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16. Abstract

Project 0-5475 performed a comprehensive analysis of utility conflict data/information flows between utility accommodation stakeholders in the Texas Department of Transportation project development process, developed data models to accommodate work and data flows between such stakeholders, developed a prototype system for the management of utility conflict data, and developed a tool for the visualization and analysis of utility conflicts within the prototype. This report provides a guideline for users of the prototype system called Utility Accommodation and Conflict Tracker (UACT). The report details how users can access UACT, how UACT displays information, and how users can navigate the interface. The report further provides an overview of UACT's business areas and the actions that are available to users in those business areas. Specifically, the report provides detailed guidance on how to import project data, import utility facility data, add stakeholders to projects, manage UACT users and permissions, upload and convert documents to PDF, create utility conflicts, create a utility agreement assembly, and create reports based on UACT data.

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UTILITY ACCOMMODATION AND CONFLICT TRACKER (UACT) USER MANUAL

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The United States Government and the State of Texas do not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to the object of this report.

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LIST OF ACRONYMS, ABBREVIATIONS, AND TERMS

AASHTO	American Association of State Highway and Transportation Officials
CAD	Computer Aided Design
CSJ	Control Section Job
DCIS	Design and Construction Information System
DOT	Department of Transportation
FHWA	Federal Highway Administration
FileNet	FileNet Electronic Document Management System
GIS	Geographic Information System
IE	Internet Explorer®
Interstate System	National System of Interstate and Defense Highways
JPEG	Joint Photographic Experts Group
LPA	Local Public Agency
PDF	Portable Document Format
PNG	Portable Network Graphic
PS&E	Plans, Specifications, and Estimate
RAM	Random Access Memory
ROW	Right of Way
SP	Service Pack
SUE	Subsurface Utility Engineering
TPP	Transportation Planning and Programming Division
TSD	Technology Systems Division
TTI	Texas Transportation Institute
TxDOT	Texas Department of Transportation
UAR	Utility Accommodation Rules
UIR	Utility Installation Review
UACT	Utility Accommodation and Conflict Tracker

ABOUT UACT

INTRODUCTION

The Utility Accommodation and Conflict Tracker (UACT) system is a web-based prototype for management and tracking of utility conflicts. Key functionalities of UACT include:

- **Utility Conflict Tracking.** Department of transportation (DOT) officials can enter utility conflict data based on existing utility facility data and create visual representations of utility conflicts that are displayed on a mapping component. The prototype also provides an overview of the status of utility conflicts for each project.

- **Utility Agreement Development and Tracking.** A utility company can complete the required forms of a utility agreement online and file the document electronically for review by the appropriate district and division personnel. The system guides the user through the completion process and selects appropriate forms based on the specific circumstances of the utility conflict.

- **Document Upload and Conversion to PDF.** The prototype allows users to upload documents that are accessible to other users based on roles and privileges. The prototype converts all documents automatically to PDF to allow easy access to all privileged users.

- **DCIS Project Data Access**. The research team designed the prototype to connect to the design and construction information system (DCIS) and display project data that are collected in a DCIS data warehouse.

- **Utility Facility Database Access.** The research team designed the prototype to integrate with a database of utility facility features based on a geographic information system (GIS).

- **Sophisticated User Access Model**. UACT provides a sophisticated and flexible access system based on capabilities, roles, and privileges. UACT administrators can further customize access to UACT by providing individual users access to specific projects.

This manual uses the following special text style conventions to distinguish among elements of the UACT interface (Table 1):

Table 1. UACT Text Styles for Interface Elements.

Text Style	Interface Element	Interface Example
Blue Text	UACT user interface hyperlink	Home
Bold Text	UACT button	Cancel
[**Text in Brackets**]	UACT tab (or subtab)	Add Conflict
Orange Text	UACT subsection header	Basic Information

UTILITY CONFLICT MANAGEMENT FUNCTIONALITY

The UACT prototype is based on a business process model that describes utility-focused right of way activities in the project development process. The UACT data architecture is designed to perform several activities which are included in the research report and cannot all be listed here (*1*). Users can perform the following primary activities using the UACT prototype:

- Import and view project data from DCIS (using DCIS connection).
- Create and edit new UACT projects.
- Add and edit documents for projects and utility conflicts.
- Create and edit utility conflicts based on existing utility facility data.
- Create and edit utility agreement documentation for utility conflicts.
- Create reports and utility conflict matrices based on utility conflict data.

The UACT prototype supports the activities of various stakeholders in the utility coordination process. At the core of the prototype is a listing of projects with associated inventory of utility conflicts that provides web-based access to utility conflict data and current status to eligible users. In the case of utility conflicts that are eligible for cost reimbursement, the prototype allows the creation of documents required for utility agreements between the Texas Department of Transportation (TxDOT) and utility owners.

ADDITIONAL INFORMATION

The Utility Accommodation Rules (UAR) and the Texas Department of Transportation (TxDOT) Utility Manual govern the accommodation of utility facilities on the state highway right of way (ROW) (*2*, *3*). The rules and guidelines are the result of a federal mandate that requires states to submit a statement to the Federal Highway Administration (FHWA) documenting the following information:

- authority of utilities to use and occupy the state highway right of way,
- power of the state DOT to regulate such use, and
- policies the state DOT uses for accommodating utilities within the right of way of federal aid highways under its jurisdiction (*4*).

The rules, which can be traced to utility accommodation policies and guides of the American Association of State Highway and Transportation Officials (AASHTO), prescribe minimums relative to the accommodation, location, installation, adjustment, and maintenance of utility facilities within the state right of way (*5*, *6*). However, the rules also establish that where industry standards or governmental codes, orders, or laws require utilities to provide a higher degree of protection than provided in the UAR, such regulations and laws take precedence (*2*). At TxDOT, a number of documents provide additional information regarding specific requirements that might affect utility installations on the right of way, including standard and special construction specifications, special provisions, and survey standards (*7*, *8*).

ACCESSING UACT

CLIENT SYSTEM REQUIREMENTS

To use UACT, use a desktop or laptop computer with an internet connection and at least the following specifications:

- Windows® XP with Service Pack 2 (SP2),
- 256 MB of RAM,
- Microsoft® Internet Explorer® (IE) 6.0 with SP2, and
- PDF reader such as Adobe Acrobat Reader® 6.0.

To access UACT, a web-browser such as Microsoft Internet Explorer along with a valid and active UACT account is required. No other client-side software is necessary. Other web-browsers such as Mozilla Firefox may be used but UACT does not officially support them. In this manual, the term "browser" or "web-browser" refers exclusively to Microsoft Internet Explorer.

LOG IN TO UACT

To access UACT, point the web-browser to the following address: http://impdev.tamu.edu/uact The address is not case sensitive and is acceptable in any combination of small and capital letters. The above address takes the user to a user login page as shown in Figure 1. At this page, enter your UACT username and password and click on **Sign in**. If you do not have a UACT account, click on Create a new account and refer to the section New User Registration of this user manual.

Figure 1. UACT Login Screen.

NEW USER REGISTRATION

UACT assumes the following business structure for system users:

- A company seeking access to UACT may be composed of multiple offices, which do not necessarily coincide with TxDOT district boundaries. Examples of offices include regional divisions, marketing areas, service centers, city departments, and utility district offices.

- For each office, there may be one or more administrators, users, consultants, and guests. By default, the first user who creates an office account in UACT is an administrator for that office. Before that user can use his/her account, a TxDOT official must validate the account and approve it.

- Office administrators have the responsibility to manage the office account, including adding and/or deleting user accounts, consultant accounts, and guest accounts.

- Administrators and users can use the online interface to submit conflict data and supporting documentation to TxDOT.

To create a new office account (and create the first administrator account) use the following procedure:

- At the UACT user login page and at the bottom of the login box, click on Create a new account (Figure 2).

Figure 2. UACT Login Box.

- On the following screen, complete the short questionnaire and click **Next** (Figure 3).

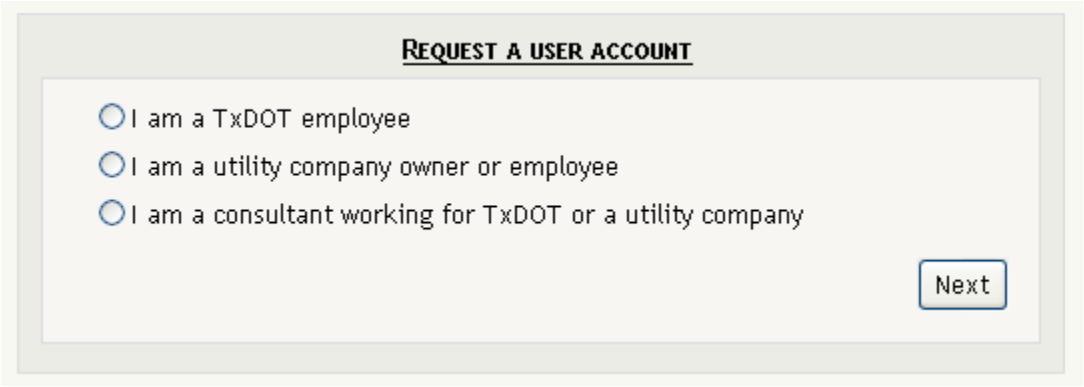


Figure 3. UACT Request User Account Screen.

- Depending on the answers provided in the questionnaire, appropriate fields in the following "Request account" form will become available. Note: If your office already exists in the UACT database, *do not* use this procedure. Instead, ask your designated UACT office administrator to create an account for you.

- At the “Request a User Account” screen, provide installation owner, your “home” TxDOT district, office, contact, security information, and click **Next** (Figure 4).

    - Verify the pre-listing of the installation owner name in the database. If a record already exists, *do not* create a new one. Instead, select the installation owner name from the drop-down menu.

    - The “home” TxDOT district is the district where you will register the new office account.

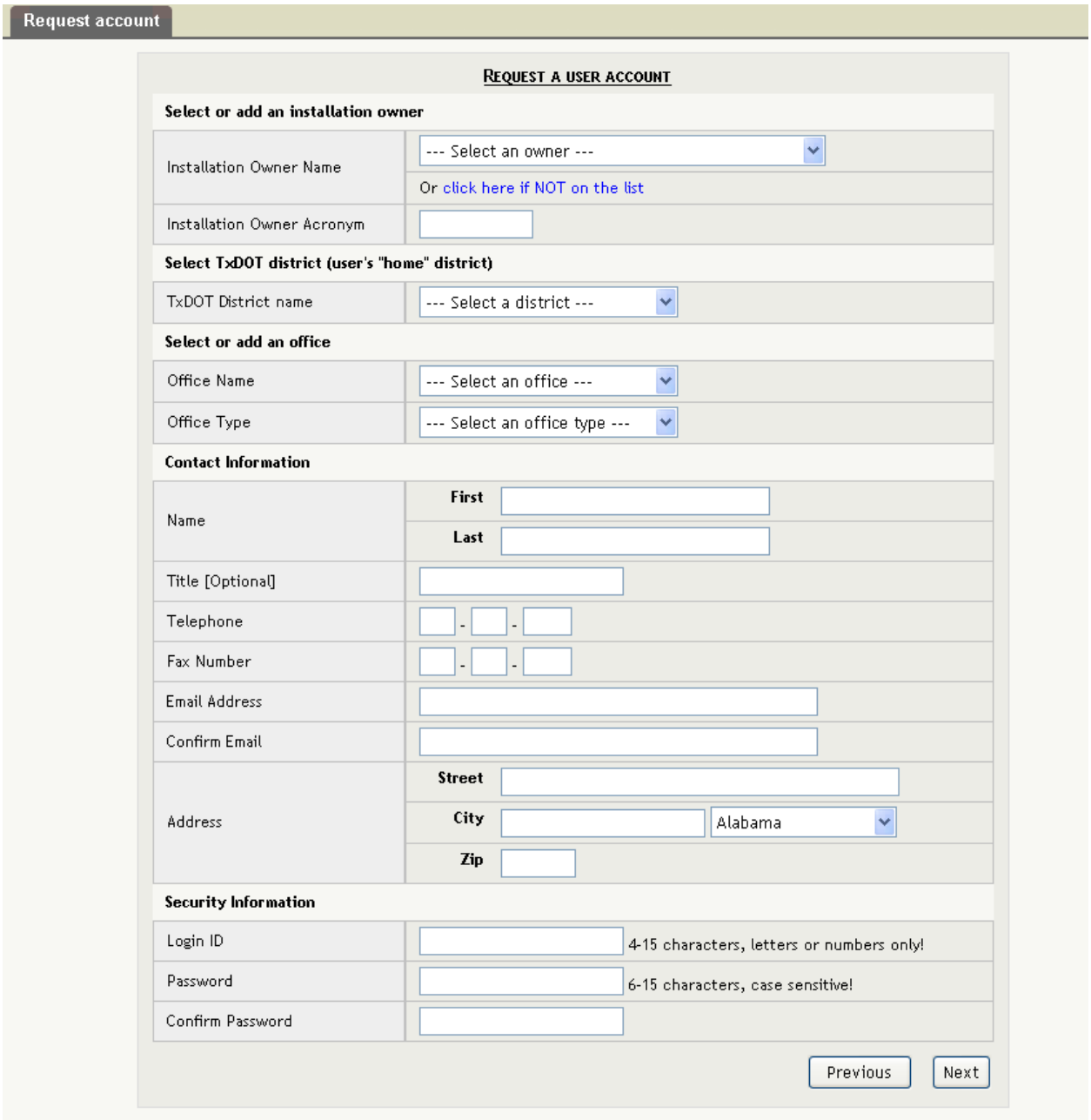


Figure 4. Request User Account Screen.

- Review the assigned role and permissions to the new user account and click **Next** (Figure 5).

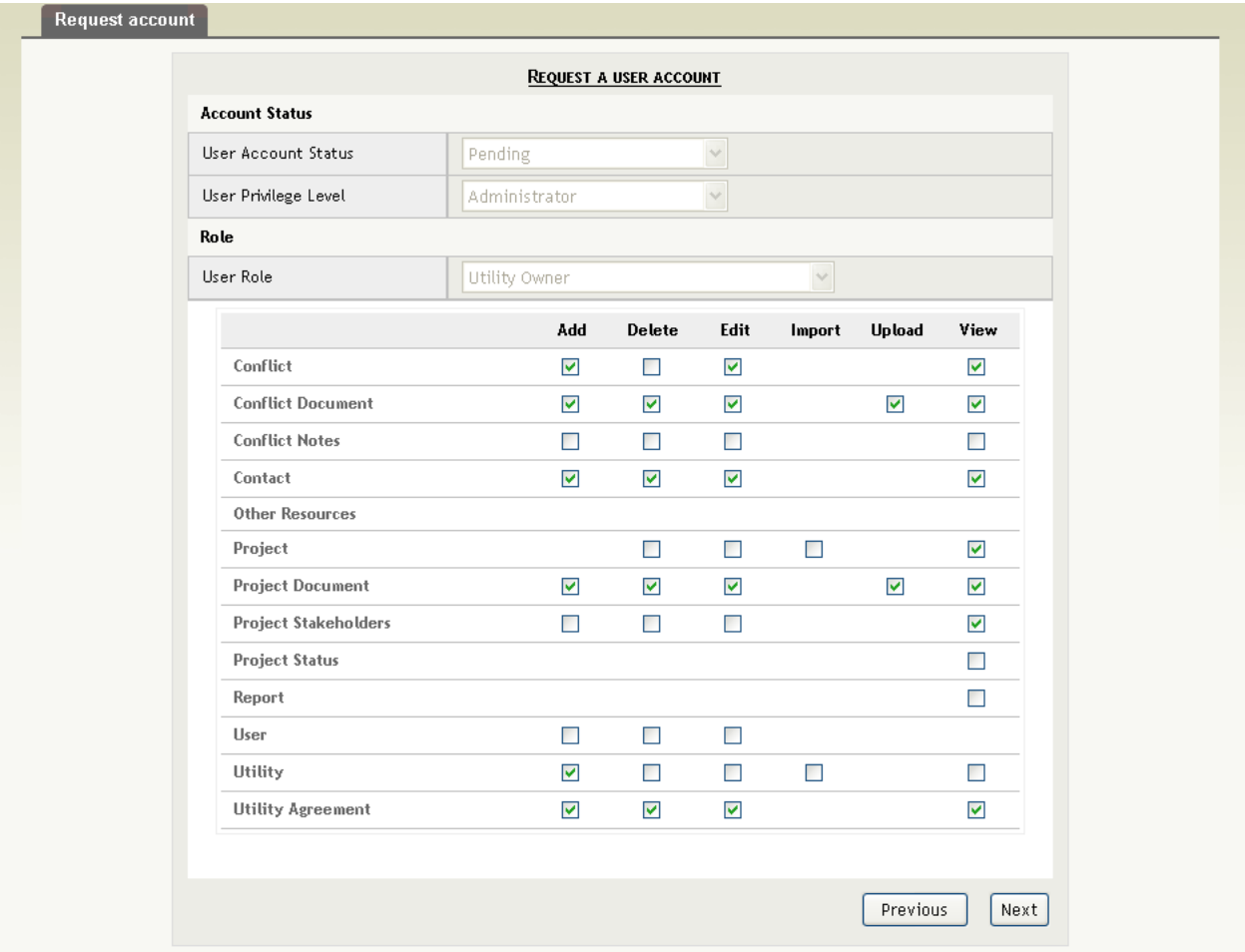
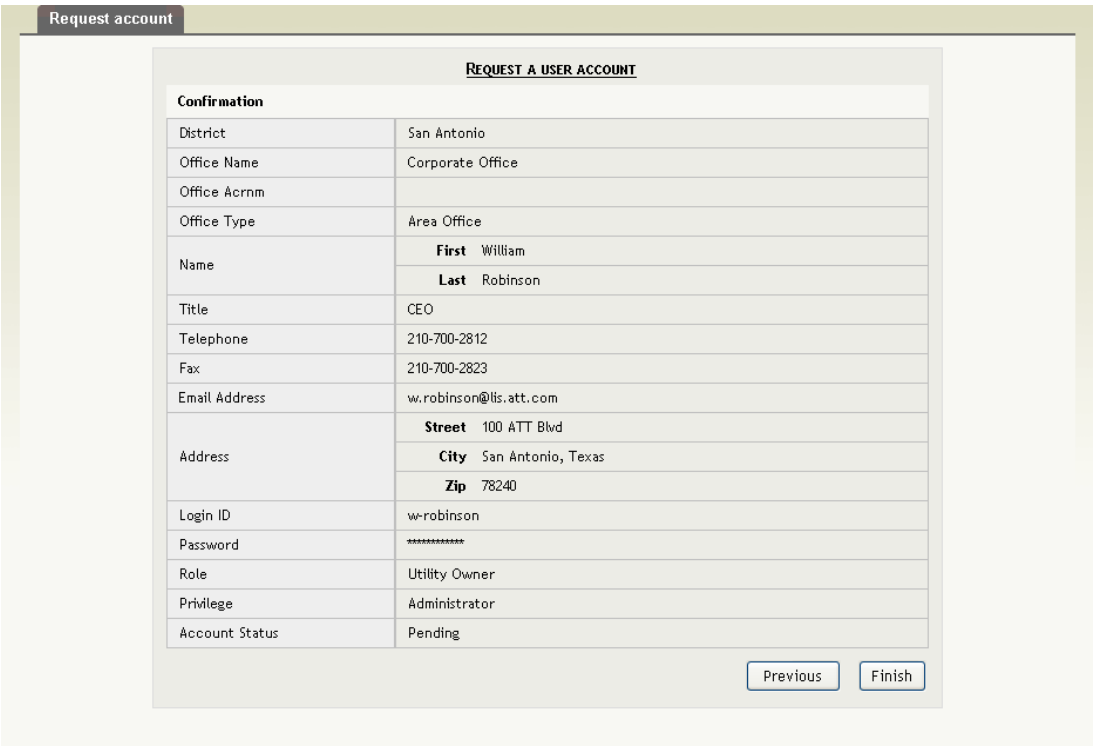


Figure 5. User Account Role Overview.

- All information on this screen is read-only, which means that it is not modifiable. By default, the account status is "Pending" until approved by a UACT System Administrator, the privilege is "Administrator," and the role is "Utility Owner." The second half of this form displays available permissions to the user (see glossary for more information on permissions). If this user account requires additional permissions, contact a UACT System Administrator.

- Verify the information and click **Finish** to submit the account request to a TxDOT administrator of the selected district, or click **Previous** to make changes (Figure 6).



Request account

REQUEST A USER ACCOUNT

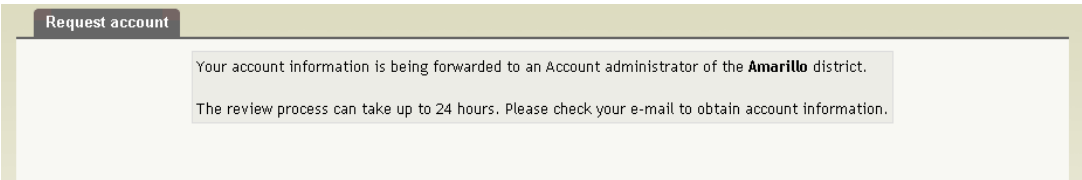
Confirmation

District	San Antonio
Office Name	Corporate Office
Office Acrnm	
Office Type	Area Office
Name	**First** William
	Last Robinson
Title	CEO
Telephone	210-700-2812
Fax	210-700-2823
Email Address	w.robinson@lis.att.com
Address	**Street** 100 ATT Blvd
	City San Antonio, Texas
	Zip 78240
Login ID	w-robinson
Password	**********
Role	Utility Owner
Privilege	Administrator
Account Status	Pending

Previous Finish

Figure 6. User Account.

- After submitting the request, TxDOT will review the information and will contact you by e-mail (Figure 7). Upon approval, you will be able to log in to UACT.



Request account

Your account information is being forwarded to an Account administrator of the **Amarillo** district.

The review process can take up to 24 hours. Please check your e-mail to obtain account information.

Figure 7. Account Request Submission Note.

PASSWORD AND LOGIN ID RETRIEVAL

A forgotten password is retrievable using one of the following methods:

- Ask your designated UACT office administrator to generate a new temporary password for your account under User Management.

- If your designated UACT office administrator is not available, contact the TxDOT right of way office and request a temporary password. TxDOT can generate a new temporary password for your account under User Management.

In all cases, UACT will send the new temporary password to the e-mail address associated with the login ID. The next time you login, UACT will ask you to change that temporary password.

A forgotten username is retrievable as follows:

- Ask a designated UACT office administrator to login and look up the username under User Management.

- If a designated UACT office administrator is not available, contact the TxDOT right of way office. TxDOT can look up your login ID under User Management.

COOKIES AND PRINTING WITH INTERNET EXPLORER

UACT uses session objects as a way to "link" pages opened by the user within the same session. The server automatically generates a session object ("cookie") in response to a user request to start a session. Before you can log in, make sure your browser is set to enable cookies. After you close the browser or when the session expires (after 60 minutes of inactivity), the server will automatically delete the session object. To enable cookies in Internet Explorer, go to Tools > Internet Options > Privacy and move the slider to Medium.

If you use Microsoft Internet Explorer, make sure the browser is set to print background colors and images. In Internet Explorer, go to Tools > Internet Options > Advanced and, under "Printing," check the "Print background colors and images" option.

HOW UACT DISPLAYS INFORMATION

LISTING OF INFORMATION

In many areas of the system, UACT displays information in tabular format. UACT displays at most 10 rows of information at once. If more information exists, UACT creates a new page that becomes available through a link at the bottom of the first page, to allow the user to navigate to additional records without a need for vertical scrolling (Figure 8).

Highway Number	ROW CSJ	Construction CSJ	Project Name	District	Edit
	1234-12-133	1234-12-132	Colorado County Reconstruction Project	Yoakum	
Sw 87th	1235-69-857	1235-69-856	Callaghan Reconstruction Project	Abilene	
Fm 5	2325-25-413	2325-25-412	Comanche Reconstruction Project	Brownwood	
Hw 90	2365-89-636	2365-89-635	Old Highway 90 overpass replacement	Atlanta	
Us 1	3658-96-588	3658-96-587	Collin Restruction Project	Dallas	
Hw 281	3695-85-255	3695-85-254	HW 281-I410 Airport Web Interchange	Lubbock	
Sw 112	3698-54-786	3698-54-785	Highway 130 Project	Childress	
I 410	4568-25-699	4568-25-698	Sw 112th Ave./Allapattah Road Roadway Improvement	Waco	
Ih 10	6541-23-885	6541-23-875	Katy Freeway Section A	Houston	
Ih 10	6541-23-886	6541-23-876	Katy Freeway Section B	Houston	

1 2

Figure 8. Tabular Listing of Information in UACT.

By default, the current page cannot be selected and is grayed out. Additional pages appear in bold and are clickable. In UACT, almost all information provided in tabular list format follows this consistent structure.

Information in tabular list format can be sorted by clicking on the white colored text of the header of any column of interest. The first click sorts the table in ascending order, the second click in descending order. Sortable columns have white colored text as compared to orange text, which identifies columns that cannot be sorted. Note: The coloring of text depends on the color scheme (theme) chosen for the website and may change if a different theme is applied to the website. If a different color scheme is chosen for the website, items that perform actions such as sorting should remain identifiable by a different text color.

UPLOADING FILES TO UACT

All files uploaded to UACT become available in two formats, the format of the uploaded original file and a PDF version. The PDF version enables users to view files uploaded to UACT if they cannot view the file in its native format (e.g., AutoCAD). Note: The time required for the generation of a PDF file increases with the size of the file.

NAVIGATING UACT

SCREEN STRUCTURE AND MENU OPTIONS

All UACT screens use the following page structure (Figure 9):

- **Navigation Area.** This area at the top of the user interface includes links to major sections of the application.

- **Main Information Area.** The content displayed here depends on the main menu item the user selects.

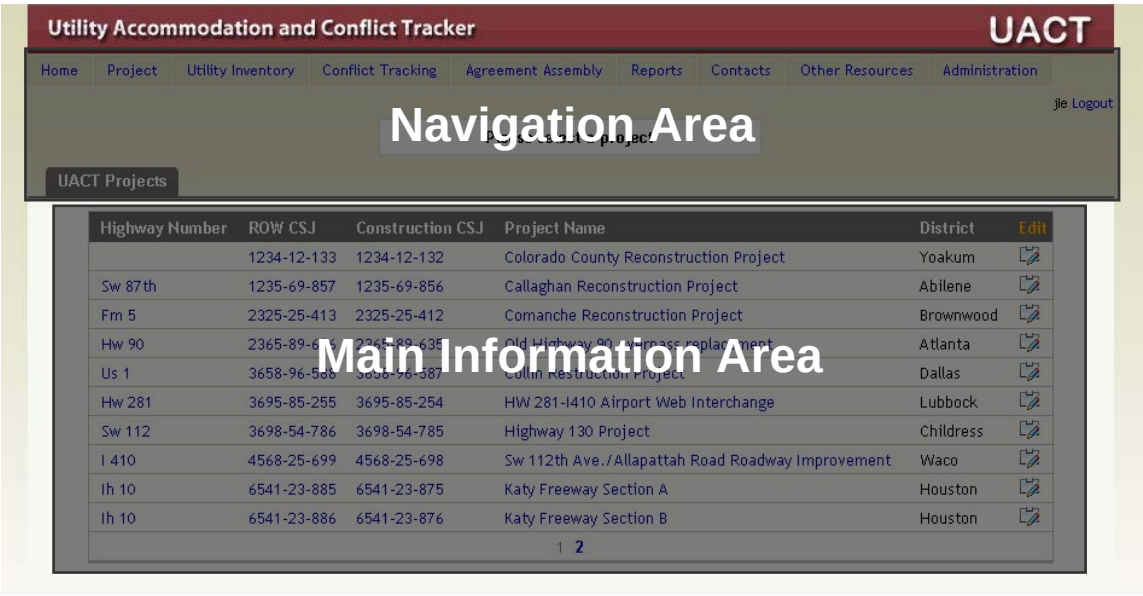


Figure 9. UACT Navigation and Main Information Area.

The Navigation Area consists of the following navigation elements (Figure 10):

- **Main Menu.** The main menu items are Home, Project, Utility Inventory, Conflict Tracking, Agreement Assembly, Reports, Contacts, Other Resources, and Administration. These main menu items correspond to the business areas of the prototype. For the most part, these items change little during the use of UACT. If a user hovers the mouse over a main menu item, additional submenu items may become available.

- **UACT System Path.** This main menu item provides a quick view of the user's current location in the UACT system. Blue text in the system path indicates links that are alternative navigation elements to components in UACT.

- **Project Information.** This main menu item provides the current right of way control section job (CSJ) and Construction CSJ of the currently active project.

- **Tab and Subtab Navigation.** This main menu item consists of tabs (and occasionally subtabs) to provide further navigation options within a business area section.

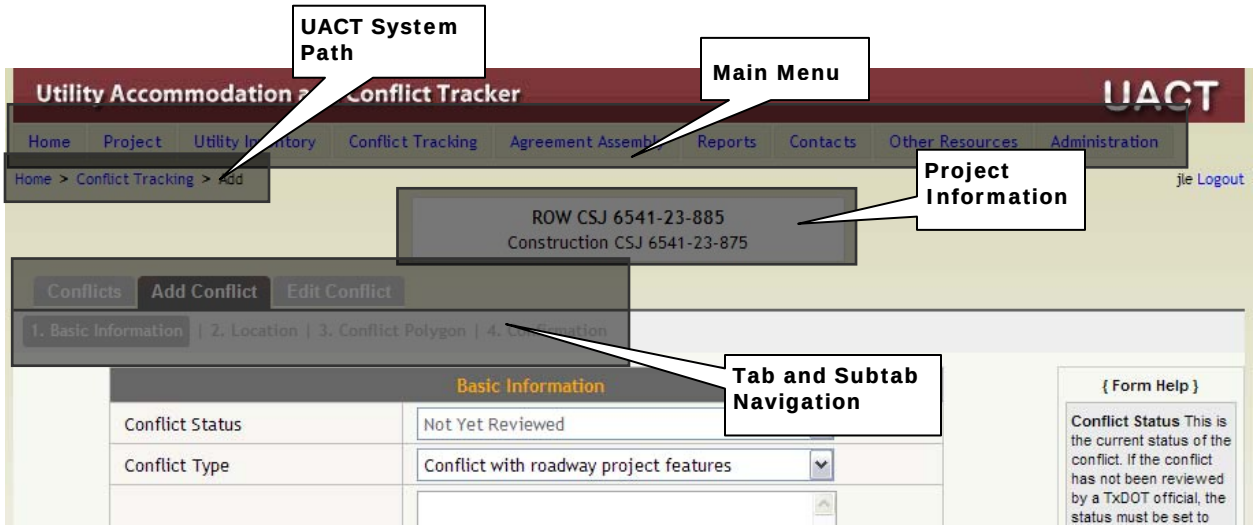


Figure 10. UACT Navigation Area.

The specific contents of the main menu, submenu, tab, and subtab navigation may differ according to the role and permissions assigned to the current user. A brief description of the main menu items follows:

Home

- Home provides a listing of projects currently on the UACT system, which is accessible to users according to their role and privilege. For access to a project, the user must first select a project by clicking on a blue link (either highway number, right of way CSJ, construction CSJ, or project name).

Project

- Project outlines details of a project selected by the user under the home page.

- Import allows a user with sufficient permissions to import a project from a central TxDOT database called DCIS.

Utility Inventory

- Utility Inventory allows viewing a list of imported utilities and its details.

- Utility Import allows a user with sufficient permissions to import a utility from an external database into UACT. The imported utilities come into play when creating conflicts and agreement assemblies.

Conflict Tracking

- Conflict Tracking allows viewing of conflicts and their details (conflict location and type, map of the conflict, and documents associated with the conflict) created by the current user or users of current user's company. TxDOT users can view all conflicts without any restrictions.

- Add Conflict allows creating a new conflict as identified by TxDOT or a utility company.

- Edit Conflict enables the user to edit a previously created conflict and its details. Some details are only modifiable by TxDOT users.

Agreement Assembly

- Agreements shows the user a list of agreements created by him or his company for submission to TxDOT along with actions available in the current context such as completing the agreement, editing its details, viewing its details, and deleting an agreement.

- New Agreement allows a utility company user to create a new agreement for submission to TxDOT.

- Continue Agreement enables a utility company user to continue a previously created agreement and finally submit it to TxDOT.

Reports

- Reports provides a mechanism for users to generate a list of certifications and other queries by using a general-purpose query engine.

Contacts

- Contacts provides a listing of users and their contact information on the UACT system.

Other Resources

- Other Resources provides external sources of information made accessible by TxDOT to UACT users.

Administration

- Users allows administrators (TxDOT and others) to add new users and manage currently registered users.

- Access Control enables a System Administrator to set up capabilities (add, edit, delete, etc.) that will be available in the UACT system as well as specify default permissions (add document, edit conflict) for the different roles (utility owner, utility consultant, TxDOT surveyor) available in UACT.

The Main Information Area consists of the following elements (Figure 11):

- **Information Display and Input Area.** This area either displays data (mostly tabular list format) or provides a user interface to input new data.

- **Help Area.** This area provides context specific help to users in certain areas of the prototype.

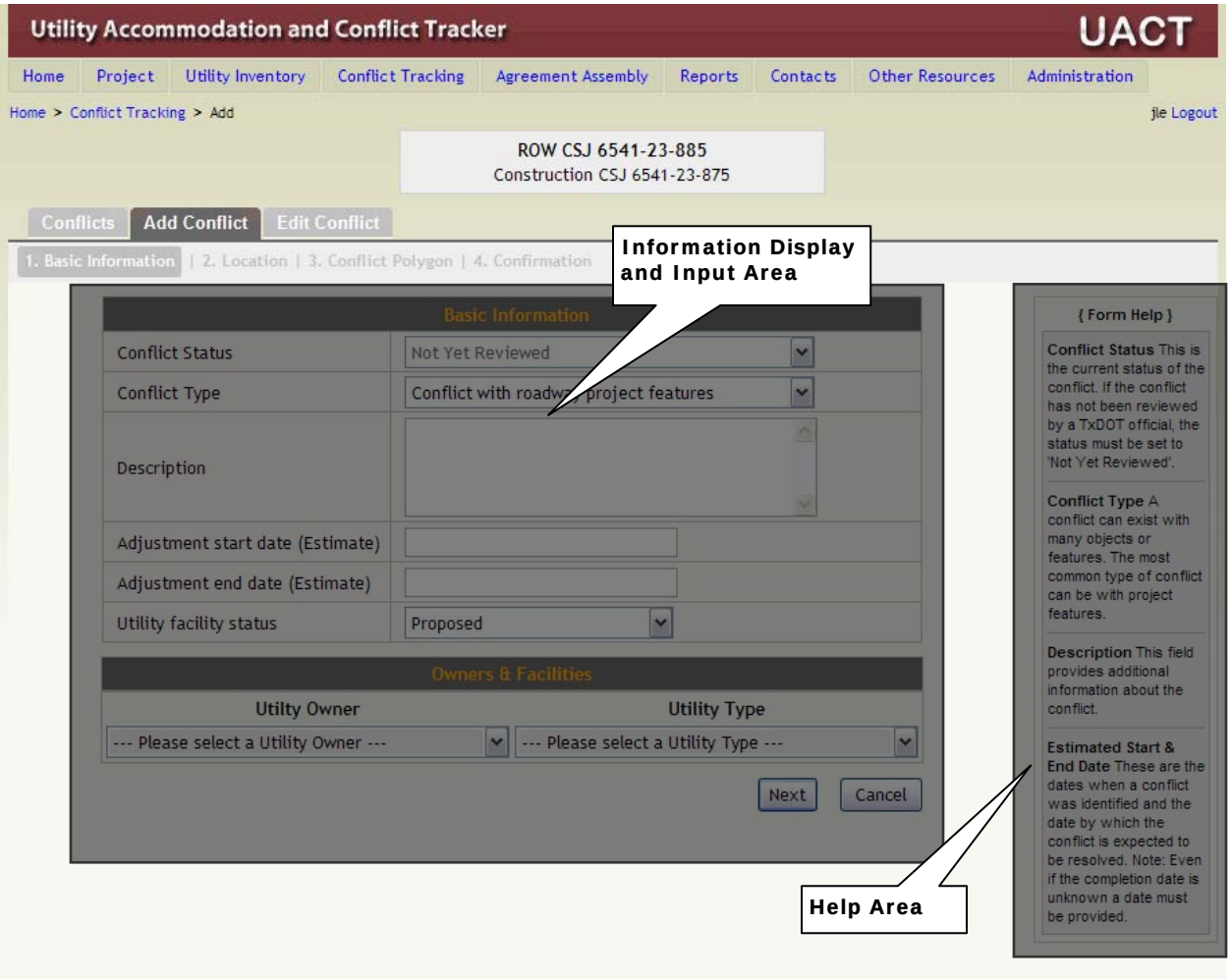


Figure 11. Main Information Area.

UACT PERMISSION AND BUSINESS AREA STRUCTURE

UACT ACCESS PERMISSIONS

UACT Capabilities

UACT provides several basic actions that users can perform in certain areas of the system that are called capabilities. In the current version, UACT provides six basic capabilities:

- **View.** Allows a user to view an object (such as details about a conflict, a list of users in UACT).
- **Add.** Gives a user the capability to add an object (such as a project, a conflict, etc.).
- **Edit.** Allows a user to edit an object (such as a user profile or information about a utility facility).
- **Delete.** Allows a user to delete an object (such as a document or a conflict, etc.).
- **Import.** Allows a user to import an object (such as a utility facility from an external database).
- **Upload.** Allows a user to upload an object (such as a document, an image file, etc.).

UACT Business Areas

UACT consists of several business areas that have subdivisions called business area sections. Table 2 provides an overview of UACT business areas and business area sections. Currently, UACT has 9 business areas and 28 business area sections. The combinations of business area sections with capabilities define access permissions to areas of the prototype. The current version of the prototype has 68 permissions that can be assigned to different user types, or roles. For example, the "Conflict Details" business area section has the assigned capabilities "view," "edit," and "delete," which allows users to view, edit, and delete utility conflict details. Once a permission has been defined, it can be assigned to a user role. As a result, all user accounts with a certain role start out with the same set of permissions. The Appendix provides a matrix that shows UACT permissions for each role.

Note that the current number of 68 permissions is much smaller than the maximum possible number of 168 (28 • 6) permissions, because not all possible combinations are currently valid combinations that produce valid permissions. For example, the combination of "delete" capability with the "Project Status" business area section is not valid because the UACT interface does not currently support the deletion of a status in that business area section. If the UACT prototype is expanded in the future, this may become a valid permission, which then would have to be created by a system administrator.

Table 2. UACT Business Areas and Business Area Sections.

Business Area	Business Area Section
Project	Project Listing
	New UACT Project
	Project Details
	Project Status
	Project Stakeholders
	Project Documents
Utility Inventory	Project Utility Listing
	Enterprise Utility Listing
	Utility Details
	New Utility
Conflict Tracking	Conflict Listing
	Conflict Details
	Conflict Documents
	Conflict Notes
	New Conflict
Agreement Assembly	Agreement Listing
	Agreement Details
	New Agreement
Reports	Reports
Contacts	Contacts Listing
Other Resources	Other Resources
	New Resource
Users	User Listing
	User Details
	New User
Access Control	System Permissions
	Role Permissions
	Privilege Permissions

Although the permissions of a UACT user are limited by the role of the user's company, they can be further restricted by the company administrator using a *privilege*. For example, a utility owner may want to set up three different types of accounts for his employees: "Administrator," which includes all permissions of the utility owner role, "User," which includes most of the

utility owner permissions, and "Guest," which includes only the view permissions of a utility owner role. Figure 12 shows how the utility owner role encompasses a subset of all UACT permissions, some of which are shared with the roles "Subsurface Utility Engineering (SUE) Provider" and "Utility Consultant" (overlapping areas), and the privileges Administrator, User, and Guest as subsets of permissions within the utility owner role.

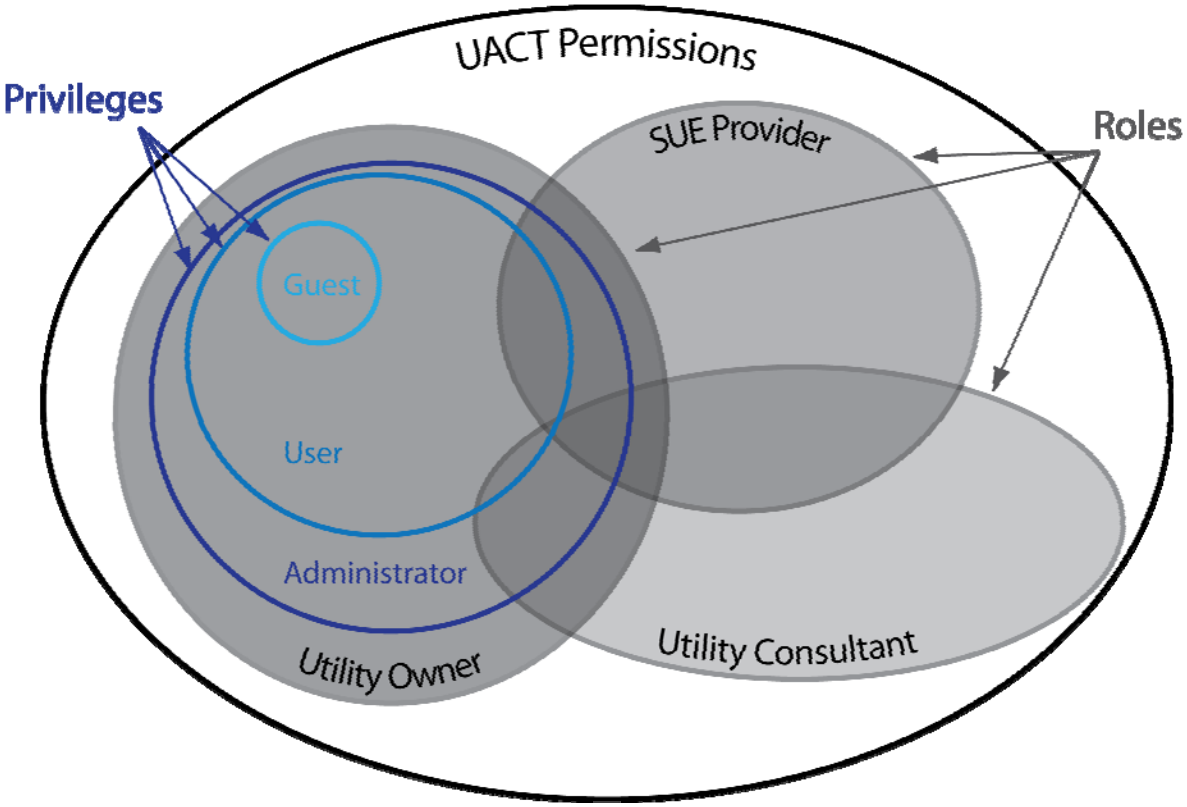


Figure 12. Relationship of Permissions, Roles, and Privileges in UACT.

UACT BUSINESS AREA DESCRIPTIONS

Home

Home is not an actual business area but rather displays the project listing business area section of the Project business area, as described below. Click on Home to display a list of all projects the user has access to in the UACT system. The list displays all projects if the current user is a TxDOT user or only a subset of projects in which the current user's company is a stakeholder or whose company's utility exists in the list of imported utilities that are part of the project (Figure 13).

Figure 13. UACT Home Page.

The information displayed here provides a quick overview of the various projects. Additional information available about the project becomes accessible by clicking on the project name or any of the CSJ numbers. Depending on the user's permissions, the **Edit** column may be visible, which allows the user to edit UACT project information by clicking on the edit icon in the appropriate row. Currently, only the project name is editable in UACT (see Figure 18 for more information).

Selecting an Active Project

In order to perform any action in UACT (such as adding conflicts or creating agreement assemblies), the user must select a project from this list of projects displayed on the home page. To select a project, click on any blue text of a project. This will select the project as the currently active project and display the project's detail information. The construction and right of way CSJ numbers of a selected project become visible in the project information area as

shown in Figure 13. To make a different project the active project, click on Home again and then click on the project that should become the active project.

Project Business Area

Project Import

[**DCIS Project Import**] lists DCIS project data and allows a user with granted permissions to import the project data into UACT.

- Click on Import under the main menu item Project (Figure 14).

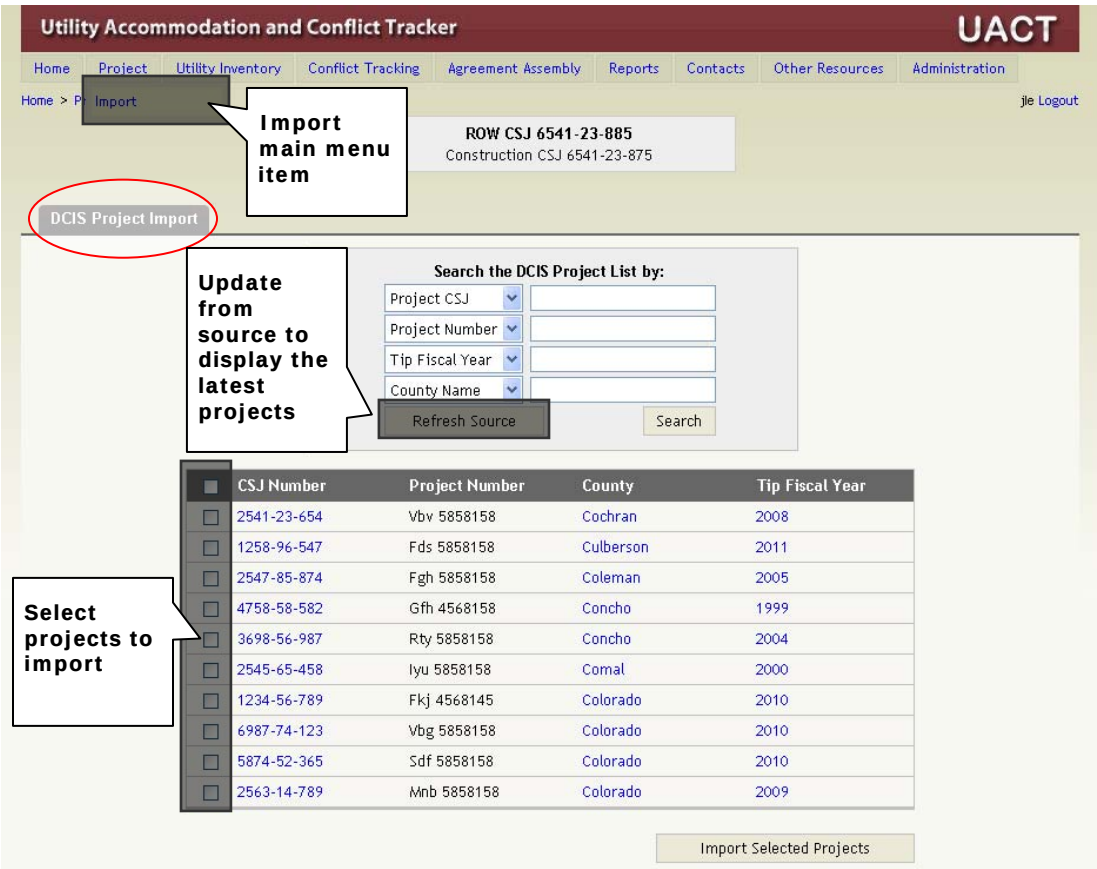


Figure 14. Project Import.

- The import page appears divided into two sections; a project search panel and the DCIS project list:
    - **Project Search Panel**. Allows a user to search through the list of available DCIS projects using the following parameters:
        - Project CSJ: A TxDOT identifier for projects divided into various sections.

- Project Number: A number assigned to a project by authorized users within the Transportation Planning and Programming (TPP) division at TxDOT.

- County: The county where the project limits exists.

- TIP Fiscal Year: The year of inclusion of the project in the Transportation Improvement Program (TIP).

o **DCIS Project List**. Displays a list of available projects from DCIS that match the selection criteria of the user's entries in the project search panel. Note: The projects listed here are current as of the last DCIS data query. The list is updatable by clicking on **Refresh Source**.

- To view the details of a particular project, click on the blue text of a project (CSJ Number, County, or TIP Fiscal Year).
    - The details view displays information obtained from the DCIS database. This information is read-only (not modifiable in UACT).
    - To return to the DCIS project list click on Return... (Figure 15).

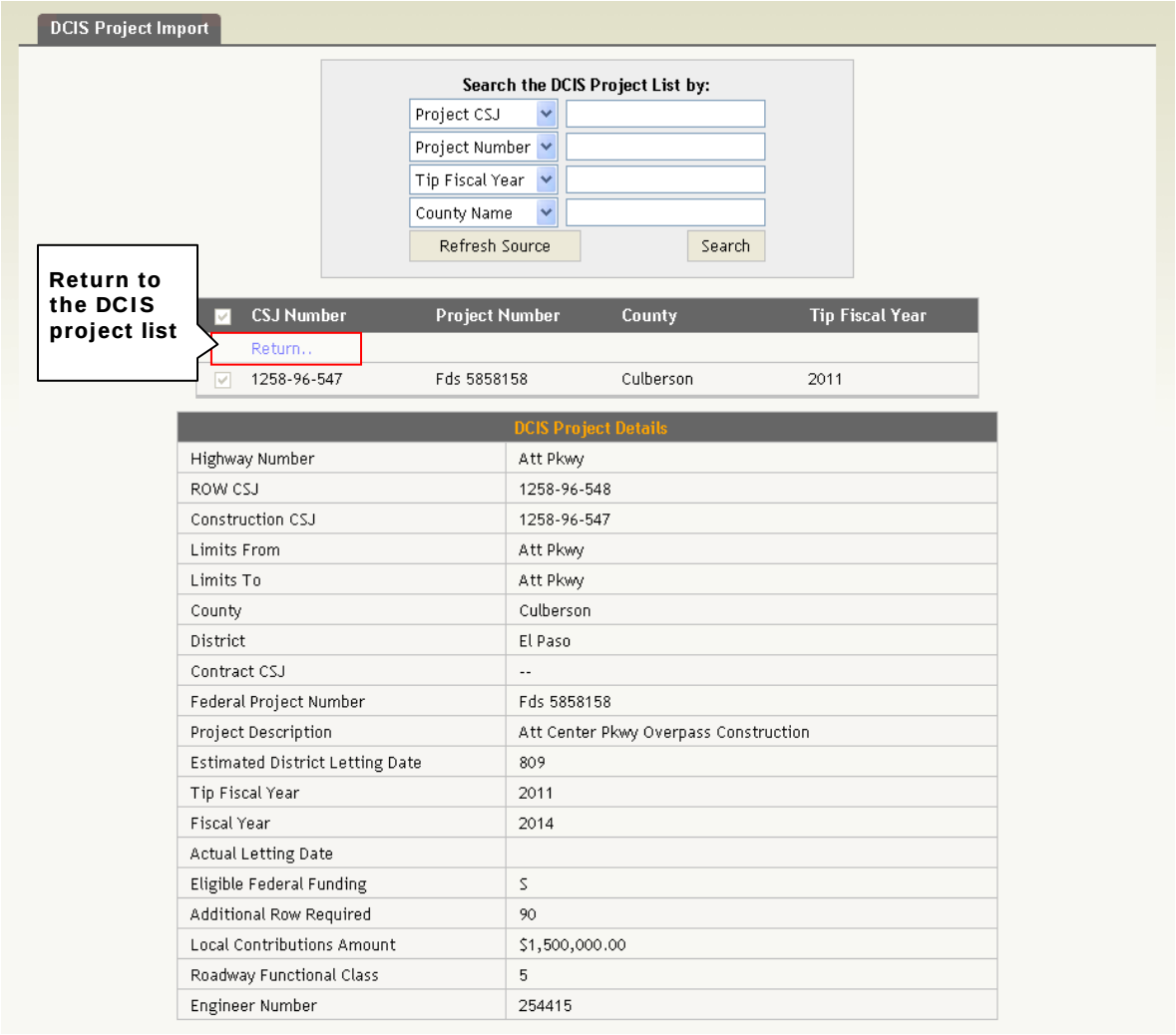


Figure 15. DCIS Project Details.

- To import a project into UACT, check the checkbox next to the CSJ Number (Figure 14). Note: It is possible to import multiple projects at a time by checking more than one checkbox.

    - At the import screen, provide a name for the project that will be used internally by UACT for tracking purposes (Figure 16).

    - Click **Save** to complete the process of importing. Note: A saved project appears immediately in the UACT project list.

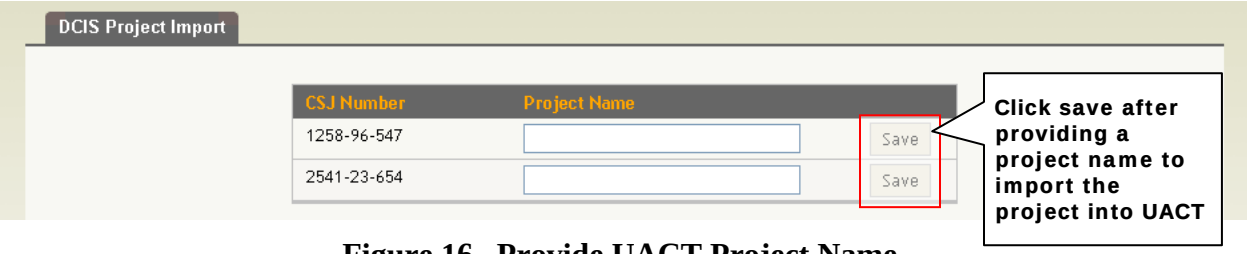


Figure 16. Provide UACT Project Name.

Project

This section gives users access to detailed information about existing UACT projects, including DCIS data, project status, project stakeholders, and documents associated with the project. The following is a description of the information provided by the Details, Status, Stakeholders, and Documents tabs.

Details Tab

[**Details**] provides detail information pertaining to the selected project.

- In the navigation area, click [**Details**] to view additional project information (Figure 17).

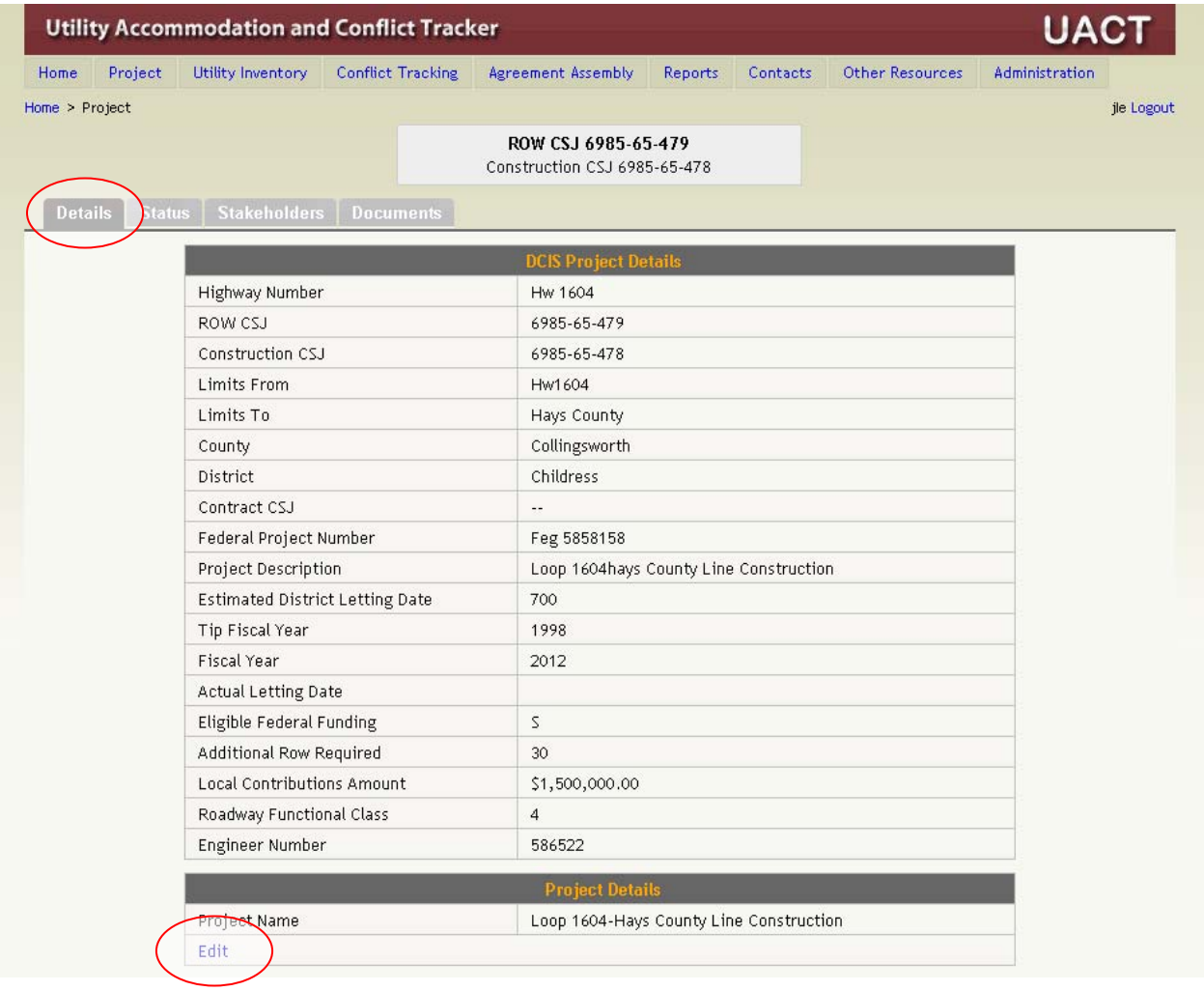


Figure 17. Project Details Page.

- Two tables labeled **DCIS Project Details** and **Project Details** provide information obtained from the TxDOT DCIS database and the UACT database, respectively. The DCIS data are read-only and no modification is possible in UACT. The UACT data, however, are modifiable depending on the user's permissions.

- Click on Edit to change the name of the selected project (Figure 17).

- A textbox appears in place of the text to edit the project name (Figure 18). Once the change(s) are complete click on Update to save them or Cancel to discard them. Any changes to the project name appear immediately on the screen.

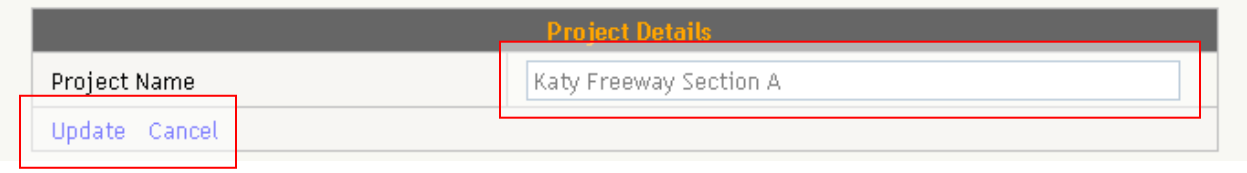
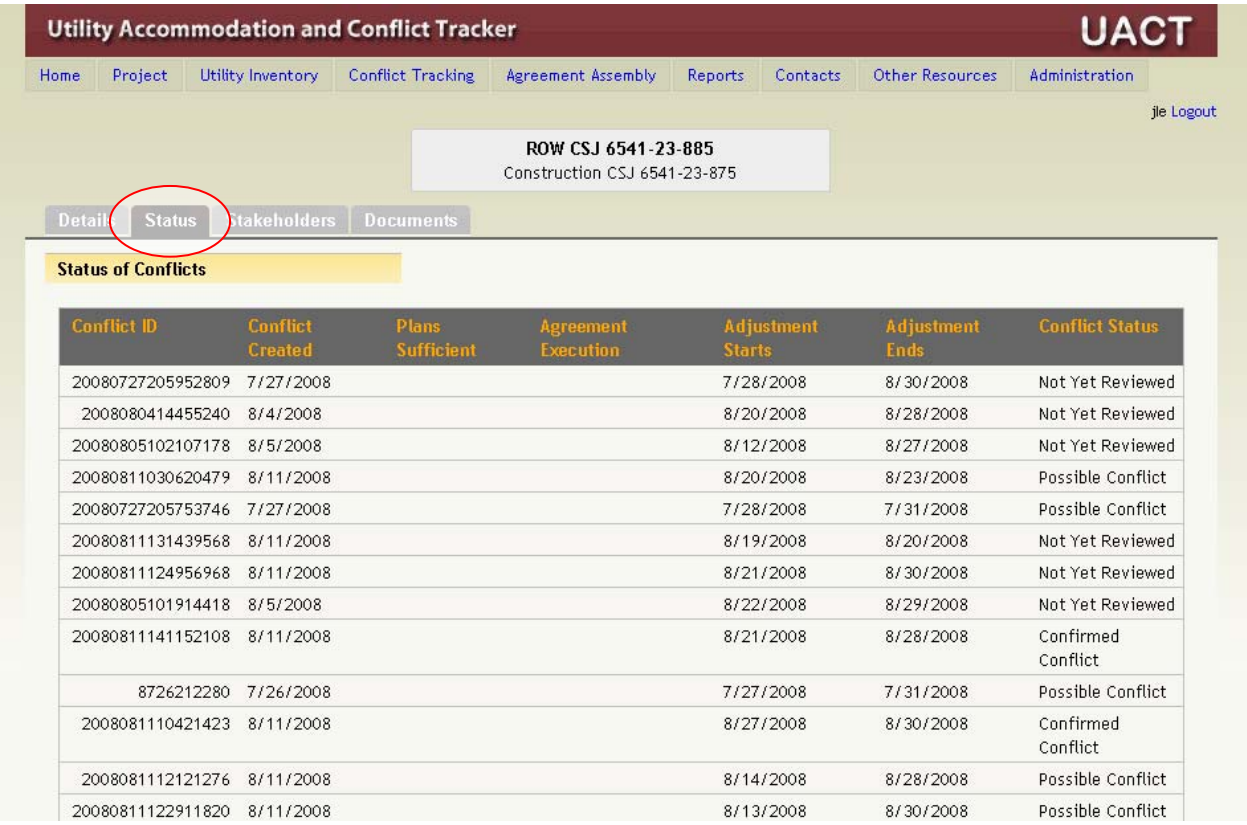


Figure 18. Update Project Name.

Status Tab

[**Status**] shows a list of conflicts for the selected project along with important dates (Figure 19).

- In the navigation area, click [**Status**] for a list of conflicts associated with the current project and their status.



Conflict ID	Conflict Created	Plans Sufficient	Agreement Execution	Adjustment Starts	Adjustment Ends	Conflict Status
20080727205952809	7/27/2008			7/28/2008	8/30/2008	Not Yet Reviewed
2008080414455240	8/4/2008			8/20/2008	8/28/2008	Not Yet Reviewed
20080805102107178	8/5/2008			8/12/2008	8/27/2008	Not Yet Reviewed
20080811030620479	8/11/2008			8/20/2008	8/23/2008	Possible Conflict
20080727205753746	7/27/2008			7/28/2008	7/31/2008	Possible Conflict
20080811131439568	8/11/2008			8/19/2008	8/20/2008	Not Yet Reviewed
20080811124956968	8/11/2008			8/21/2008	8/30/2008	Not Yet Reviewed
20080805101914418	8/5/2008			8/22/2008	8/29/2008	Not Yet Reviewed
20080811141152108	8/11/2008			8/21/2008	8/28/2008	Confirmed Conflict
8726212280	7/26/2008			7/27/2008	7/31/2008	Possible Conflict
2008081110421423	8/11/2008			8/27/2008	8/30/2008	Confirmed Conflict
2008081112121276	8/11/2008			8/14/2008	8/28/2008	Possible Conflict
20080811122911820	8/11/2008			8/13/2008	8/30/2008	Possible Conflict

Figure 19. Project Status.

- The details include the conflict ID, date of creation of conflict, date on which the utility owner received plans sufficient to begin the design of the adjustment, agreement execution date, adjustment start and end dates, and the UACT conflict status.

Stakeholders Tab

[**Stakeholders**] lists utility companies that are associated with the project. For example, UACT adds utility companies to a project's list of stakeholders if a utility facility of that company is imported to the project. Project managers can also add stakeholders manually to a project and indicate if a stakeholder is a local public agency (LPA) by clicking a checkbox. Once a user is a stakeholder of a project, the project becomes visible at the user's project selection screen. Depending on the permissions available to the user, the visibility of [**Stakeholders**] and some or all of its capabilities (adding, deleting, or editing) might not be available.

- Click [**Stakeholders**] to view a current list of stakeholders (Figure 20). Stakeholders with the status of an LPA appear with a checked checkbox next to them.

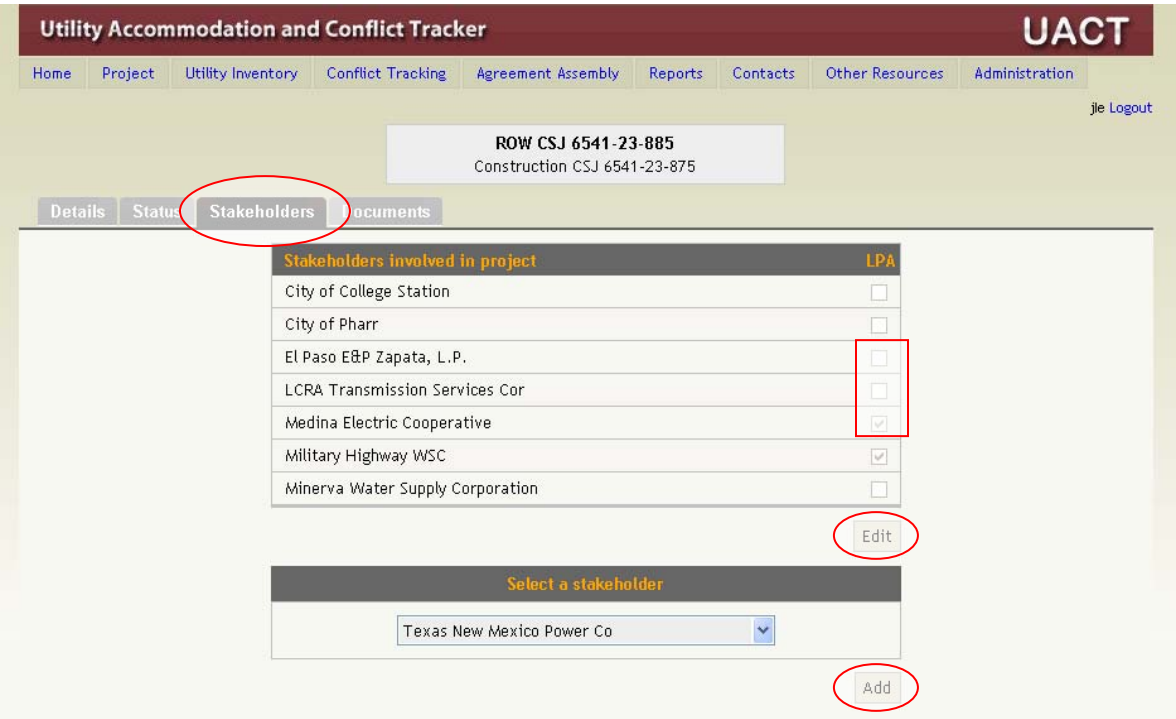


Figure 20. Project Stakeholders.

- To edit a currently added stakeholder, click **Edit** under **Stakeholders involved in project** (Figure 20).

- In edit mode, project managers can add and remove stakeholders and change a stakeholder's LPA status (Figure 21). To remove a stakeholder, check the checkbox under the remove column. To change the LPA status, check or uncheck the checkbox under the LPA column. Once the change(s) are completed click on **Update** to save. Click on **Return** without **Update** to discard any change(s) or to exit edit mode.

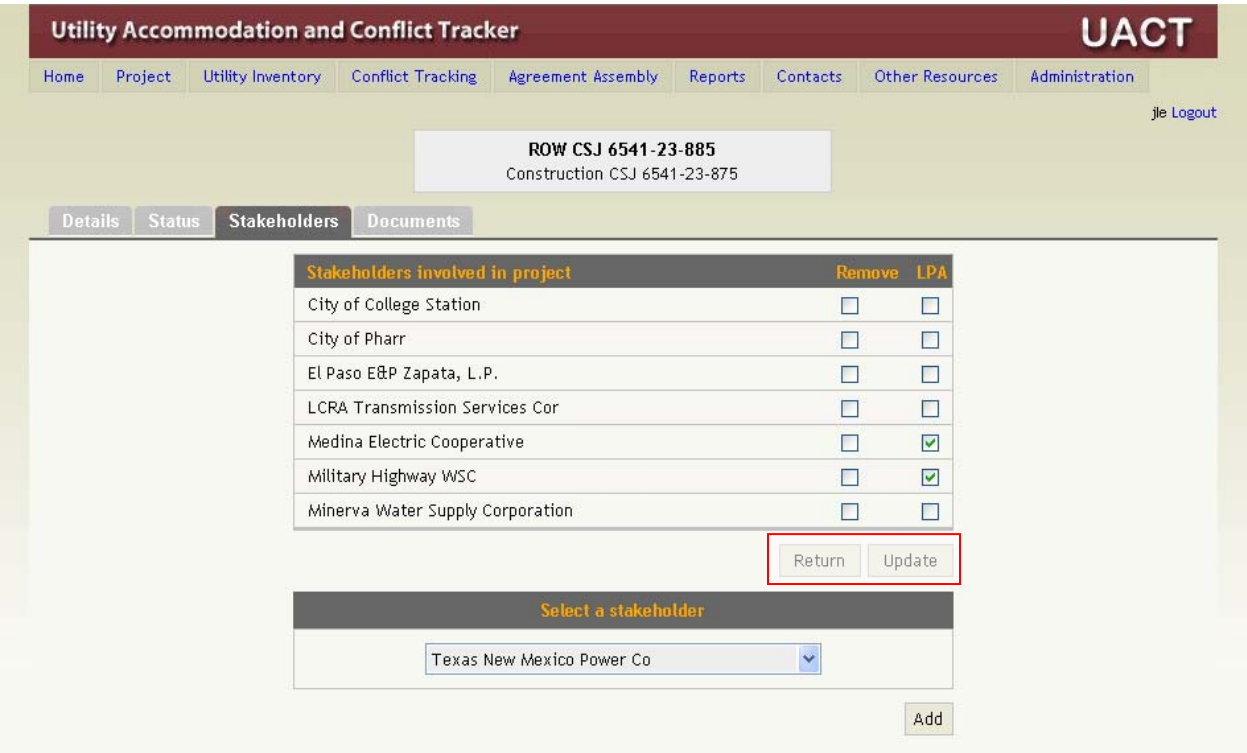


Figure 21. Modify Stakeholders.

- To add a new stakeholder to the project, select the name of the company from the listing under the **Select a stakeholder** table and click on the **Add** button (Figure 20). Note: It is not necessary to be in edit mode to add a stakeholder. Changes made to the stakeholders list reflect immediately on the screen.

Documents Tab

[**Documents**] lists and allows uploading of any documents that are relevant to the current project (Figure 22).

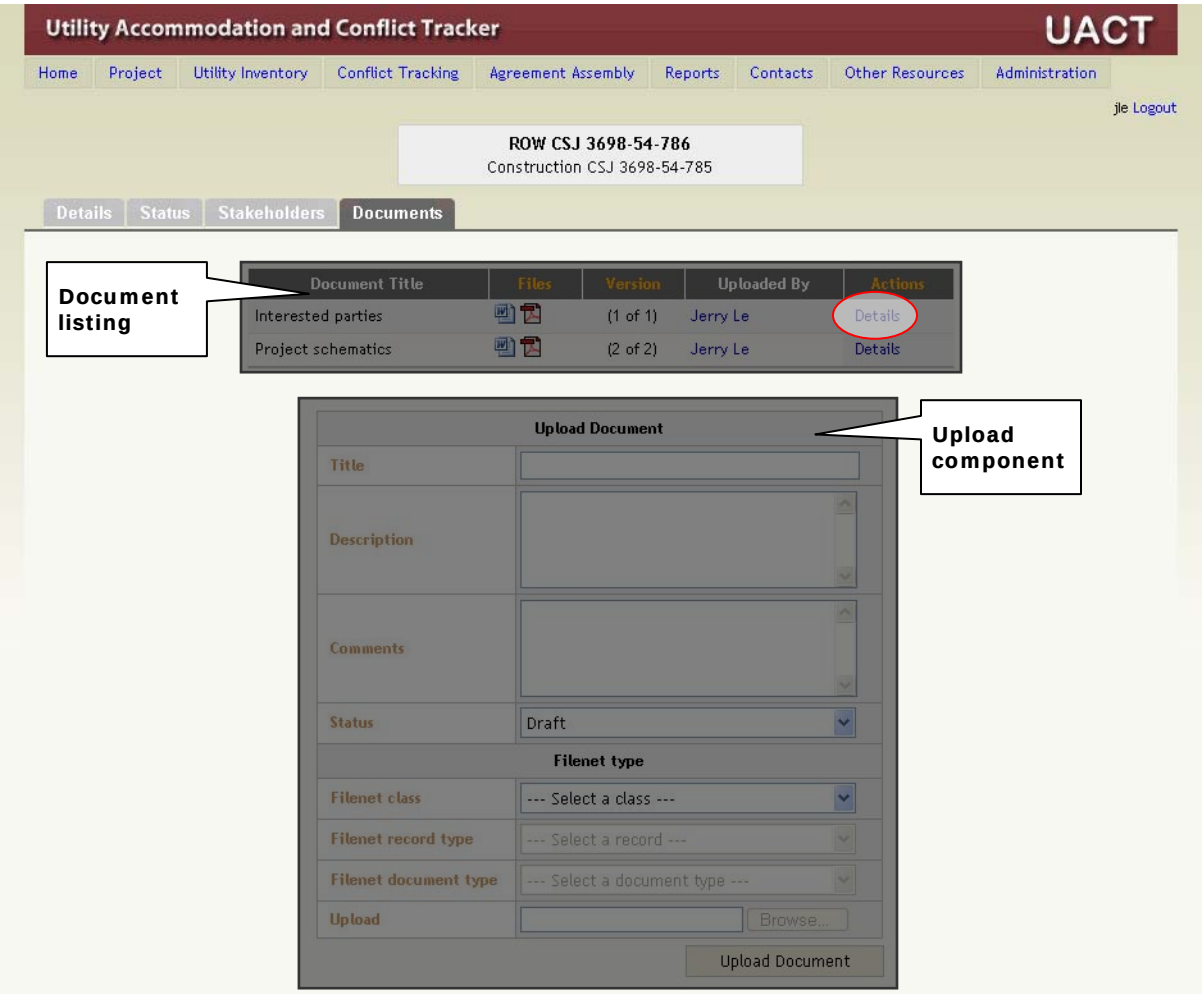


Figure 22. Project Documents.

The visibility of this tab and capabilities associated with it are dependent upon the user permissions. The following describes capabilities to view and upload documents, to view document details, and to view and upload new document versions.

View Document Listing

- Click [**Documents**] to view a listing of documents associated with the current project (Figure 22). The contents of the documents page appear in two sections. The top section displays a list of current project documents and the bottom section displays an uploading component, which assists in uploading files. The document list provides a quick overview of the documents by showing selective document information, including:

    - **Document Title.** Shows the title provided by the user who uploaded the file.

- **Files.** Provides links to the files for download (icons). UACT displays different icons to indicate the file type. The left icon always links to the original document and the right icon always links to a PDF version of the original document.

- **Version.** Displays the latest version of the current document as well as the count of other versions available for this document. In UACT, a document version is defined as a document that is a modification of another document with the same title, description, and FileNet types. In UACT, new versions of a document do not overwrite previous versions; they appear next to the older versions when viewing the details of a document. A user can upload a new version of a document on the document details screen.

- **Uploaded By.** Displays the full name of the user that uploaded the file.

- **Actions.** Displays actions the current user can perform on the document, including all versions of the document. Currently, the only available action is Details, which shows additional information about the file.

Upload Document

- To upload a new document, enter appropriate information into the fields of the upload component (Figure 22):

    - **Title.** Provide a few words used to identify the document. Future versions of the document will use the same title. This is a required field.

    - **Description.** Provide a few words to describe the purpose and contents of the document. This is a required field.

    - **Comments.** Provide additional comments as needed. This field is not required.

    - **Status**. Select the document status, which is a means to label different versions (or revisions) of a document. The status options includes:

        - **Draft.** Indicates that the document will likely change.

        - **Final.** Indicates that the document has reached its final revision.

        - **Superseded.** Indicates that a newer version of the document exists.

        - **Obsolete.** Indicates that the document is no longer considered valid for use.

        - **Other.** Indicates that the document has a status that is undefined.

    - **FileNet class.** The user must select the document's FileNet document class, which is a category of documents that corresponds to the highest level of

aggregation of TxDOT business functions. Examples include Administrative, Construction, Project Design, Right of Way, Traffic Operations, and Transportation Planning.

- **FileNet record type.** The user must select the document's FileNet record type, which is a subclass of the document class selected in the previous step. For example, the FileNet document class *Project Design* has a FileNet record type *Plans Specifications and Estimates*.

- **FileNet document type.** The user must select the document's FileNet document type, which is a subclass of the FileNet record type selected in the previous step. For example, the FileNet record type *Plans Specifications and Estimates* has a FileNet document type *Plan*.

- **Upload.** Select the document to upload by clicking **Browse…** and then click **Upload Document** to upload the file. Note: Uploaded files become available for viewing in the document list table after the upload to the UACT server is complete. UACT also converts the document to PDF, which may take a few seconds up to one or more minutes to complete, depending on the size of the uploaded file.

View Document Details

- To view the details associated with a file, click Details of a file (Figure 22). This action displays the document summary table as well as detail tables for each available version of the document (Figure 23).

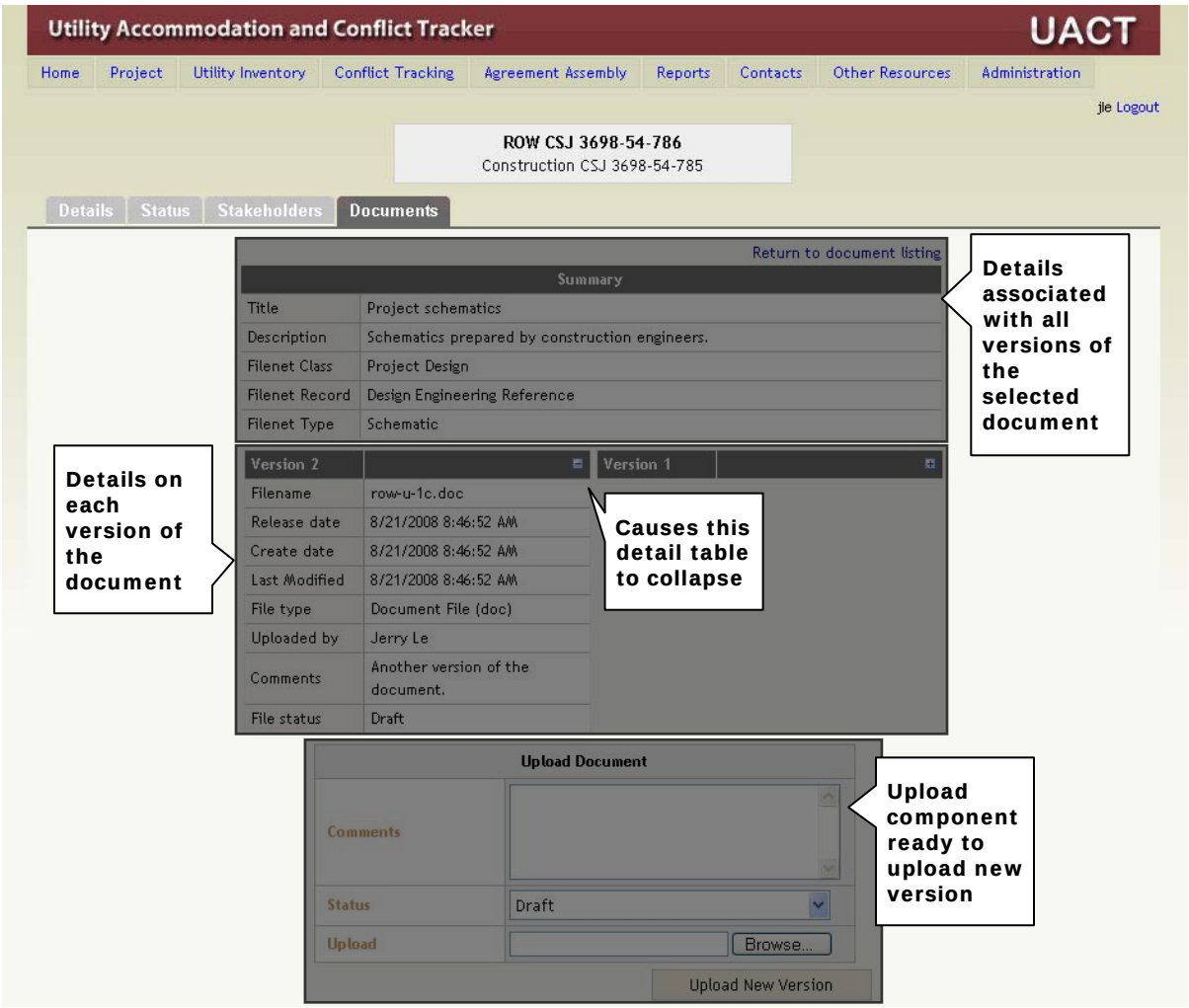


Figure 23. Details of a Document – Uploading a New Version.

- Document details provides a summary table, one or more version tables, and a modified upload component.

    - **Summary.** This section displays information that all versions of the uploaded document have in common.

    - **Version Tables.** Displays information relating to versions of the same document. The latest version of the selected document always appears first. If additional versions exist, they appear collapsed to avoid unnecessary vertical scrolling of the page.

- **Upload.** Provides the ability to upload a new version of an existing document. To upload the new version, add a comment (not mandatory), select a document status (mandatory), click **Browse…** to select the document for uploading, and click **Upload New Version** to upload the document. Note: The uploaded document appears immediately as the latest version in the version tables. The new file is not required to have the same name as the original file. For example, the original file could be `adjustment_plan.doc` and the new version file could be `adjustment_plan_ver2.doc.` However, title, description, and FileNet codes will be identical to the original file.

Utility Inventory Business Area

Click Utility Inventory to either display an inventory of utility facilities associated with the current project (Inventory tab) or to import additional utilities facilities (Import tab).

Inventory Tab

[**Inventory**] lists utility facilities that are associated with the current project. It also allows a user with sufficient privileges to view and edit additional information about each facility. The visibility of this tab and the capabilities associated with this portion of the application depend on the permissions available to the current user.

View Utility Listing

- Click on the Utility Inventory main menu item (Figure 24).

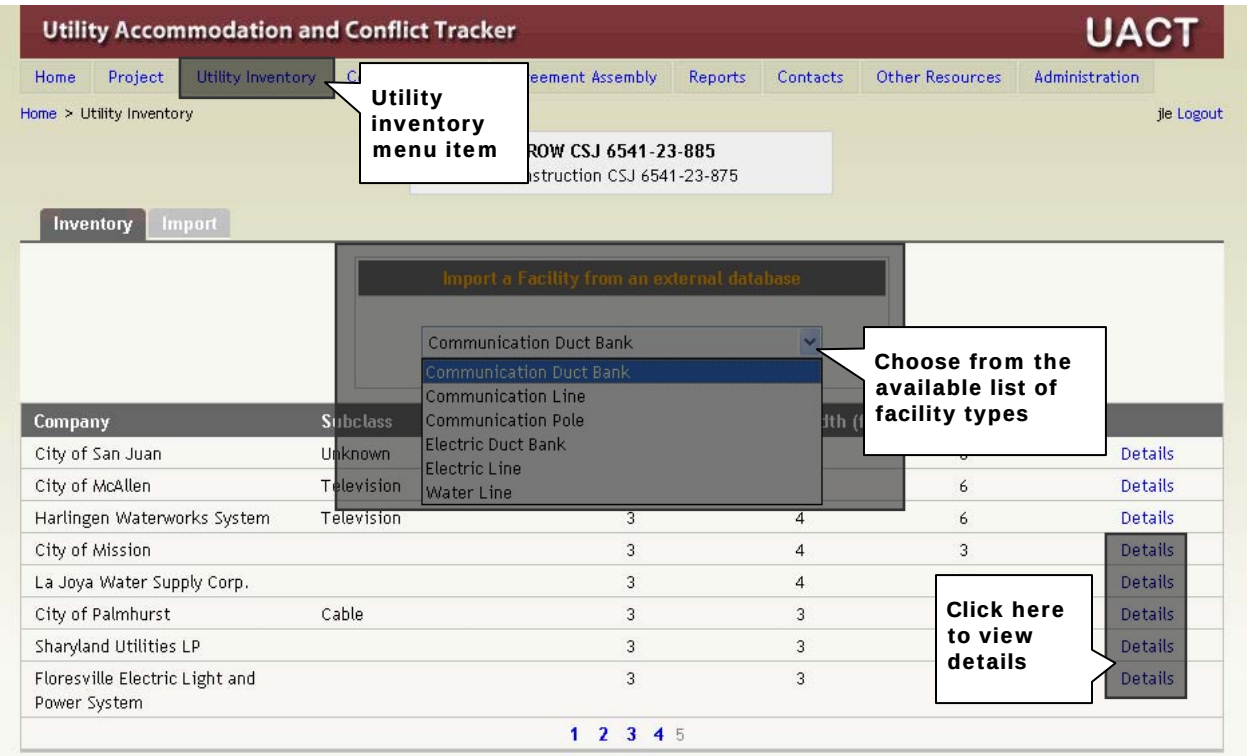


Figure 24. Utility Inventory.

- The content of the inventory page appears divided into two sections:
    - **Facility type drop-down**. Displays a list of utility facility types that are available in UACT.
    - **Facility list**. Displays the list of utilities associated with the current project and of the type selected from the Facility type drop-down. The fields displayed in the

facility list differ depending on the type of facility selected. Additional information about utility facilities can be obtained by clicking on the Details link of a facility, as follows.

View Utility Details

- To view detailed information about a utility facility, click Details (Figure 24). This causes the facility list to shorten to display the selected facility only (Figure 25).

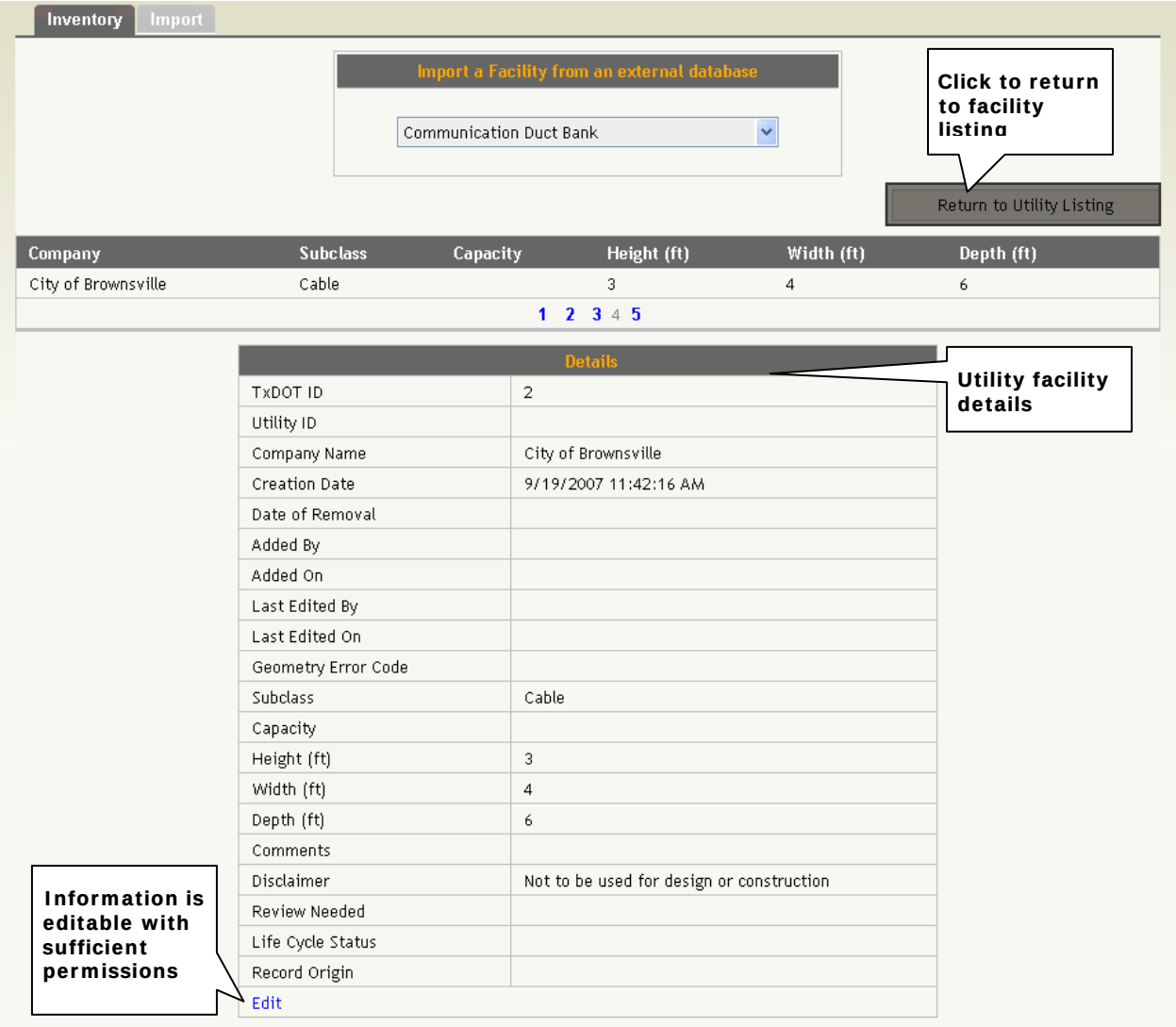


Figure 25. Utility Facility Detail.

- A detail table appears with additional information about the utility. The information in the facility detail table may be editable under certain conditions. To edit this information, click Edit in the bottom left corner.

- To return to the facility list, click on **Return to Utility Listing** (Figure 25).

Import Tab

[**Import**] allows a user with sufficient permissions to import a utility facility from an enterprise database into UACT. The imported utilities are then useful for creating conflicts and agreement assemblies.

Import Utility Facility

- Click on the Import submenu item under Utility Inventory or [**Import**] if you are already in the Utility Inventory portion of the website (Figure 26).

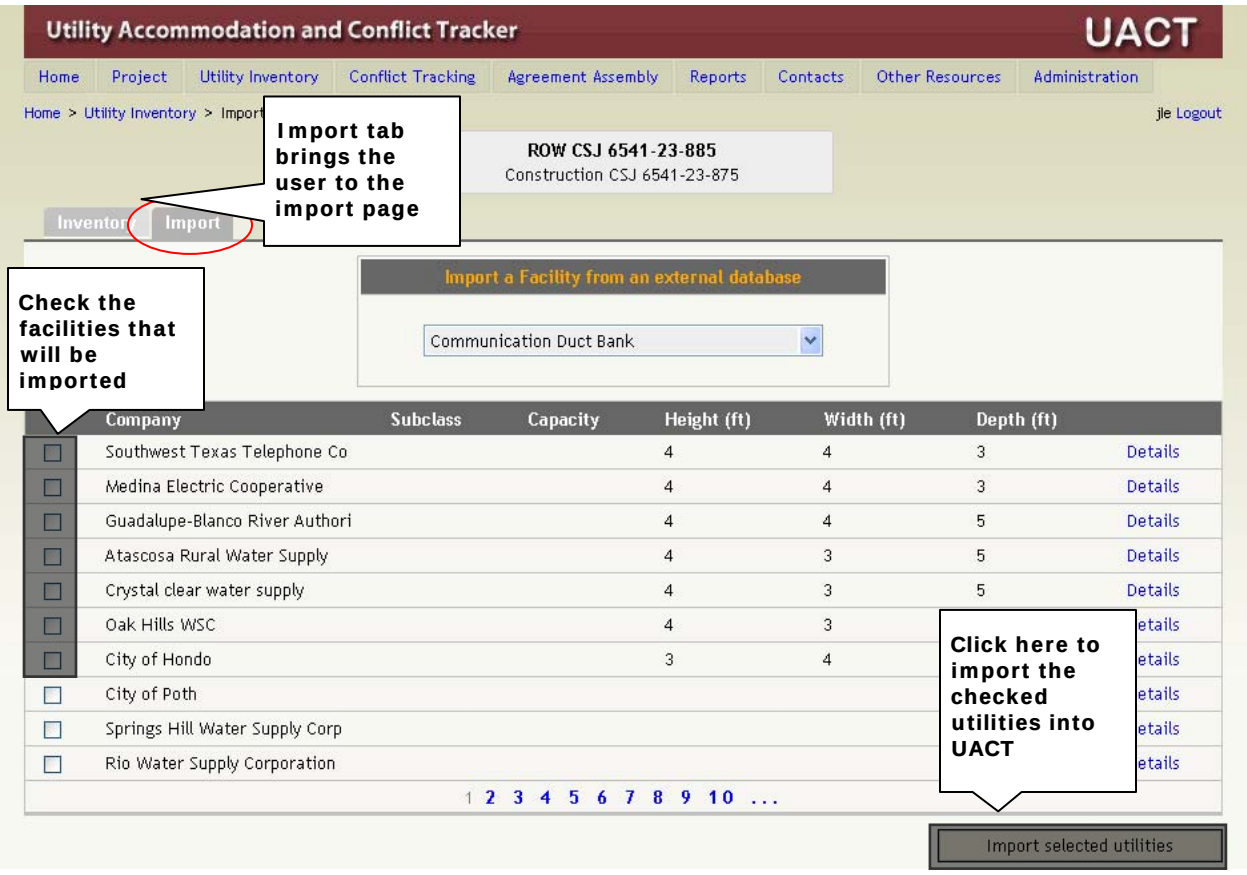


Figure 26. Utility Facility Import.

- The import page appears in two sections:

  - **Facility type drop-down**. Displays a list of available utility facility types that are available in the enterprise utility facility database.

  - **Facility list**. Displays a list of available utility facility records in the enterprise database. The list automatically filters out utilities that have already been imported to UACT.

- To import a facility check the checkbox next to the facility name and click the **Import selected utilities** button. Note: More than one facility is importable at a time simply by checking multiple checkboxes.

- The view detailed information about a facility click Details (See Viewing Utility Details in the Inventory Tab section above).

Conflict Tracking Business Area

Conflict Tracking is the section of the application that enables a user with sufficient permissions to view, add, and edit conflicts. It is also one of the central features of UACT. Users can view information on available conflicts in textual and visual (interactive map) formats. Actions such as editing information or status of existing conflicts are possible. Conflicts are always associated with a utility facility and a UACT project. Therefore, a user must select a project before UACT can display conflicts associated with that project (see Selecting an Active Project in the Home section).

Click Conflict Tracking to display the project's list of conflicts with the tabs Conflicts, Add Conflict, and Edit Conflict (Figure 27):

Figure 27. Conflict Tracking.

- **Conflicts.** Lists the conflicts associated with the current project.
- **Add Conflict.** Allows a user with sufficient permissions to create a new conflict.
- **Edit Conflict.** Allows a user with sufficient permissions to edit a previously created conflict.

Conflicts Tab

- Click the Conflict Tracking main menu item or [**Conflicts**] if you are already in the Conflict Tracking section of the website.

- Additional information about a conflict can be obtained by clicking on the Details link at the end of a conflict record.

- The Details link provides utility conflict information on four subtabs (Figure 28):

    - Conflict Outline,
    - Map,
    - Documents, and
    - Notes.

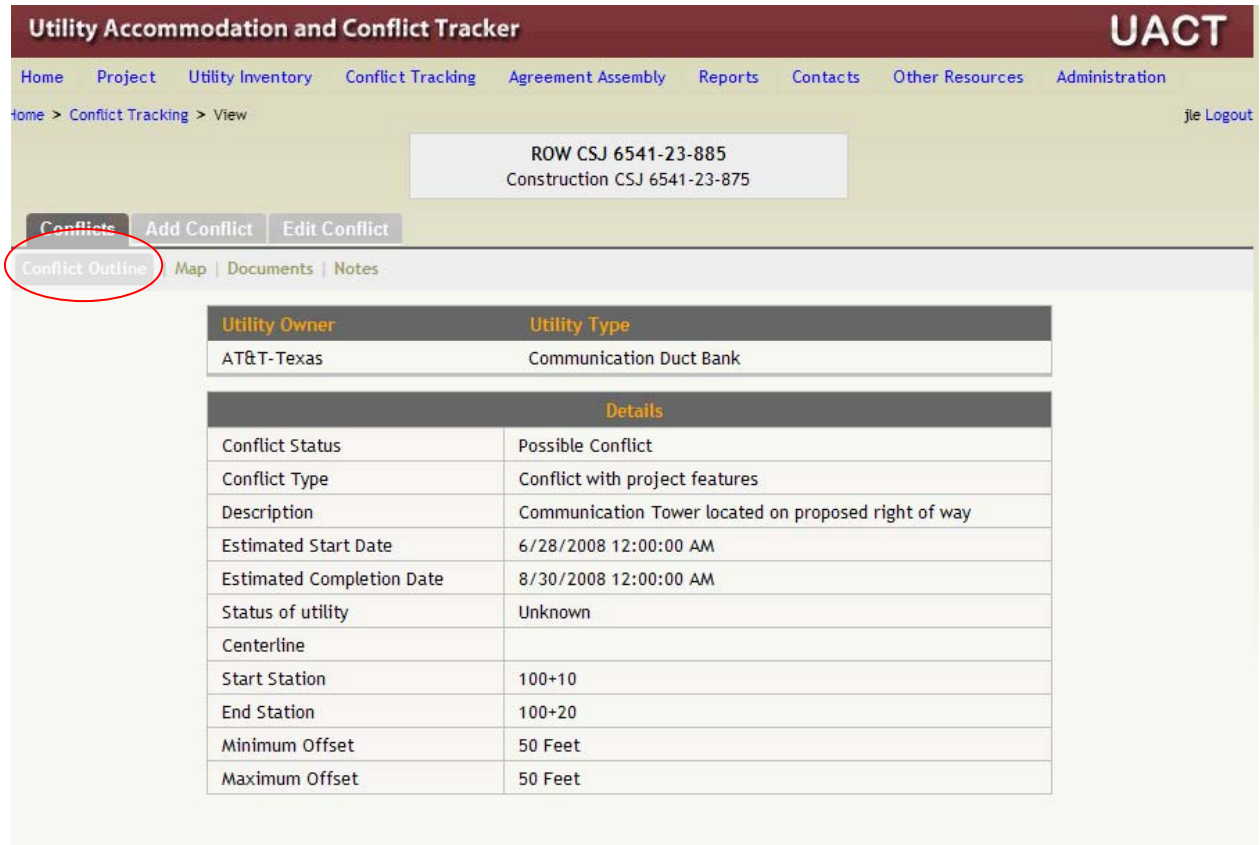


Figure 28. Utility Conflict Detail.

Conflict Outline Subtab

- Click [**Conflict Outline**] to review utility conflict information divided into two tables:

    - **Utility Owner/Type.** This table displays the type of utility facility in conflict and its owner.

- **Conflict Details.** The details table lists additional conflict information. For a description of the fields in this table, see chapter Creating and Tracking Utility Conflicts.

Map

- Click [**Map**] to view a location map with an outline of the selected conflict (Figure 29).

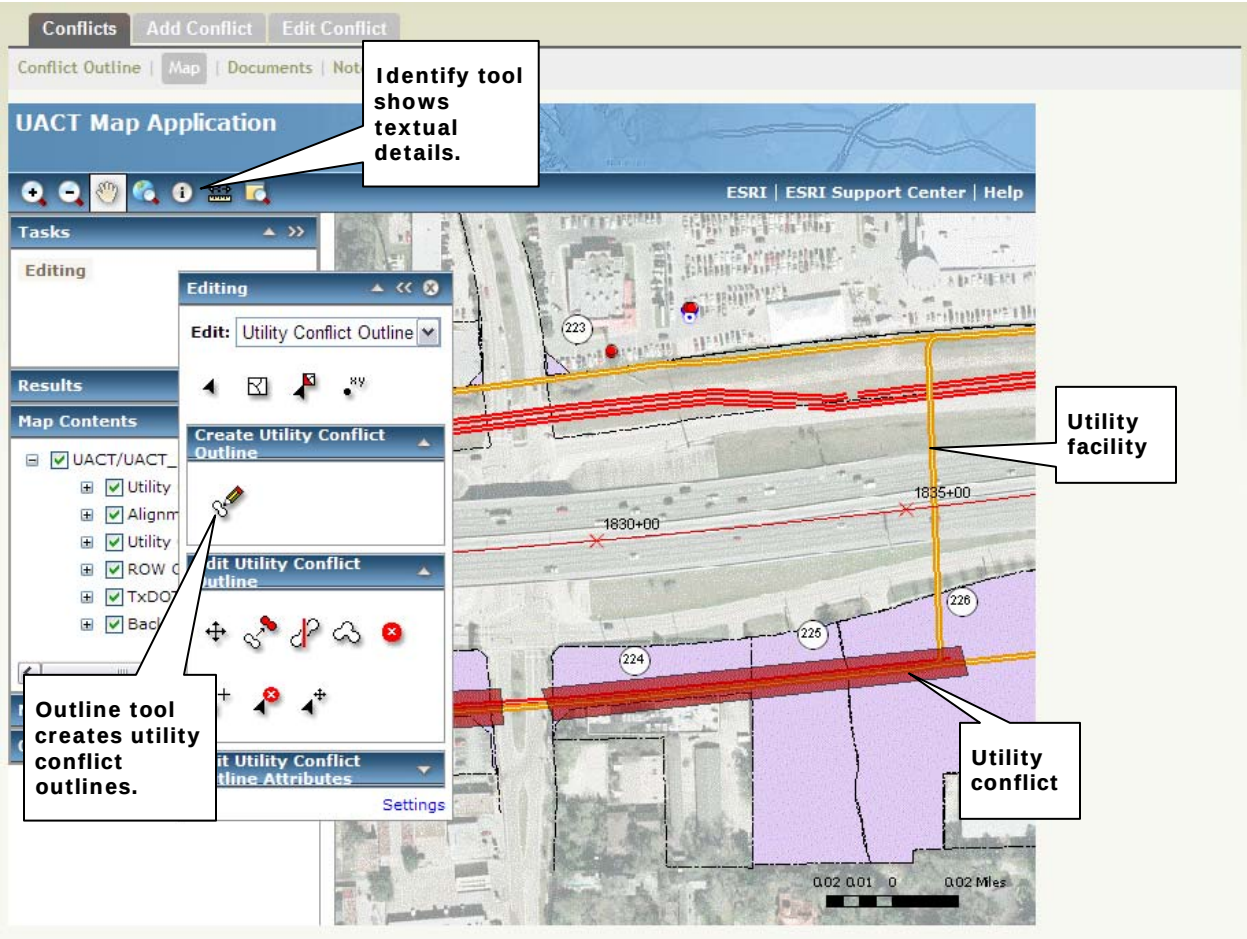


Figure 29. Map Displaying Conflicts.

- The map displays utility conflicts in form of red semi-transparent polygons. Textual details about the conflict are viewable here by clicking the "identify" tool in the map toolbar.

Documents

- Click [**Documents**] to list documents associated with a conflict or to upload a new conflict documents (Figure 30).

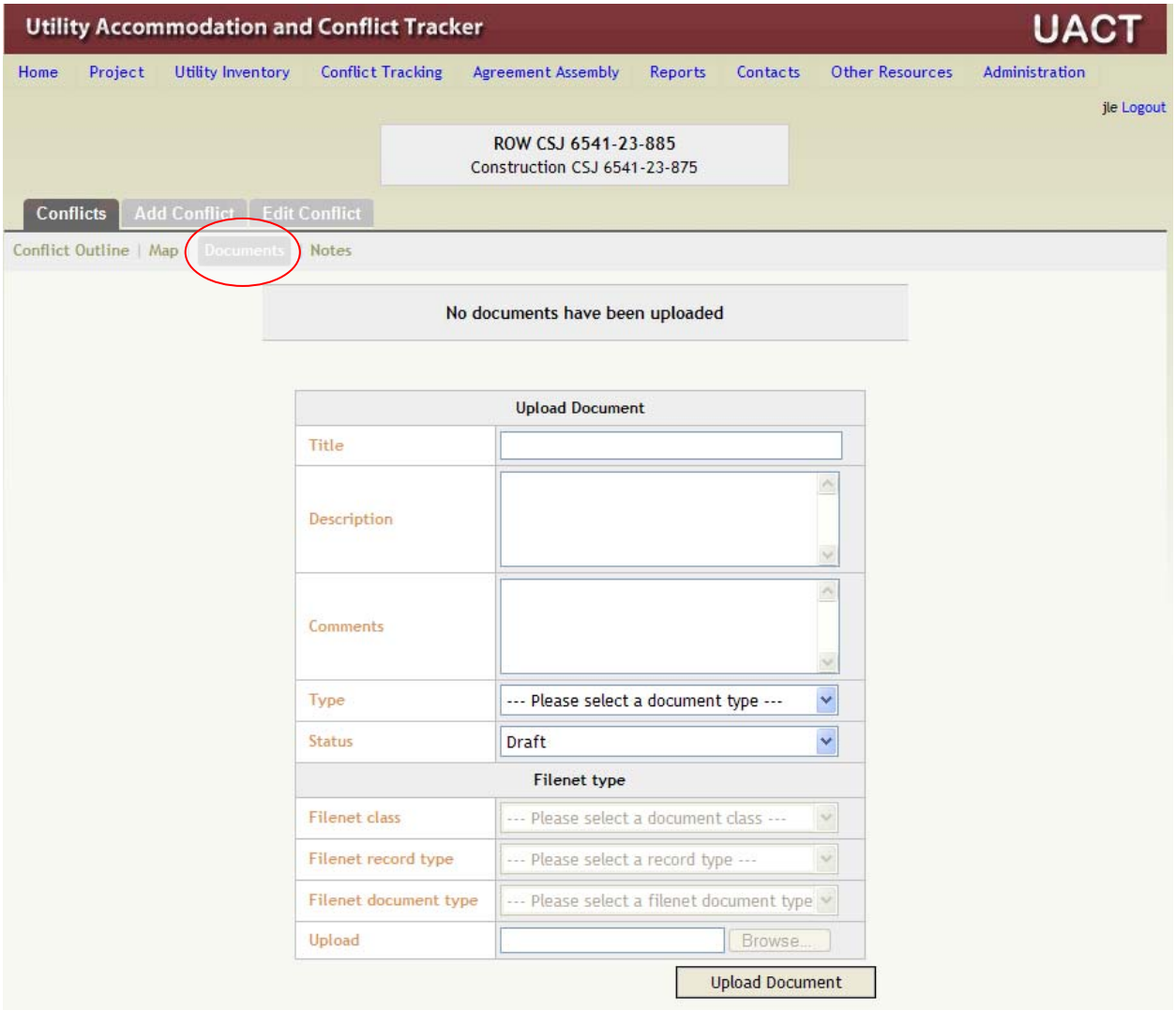


Figure 30. Conflict Documents.

- This document component has the same functionality as the document component previously described in the Documents tab of the Project section (Figure 22). Refer to that section for more information on documents and document versions.

Notes

- Click [**Notes**] to record important information regarding a conflict (Figure 31).

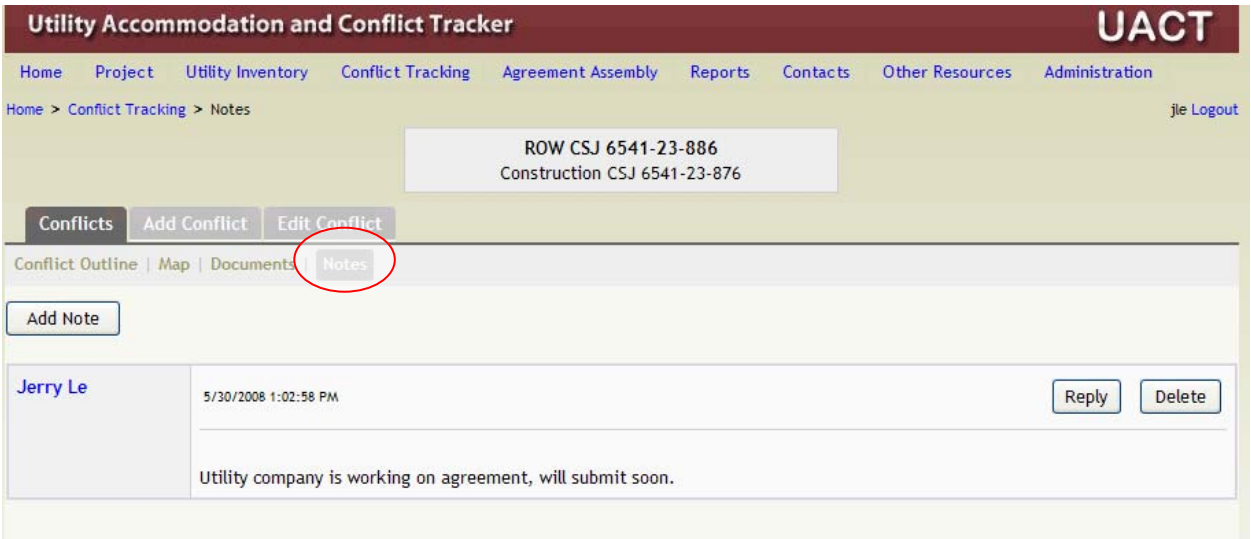


Figure 31. Conflict Notes.

- Notes are currently visible to TxDOT employees to provide a mechanism to communicate utility conflict information. Notes can be used to record information from discussions with the utility company owners or to record information about deadlines and pending tasks related to the current conflict. In the current version of UACT, [**Notes**] is only visible to TxDOT employees and cannot be viewed by utility companies.

Add Conflict Tab

[**Add Conflict**] allows a user with sufficient permissions to create a new conflict that UACT automatically associates with the currently active project (Figure 32). For information on how to add a conflict, see Creating Utility Conflicts.

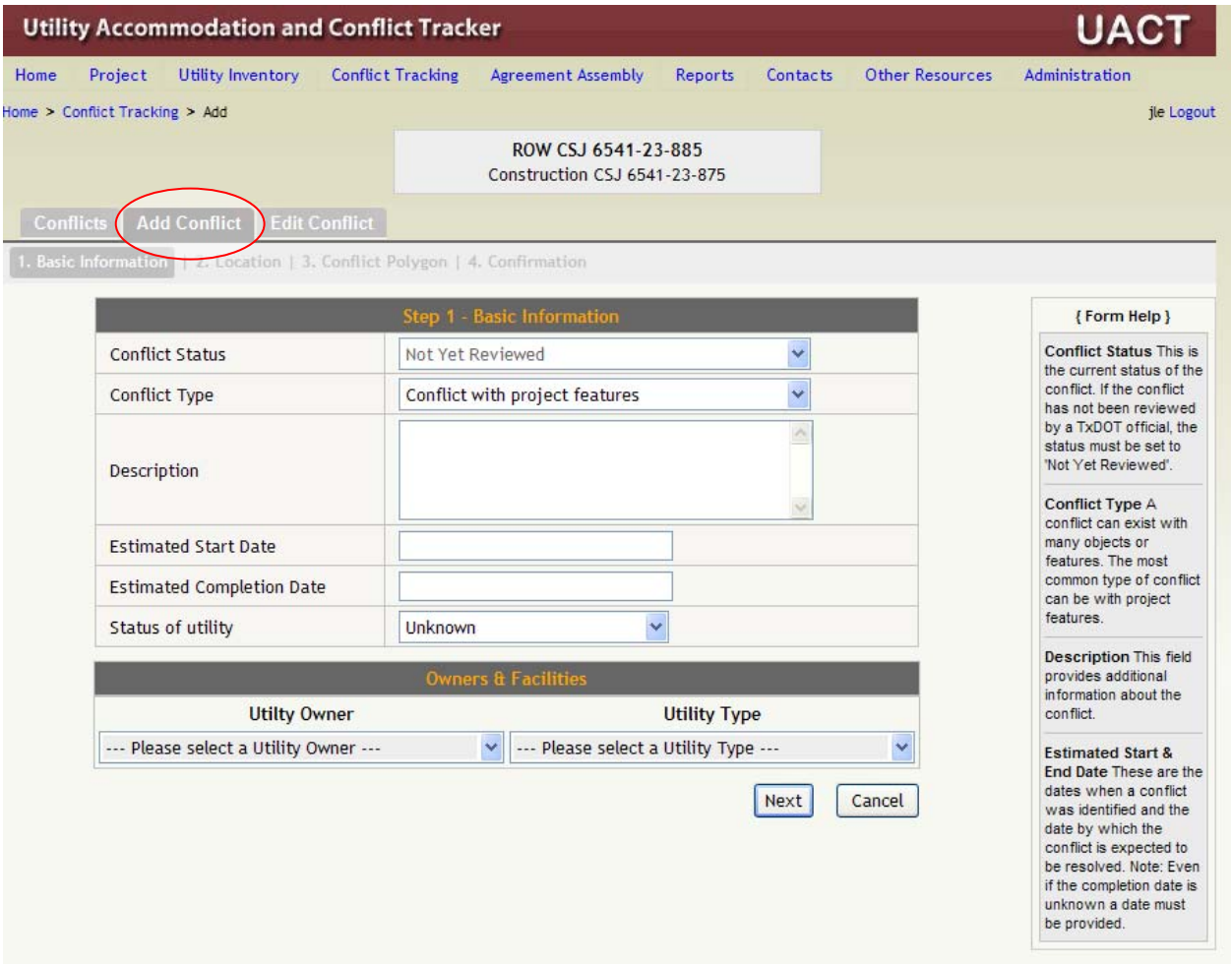
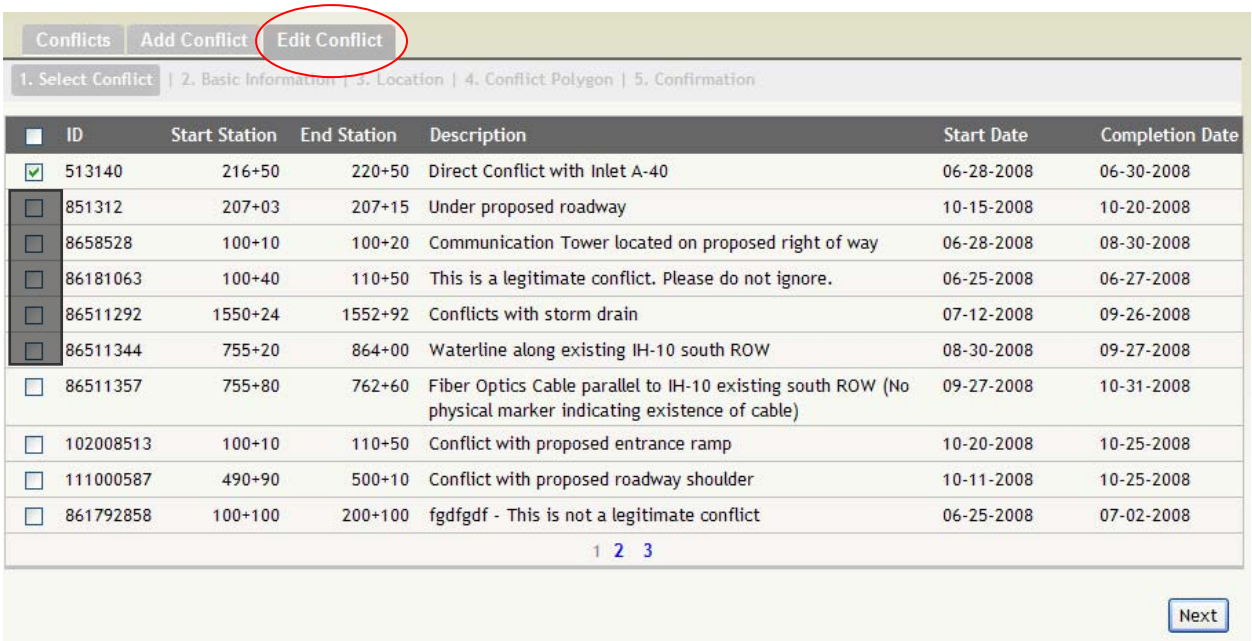


Figure 32. Add Conflict.

Edit Conflict Tab

[**Edit Conflict**] allows a user with sufficient permissions to edit an existing conflict associated with the current project (Figure 33). For information on how to edit conflicts, see Editing Utility Conflicts.



ID	Start Station	End Station	Description	Start Date	Completion Date
513140	216+50	220+50	Direct Conflict with Inlet A-40	06-28-2008	06-30-2008
851312	207+03	207+15	Under proposed roadway	10-15-2008	10-20-2008
8658528	100+10	100+20	Communication Tower located on proposed right of way	06-28-2008	08-30-2008
86181063	100+40	110+50	This is a legitimate conflict. Please do not ignore.	06-25-2008	06-27-2008
86511292	1550+24	1552+92	Conflicts with storm drain	07-12-2008	09-26-2008
86511344	755+20	864+00	Waterline along existing IH-10 south ROW	08-30-2008	09-27-2008
86511357	755+80	762+60	Fiber Optics Cable parallel to IH-10 existing south ROW (No physical marker indicating existence of cable)	09-27-2008	10-31-2008
102008513	100+10	110+50	Conflict with proposed entrance ramp	10-20-2008	10-25-2008
111000587	490+90	500+10	Conflict with proposed roadway shoulder	10-11-2008	10-25-2008
861792858	100+100	200+100	fgdfgdf - This is not a legitimate conflict	06-25-2008	07-02-2008

1 2 3

Figure 33. Edit Conflict.

Utility Agreement Assembly Business Area

The Agreement Assembly section of UACT enables a utility company user with sufficient permissions to create and track a utility agreement assembly electronically for submittal to TxDOT. Agreements are associated with a project and therefore require the selection of an active project before UACT can display agreements for that project (see Selecting an Active Project in the Home section).

Click on Agreement Assembly to view the agreement assembly section divided into three categories (Figure 34).

Figure 34. Agreement Listing.

The Agreement Assembly listing has the following three tabs:

- **Agreements.** Lists the agreements associated with the current project.
- **New Agreement.** Allows a user with sufficient permissions to create a new agreement.
- **Continue Agreement.** Allows a user with sufficient permissions to complete the process of creating and submitting an agreement assembly that was previously interrupted.

Agreements Tab

[**Agreement**] lists the agreements available for the selected project. UACT filters the list of agreements automatically to display only the agreements of the utility company that is logged into UACT. If a TxDOT user views this page, UACT provides a complete listing of all project agreements.

View Agreement Listing

- Click on the Agreement Assembly main menu item or [**Agreements**] if already under the Agreement Assembly section to view a list of current agreements for the selected project (Figure 34). The agreement list contains the following information for each listed Agreement:

    - **U-Number.** A unique identifier for a Utility Agreement Assembly that the TxDOT ROW Division provides.

    - **Comments.** Descriptive information about a Utility Agreement Assembly having relatively undefined content and/or format. This field provides additional information about a Utility Agreement Assembly.

    - **Latest Status.** A brief text to inform the user about the latest change made to the Utility Agreement Assembly.

    - **Status Date.** The date on which the status change took place.

    - **Actions.** Procedures that a user can perform on a Utility Agreement Assembly. The availability of some of these actions depends on the permissions assigned to the current user. Actions include:

        - **Continue.** Takes the user to the Continue Agreement section to complete the utility agreement process.

        - **Edit.** Allows a user with sufficient permissions to edit the U-Number or Comments field of a Utility Agreement Assembly.

        - **Details.** Lists details pertaining to a Utility Agreement Assembly such as the utility conflict(s) that will be resolved using this agreement, the utility facilit(ies) in conflict, the progress made in the utility agreement process, etc.

        - **Delete.** Allows a user with sufficient permissions to remove the agreement assembly record from the database as well as any information related to the agreement.

New Agreement Tab

[**New Agreement**] allows a user with sufficient permissions to create a Utility Agreement Assembly, which is the first step in the utility agreement process. Creating an assembly involves selecting one or more utility conflicts for processing purposes. A conflict, and hence by extension the facility associated with that conflict, can be added to only one utility agreement. UACT automatically filters the conflicts in this section and shows only those that are not already associated with another agreement.

Create New Agreement

- Click on the Create menu item under Agreement Assembly, or click on [**New Agreement**] if already under the agreement assembly section (Figure 35).

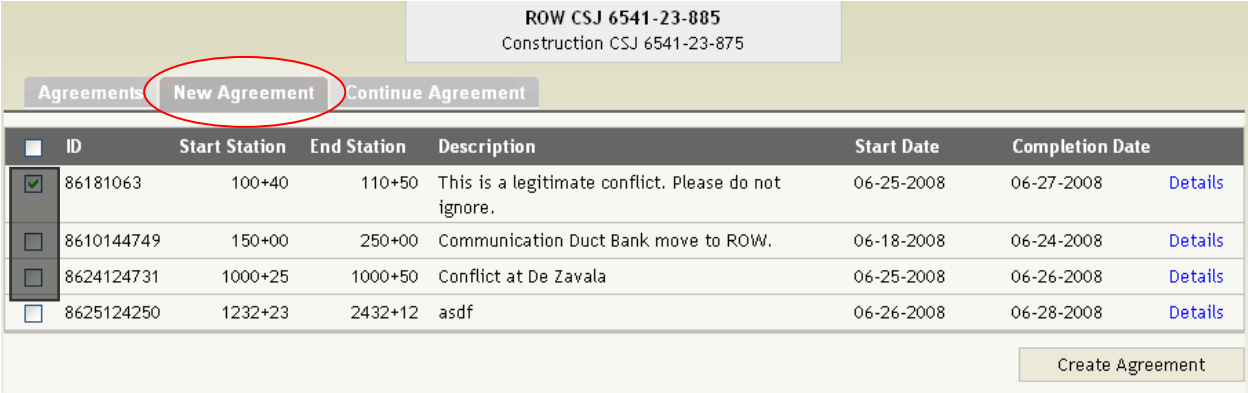


Figure 35. Select Conflicts for New Agreement.

- Select one or more conflicts by checking the checkbox next to each conflict on the left.

- Click on the **Create Agreement** button to start a new utility agreement assembly with the selected conflicts.

- UACT will display a list of current agreements, including the newly created agreement. Note that the newly created agreement does not have a U-Number yet. The U-Number will be assigned by the ROW Division at a later time.

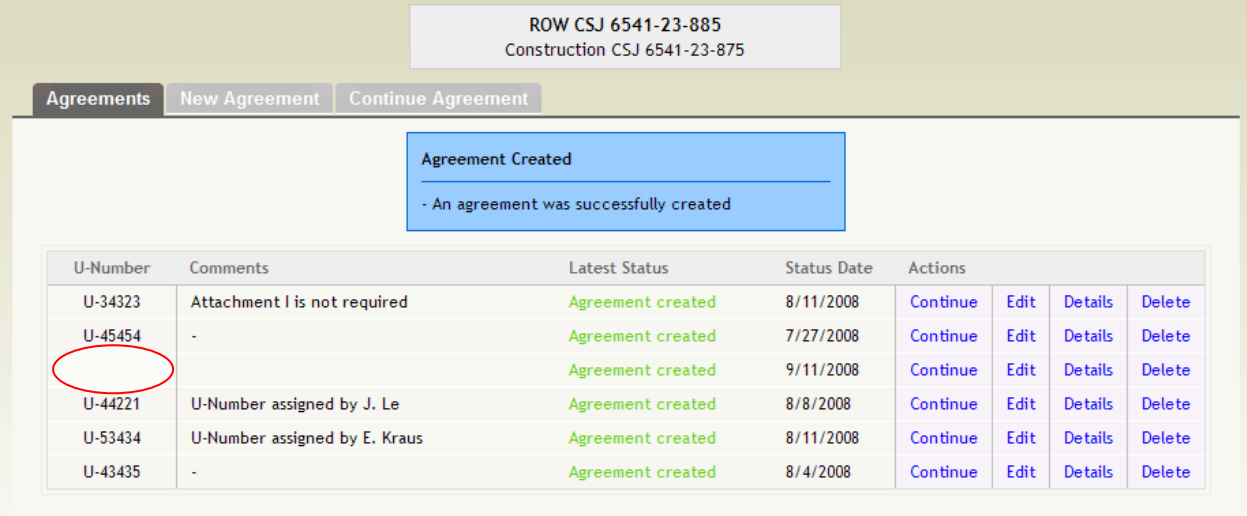


Figure 36. New Agreement Created.

- Once a record has been created for a utility agreement assembly, a user can complete the assembly by clicking the Continue link. See chapter Submitting and Processing Utility

Agreements for more information on how to complete the attachments required for the utility agreement assembly.

Continue Agreement Tab

[**Continue Agreement**] allows a user to continue a previously created agreement. This section shows only new or partially completed agreements but not completed agreements.

Continue an Agreement

- Click on the Continue menu item under Agreement Assembly or on [**Continue Agreement**] if already under the Agreement Assembly section (Figure 37).

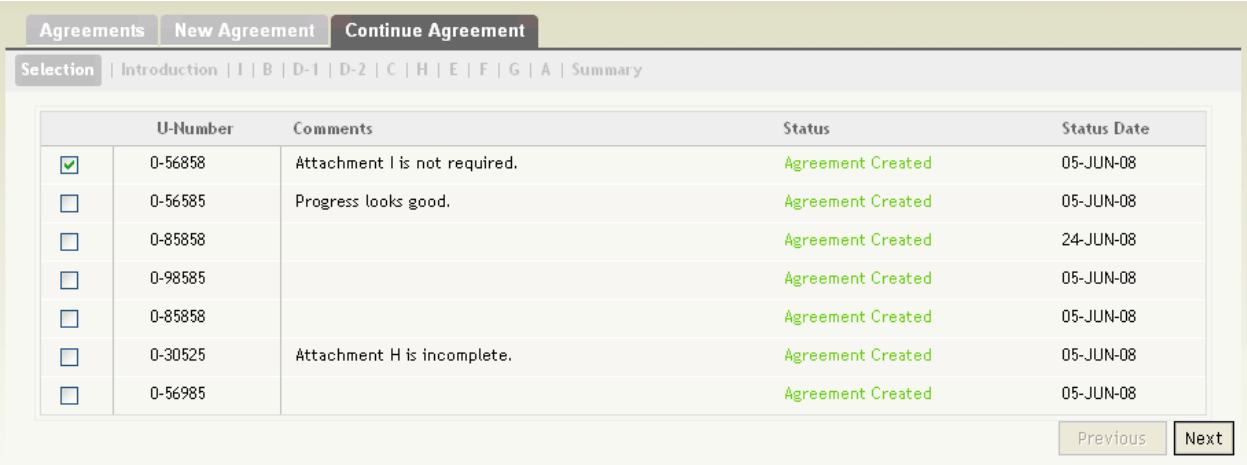


Figure 37. Continue Agreement.

- Select an agreement assembly by checking the checkbox next to the desired agreement and click the **Next** button. See chapter Submitting and Processing Utility Agreements for more information.

Reports Business Area

Reports allows TxDOT users with sufficient permissions to query UACT utility conflict data and generate reports on the fly for specific scenarios. The generated reports can be converted to PDF for easy printing and distributing. Note: The current UACT prototype only contains a very small number of reports to demonstrate the functionality of the data model. A future implementation of UACT could greatly improve on the number of reports available to users.

Reports Tab

[**Report**] provides a drop-down to select a utility conflict type and a calendar to select a target (e.g., letting) date (Figure 38):

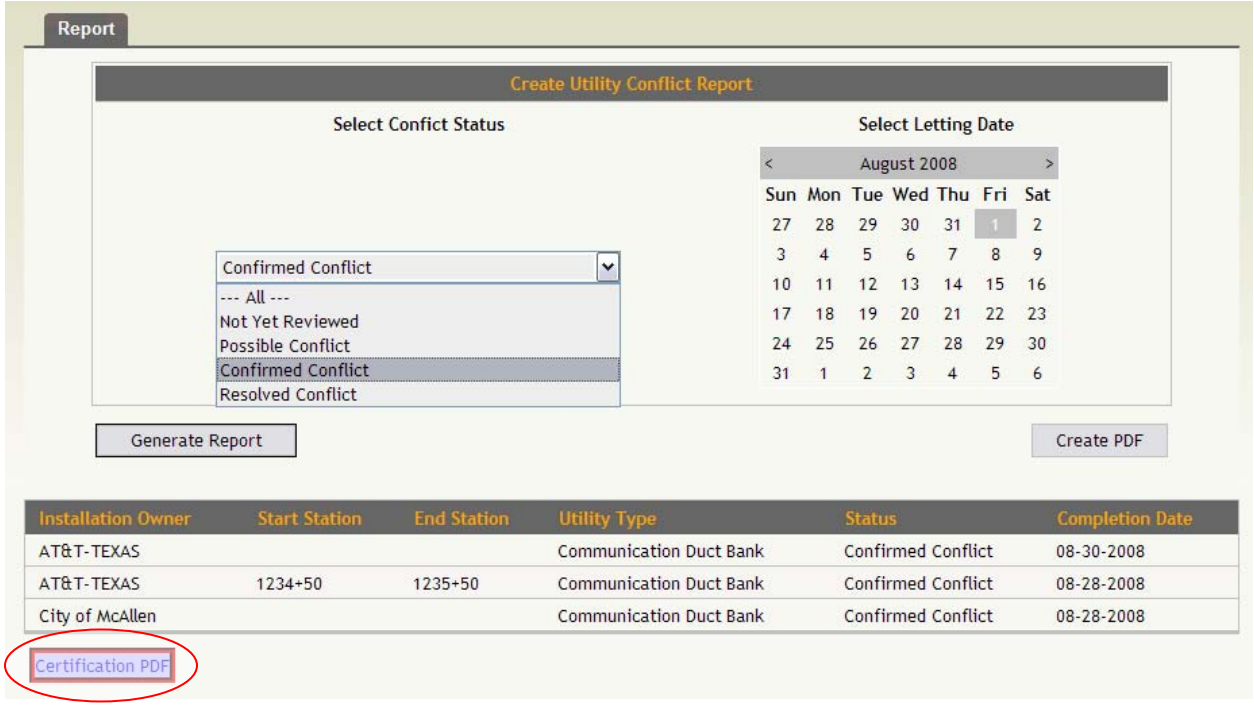


Figure 38. Create Utility Certification Report.

To create a new report, a user must select a conflict status on the left drop-down and a target date in the right calendar. The following example illustrates how to create a utility certification (that certifies all outstanding utility conflicts past the letting date) for inclusion in the Project, Specifications, and Estimate (PS&E) documentation:

Create Utility Adjustment Certification

- Click on the Reports main menu item or [**Reports**] if already under the Reports section.

- Under the left drop-down menu, select “Confirmed Conflict” (Figure 38).

- Select the letting date in the calendar on the right. In this example, the user selected August 1, 2008 (Figure 38).

- Click **Generate Report**. The list of confirmed conflicts with an estimated adjustment date after August 1, 2008, appears at the bottom of the page (Figure 38). In this example, there are three utility conflicts that will adjust after the letting date.

- Click **Create PDF** to create a PDF version of the list that is formatted like a utility certification. It will take UACT a few seconds to create the PDF. When the process is complete, a button will appear at the bottom of the page that reads **Certification PDF**.

- Click **Certification PDF**, review the file, and save it (Figure 39).

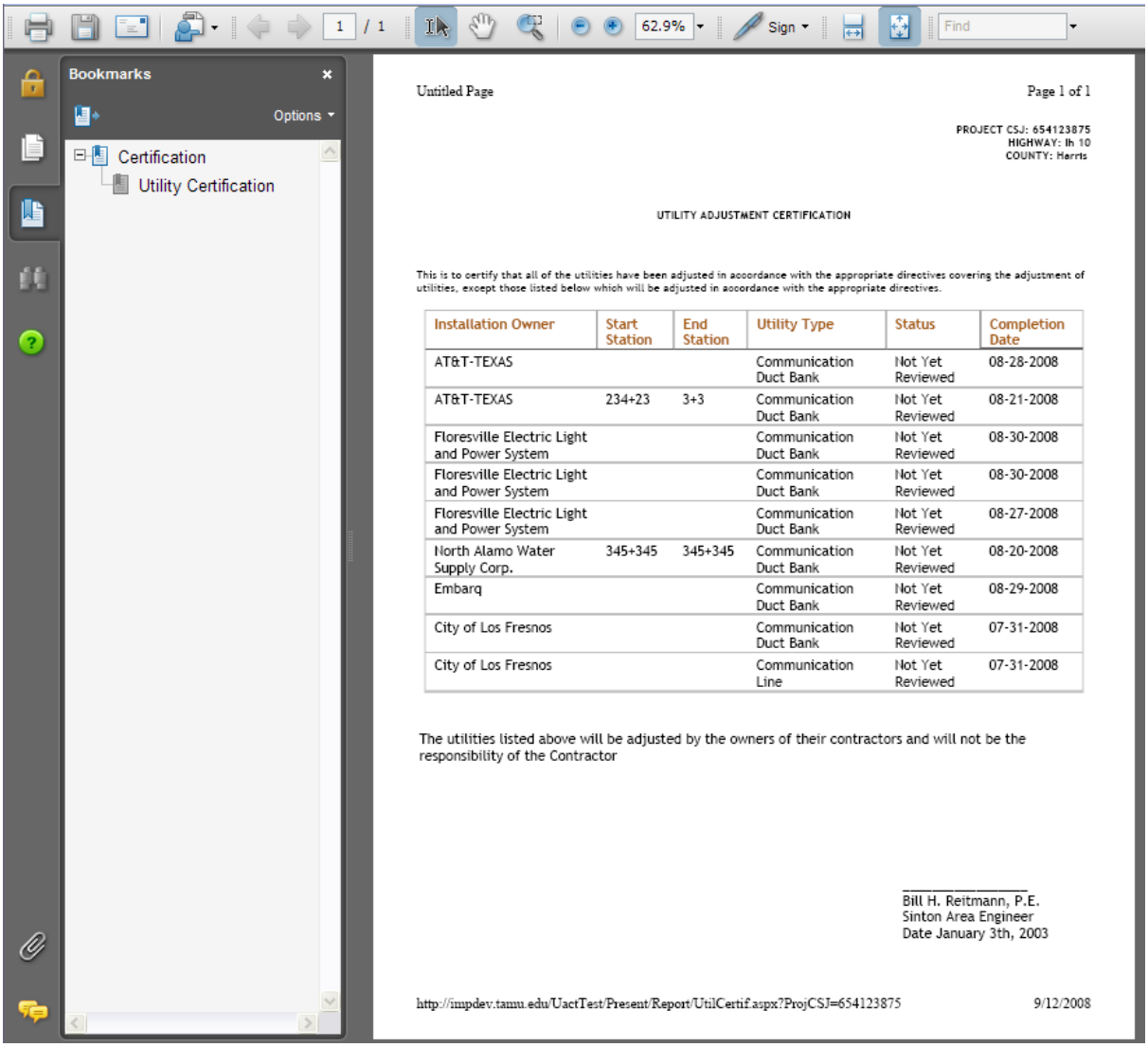


Figure 39. Utility Adjustment Certification Report.

UACT uses a utility certification template that can be modified to the needs of a district. UACT automatically inserts the project's CSJ, highway, and county into the report and provides a signature block for the appropriate TxDOT official.

Contacts Business Area

Contacts lists users of the UACT system to provide contact information to other UACT users. This section of UACT is intended to link to user data of the Utility Installation Review (UIR) system. Currently, only the names and e-mail addresses of TxDOT personnel are provided to demonstrate the functionality of the prototype (Figure 40).

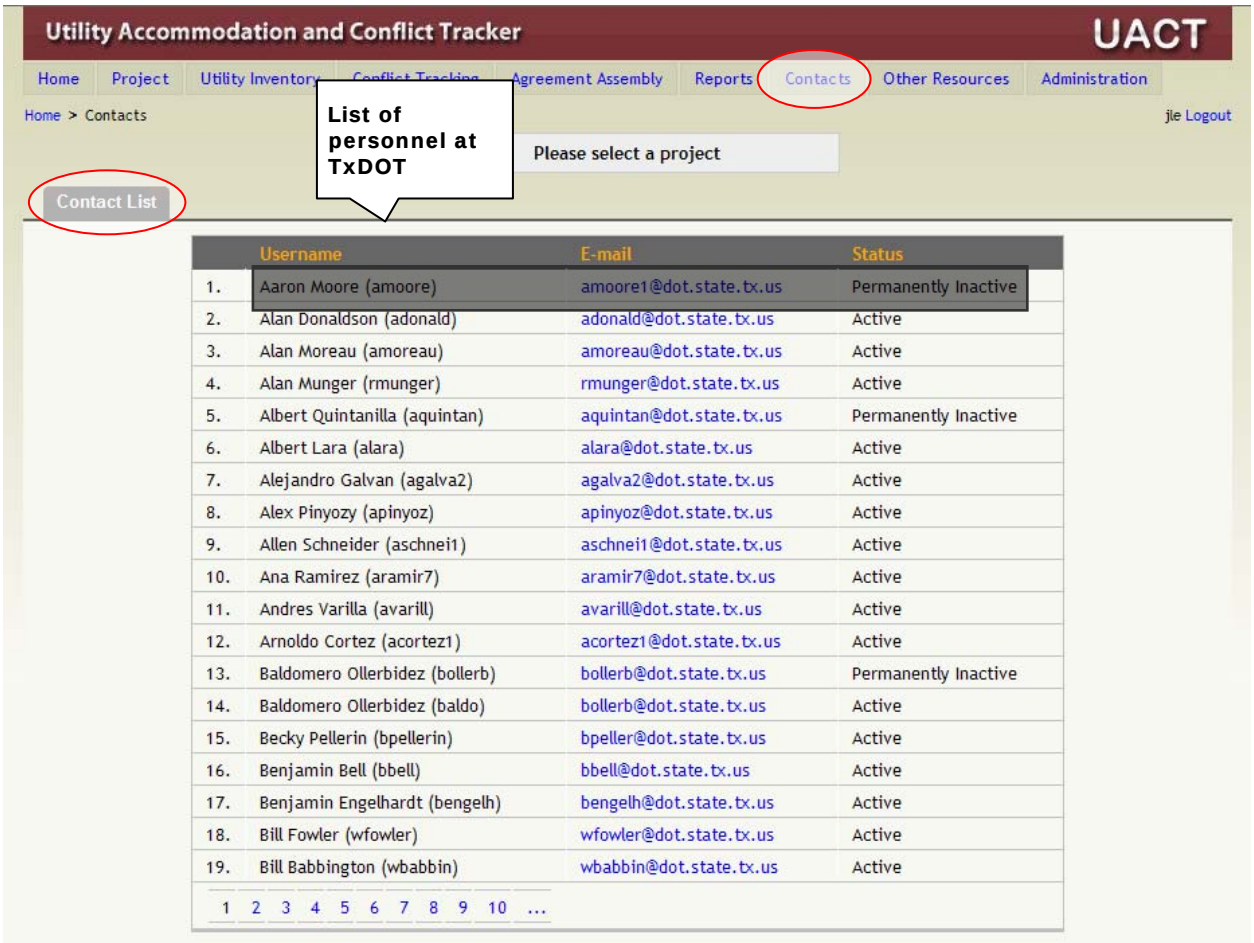


Figure 40. Contact List.

Contact List Tab

[**Contact List**] shows a list of TxDOT personnel currently registered with TxDOT. The information listed here includes:

- **Username.** The full name and in parentheses, the UACT username chosen by the individual.

- **E-Mail.** The individual's e-mail address.

- **Status.** The current status of the user in UACT.

Other Resources Business Area

Other Resources is intended to provide UACT users and guests information related to utility coordination and utility conflict resolution processes and regulations. Currently, this section includes links to several business process models, including the process overview diagram and the detailed process diagram. A future implementation of UACT could include user documentation, guides (such as this user guide), and links to TxDOT policies and guidelines.

Other Resources Tab

[**Other Resources**] shows links to information made available to UACT by TxDOT personnel or the System Administrator such as business process models and user manuals for UACT.

Accessing Other Resources

- Click on the Other Resources main menu item or [**Other Resources**] if already under this section of the website (Figure 41).

Figure 41. Other Resources.

Administration Business Area

Administration provides an interface to authorized TxDOT personnel as well as the UACT System Administrator to administer the UACT system. These tasks include managing users (such as adding or editing their profile), managing access control (permissions that are assigned to users), and other miscellaneous tasks such as changing the theme of the website. Note: Only users with administrative privilege or a System Administrator may access the Administration interface (Figure 42).

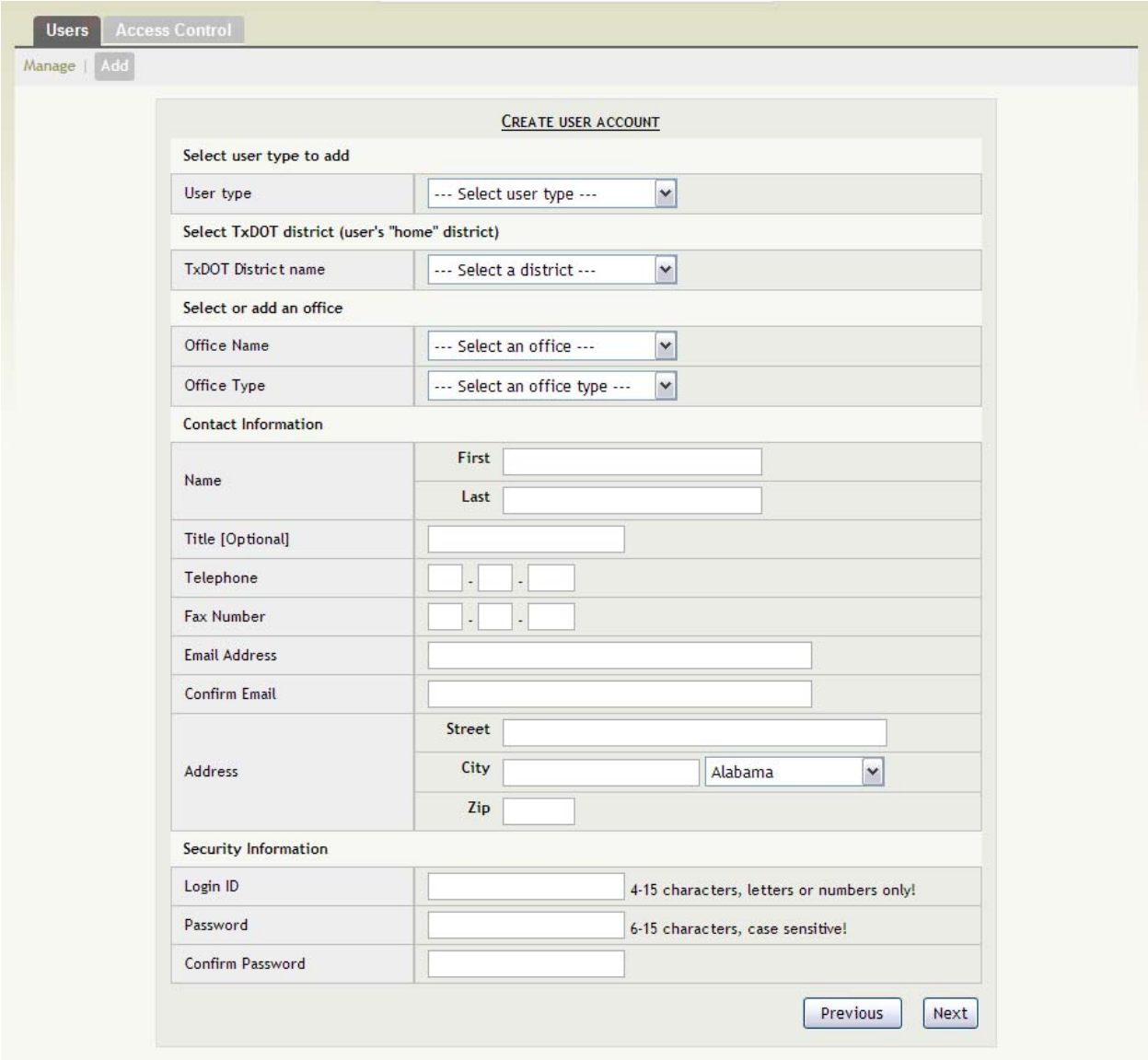


Figure 42. Add New User.

The Administration interface includes the tabs Users and Access Control:

Users Tab

[**Users**] provides a mechanism to an administrator to add, edit, and delete users and their profiles. Depending on the permissions available to the current user, this interface as well as the capabilities associated with it may display differently. For example, a user with a role of Utility Owner can add users but cannot create new permissions for that role, which is a capability reserved to a System Administrator.

Add a User

- Click on the Users main menu item under Administration or [**Users**] if already in this section of the website. Click on the [**Add**] subtab to access a wizard that assists in adding new users (Figure 43).

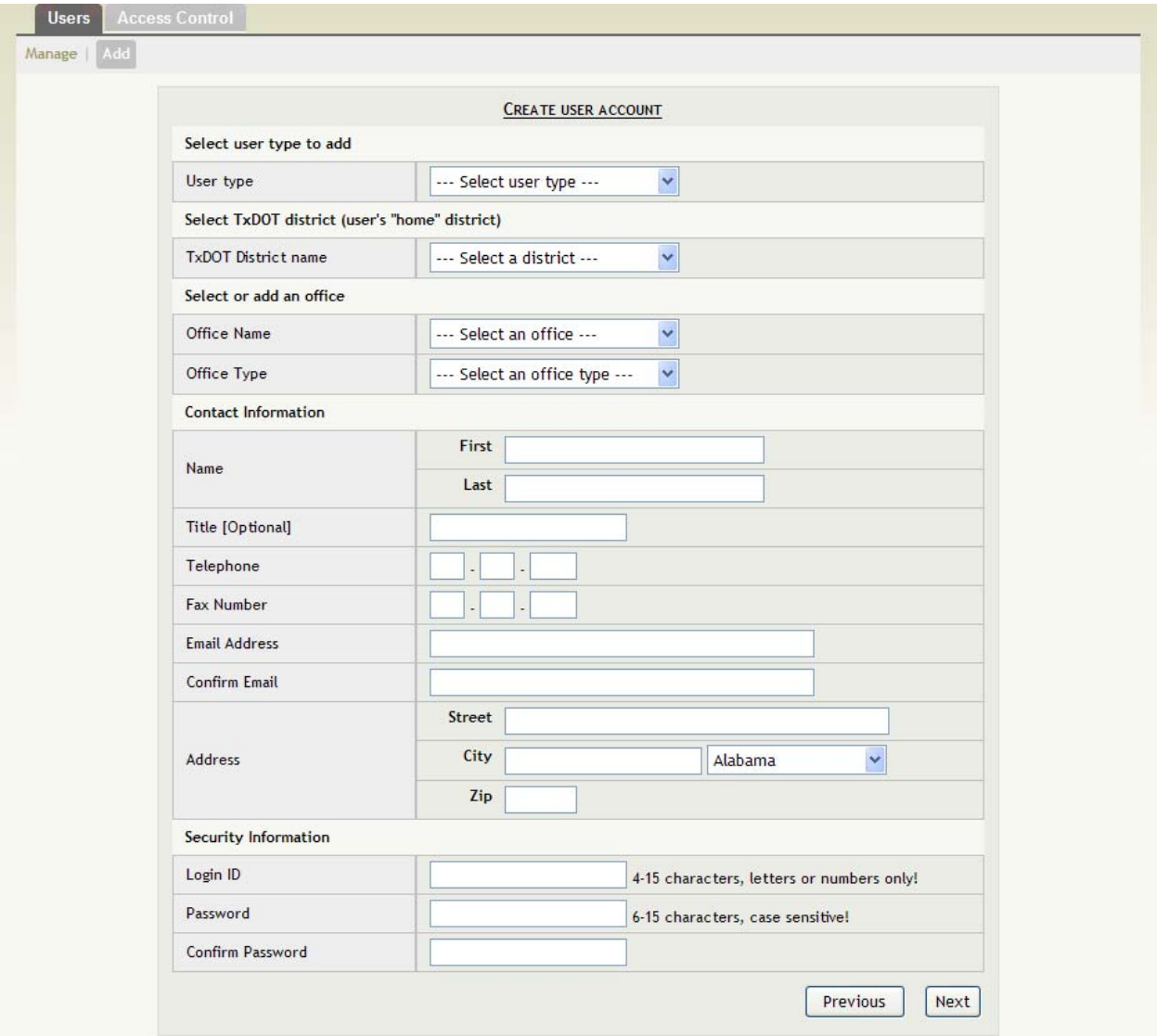


Figure 43. Create User Account.

- Provide installation owner (if adding a utility company user), “home” TxDOT district, office, contact, and security information, and click **Next** (Figure 43).

    - Verify the pre-listing of the installation owner name in the database. If a record already exists, do not attempt to create a new one. Instead, select the installation owner name from the drop-down menu.

    - The “home” TxDOT district is the district where you will register the new office account.

- The next step allows System Administrators to assign access control permissions for the new user. Select an appropriate status, role, and privilege level and review the resulting default permissions. If not sufficient, a system administrator can customize the permissions of the new user by checking or unchecking permission checkboxes (Figure 44).

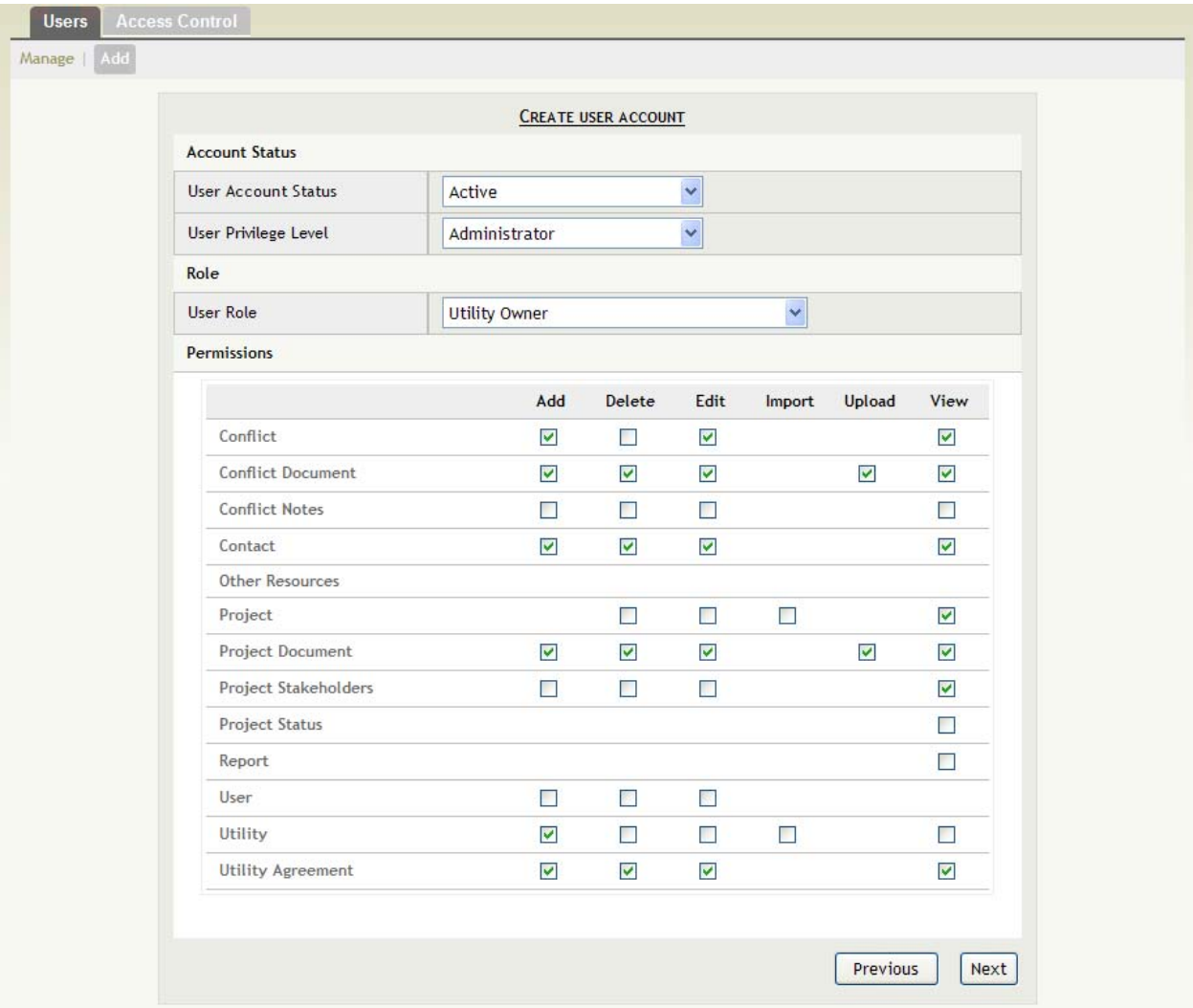


Figure 44. User Account Permissions.

- Click **Next**.

- Verify the user account information and click **Finish** to create the new user account. If the user was assigned a status of "Active," the account is immediately available for use (Figure 45).

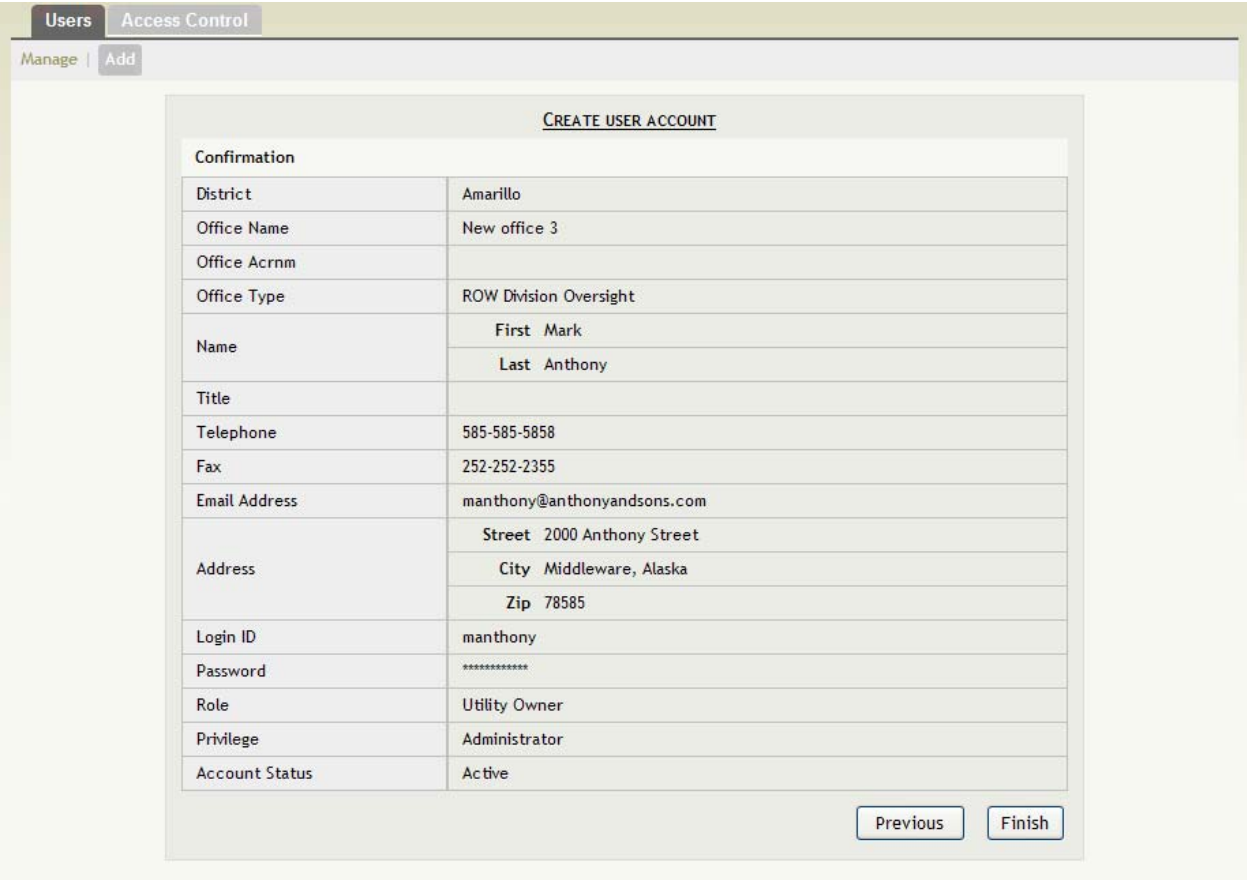


Figure 45. User Account Confirmation.

Access Control Tab

[**Access Control**] provides a UACT System Administrator with a mechanism to create permissions for the system and to assign defaults for each role and privilege that exist within UACT. Permissions are combinations of a capability and a business area section. For a list of currently valid permissions in UACT, see the Appendix. If UACT is expanded, a new business area section must be created by adding a record to the database. For more information about permissions, see the UACT Access Permissions section at the beginning of this chapter and/or in the Appendix.

When creating new users, the repetitive task of assigning permissions to a user can be avoided by assigning default permissions to roles and privileges that in turn can be assigned to users.

Default permissions for roles can be set under [**Default Permissions**], and default permissions for privileges can be set under [**Default Privilege Permissions**].

Create New Permission

- To create a permission, click [**Permissions**] under [**Access Control**] (Figure 46).

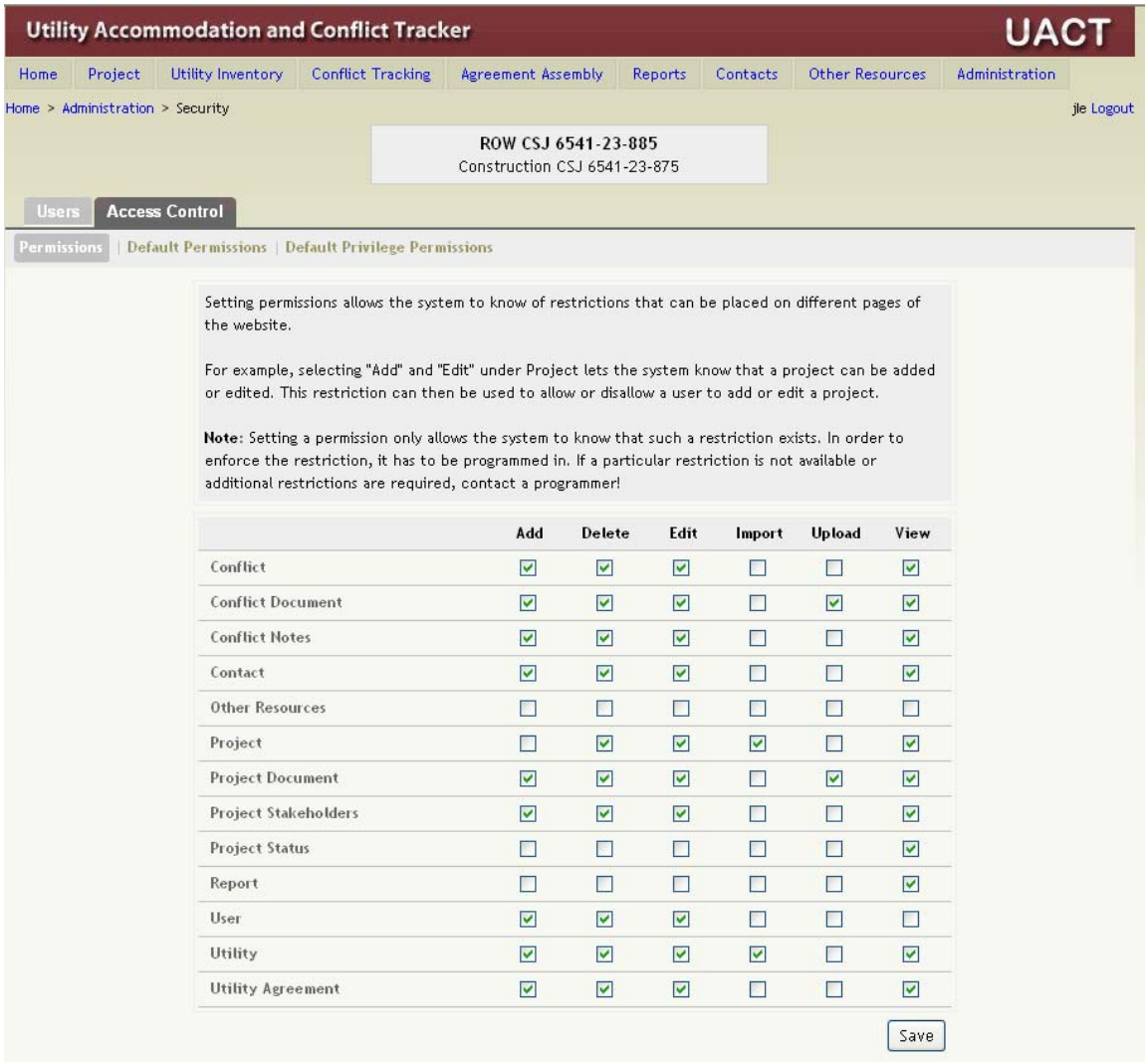


Figure 46. UACT Access Control Permissions.

- In the matrix displayed, check a checkbox to create a new permission for the selected capability and business area section.

- Click **Save**.

Note: Checking a permission in this table only allows the system to understand that such a permission exists. It does not create the code that is required to perform a particular capability. For example, checking the box “Upload” for the “Conflict” business area section does not create an upload component on the interface, it merely allows the system to enforce

the upload capability in the "Conflict" business area section. In its current version, UACT includes all required code for the permission configuration shown in Figure 46. If TxDOT desires to add additional capabilities to business area sections in a future version of UACT, it would require a modification of the UACT code. If a particular restriction is not available or additional permissions/capabilities are required, contact the UACT programming supervisor.

Assign Default Permissions

- Click [**Default Permissions**] under [**Access Control**] (Figure 47).

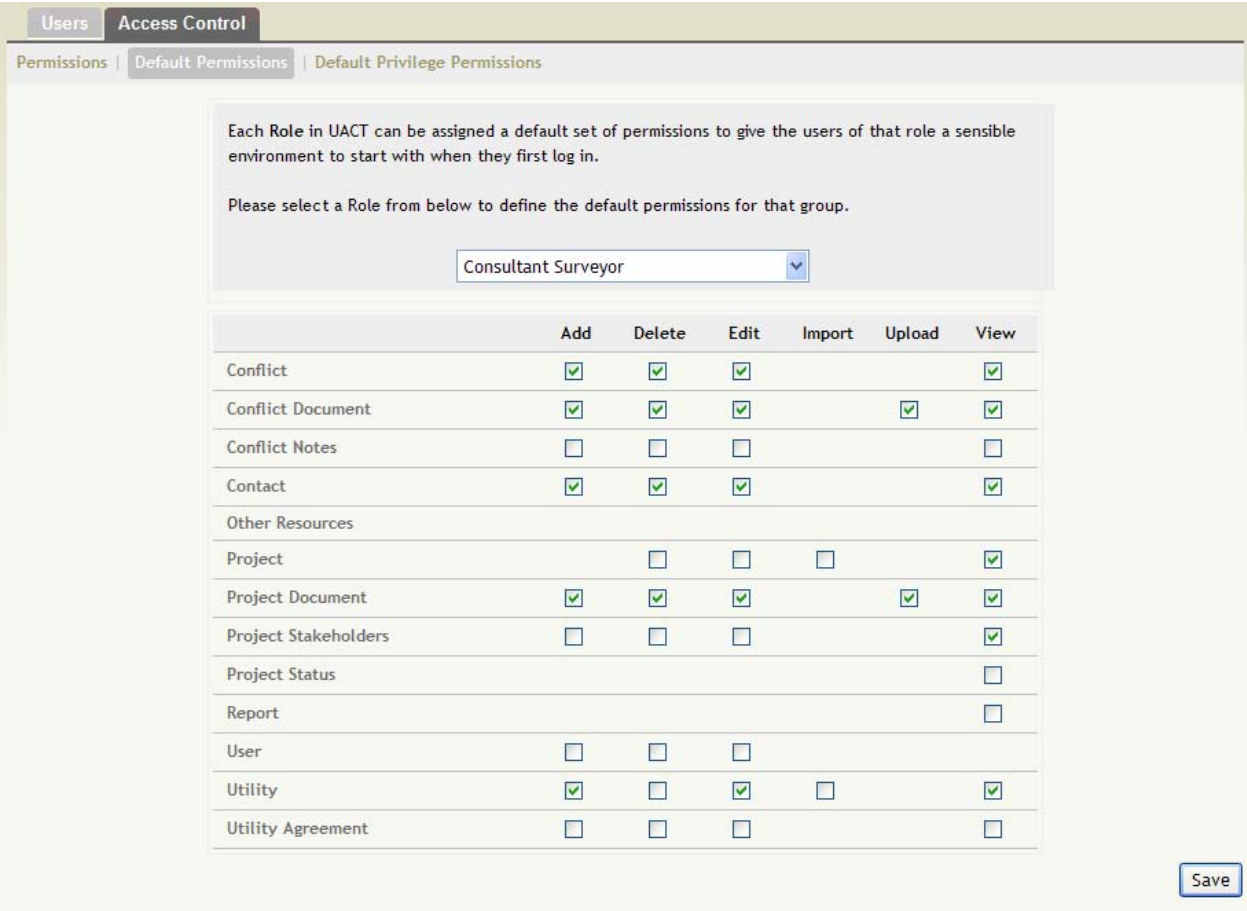


Figure 47. Default Permissions of the Consultant Surveyor Role.

- Select the role from the drop-down menu for which the default permissions will be assigned or modified.

- Check the checkboxes for permissions that apply to this role. Note: Some permissions might not have checkboxes, which indicates that this permission does not exist within the system.

- Click **Save**.

Assign Default Permissions to a Privilege of a Role

- Click [**Default Privilege Permission**] under [**Access Control**].

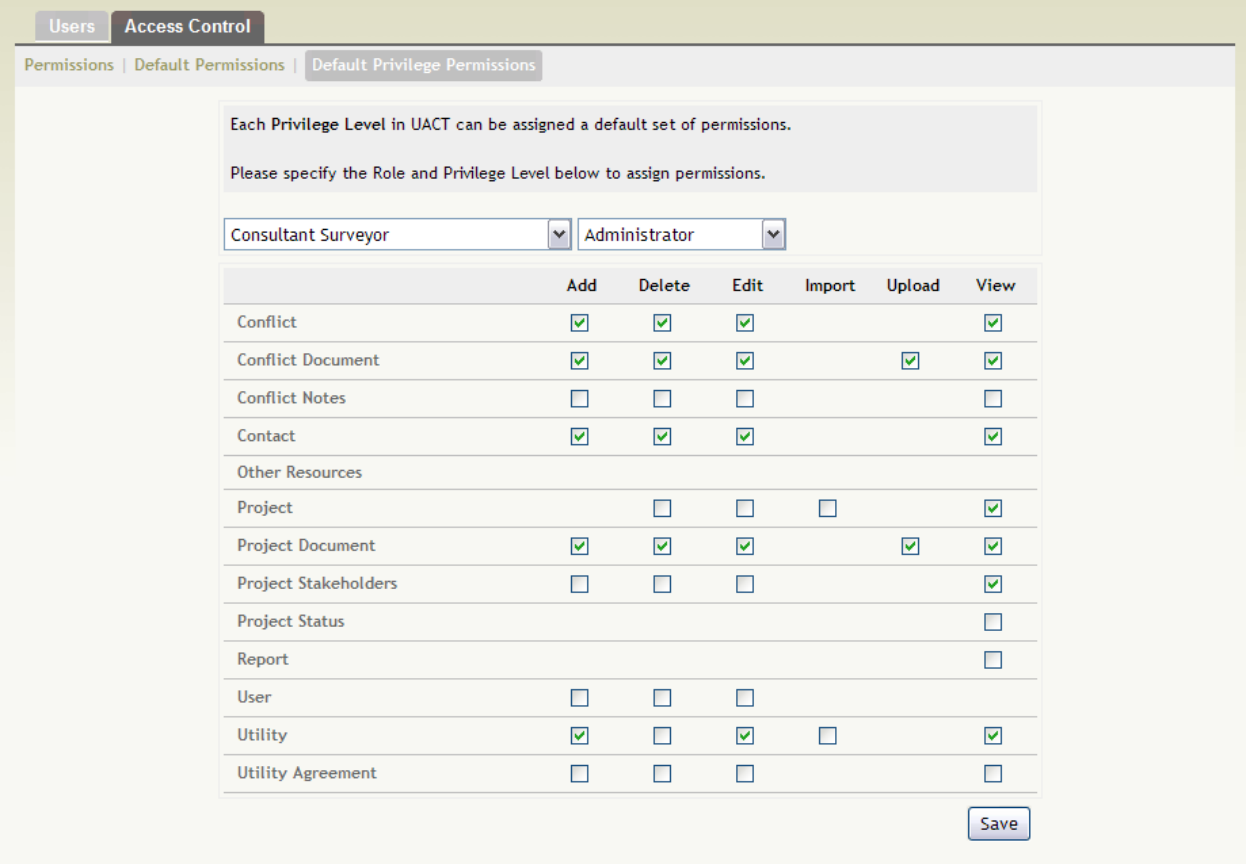


Figure 48. Default Permissions of the Administrator Privilege of the Consultant Surveyor Role.

- Select the role for which the default permissions will be assigned.

- Check the checkboxes for permissions that apply to the privilege of this role. Note: Some permissions might not have checkboxes, which indicates that this permission does not exist within the system.

- Click **Save**.

CREATING AND TRACKING UTILITY CONFLICTS

CREATING UTILITY CONFLICTS

Overview

Creating conflicts is a central feature of UACT. In order for a user to create an agreement assembly, a project must have at least one utility conflict. In the general flow of using UACT, a utility conflict can be created after a user has selected a project and imported at least one utility facility.

Create a Conflict

- Click Add under the Utility Conflict main menu item or [**Add Conflict**] if already in this section.

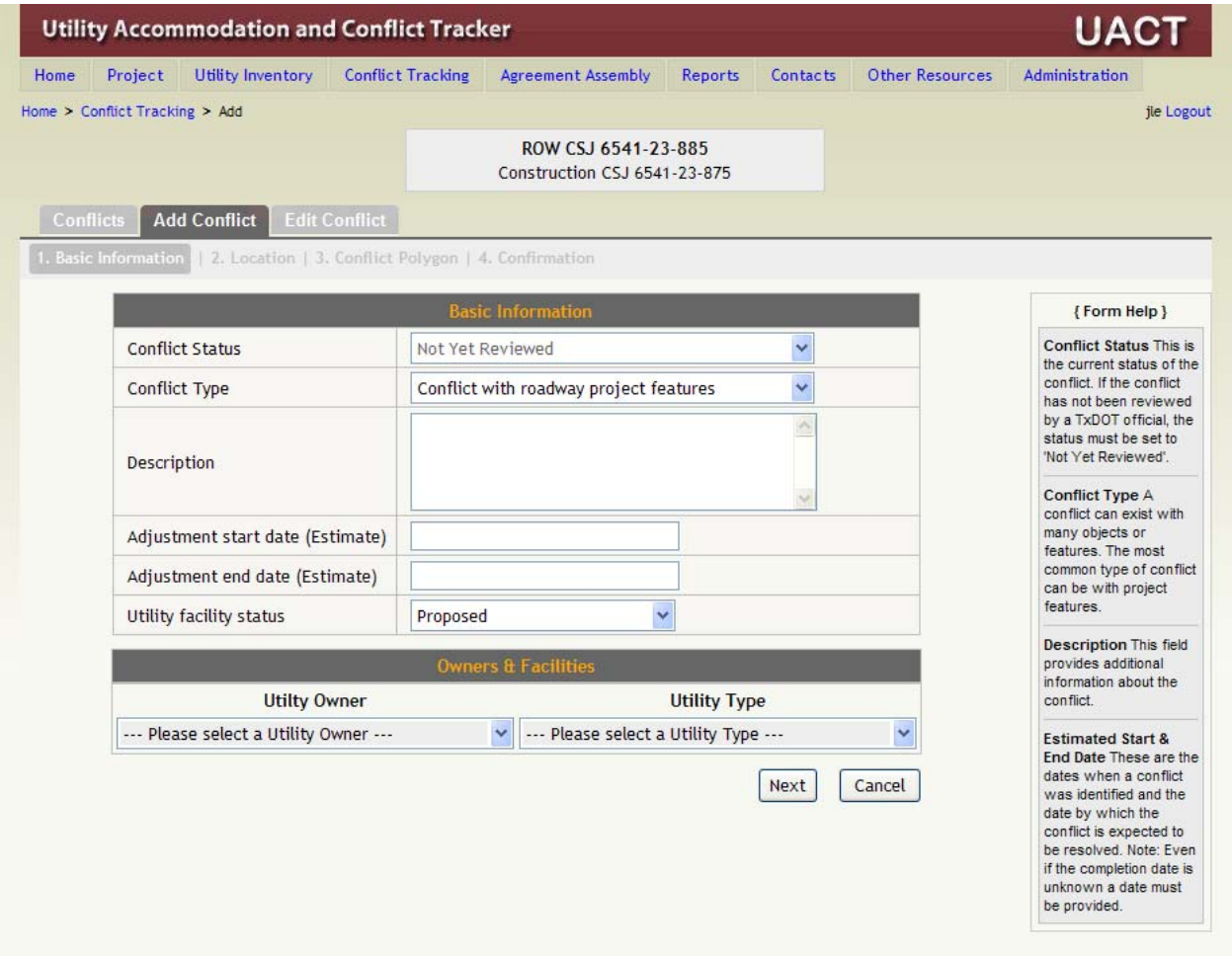


Figure 49. Add New Utility Conflict: Basic Information.

- The creation of utility conflicts is divided into four stages that are represented by subtabs: Basic Information, Location, Conflict Polygon, and Confirmation.

Basic Information

- Under [**Basic Information**], provide the following (Figure 49):
    - **Conflict Status.** The current status of the conflict at the time of creation of this conflict. The status of a conflict can be changed at any time after the conflict is created.
    - **Conflict Type.** Distinguishes the type of utility conflict.
    - **Description.** A brief text providing further information about the conflict.
    - **Adjustment start date.** An estimation of when the process of adjusting the conflict will commence.
    - **Adjustment end date.** An estimation of when the process of adjusting the conflict will be resolved.
    - **Utility facility status.** The current status of the utility facility at the time of creation of this conflict.
- Select a single utility facility that is in conflict.
    - Utility facilities can be filtered using the Utility Owner and/or the Utility Type drop-down menu. To select a utility facility, check the checkbox next to it.
- Click **Next**.

Location

- Under [**Location**], provide information pertaining to the location of the utility conflict (Figure 50).

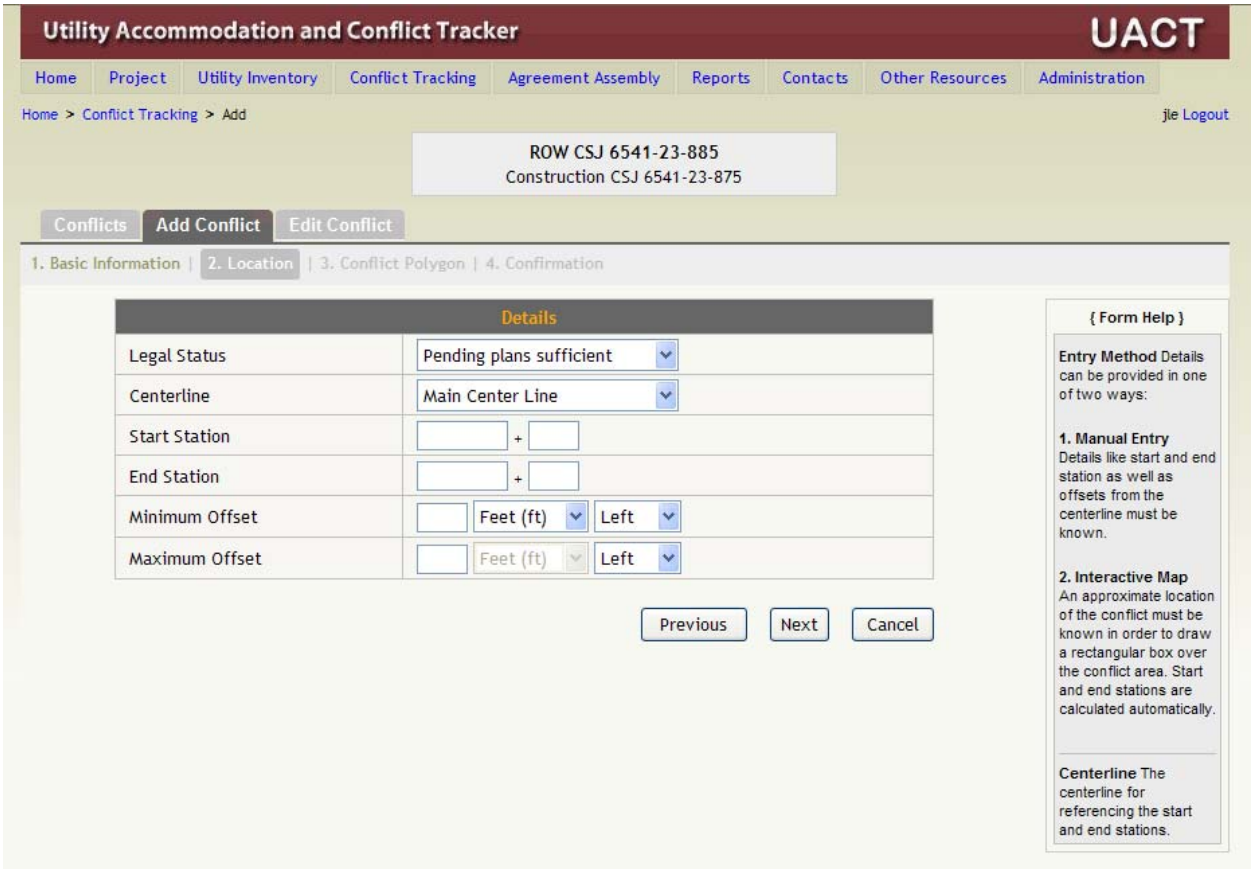


Figure 50. Add New Utility Conflict: Location.

- **Legal Status.** The current legal status of the conflict defined by the last notification that TxDOT sent to the utility owner. A TxDOT employee can update the legal status in UACT at any time.

- **Centerline.** The project reference line that stations and offsets will refer to.

- **Start Station.** The starting point of the conflict in station notation.

- **End Station.** The ending point of the conflict in station notation.

- **Minimum Offset.** The minimum distance from the centerline to the conflict at any point between the start and end stations of the conflict. A positive value indicates an offset to the right when looking in direction of increasing stations, and a negative value indicates an offset to the left when looking in direction of increasing stations.

- **Maximum Offset.** The maximum distance from the centerline to the conflict at any point between the start and end stations of the conflict. A positive value indicates an offset to the right when looking in direction of increasing stations, and a negative value indicates an offset to the left when looking in direction of increasing stations.

Conflict Polygon

- Under [**Conflict Polygon**], create a visual representation of the utility conflict (Figure 51).

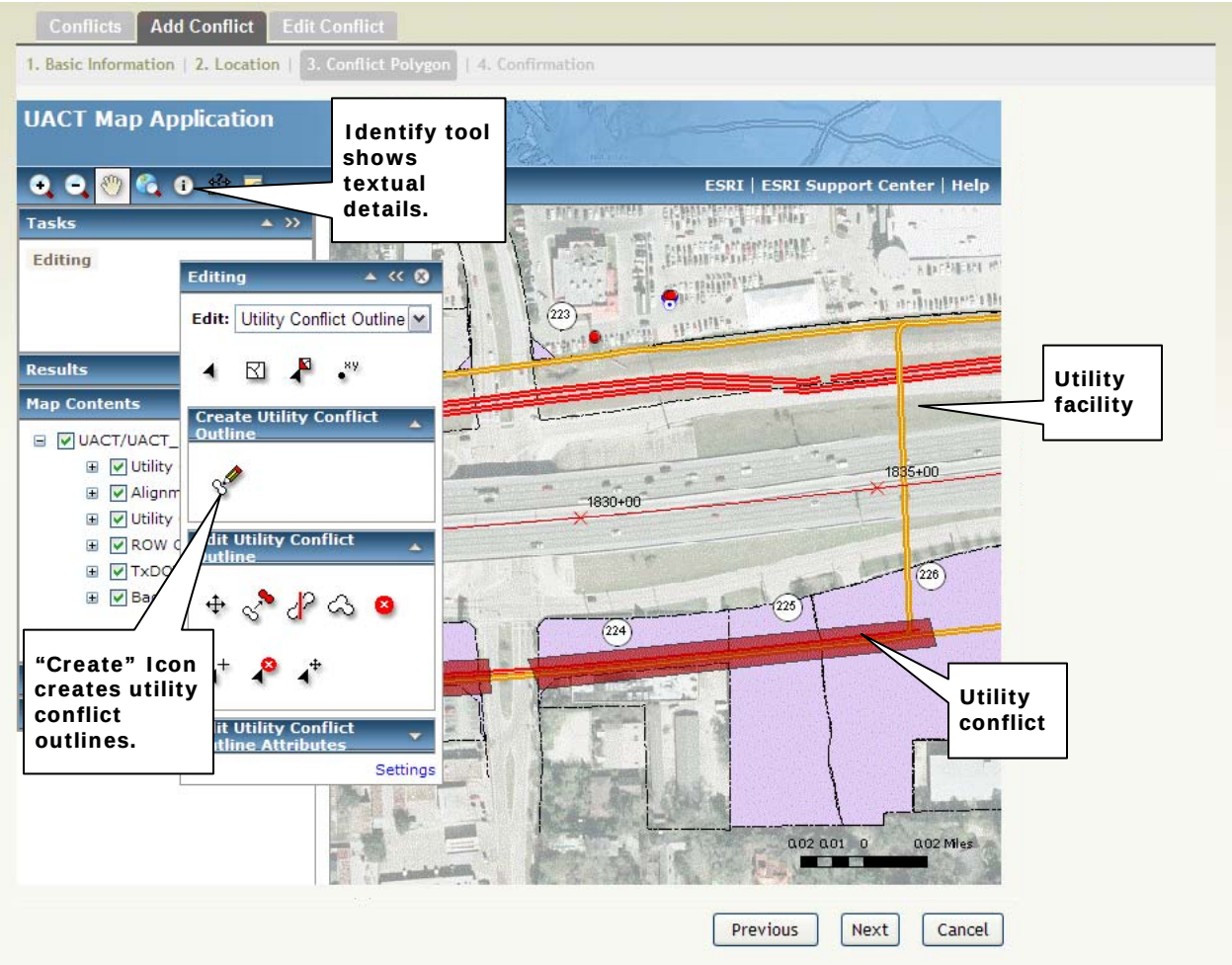


Figure 51. Create Utility Conflict Outline.

- Click on **Editing** under the "Tasks" pane on the left. The "Editing" toolbox will pop up that can be used to create conflicts.

- Under "Create Utility Conflict Outline," select the "Create" icon.

- Draw an outline of the utility conflict on the map in the appropriate location by clicking on the map once for each corner of the outline. Double-click to complete the creation of the outline.

- Click **Next**.

Confirmation

- Review the utility conflict data just entered.
- Click **Finish** to create the conflict.

SUBMITTING AND PROCESSING UTILITY AGREEMENTS

SUBMITTING UTILITY AGREEMENTS

Overview

A central feature of UACT is the creation of utility agreement assemblies for reimbursable utility adjustments. For these utility conflicts, UACT provides a sequence of steps that help a utility company user with the completion of the utility agreement and required attachments. The utility agreement assembly can then be electronically forwarded for review to the appropriate TxDOT official at a district, and subsequently to the TxDOT ROW Division. At this point, the creation of electronic utility agreement assemblies is not intended to eliminate the paper copy of the agreement, but rather help standardize the content of the agreement, ensure agreement completeness, and eliminate time wasted by sending paper copies of the agreement back and forth between stakeholders. In the UACT system, a paper copy of the agreement is only needed once all stakeholders have reviewed and approved the electronic version of the agreement. The agreement can then be printed, signed, and forwarded to TxDOT.

In the utility agreement assembly creation process, UACT determines automatically which forms need to be filled out and prompts the user at each step based on user input. The list of attachments is shown as subtabs or steps on top of each page. As the user progresses, these steps open up, allowing the user to go back and forth. Once a step is completed, click on **Next** to progress further or **Previous** to revisit a completed page. At any time during the process, the user can navigate away from the wizard and return later to continue the agreement. All progress up to the current step is saved by the application. A change made in the current step, however, is not saved until the user clicks the **Next** button. Clicking on **Next** produces a PDF file of the attachment. In the last step, all PDF files are combined into one utility agreement assembly PDF file.

Some attachments require detailed knowledge about the utility agreement process. To help the user identify requirements and understand the process, UACT provides context help and links to supporting documentation.

Agreement Structure

A utility agreement assembly consists of the standard utility agreement form and additional forms called attachments that have an alphabetical letter (A-H) followed by a name. The number and type of attachments for an agreement assembly depend on the specific circumstances of the adjustment.

Create a New Utility Agreement Assembly

In UACT, a user creates a new utility agreement assembly by selecting utility conflicts that UACT associates with a new agreement assembly. Once the agreement assembly is created, a user can click on the continue link to complete the agreement assembly.

- Click on the Create submenu item under Agreement Assembly or [**New Agreement**] if already under the agreement assembly section of the website (Figure 52).

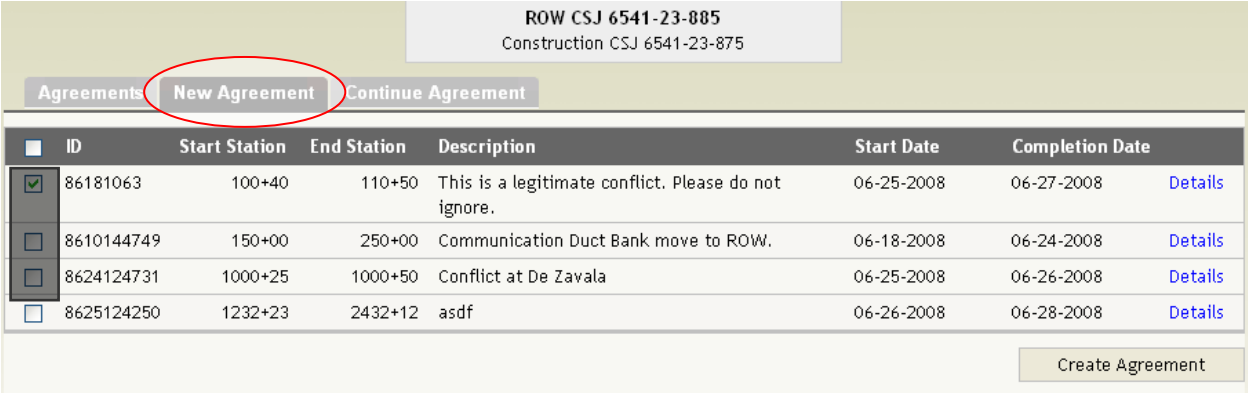


Figure 52. Select Conflicts for New Agreement.

- Select one or more conflicts by checking the checkbox next to each conflict on the left.

- Click on the **Create Agreement** button to create a new utility agreement assembly with the selected conflicts.

- UACT will display a list of current agreements, including the newly created agreement. Note that the newly created agreement does not have a U-Number yet. The U-Number will be assigned by the ROW Division at a later time (Figure 55).

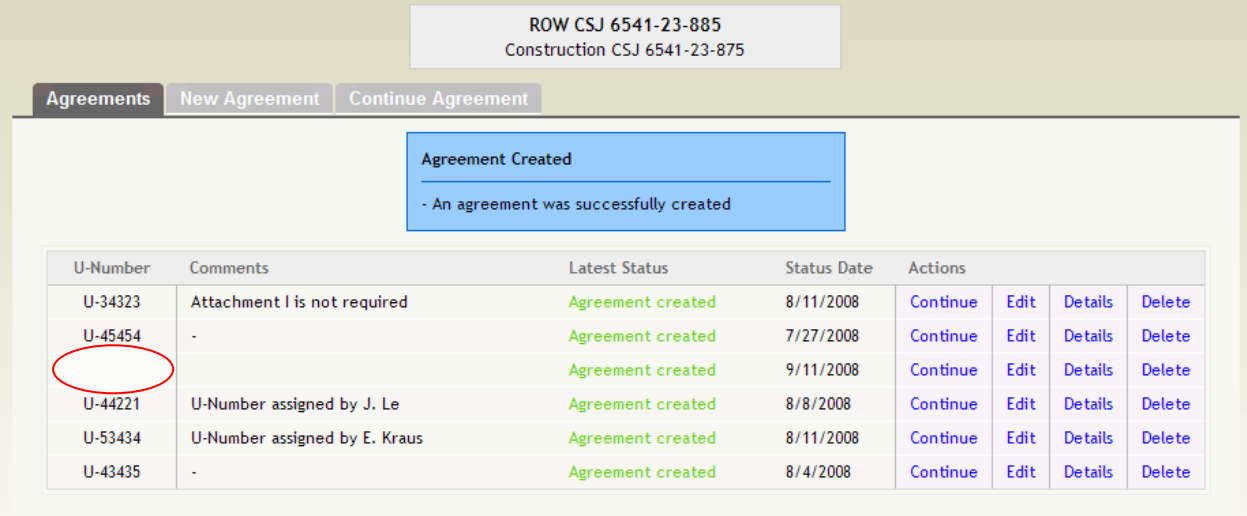


Figure 53. New Agreement Created.

- Once a record has been created for a utility agreement assembly, a user can complete the assembly by clicking the Continue link.

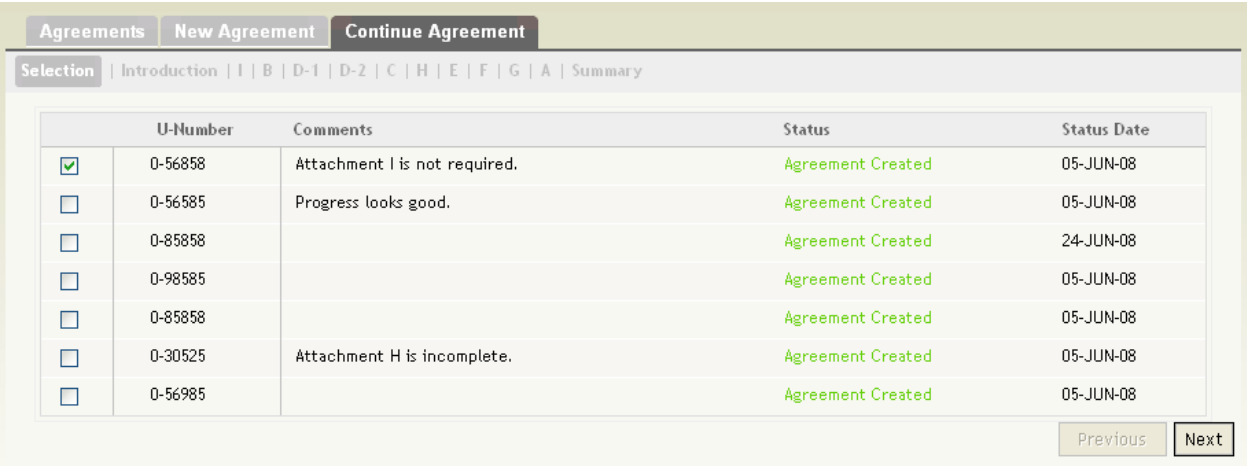
Continue Utility Agreement Assembly

Click on the Continue submenu item under Agreement Assembly or [**Continue Agreement**] if already under this section of the website.

Selection Subtab

This page lists agreements that are incomplete. The number of agreements shown here is limited by the user's access rights. For example, a utility company user will see only their own agreements, and TxDOT officials will see all project agreements.

- Select the agreement to continue (Figure 54). The agreement can be identified by the U-Number displayed in the selection table.



	U-Number	Comments	Status	Status Date
☑	0-56858	Attachment I is not required.	Agreement Created	05-JUN-08
☐	0-56585	Progress looks good.	Agreement Created	05-JUN-08
☐	0-85858		Agreement Created	24-JUN-08
☐	0-98585		Agreement Created	05-JUN-08
☐	0-85858		Agreement Created	05-JUN-08
☐	0-30525	Attachment H is incomplete.	Agreement Created	05-JUN-08
☐	0-56985		Agreement Created	05-JUN-08

Figure 54. Utility Agreement Assembly, Selection.

- Click **Next**.

Introduction Subtab

This page provides a brief overview of the process to complete the agreement and a summary of each attachment that may be used in the agreement assembly process (Figure 55). The attachments that are actually needed for a specific agreement are determined in the following process.

Figure 55. Utility Agreement Assembly, Introduction.

- Click **Next** to begin the process of creating an agreement assembly.

Subtab I – Inclusion in Highway Contract

Attachment I is a required attachment for adjustments that will be completed under the highway construction contract. This procedure is sometimes advantageous for the utility owner and TxDOT. See chapter six, section three, of the utility manual for more information (*9*). To complete attachment I, follow these steps:

- Select "Yes" to include the adjustment in the highway construction contract, or select "No" to continue without including the adjustment in the highway contract (Figure 58).
- Click **Next**.

Figure 56. Utility Agreement Assembly, Attachment I.

Subtab G – Betterment and Estimates Calculation

TxDOT requires the utility to submit a breakdown of cost estimates by categories (such as materials and supplies, labor, transportation, and equipment, etc.) that it will incur during its adjustment process. This helps to document the adjustment process and later to compare the total estimated costs to actual costs. All estimates should have sufficient categories for TxDOT to compare estimate costs with actual costs. See chapter seven, section two, of the utility manual for more information (*9*).

When a utility is adjusted for relocation or replacement, the utility owner can create a new facility of size and quality equivalent to the old facility, or the utility owner can use the opportunity to upgrade the facility. TxDOT's term for upgrades to facilities that are elective, i.e., not mandated by new standards or requirements, is "betterment." Utilities that do not opt for betterment are termed "in-kind" facilities. If the utility is eligible for cost participation by TxDOT in relocating its facility, any betterment should be reported and TxDOT will not reimburse this amount. See chapter seven, section two, of the utility manual for more information (*9*). Betterments estimates should follow the same structure as in-kind estimates to allow TxDOT to compare both kinds of estimates. Follow these steps to complete attachment G:

- Select the estimate method: “Design estimate with betterment” if the new design includes betterment or “Design estimate without betterment” if the design does not include any betterment (Figure 57).

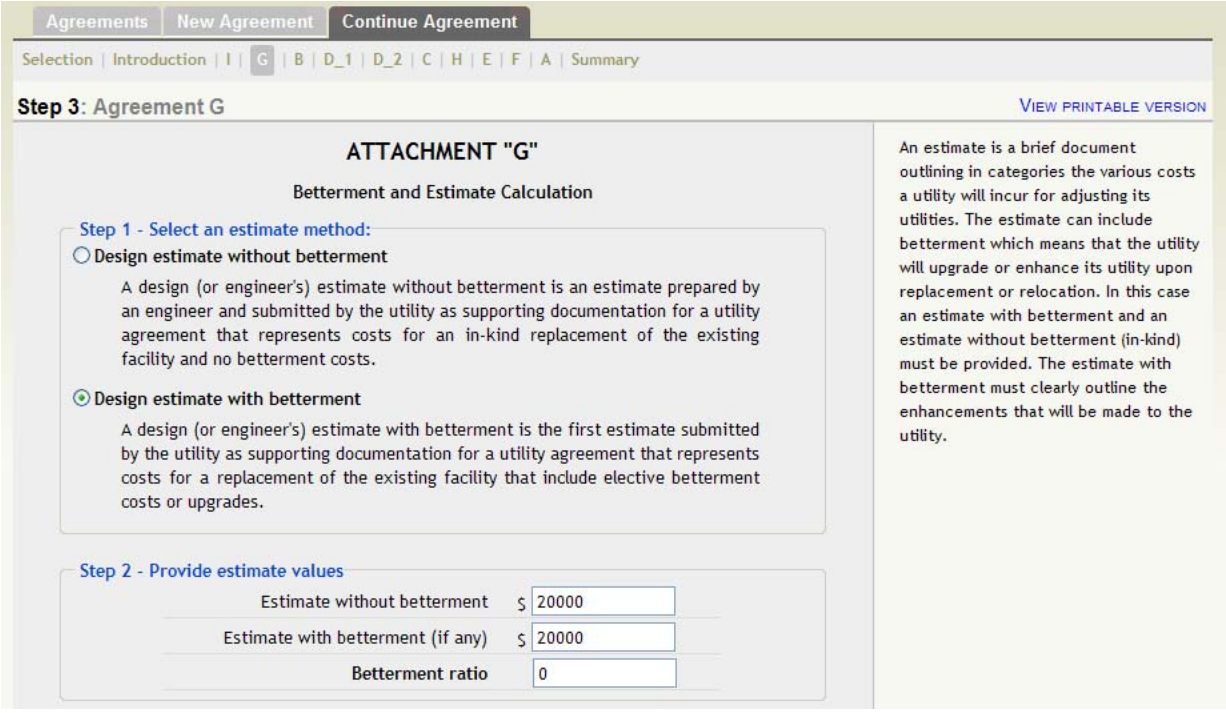


Figure 57. Utility Agreement Assembly, Attachment G, Steps 1 and 2.

- If the design does not include betterment, only the “in-kind” estimate is needed. If the design includes betterment, a “betterment” estimate is needed as well. Provide the total estimated value for the adjustment without betterment. If betterment exists, also provide the total estimated value for the adjustment with betterment. UACT calculates the betterment ratio automatically.

- Upload the “betterment” estimate and/or the “in-kind” estimate as follows:
    - Provide title, description, and a status of the document (comments are optional). The FileNet types are pre-selected and cannot be modified.
    - Click on **Browse…** to select the document.
    - Click on **Upload Document** to upload the document (Figure 58).

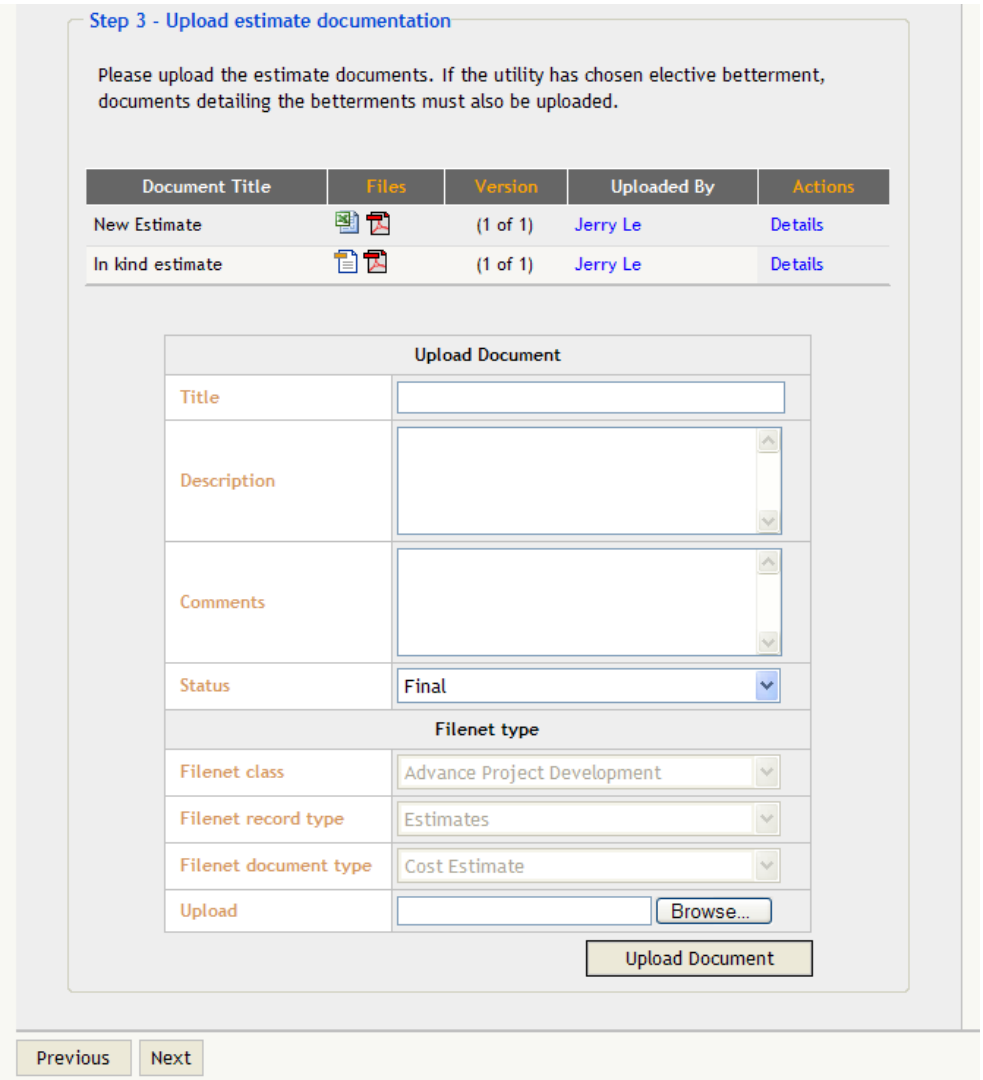


Figure 58. Utility Agreement Assembly Attachment I, Step 3.

- Repeat these steps for the second estimate, if needed.
- Click **Next**.

Subtab B – Cost Accumulation Method

If the adjustment is eligible for cost participation by TxDOT, a utility can receive reimbursement using one of two methods of cost accounting (see chapter one, section five, of the utility manual for more information (*9*)):

- **Actual Cost.** The utility accumulates costs under a work order accounting procedure prescribed by a federal or state regulatory body; and the utility proposes to request reimbursement for actual direct and related indirect costs.

- **Lump Sum.** The utility proposes to request reimbursement based on an agreement lump sum amount supported by a detailed cost analysis.

Select the method of cost accounting as follows:

- Select either Actual Cost Method of Accounting or Lump Sump Method of Accounting, and click **Next** (Figure 59).

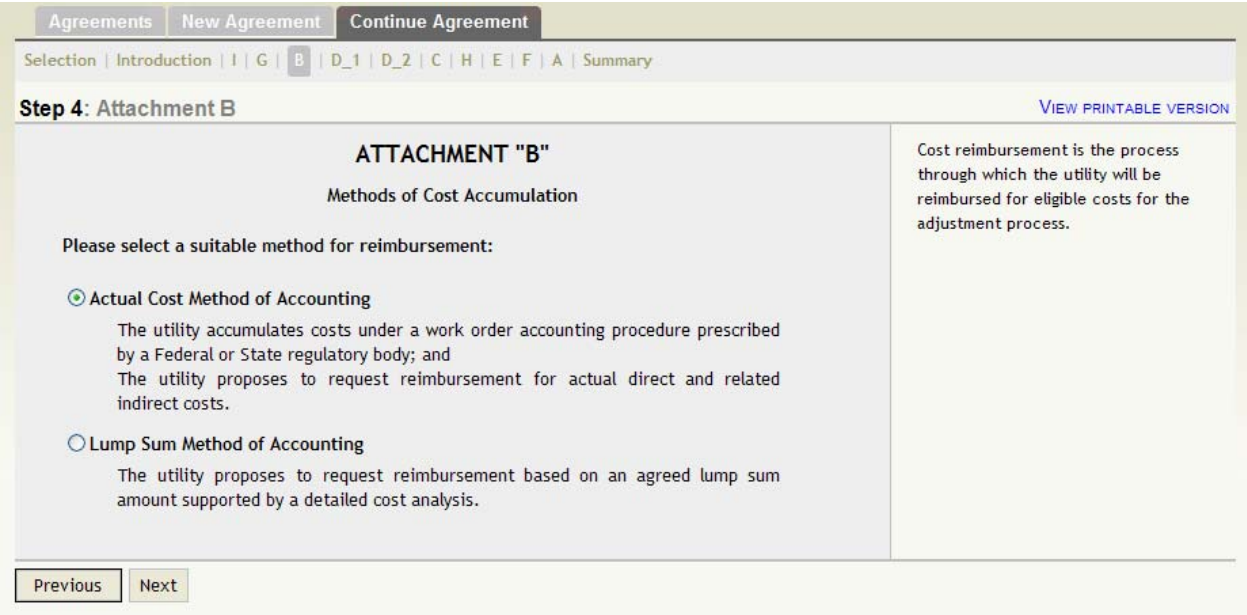


Figure 59. Utility Agreement Assembly, Attachment B.

Subtab D1 – Statement Covering Contract Work

The construction work required for an adjustment can be performed in one of two ways, depending on the resources available to the utility owner (see chapter six, section three, of the utility manual for more information (*9*)). The two methods are:

- **Force Account.** The utility uses its own crews and equipment to complete the adjustment. When a utility uses this method, it will be reimbursed only for the actual costs of adjustment.

- **Contract Method**. When a company under contract to the utility or to TxDOT performs the adjustment, it must be determined that the utility does not have adequate forces to perform the work, or that performance of the work under contract is to TxDOT's advantage. Prior approval by TxDOT is not necessary for use of this method, but the utility must execute Form ROW-U-48 (Statement Covering Construction Contract Work) to ensure that requirements of the contract method are met.

To complete attachment D, follow these steps:

- Select either Force Account Method (to indicate that the utility will utilize its own resources for the adjustment) or Contract Method (to indicate that the utility will contract out the construction work).

- Click **Next**.

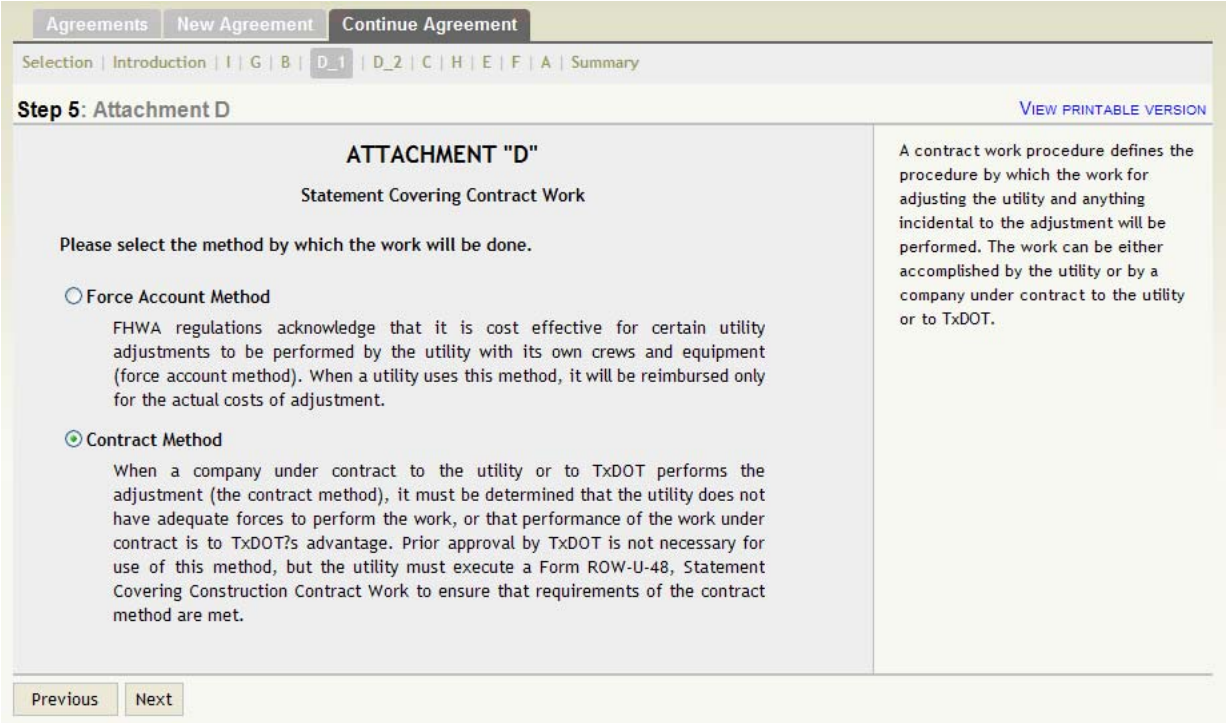


Figure 60. Utility Agreement Assembly, Attachment D, Step 1.

Subtab D2 – Statement Covering Contract Work

If a utility chooses Contract Method in the previous step, the utility must choose a specific method from a TxDOT approved list of methods. See chapter seven, section three, of the utility manual for more information (*9*).

TxDOT allows the following contracting work methods:

- **Open Advertising**. Solicitation for bids is accomplished through open advertising and the contract is awarded to the lowest qualified bidder who submits a proposal in conformity with the requirement and specifications for the work to be performed.

- **Prequalified Contractors**. Solicitation for bids is accomplished by circulating to a list of prequalified contractors and such contract is awarded to the lowest qualified bidder who submits a proposal in conformity with the requirements and specifications for the work to be performed. The prequalified contractors must be listed.

- **Existing Continuing Contract**. The work is performed under an existing continuing contract under which certain work is regularly performed for the utility company and under which the lowest available costs are developed. (If only part of the contract work is done under an existing contract, the utility company must provide detailed information using additional attachments.)

- **Contract Outside the Foregoing Requirements**. A utility can propose to contract outside the foregoing requirements. In that case, the utility must attach evidence in support of its proposal to the estimate in order to obtain concurrence of TxDOT, and the FHWA engineer where applicable.

- **Include PSE in Construction Contract**. The utility may include plans and specifications, with the consent of TxDOT, in the construction contract awarded by the state.

To select an approved contract method, follow these steps:

- Click on a contract method that will satisfy the adjustment requirements (Figure 61).

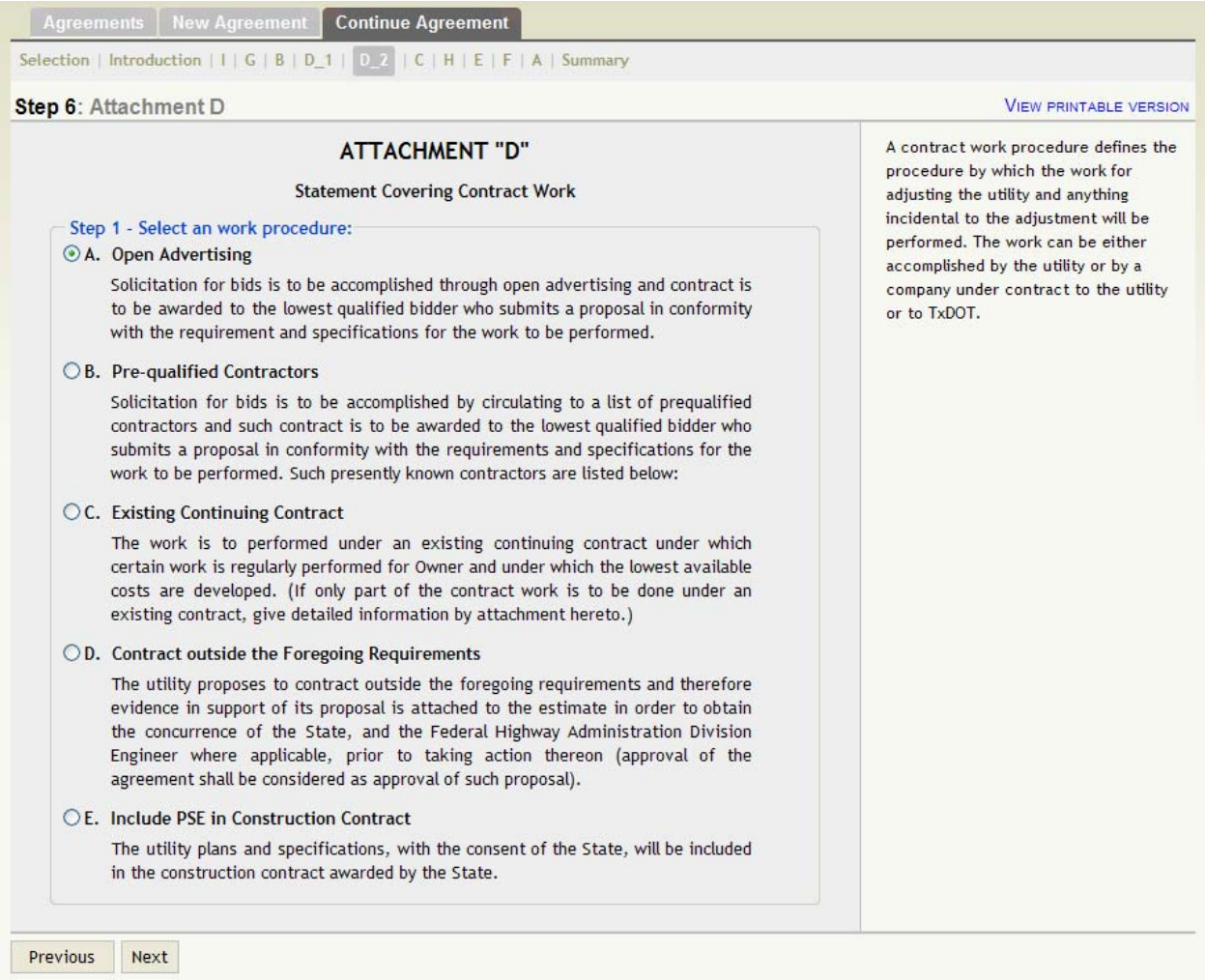


Figure 61. Utility Agreement Assembly, Attachment D, Step 2.

- If the user chooses option B (prequalified contractor method), the user must provide a list of at least three contractors (Figure 62).

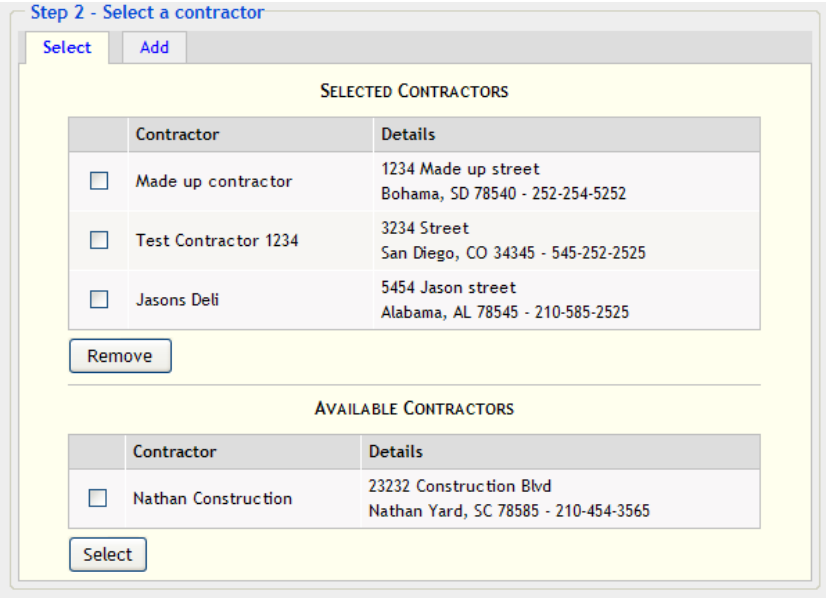


Figure 62. Utility Agreement Assembly, Attachment D, Step 2, Selected Contractors.

- If the utility company has used this option in the past, UACT will provide a list of available contractors by clicking the [**Select**] tab (Figure 62).

- To select a contractor for the prequalified list of contractors, check the checkbox next to the contractor name under the "Available Contractors" list and click **Select**. At least three contractors must be selected. If the list is empty or not enough contractors are available, the user must add additional contractor(s).

- To add an additional contractor, click the [**Add**] tab (Figure 63).

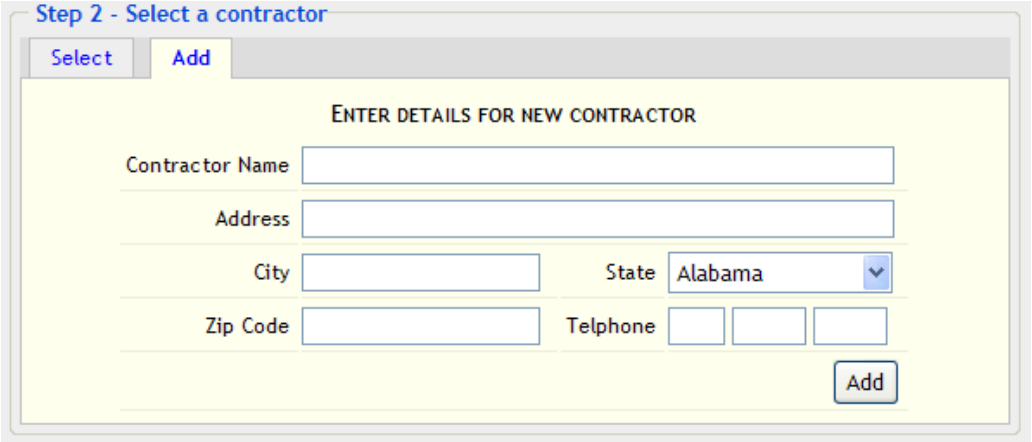


Figure 63. Utility Agreement Assembly, Attachment D, Step 2, Add New Contractor.

- Provide contractor details including the name, address, city, state, zip code, and telephone and click **Add**. Note: Adding a new contractor also adds the contractor to the list of selected contractors for this step.

- To remove a contractor from the list of selected contractors, click the [**Select**] tab (Figure 62).

- Check the checkbox next to the contractor name under the "Selected Contractors" list and click **Remove**. Note: Removing a contractor causes the contractor to be removed only from the selection list. To remove the contractor from the database of contractors entirely, administrative privileges are required.

Subtab C – Utility's Schedule of Work and Estimated Date of Completion

In addition to providing estimates about the cost of the utility adjustment and the contracting method of, the utility must provide a schedule of the adjustment. In this prototype version of UACT, a user can select one of two schedule categories, depending on the complexity of adjustment involved:

- **Simple adjustments category.** The adjustment does not require major design or construction work, has no foreseeable impact on highway construction scheduling, and does not require coordination with the highway contractor.

- **Complex adjustments.** The adjustment requires significant design and construction work that might impact the highway construction schedule, and might require coordination with the construction contractor.

To complete attachment C, follow these steps:

- Select simple or complex adjustments. Simple adjustments require only the Construction/Splicing schedule; complex adjustments require start and end dates for all other phases of work.

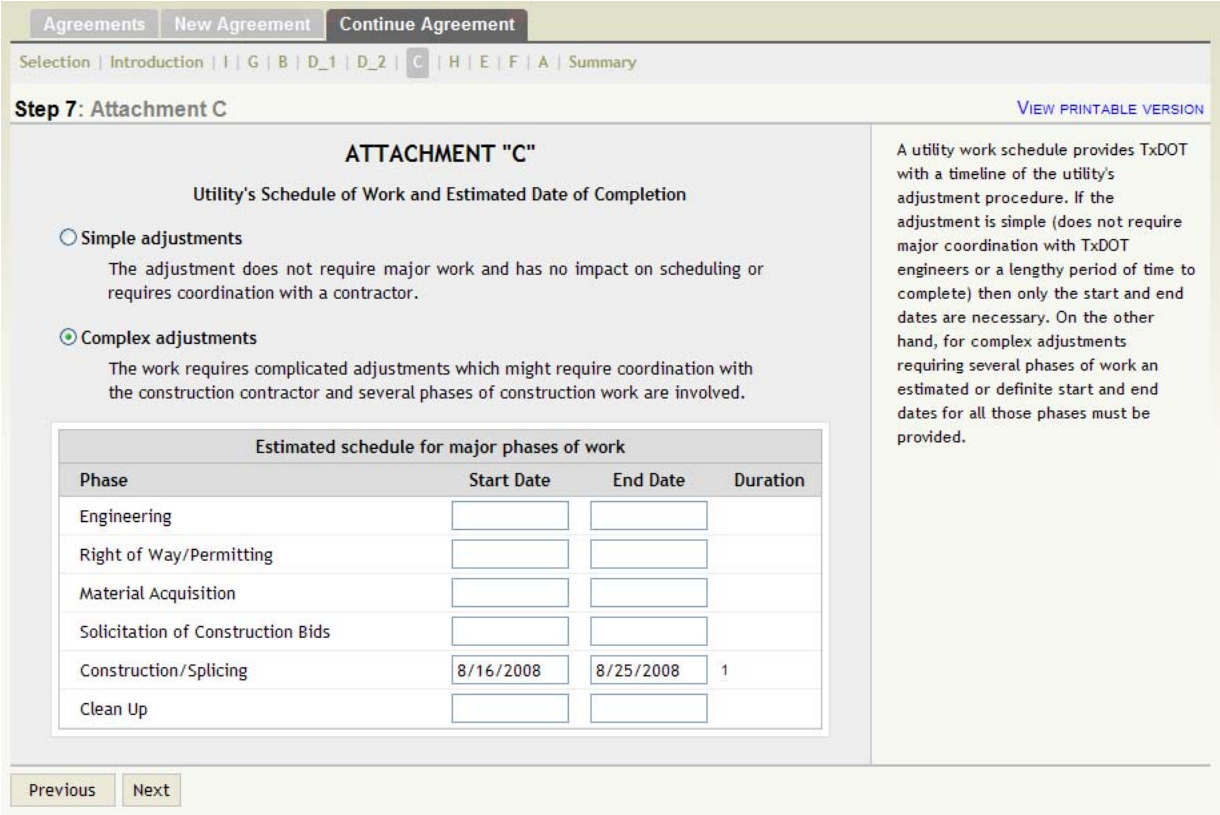


Figure 64. Utility Agreement Assembly, Attachment C.

- Enter start date and end dates for the required phases. Note: UACT automatically calculates the duration of work in weeks, listed in the column "Duration."

- Click **Next**.

Subtab H – Proof of Property Interest

In order to for a utility adjustment to be eligible for cost reimbursement, a utility must have a compensable property interest. In many cases, a utility must submit proof of the compensable property interest before the agreement can be approved. See chapter three, section four, of the utility manual for more information (*9*). In general, TxDOT may recognize a compensable interest in the following situations:

- **Constitutional Property Right**. The utility owns a deed, easement, or a lease, which signifies that the utility is located on right of way, acquired in its name, and is used for utility purposes.

- **Texas Transportation Code Section 203.092 (Federal-Aid Project)**. Proof of property interest is not required, as under section 203.092 the utility shall receive 100 percent of cost participation from the federal government for adjustment cost/relocation costs.

- **Texas Case Law**. The utility does not have sufficient proof of property interest and will rely on Texas case laws (precedents).

- **License Agreement**. The utility has a license agreement with a third party (typically a railroad company) that documents a compensable interest.

- **Joint Use Agreement between Utility Companies**. The utility occupies the private easement of another utility.

- **Prescriptive Claim (No proof of interest)**. The utility company has no sufficient proof of property interest and will rely on affidavits to document property rights.

To complete attachment H, follow these steps:

- Select the appropriate option for proof of property interest from the list of available choices (Figure 65).

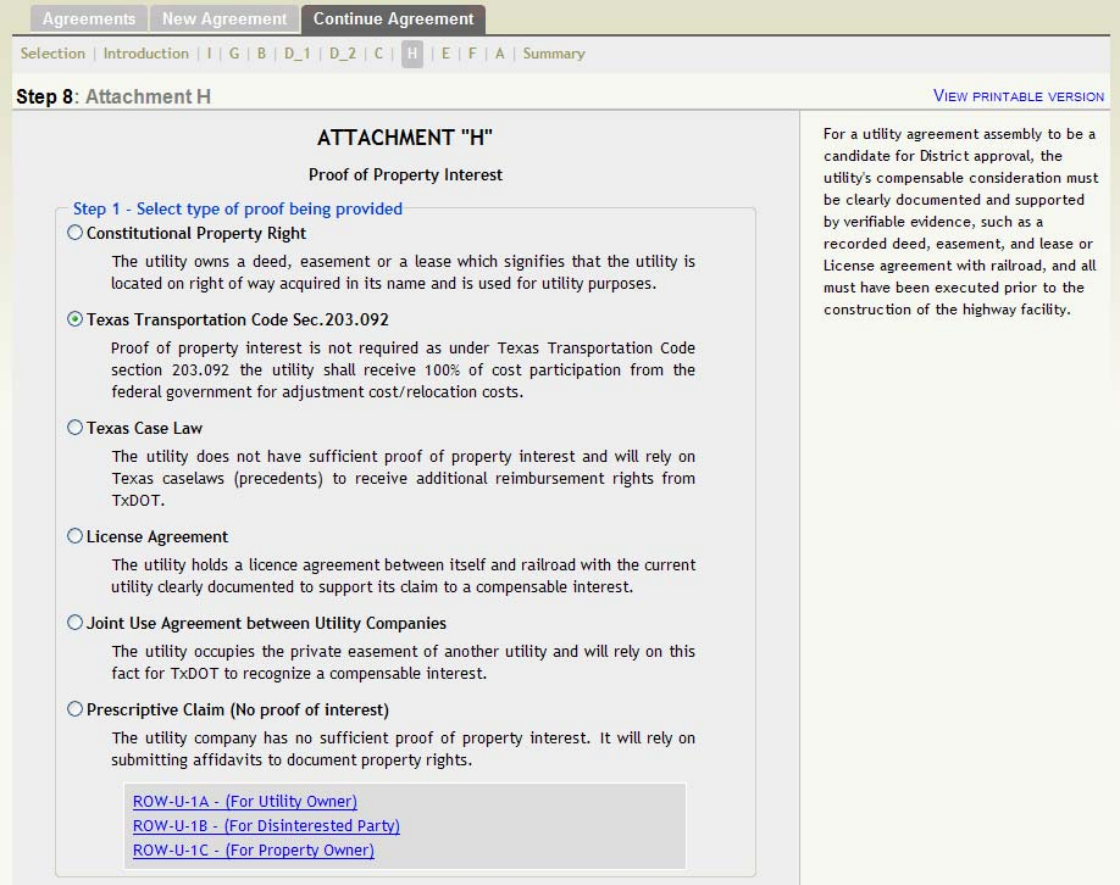


Figure 65. Utility Agreement Assembly, Attachment H.

- Upload required documents as necessary. Note: Under Texas Transportation Code section 203.092, no proof of interest is required. For any other choice, documents that provide evidence of property rights must be uploaded.

- If the user selects prescriptive claim, UACT provides three links to different types of affidavits that can be downloaded, completed, and then uploaded. For more information on uploading files, see section Documents Tab in Chapter UACT Business Area Descriptions. The FileNet types are pre-selected and cannot be modified.

- Click **Next**.

Subtab E – Joint Use and Occupancy Agreement

A joint-use agreement sets forth the rights and obligations of TxDOT and the utility owner for occupying, maintaining, accessing, and notifying either party of changes in their facilities. This section of UACT determines which joint use agreement will be required, and whether the utility will need to quitclaim property to TxDOT.

To complete attachment E, follow these steps:

- (Optional) select the appropriate answers under Step 1 – Complete questionnaire (Figure 66). The questionnaire can be skipped if the user knows which forms must be completed. Note: The joint use agreement is not a requirement for approval of the agreement assembly. However, in many cases it is required before TxDOT can reimburse the utility for adjustment costs.

- Upload the required forms. For more information on uploading files, see section Documents Tab in chapter UACT Business Area Descriptions. The FileNet types are pre-selected and cannot be modified.

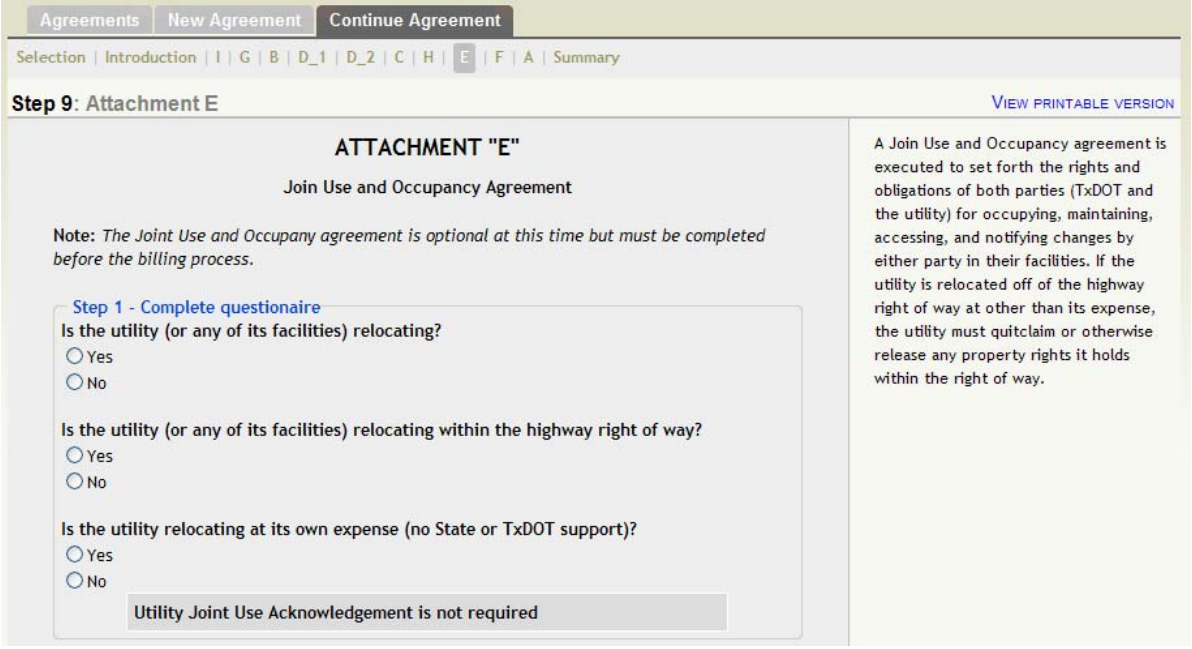


Figure 66. Utility Agreement Assembly, Attachment E.

Subtab F – Eligibility Ratio

This section of UACT helps the user to determine the eligibility ratio of the agreement, which is the relationship between the portion of a utility facility (serving the general public) located on private property and the portion of the utility facility located on public property. If the facility is located completely on private property, the ratio is 1, meaning the facility is 100 percent eligible for reimbursement. If the facility is located completely on public property, the ratio is 0,

meaning the facility is 0 percent eligible for reimbursement. Exceptions are utilities located on interstate highways, which are 100 percent eligible for reimbursement.

To complete attachment F, follow these steps:

- Select all utility facilities that are being removed (Figure 67).
- Click Next >>.

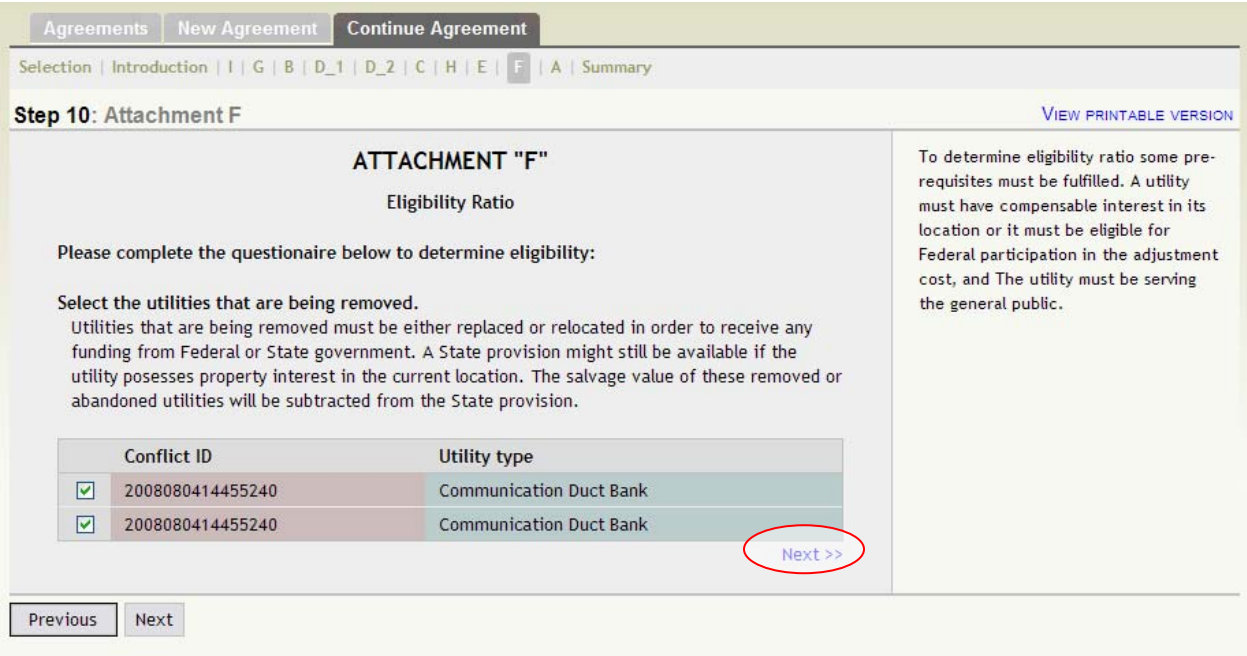


Figure 67. Utility Agreement Assembly, Attachment F, Step 1.

- Select all utility facilities that are being replaced or relocated (Figure 68).
- Click Next >>.

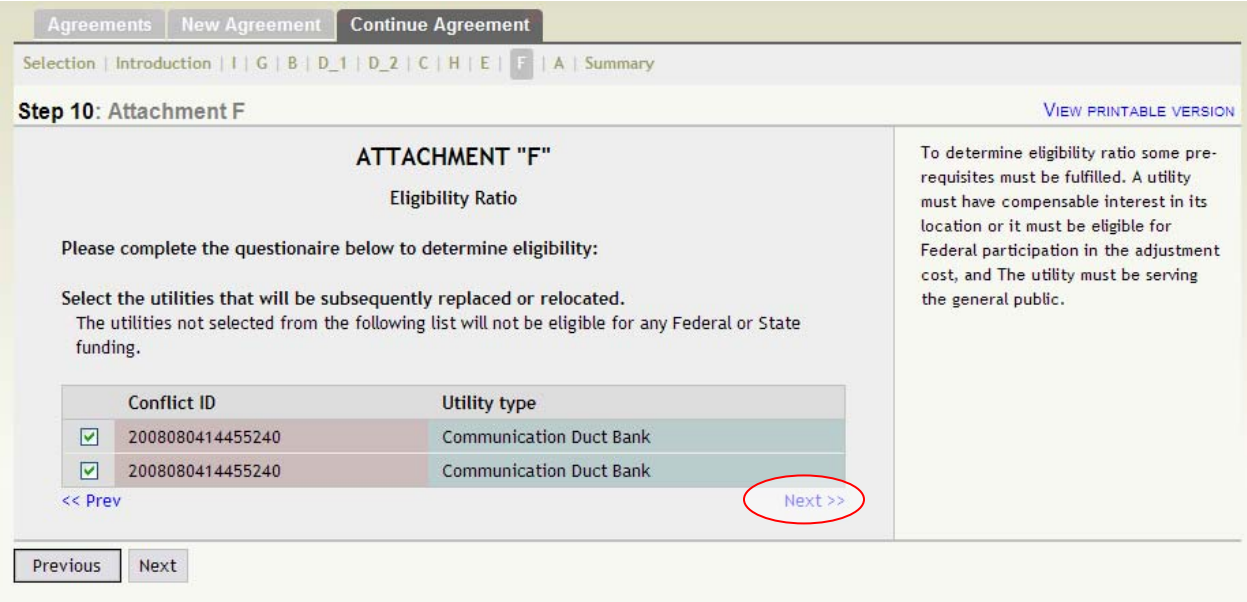


Figure 68. Utility Agreement Assembly, Attachment F, Step 2.

- Select all utility facilities that are serving the general public (Figure 68).
- Click Next >>.

Figure 69. Utility Agreement Assembly, Attachment F, Step 3.

- At the final step of attachment F, eligible and non-eligible utilities are shown as separate lists along with an eligibility ratio calculator (Figure 70).

Figure 70. Utility Agreement Assembly, Attachment F, Step 4.

- For each eligible utility listed under "Eligibility Ratio Calculation," provide the adjustment cost as well as the amount of private and public property occupied by the utility. The unit used for the amount can be selected from the Eligibility Type drop-down menu. An eligibility ratio for each individual utility is listed at the end of each row, and a composite eligibility ratio for all utilities (if more than one exist) is shown at the bottom of the table.

- Click the **Next** button.

Subtab A – Plans & Specifications

For the utility adjustment process, adjustment plans and other specifications must be submitted to TxDOT for review. These plans help TxDOT to determine how the construction process will be affected and what, if any, additional resources will be needed. CAD drawings (including AutoCAD and MicroStation files) are automatically converted to PDF.

To complete attachment A, follow these steps:

- Upload required plans and specifications as needed (Figure 71). The FileNet types are partially selected, only the user must only select the "FileNet document type." For more information on uploading files, see the Documents Tab section in the UACT Business Area Descriptions chapter.

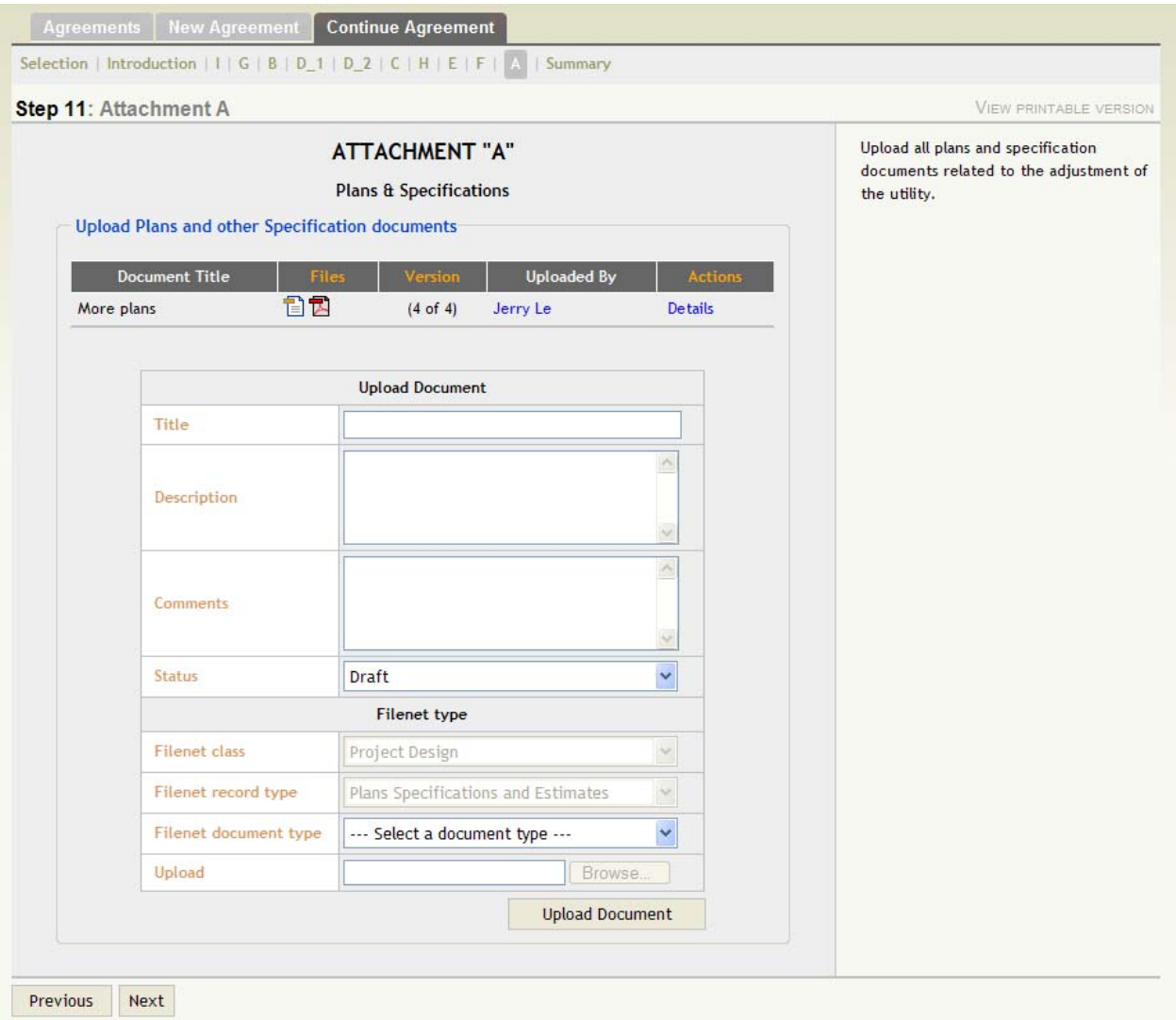


Figure 71. Utility Agreement Assembly, Attachment A.

Summary Tab

Once the utility agreement process is complete, a summary of each step is provided along with any error or informational messages (Figure 72). If a step is not completed or a requirement is not met, UACT will inform the user on this page. To edit a document on a previously completed step, simply click Edit next to the desired attachment or use the subtab menu on top to navigate back to that step.

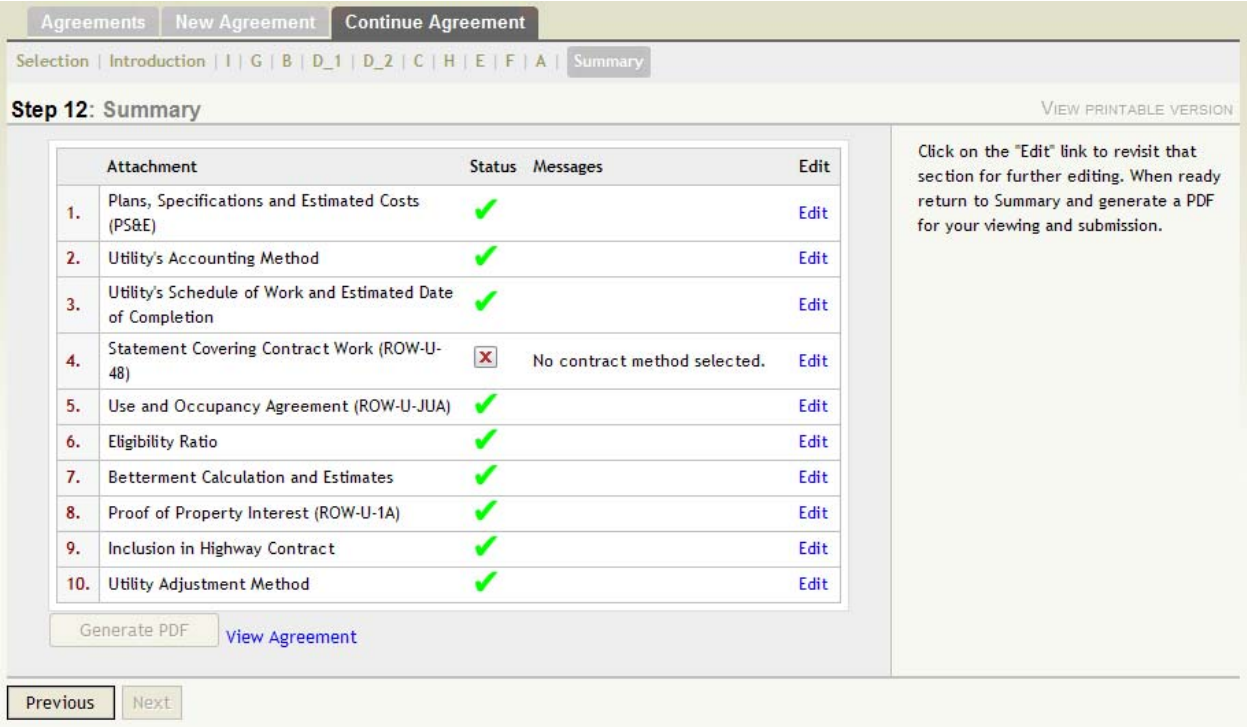


Figure 72. Utility Agreement Assembly, Summary.

To complete the utility agreement assembly process, follow these steps:

- Review any warning messages that may appear on this screen. Provide and complete missing information as necessary.

- If UACT provides no warning message, the **Generate PDF** button becomes visible and the user can click on it to generate the agreement assembly packet for submission.

- Once the agreement is generated, click View Agreement to view the final version of the document that will be submitted to TxDOT. Note: Once an agreement has been submitted to TxDOT for review, no changes can be made to the assembly until TxDOT opens the agreement up for editing.

REFERENCES

1. Kraus, E., Quiroga C., and Koncz, N. *Development of a Utility Conflict Management System.* Publication FHWA/TX-08/0-5475-4. Under review. Texas Department of Transportation, Austin, Texas, 2008.
2. *Texas Administrative Code, Title 43, Part 1, Chapter 21, Subchapter C. 43TAC1.21C*. http://info.sos.state.tx.us/pls/pub/readtac$ext.ViewTAC?tac_view=5&ti=43&pt=1&ch=21&sch=C&rl=Y. Accessed February 1, 2009.
3. *Utility Manual*. Texas Department of Transportation, Austin, Texas, July 2005.
4. *Code of Federal Regulations, Title 23, Part 645, Subpart B—Accommodation of Utilities*. 23 CFR 645.101 – 645.119, Washington, D.C., 2006. http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr;sid=0910bff7574ab3e1a9afc2d7c645b8d1;rgn=div5;view=text;node=23%3A1.0.1.7.26;idno=23;cc=ecfr. Accessed February 1, 2009.
5. *A Policy on the Accommodation of Utilities within Freeway Right-Of-Way*. American Association of State Highway and Transportation Officials, Washington, D.C., 2005.
6. *A Guide for Accommodating Utilities within Highway Right-Of-Way*. American Association of State Highway and Transportation Officials, Washington, D.C., 2005.
7. TxDOT Specifications. Texas Department of Transportation, Austin, Texas, 2007. http://www.dot.state.tx.us/business/specifications.htm. Accessed February 1, 2009.
8. *TxDOT Survey Manual.* Texas Department of Transportation, Austin, Texas, February 2006.
9. *Right of Way Utility Manual.* Texas Department of Transportation, Austin, Texas, August 2008. http://onlinemanuals.txdot.gov/txdotmanuals/utl/index.htm. Accessed February 1, 2009.

APPENDIX. PERMISSION MATRIX

Permissions				Roles															
Business Area	Business Area Section	Cap.	Perm. ID	UACT System Administrator	TxDOT District ROW Administrator	TxDOT ROW Division Reviewer	TxDOT District Utility Coordinator	Consultant Utility Coordinator	TxDOT District Design Project Manager	TxDOT District Designer	TxDOT Surveyor	Consultant Surveyor	SUE Consultant	Utility Owner	Utility Consultant	LPA	Utility Contractor	Highway Project Contractor	ROW Acquisition Consultant
Project	Project Listing	View	1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	New UACT Project	View	2	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
		Add	3	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
	Project Details	View	4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		Edit	5	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
		Delete	6	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
	Project Status	View	7	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
	Project Stakeholders	View	8	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		Edit	9	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
		Add	10	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
		Delete	11	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
	Project Documents	View	12	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		Edit	13	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		Add	14	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		Delete	15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Utility Inventory	Project Utility Listing	View	16	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
	Utility Details	View	17	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
		Edit	18	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
		Delete	19	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
	Enterprise Utility Listing	View	20	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
		Add	21	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
	New Utility	View	22	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
		Add	23	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Conflict Tracking	Conflict Listing	View	24	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
	Conflict Details	View	25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
		Edit	26	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
		Delete	27	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
	New Conflict	View	28	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
		Add	29	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
	Conflict Documents	View	30	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
		Edit	31	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
		Add	32	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
		Delete	33	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
	Conflict Notes	View	34	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No
		Edit	35	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No
		Add	36	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No
		Delete	37	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No
Agreement	Agreement Listing	View	38	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
	Agreement Details	View	39	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
		Edit	40	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes	Yes	No	No	No
		Delete	41	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes	Yes	No	No	No
	New Agreement	View	42	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Yes	Yes	Yes	No	No	No
		Add	43	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Yes	Yes	Yes	No	No	No
Reports	Reports	View	44	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
Contacts	Contacts Listing	View	45	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other Resources	Other Resources	View	46	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	New Resource	View	47	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No
		Edit	48	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No
		Add	49	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No
		Delete	50	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No
Users	User Listing	View	51	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
	User Details	View	52	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
		Edit	53	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
		Delete	54	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
	New User	View	55	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
		Add	56	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Access Control	System Permissions	View	57	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
		Edit	58	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
		Add	59	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
		Delete	60	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
	Role Permissions	View	61	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
		Edit	62	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
		Add	63	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
		Delete	64	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
	Privilege Permissions	View	65	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
		Edit	66	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
		Add	67	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
		Delete	68	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No

Table 3. UACT Access Matrix