puts all the individual entities of the construction project together as a team to manage the project in a manner that benefits all parties.

Recommendation 10A:

For major and complex projects that involve the relocation of utility facilities, a pre-bid meeting should be held with the affected utility companies soon after construction plans are issued to allow contractors to obtain information directly from the utility companies regarding their relocation and adjustment requirements. Scheduling of work pertaining to the relocation of utility facilities should be discussed at this time so all bidders will have detailed information regarding the nature and scope of such required adjustments. Representatives of all affected utility companies should attend this meeting to discuss their work plans. It may be necessary for INDOT to require attendance by affected

utility companies. The date of the pre-bid meeting with the utility companies should be stated in the construction contract bid documents. INDOT should provide adequate advance notice to the utility companies regarding the date of the meeting. Minutes of this meeting should be recorded by INDOT and distributed prior to bid to those contractors who have obtained plans for that particular project.

Recommendation 10B:

A preliminary pre-construction or coordination meeting with utility companies should be scheduled for those projects involving significant relocations of utility facilities. This should typically be held 10-14 days after the letting date and the date for this meeting should be stated in the bid documents. This meeting would be in advance of the formal pre-construction meeting. All utility companies involved in the project should be required to attend. This would allow the contractor to present its proposed construction schedule based on the assumptions it made during the bidding process. At that time, utility companies could start to interface their work into the contractor's schedule and identify potential conflicts and problems that could impact the critical path of the contractor's schedule. If necessary, and if all parties agree, the project schedule could be revised for presentation at the formal pre-construction meeting.

Recommendation 10C:

Partnering should be initiated and continued during the life of those projects where there needs to be close coordination between the relocation of utility facilities and the highway contractor's work. All utility companies should be involved in this process. This should help ensure that utility companies install their facilities as planned.

Benefits:

- The contractor should benefit by having more complete information from which to bid the project. Construction means and methods, along with production rates and schedules, can be more accurately determined with more complete information regarding utility company work plans for the project. This should lead to lower bid prices. This should also help eliminate the adversarial atmosphere that sometimes occurs when a contractor's plan of work, developed during the bidding process, cannot be implemented due to a lack of coordination with utility company work plans that were unknown at the time of letting.
- INDOT and the public should benefit from improved communications among contractors and utility companies, which should enable contractors to do a better job of project planning at the pre-bid stage. This should translate into fewer construction delays and traffic restrictions.
- An increased level of cooperation among the project team members should reduce traffic congestion and disruption for the public.
- Holding a coordination meeting with utility companies prior to the formal pre-construction meeting should allow those companies to compare their work plans and determine if there are conflicts that need to be resolved. Utility company involvement at this stage may eliminate the need for such involvement at the formal pre-construction meeting that INDOT holds with the contractor

Issue 11: DEVELOP A PROCESS FOR DEALING WITH CONFLICTS WHEN UNEXPECTED UTILITY FACILITIES ARE ENCOUNTERED DURING CONSTRUCTION

Even with additional effort and enhanced planning during the design process, problems may still be encountered during construction with unknown utility facilities, abandoned utility facilities or additional utility facilities that may now need to be adjusted, relocated or abandoned. Abandoned facilities represent out-of-service utility lines that have been abandoned in place. Abandoned facilities are generally of unknown origin and are attributed to either a lack of records indicating their presence or the original owner being out of business or otherwise unavailable to locate these facilities. Abandoned facilities sometimes still contain product, and when found, create a potentially hazardous situation. Encountering an abandoned facility during construction can mean a major delay while the facility is identified and either removed or sealed. Since abandoned and active facilities are often near one another, the abandoned lines may be marked as active and vice-versa, leaving the active facility vulnerable to potential damage.⁹

There is no defined procedure for handling unknown or abandoned utility facilities or additional utility facilities that now need to be adjusted, relocated or abandoned. This potential problem requires a plan to be in place that provides compensation for the contractor (if appropriate), adjusts the schedule as needed and provides for utility company response to the needed relocation.

Recommendation 11A:

INDOT should develop a formal policy regarding what to do upon the discovery of unknown or abandoned utility facilities and utility facilities not previously planned for relocation. The policy should define the responsibilities for INDOT as project owner/designer, the highway contractor and those utility companies that own the affected facilities. The handling of abandoned utility facilities that may have no current ownership should also be addressed in this policy. Compensation for contractors that incur delays and additional costs due to encountering these unexpected utility facilities should be addressed. The policy should also:

- Set forth the legal requirements for dealing with an unknown utility facility on the jobsite.
- Clarify a utility company's responsibility when a previously unknown utility line on the project site is identified as belonging to that utility company.
- Provide a procedure to follow in situations where the owner of the unknown utility facility cannot be determined, and for handling such facilities when it cannot be determined if the line is active or abandoned.
- Determine how the highway contractor is to be compensated for dealing with an unknown or abandoned utility facility that interferes with the contractor's work or facilities previously unplanned for relocation that must now be moved.
- Determine the responsibility the project owner (INDOT or other public agency) has for unknown utility facilities that are discovered after work has been initiated

Recommendation 11B:

In addition to developing a policy, an appropriate specification should be added to the INDOT Standard Specifications to address the handling of unexpected utility facilities that are discovered during construction. Specifications currently in effect in other states and jurisdictions, particularly the Illinois specification for unknown utility facilities, should be reviewed for their effectiveness.

Benefits:

- Having a process in place to deal with the discovery of unexpected utility facilities should lessen the potential for adversarial relationships on jobsites between INDOT and contractors. A defined process should allow each party to know what is expected and what action(s) to take to resolve the problem and move forward on the project. This should also provide the contractor fair compensation for any additional costs incurred as a result of an unknown utility facility and provide INDOT with a procedure for determining the validity of such costs.
- Moving the construction process toward completion without finger pointing or inactivity while the parties try to resolve issues should be a significant benefit for the public.

CONCLUSION

Events in the past few years have made it clear that processes for highway improvement projects involving the relocation of utility facilities must change. Better communication, coordination and cooperation among the highway agency, design consultants, utility companies and contractors are essential to minimize disruption for motorists and nearby property owners and to reduce the time and cost of completing these projects.

Utility companies and government agencies both need to use the right-of-way to fulfill their respective legal duties to serve the public. Since the right-of-way is host to a complex network of utility facilities, highway improvement projects are likely to result in conflicts with those facilities. Such conflicts are likely to become more commonplace as a growing population demands greater highway vehicular capacity and enhanced utility services. This report details many of the factors that contribute to the problems experienced today.

This report also presents some initial ideas for addressing those issues. These ideas should be the starting point for a more comprehensive examination of those issues.

The Utility Relocation Task Force believes that implementation of these recommendations – or others that will be determined after further study – should minimize, if not eliminate, delays and additional costs associated with these projects. The ultimate goal is to have procedures in place throughout the highway improvement process that: (1) provide for improved communication, coordination and cooperation among the partners; (2) clearly assign responsibilities to each of the partners and (3) assure accountability when a partner does not fulfill any of its assigned responsibilities.

The Task Force is now taking steps to bring others into this discussion for their input and ideas. At the same time, it is committed to developing an implementation plan that will involve a more detailed analysis of these possible solutions.

The Task Force acknowledges that this period of additional study will take time but must be done as soon as possible and followed by action. At the same time, the Task Force understands that the failure to implement change may be a recipe for future chaos.

The Task Force strongly encourages swift implementation for those plan elements pertaining to accountability. The remaining elements should be implemented as soon as the details are finalized in an implementation plan.

Bottom line, when highway improvement projects involve the relocation of utility facilities all parties, including the public, deserve timely and cost effective completion of these projects.

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APPENDIX A**WISCONSIN LAW
Chapter 84
State Truck Highways; Federal Aid**

84.063 Utility facilities relocation. (1) DEFINITIONS. In this section:

(a) “Highway improvement” means a state trunk highway improvement project.

(b) “Utility facility” means any pipe, pipeline, duct, wire line, conduit, pole, tower, equipment or other structure, whether aboveground or underground, used for any of the following:

1. The transmission or distribution of electrical power or light.

2. The transmission, distribution or delivery of heat, water, gas, sewer, telegraph or telecommunication services.

(2) NOTIFICATION. (a) If a utility facility is within the right-of-way of a proposed highway improvement, the department shall identify the owner and notify the owner in writing of the proposed improvement.

(b) Within a specified period after the date the notice is received, the utility facility owner shall provide the department with a description and the general location of each utility facility in the proposed highway improvement right-of-way.

(3) PLANS. (a) If a utility facility owner provides the information required under sub. (2), the department shall send the utility facility owner at least one set of available project plans for the proposed highway improvement, including the location of the owner’s existing utility facilities.

(b) Within a specified period after receiving the project plans, the owner shall provide the department with a work plan. The period of time within which the owner is required to provide the department with a work plan shall reflect whether the utility facility owner is required to coordinate its work plan with another utility facility owner. The work plan provided by the owner shall include all of the following:

1. A copy of the project plans that verifies the location of all of the owner’s existing utility facilities specified on the plans by the department and that identifies the owners’ proposed location of relocated or additional utility facilities within the right-of-way of the proposed improvement.

2. A plan and a schedule of working days necessary to obtain any approval required by a governmental agency and to accomplish any proposed relocation or adjustment required by the proposed improvement.

(c) The department shall review and approve a work plan submitted under par. (b) for compliance with permit requirements and to ensure that the plan is reasonable. Approval of a work plan under this paragraph does not waive any requirement for approval of the work plan by any other governmental agency. The utility facility owner shall notify the department when all required approvals have been obtained. After receiving notification that all approvals have been obtained, the department shall notify the owner of the date on which the owner may proceed with its utility facility relocation work.

(d) The department shall notify the utility facility owner of any change in the highway improvement that requires additional relocation or adjustment of utility facilities. The department and the owner shall agree on a reasonable time to accomplish the additional work.

(4) RESPONSIBILITIES. (a) If additional utility facility relocation or adjustment work is required under sub. (3) (d), the department shall reimburse the owner for the additional work.

(b) The project contractor shall be responsible for any damages negligently caused to a utility facility.

(c) If the utility facility owner fails to comply with sub. (3), the department or its contractor shall not be liable to the owner for damages to a utility facility resulting from the highway improvement if the department or its contractor complies with s. 182.0175 (2), and the owner shall be liable to the department or its contractor for damages resulting from the failure to comply.

(5) RULES. The department shall promulgate rules to implement and administer this section.

History: 1991 a. 39; 1999 a. 85.

Cross Reference: See also ch. Trans 220, Wis. adm. code.

APPENDIX B

WISCONSIN RULES
Wisconsin Department of Transportation

Chapter Trans 220
UTILITY FACILITIES RELOCATION

Trans 220.01 Purpose and scope.

Trans 220.04 Notification.

Trans 220.02 Applicability.

Trans 220.05 Project and work plans.

Trans 220.03 Definitions.

Trans 220.06 Responsibilities.

Trans 220.01 Purpose and scope. The purpose of this chapter is:

(1) To establish the administrative procedures for implementing s. 84.063, Stats., and to prevent delays to proposed state trunk highway improvement projects and contractor delay and expense due to uncertain scheduling of utility relocations.

(2) To define a process and scheduling procedure to deal with utility conflicts with state trunk highway construction and arrange for their timely resolution.

(3) To integrate the utility facility relocation process under s. 84.063, Stats., with several pre-existing statutes and regulations, including the following:

(a) The obligations of utilities and highway planners and contractors under s. 182.0175, Stats.;

(b) The obligations of utilities to pay the cost of protection or changes to utility facilities to accommodate highway work under s. 66.0831, Stats.; and

(c) The obligations of utilities to comply with the conditions of permits issued for the location of utilities within highways under s. 86.07 (2), Stats., and 23 CFR part 645 (April 1, 1993).

(4) To comply with federal law regarding utility accommodation when the project is on any right of way of any federal-aid highway and funded in whole or in part with federal funds (23 USC 109 (1) (1993)).

(5) To make it clear that this chapter is not applicable to railroad facility relocations or adjustments.

History: Cr. Register, February, 1994, No. 458, eff. 3-1-94; **correction in (3) (b) made under s. 13.93 (2m) (b) 7., Stats.**

Trans 220.02 Applicability. (1) This chapter applies to state trunk highway improvement projects which have utility facilities located on them and are let for construction after this chapter has been published and for which the department has mailed the notification and plans prescribed in ss. Trans 220.04 and 220.05

(2) The department shall begin sending the notification and plans prescribed in ss. Trans 220.04 and 220.05 for all state trunk highway improvement projects for which the design process is initiated after this chapter is published. The department will not be required to resend the notification and plans if it has already done so prior to this chapter being published.

(3) This chapter does not apply to the alteration or relocation of railroad facilities.

History: Cr. Register, February, 1994, No. 458, eff. 3-1-94.

Trans 220.03 Definitions. The definition of words and phrases in s. 84.063, Stats., apply to this chapter. In this chapter:

- (1) “Business day” means any calendar day of the year exclusive of Saturdays, Sundays and legal holidays.
- (2) “Calendar day” means any day of the year; if more than one day, it means any consecutive days of any year or years.
- (3) “Compensable work” means utility facility alteration or relocation work for which the department will reimburse the utility facility owner under programs or policies of the department, including s. 84.295 (4m), Stats.
- (4) “Contractor” means the person or entity that enters into an improvement project contract with the department under s. 84.06, Stats., and subcontractors or suppliers to the contractor.
- (5) “Department” means the department of transportation or its agent.
- (6) “Highway” has the meaning given in s. 340.01 (22), Stats.
- (7) “Improvement” has the meaning given in s. 84.06 (1), Stats.
- (8) “Letting date” means the date the department receives and opens bids for an improvement.
- (9) “Mail” means a written transmittal, currently dated and sent to the addressee by regular or certified, return receipt requested United States postal service mail or other means.
- (10) “Major reconditioning” means an improvement project which includes pavement resurfacing or minor reconditioning plus shoulder widening, ditch restoration, reduction of curvature or grades and intersection improvements.
- (11) “Minor reconditioning” means an improvement project which includes pavement resurfacing, pavement widening, shoulder paving and intersection improvements.
- (12) “Noncompensable work” means utility facility alteration or relocation work which the owner must carry out without cost to the department.
- (13) “Owner” means the owner of a utility facility.
- (14) “Project plan” means a plan for a highway improvement suitable for the design of utility facility alterations or relocations which the department sends to the owner.
- (15) “Reconstruction” means an improvement project which rebuilds an existing facility and may include reducing curvature or grades and widening pavement and shoulders.
- (16) “Resurfacing” means an improvement project which provides a new roadway surface on an existing pavement and may include minor base patching, intersection paving, shoulder gravel and selective beam guard.
- (17) “State trunk highway” means any highway designated as part of the state trunk highway system pursuant to s. 84.02 or 84.29, Stats., exclusive of connecting highways.
- (18) “Utility facility” includes cable services.
- (19) “Work plan” means a plan of the owner to carry out utility facility alteration or relocation work to accommodate an improvement project of the department.
- (20) “Working day” means a business day on which weather and other conditions not under the control of the owner will permit utility facility alteration and relocation work to proceed for at least 8 hours of the day with the normal working force of the owner engaged in performing the controlling item of work in accordance with the owner’s approved work plan. In determining the normal working force of the owner, consideration shall be given for any diversion of the owner’s working force that is required to respond to an emergency involving restoration of critical utility service.

History: Cr. Register, February, 1994, No. 458, eff. 3-1-94.

Trans 220.04 Notification. (1) The department shall make a reasonable effort to determine what utility facilities are located within the right of way of a proposed improvement project by researching permit files, reviewing map files maintained by the department, field investigation or contact with one call locating services, and through contacts with local governmental units.

(2) The department shall identify the owner of facilities determined in sub. (1) by name.

(3) The department shall notify the owner of the proposed improvement by mail. The department may include a receipt of mailing form with the notification, in which case the owner shall complete the form and mail it back to the department within 7 calendar days of receipt.

(4) The notification shall include the name or route number, or both, of the highway, the geographical limits of the improvement, general description of the work to be done, desired date for completion of utility coordination and anticipated year of construction of the improvement.

(5) Within 60 calendar days of mailing the notification referred to in sub. (3), the owner shall provide the information specified in s. 84.063 (2) (b), Stats., by mail; that is, a description and the general location of each utility facility in the vicinity of the improvement. The utility shall reply whether or not it has facilities in the vicinity.

Note: Section 84.063 (2) (b), Stats., reads as follows:

(2) (b) Within a specified period after the date the notice is received, the utility facility owner shall provide the department with a description and the general location of each utility facility in the proposed highway improvement right-of-way.

History: Cr. Register, February, 1994, No. 458, eff. 3-1-94.

Trans 220.05 Project and work plans. (1) After the owner responds with the information specified in s. 84.063 (2) (b), Stats., the department shall mail the owner at least one set of the available project plan. The project plan shall show all existing utility facilities known to the department that are located in the right of way where they will conflict with the improvement.

(2) The department may include a receipt of mailing form. If a receipt of mailing form is sent, the owner shall complete the form and mail it back to the department within 7 calendar days of receipt.

(3) The project plan need only show those portions of the improvement which give the project location, the owner's existing utility facilities and how those facilities will be affected by the improvement. The department will also provide any additional and duplicate plan information needed by the owner to design and layout the removal, relocation or adjustment of existing utility facilities and the placement of relocated or additional facilities within the project limits.

(4) The owner shall provide the department with a work plan. The work plan shall be furnished within 60 calendar days after the date of mailing of the project plan by the department for resurfacing projects; within 90 calendar days for minor reconditioning projects; and within 120 calendar days for major reconditioning, reconstruction or new construction projects. Upon owner request or its own initiative, when the department determines there is a potential for conflict between work plans, the department will schedule a meeting that the owners are required to attend to coordinate the work. An additional 30 calendar days will be allowed to furnish the work plan if coordination is required with other utility facility owners or if the work is compensable.

(5) For noncompensable work, the work plan shall include, in addition to the information required in s. 84.063 (3) (b), Stats., a narrative description of what work will be done; whether the work is dependent on work by another owner; whether the work will be done prior to highway construction and which work will be necessary to coordinate with the work of the contractor; when the work will be started and the length of time in working days required to complete the work. A listing of approvals required by governmental agencies

and the expected time schedule to obtain those approvals shall be provided. The project plan furnished by the department shall be reviewed by the owner to verify that the owner's utility facilities are shown. If the facilities are not shown, the owner shall mark their location and return the marked up project plan to the department with a dated transmittal. If the utility facilities are shown, the owner shall advise the department by mail and need not return the project plan. For noncompensable work, the owner may also submit a request for a utility alteration or relocation loan pursuant to s. 84.065, Stats., and ch. Trans 30. If the owner's proposed relocated or additional utility facilities will be relocated within the highway right-of-way, a permit application may be submitted at the same time in accordance with "The Policy for the Accommodation of Utilities Within Highway Right-of-Way" of the department.

Note: A copy of this policy may be obtained at no cost upon request to the Division of Highways, Department of Transportation, P.O. Box 7916, Room 651, Madison, WI 53707-7916, telephone (608) 266-0233.

Note: Section 84.063 (3) (b), Stats., reads as follows:

(3) (b) *Within a specified period after receiving the project plans, the owner shall provide the department with a work plan. The period of time within which the owner is required to provide the department with a work plan shall reflect whether the utility facility owner is required to coordinate its work plan with another utility facility owner. The work plan provided by the owner shall include all of the following:*

1. *A copy of the project plans that verifies the location of all of the owner's existing utility facilities specified on the plans by the department and that identifies the owner's proposed location of relocated or additional utility facilities within the right-of-way of the proposed improvement.*

2. *A plan and a schedule of working days necessary to obtain any approval required by a governmental agency and to accomplish any proposed relocation or adjustment required by the proposed improvement.*

(6) For compensable work, in addition to the items specified in sub. (5), the work plan shall include an estimate of cost for utility facilities relocation including appropriate credits for betterments, used life and salvage. An executed conveyance of rights or quit-claim deed to the property occupied by the owner's facilities if one is required by the improvement project may be submitted at this time.

(7) The department shall review the work plan to ensure compatibility with permit requirements, the improvement plans and construction schedule, reasonableness of relocation scheme and reasonableness of cost for compensable work. If the work plan submitted by the owner is not compatible or reasonable, the department shall advise the owner by mail as soon as practicable. If sent through regular mail, the department may include a receipt of mailing form. If a receipt of mailing form is sent, the owner shall complete the form and mail it back to the department within 7 calendar days of receipt. The owner shall submit a revised work plan within 30 calendar days of receipt of advice by the department that the work plan is not compatible or reasonable. The department shall review the revised work plan and if the work plan is still not compatible or reasonable, the work plan revision process shall be repeated. When the work plan is compatible and reasonable, the department shall advise the owner by mail of its approval.

(8) The owner shall notify the department by mail within 15 calendar days of receiving all required approvals from government agencies.

(9) The department shall notify the owner by mail not less than 30 calendar days before the owner is required to begin the work provided for in the approved work plan. The department may include a receipt of mailing form which the owner shall complete and return within 7 calendar days of receipt.

(10) If the owner's approved work plan is dependent on work by the contractor, the contractor shall provide the department and the owner a good faith notice 14 to 16 calendar days before the work is expected to be complete and ready for the owner to begin its work. The contractor shall follow up with a confirmation notice to the department and the owner not less than 3 working days before the work will be ready for the owner to begin its work.

(11) The owner shall notify the department when its work has started. The owner shall complete its work within the time frame described in its work plan. The owner shall notify the department when the work is complete. Notices of work start and work completion shall be sent by mail within 15 calendar days of starting and completing the work, respectively.

(12) If, prior to the letting date of the highway improvement project, the department's project plan is changed so that additional utility relocation or adjustment work is found necessary, the department shall furnish a revised project plan per subs. (1) to (3), and the owner shall provide the department with a revised work plan per subs. (4) and (5), except that the time allowed for the owner to submit the revised work plan after receipt of the revised project plan shall not exceed 60 calendar days. Revisions to the project plan shall be identified to the owner.

(13) If, after the letting date of the highway improvement project, additional utility relocation or adjustment work is found necessary, the department shall notify the owner. The department and the owner shall agree on a revised work plan.

(14) If additional utility relocation or adjustment work is found necessary after the owner has been notified per sub. (9), refer to s. Trans 220.06.

History: Cr. Register, February, 1994, No. 458, eff. 3-1-94.

Trans 220.06 Responsibilities. (1) If the department requires additional work to a utility facility after the facility has been relocated or adjusted in accordance with a work plan approved by the department, the department shall bear the reasonable cost of the additional work.

(2) If the department requires relocation or adjustment of a noncompensable utility facility that was originally determined, per the work plan, to not need relocation or adjustment, the owner shall bear the cost of the relocation or adjustment.

(3) If the department requires relocation or adjustment of a compensable utility facility that was originally determined, per the work plan, to not need relocation or adjustment, the department shall bear the reasonable cost of the relocation or adjustment.

(4) The owner shall bear the cost of additional work to any portion of its facilities after the facilities have been relocated or adjusted in accordance with a work plan approved by the department if the additional work is required by the department due to error by the owner in preparation of work plans for, field location of, or construction of the relocation or adjustment of its facilities.

(5) The contractor shall be responsible for compliance with s.182.0175 (2), Stats., with respect to precautions to be taken to avoid and prevent damage to utility facilities.

(6) (a) The owner shall complete alteration or relocation of its utility facilities in accordance with the work plan approved by the department.

(b) The work shall be completed by the owner within the time frame of the approved work plan.

(7) (a) If the owner has complied with ss. 66.0831, 84.063 and 182.0175, Stats., and this chapter and the utility facilities are damaged by the contractor, the contractor shall be responsible to the owner for damages if the contractor has not complied with s.182.0175 (2), Stats.

(b) The contractor shall not be responsible for damage to utility facilities if it has complied with ss. 182.0175 (2) and 66.0831, Stats.

(c) If the owner fails to provide a work plan as provided in s.Trans 220.05, or fails to complete the alteration or relocation of its facilities in accordance with the work plan approved by the department as provided in s. Trans 220.05, the owner shall be liable to the contractor for all delay costs and liquidated damages incurred by the contractor which are caused by or which grow out of failure of the owner to carry out and complete its work in accordance with the approved work plan.

(8) If one year or more has passed since the department approved a work plan, the owner may submit a revised work plan that must be considered by the department if it is submitted prior to the letting date and does not affect the letting date **History:** Cr. Register, February, 1994, No. 458, eff. 3-1-94; **corrections in (7) (a) and (b) made under s. 13.93 (2m) (b) 7., Stats.**