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| --- |
| **NiSource** |
| **Columbia Pipeline Group (CPG)** |
| **Design Specification (SDS)**  **Project: NiPADS ProTool Enhancements** |

**Business Unit(s): CPG Engineering & Construction**

Document Version: 1.0

**Open Items**

1. Need to determine how ProTool authentication works – Follow up with Bruner
2. Need to determine how to capture authorization roles (Viewer, User, Admin, etc) once authenticated within ProTool.

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# Application Architecture

The solution will consist of the following major parts. Refer to the solution architecture diagram that follows.

1. **Forecast Spreadsheet Template** – Users shall create a new spreadsheet from a standardized template (available from a SharePoint site) for each project that they wish to track. In leveraging Microsoft Excel, the project delivery and operations teams will have the ability to customize and track estimates offline; uploading them to ProTool once connected. The template shall contain button macros and VBA components for exporting and importing updated forecast information from/into ProTool.
2. **ProTool Database Components** – The solution will leverage existing tables found within ProTool SQL Server 2008 R2 database including: EstimateYears (Forecast), EstimateYearbyCategories (Budget), AuditEvents, Audits, Projects, LockingDateByMonth, and CostCategories (Project Cost Groups). The EstimateYears tables will be the primary table used to export and import forecast information. The rest of the tables will be used to support cursory data on the spreadsheet template or used to validate business rules. Access to the ProTool database and necessary stored procedures will be controlled using Windows Integrated security and Active Directory.

## Solution Architecture Diagram



## Technical Process Diagram

The following shows the technical process of the solution:

Insert Technical Process Diagram

## Site Map

Not applicable. The user interface (UI) portion of the solution is the Microsoft Excel spreadsheet template.

## Batch Processes

Not applicable. There are no batch processes associated with this solution.

## Functional scalability

Existing hardware, software, and network infrastructure used by ProTool shall be leveraged for this solution. All UI processing shall be distributed to the end-users computers via the Excel VBA macros.

## Error Messages

1. **Field Cost Tracker Excel Spreadsheet Template**

Technical detail of any program exception or invalid data state will be stored in a hidden “DEBUG” worksheet tab (1st sheet before Forecast Information), but not displayed or visible to end-users. This will serve useful to IT staff in any debugging effort. IT support can ask the user for a copy of the Excel Spreadsheet and unhide the “DEBUG” worksheet tab.

User-friendly messages will display to users in two types:

1. Generic message letting the user know an internal program error occurred during processing.
2. High level, short message that describes any invalid data value or data state determined during processing.

1. **ProTool Database Components**

Any SQL Server errors including those thrown from within stored procedures will be rolled up to the Excel Spreadsheet VBA code for handling as described previously.

# Application Component Design

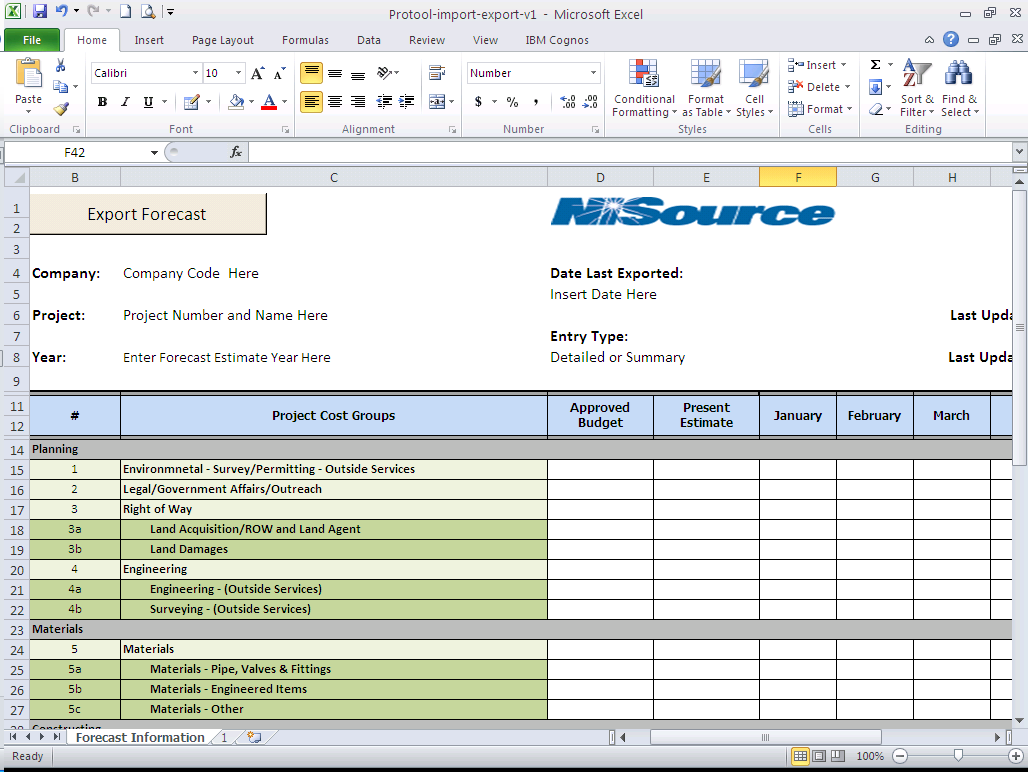
## Field Cost Tracker Excel Spreadsheet Template

The Excel spreadsheet makes up the entire user interfaces for this solution.

### Forecast Summary Worksheet

Create an Excel 2010 macro-enabled spreadsheet template with detail designs as described in sub-sections below.

#### Get Forecast (Button Macro) - Screens



#### Get Forecast (Button Macro) – Functionality

| **Sections** | **Field(s)** | **Control / Validation** | **Data Mapping** | **Notes** |
| --- | --- | --- | --- | --- |
| Header | Company | Protected cells | From user prompt |  |
| Project (Number & Name) | Protected cells | ProTool.Projects. Project\_No  ProTool.Projects. Title |  |
| Forecast Year | Protected cells | From user prompt |  |
| Date Last Exported | Protected cells | ProTool.Audit.Audit\_Date | Where  Company\_Cd=User Prompt  Project\_No= User Prompt  User\_ID = **USER**  Audit\_Event\_ID=TBD |
| Entry Type | Protected cells | ProTool.Estimates.Cost\_Category\_Type |  |
| Last Forecast Update User | Protected cells | TBD  From the Audit table |  |
| Last Forecast Update Date | Protected cells | TBD  From the Audit table |  |
| Get Forecast | Button click |  | VBA Macro to prompt user for PO# and get data from ProTool db. |
| Line Detail | Project Cost Group # | Protected cells | ProTool.CostCategories.Cost\_Category\_Cd |  |
| Project Cost Group | Protected cells | ProTool.CostCategories.Cost\_Category\_Desc | If Entry Type is Summary, where Cost\_Category\_Type=**Summary**  If Entry Type is Detailed, where Cost\_Category\_Type=**Detail** |
| Approved Budget | Protected cells | ProTool.EstimateYearsByCategories.Amount | WHERE Company\_Cd = *Prompt Value,* Project\_No= *Prompt Value*, Estimate\_Year=*Prompt\_Value* and Estimate\_Version=MAX(Estimate\_Vesion) for Estimate Year  Broken down by Cost\_Category\_Cd |
| Present Estimate | Protected cells | Calculation | Sum of all months |
| January | Protected cells | ProTool.EstimateYears.January |  |
| February | Protected cells | ProTool.EstimateYears.February |  |
| March | Protected cells | ProTool.EstimateYears.March |  |
| April | Protected cells | ProTool.EstimateYears.April |  |
| May | Protected cells | ProTool.EstimateYears.May |  |
| June | Protected cells | ProTool.EstimateYears.June |  |
| July | Protected cells | ProTool.EstimateYears.July |  |
| August | Protected cells | ProTool.EstimateYears.August |  |
| September | Protected cells | ProTool.EstimateYears.September |  |
| October | Protected cells | ProTool.EstimateYears.October |  |
| November | Protected cells | ProTool.EstimateYears.November |  |
| December | Protected cells | ProTool.EstimateYears.December |  |
| Pop-up Dialogs | Enter Company Code, Project Number and Estimate Year | Validate value is numeric | Filter on ProTool.EstimateYears.Company\_Cd, ProTool.EstimateYears.Project\_No, and ProTool.EstimateYears.Estimate\_Year | Prompts user on click of “Get Forecast” button. |

To get the list of **Company Codes**:

SELECT [Company\_Cd]

FROM [Protool\_staging].[ProTool].[Company]

WHERE Active\_Fl='1'

Order by Company\_Cd

To get **Project Status**:

SELECT [Project\_Status\_Cd] FROM [Protool\_staging].[ProTool].[Projects]

WHERE [Company\_Cd]='TCO'

AND Project\_No = ' 17024'

Replace TCO with desired Company CD

Replace 17160 with the desired Project Number

To get **Approved Budget (broken down by Cost Category)**:

SELECT [Cost\_Category\_Cd]

,[Amount]

FROM [Protool\_staging].[ProTool].[EstimateYearByCategories]

WHERE Company\_Cd='TCO' AND Project\_No='17024' AND Estimate\_Year='2013' AND [Version\_No]=

(SELECT Version\_No FROM [ProTool].[ProTool].[EstimateYears]

WHERE Company\_Cd='TCO' AND Project\_No='17024' AND Estimate\_Year='2013' AND Year\_Approval\_Fl=1)

To get **Forecast Information**:

SELECT [January]

,[February]

,[March]

,[April]

,[May]

,[June]

,[July]

,[August]

,[September]

,[October]

,[November]

,[December]

FROM [ProTool].[ProTool].[EstimateYears]

WHERE Company\_Cd='TCO' AND Project\_No='17024' AND Estimate\_Year='2013' AND Version\_No =

(SELECT MAX(Version\_No) FROM [ProTool].[ProTool].[EstimateYears] WHERE Company\_Cd='TCO' AND Project\_No='17024' AND Estimate\_Year='2013')

**We need to update the test environment Estimate Years table to include Cost Category.**

To get **Cost Cateogry Information:**

SELECT [Cost\_Category\_Cd]

,[Cost\_Category\_Desc]

,[Cost\_Category\_Type]

FROM [Protool\_staging].[ProTool].[CostCategories]

Gives you the number that goes in Column C and the Name that goes in Column D.

The Type is used to determine whether it is Summary or Detailed.

#### Get Forecast (Button Macro) – Business Rules

| **Rule ID** | **Business Rule Description** | **Notes** |
| --- | --- | --- |
|  | Use Windows integrated security to confirm the user has a ProTool role (IT\_ADMIN, MARKET\_DEV, ADMIN, CA, EC\_MANAGER, USER, VIEWER ) before allowing them to retrieve the project forecast information. Any ProTool role can retrieve the forecast information. If the user is not a ProTool role, please display a user friendly message indicating that they need to request access to the ProTool application via an AccessIT request. |  |
|  | Protect the entire Forecast Information worksheet tab. Users cannot modify layout or content. They can click the button to retrieve or refresh forecast information as many times desired. |  |
|  | Upon selection of the **Export Forecast** button, Verify VPN access and display user-friendly message if no connectivity. |  |
|  | If the user has VPN access, (and the first time exporting the forecast) the user should be prompt to select a company code (from a dropdown list) and enter a project number and estimate year. The information shall be stored along with the spreadsheet in a hidden view. |  |
|  | Following the first export, the spreadsheet should not prompt the user for the company code, project number, nor estimate year. It should use the values hidden within the spreadsheet. |  |
|  | To create a new project or estimate year spreadsheet, users will have to download the template from the ProTool website. |  |
|  | After getting the Company Code, Project Number, and Estimate Year, validate that the project status is Active. Display a user-friendly message if Project status is not Active (Project\_Status\_Cd=1). Terminate data import. |  |
|  | When the entered estimate year does not exists for the project, display user-friendly message and prompt the user to enter a new estimate year (keep the company code and project number values) |  |
|  | For all past months, the numbers shall be bold (indicating they are actuals) |  |
|  | If the entry type for the project is Summary (Cost\_Category\_Type=1) only the summary project cost groups shall be displayed. If the Entry Type for the project is Detailed (Cost\_Category\_Type=2), only the detailed project cost groups shall be displayed. If the Entry Type for the project is Null, only the summary project cost groups shall be displayed. |  |
|  | The Forecast imported from the ProTool database shall correspond to the MAX Estimate Version for the entered Estimate Year to be retrieved |  |
|  | Present Estimate is the sum of all month columns for a year. |  |

### Forecast Tracking Worksheet for Each Period

The Layout and content is protected for the header rows; dark green PO lines; and slim dark gray rows. Users can modify period ending date and insert/update all rows and content in between the slim dark gray rows.

#### Forecast Tracking Worksheet - Screens

Insert Screenshots Here

#### Forecast Tracking Worksheet – Functionality

| **Sections** | **Field(s)** | **Control / Validation** | **Data Mapping** | **Notes** |
| --- | --- | --- | --- | --- |
| Header | Company | Protected cells | From user prompt |  |
| Project (Number & Name) | Protected cells | ProTool.Projects. Project\_No  ProTool.Projects. Title |  |
| Forecast Year | Protected cells | From user prompt |  |
| Entry Type | Protected cells | ProTool.Projects. Audit |  |
| Submitted On | Protected cells | Macro updates upon successful submit | Date and time submitted. |
| Submitted By | Protected cells | User’s network id that submitted. |
| Import to ProTool | Button macro |  | On click VBA code will submit the updated forecast to the EstimateYears table. The VBA code will also record an auditable action and update the summary sheet. |
| Copy to New Sheet | Button macro |  | On click VBA code will retrieve the latest forecast from ProTool, populate the Summary Spreadsheet, then copy the current worksheet into a new tab, update the budget and forecasts for the primary and secondary project cost group rows, and clears all the detail amounts (in between the project cost groups) for the new period. |
| Primary and Secondary Cost Group Rows | Project Cost Group# | Protected cells | Macro copied from Summary Sheet |  |
| Project Cost Group | Protected cells | Macro copied from Summary Sheet |  |
| Approved Budget | Protected cells | Macro copied from Summary Sheet |  |
| Present Estimate | Protected cells | Calculated | Sum of all months for that row |
| January |  | Macro copied from Summary Sheet |  |
| February |  | Macro copied from Summary Sheet |  |
| March |  | Macro copied from Summary Sheet |  |
| April |  | Macro copied from Summary Sheet |  |
| May |  | Macro copied from Summary Sheet |  |
| June |  | Macro copied from Summary Sheet |  |
| July |  | Macro copied from Summary Sheet |  |
| August |  | Macro copied from Summary Sheet |  |
| September |  | Macro copied from Summary Sheet |  |
| October |  | Macro copied from Summary Sheet |  |
| November |  | Macro copied from Summary Sheet |  |
| December |  | Macro copied from Summary Sheet |  |
| Line Detail (white rows) | Project Cost Group# | User Defined |  |  |
| Project Cost Group | User Defined |  |  |
| Approved Budget | Protected cells | Empty |  |
| Present Estimate | Protected cells | Calculated | Sum of all months for that row |
| January | Unprotected for all future months |  |  |
| February | Unprotected for all future months |  |  |
| March | Unprotected for all future months |  |  |
| April | Unprotected for all future months |  |  |
| May | Unprotected for all future months |  |  |
| June | Unprotected for all future months |  |  |
| July | Unprotected for all future months |  |  |
| August | Unprotected for all future months |  |  |
| September | Unprotected for all future months |  |  |
| October | Unprotected for all future months |  |  |
| November | Unprotected for all future months |  |  |
| December | Unprotected for all future months |  |  |
| Sheet Totals | Monthly Totals | Protected cells | Formula: Sum of all Project Cost Group row amounts for the corresponding month. |  |

#### Forecast Tracking Worksheet – Business Rules

| **Rule ID** | **Business Rule Description** | **Notes** |
| --- | --- | --- |
|  | Users can insert/update all rows and content in between the project cost groups. |  |
|  | Users can add content to cells that are outside the framed grid to the right or below. |  |
|  | Users cannot insert columns, but can enter content into columns to the right of the framed grid. |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

### Import Forecast Worksheet to ProTool (Button Macro):

#### Import Forecast Worksheet - Screens

Insert Screenshots Here

#### Import Forecast Worksheet – Functionality

| **Sections** | **Field(s)** | **Control / Validation** | **Data Mapping** | **Notes** |
| --- | --- | --- | --- | --- |
| Header | Submitted On | Protected cells | Macro updates upon successful submit | Date and time submitted. Submit macro should not continue if this date value already exists. |
| Submitted By | Protected cells | User’s network id that submitted. |
| Import to ProTool | Button macro |  | On click VBA code will submit the updated forecast to the EstimateYears table. The VBA code will also record an auditable action and update the summary sheet. |
| Success pop-up dialog | Ok | Button | Click to close dialog and return to worksheet. | Dialog informs user when the submit has completed successfully. |
| Failure pop-up dialog | Ok | Button | Click to close dialog and return to worksheet. | Dialog informs user when a validation or error occurred and processing has aborted. |
| Submit Fields | Company Code (Header section) | Protected cell | ProTool.EstimateYears.Company\_Cd | An Update Statement will be used (instead of an insert statement) to retain the flags in the EstimateYears row |
| Project Number (Header) | Protected cell | ProTool.EstimateYears.Project\_No |
| Estimate Year (Header) | Protected cell | ProTool.EstimateYears.Estimate\_Year |
| Estimate Version | Protected cell | ProTool.EstimateYears.Version\_No |
| Project Cost Group # |  | ProTool.EstimateYears.Cost\_Category\_Cd |
| January |  | ProTool.EstimateYears.January |
| February |  | ProTool.EstimateYears.February |
| March |  | ProTool.EstimateYears.March |
| April |  | ProTool.EstimateYears.April |
| May |  | ProTool.EstimateYears.May |
| June |  | ProTool.EstimateYears.June |
| July |  | ProTool.EstimateYears.July |
| August |  | ProTool.EstimateYears.August |
| September |  | ProTool.EstimateYears.September |
| October |  | ProTool.EstimateYears.October |
| November |  | ProTool.EstimateYears.November |
| December |  | ProTool.EstimateYears.December |

#### Import Forecast Worksheet – Business Rules

| **Rule ID** | **Business Rule Description** | **Notes** |
| --- | --- | --- |
|  | Clicking the “Import to ProTool” button submits the current worksheet. |  |
|  | The entire worksheet is protected if the submit is successful. |  |
|  | The user name and date/time submitted is automatically updated in the upper-right hand corner of the header rows. |  |
|  | The button macro will not allow the user to submit the same sheet more than once unless the first attempt failed with error. |  |
|  | A user-friendly message should display upon any failed validation or internal processing error. |  |
|  |  |  |
|  |  |  |

### Copy to New Sheet (Button Macro):

Clicking the “Copy to New Sheet” button will create a new worksheet. It always copies from the last worksheet tab no matter which worksheet the button is selected.

#### Copy to New Sheet - Screens

Insert Screenshots Here

#### Copy to New Sheet – Functionality

| **Sections** | **Field(s)** | **Control / Validation** | **Data Mapping** | **Notes** |
| --- | --- | --- | --- | --- |
| Header | Copy to New Sheet | Button macro |  | On click VBA code will retrieve the latest forecast from ProTool, populate the Summary Spreadsheet, then copy the current worksheet into a new tab, update the budget and forecasts for the primary and secondary project cost group rows, and clears all the detail amounts (in between the project cost groups) for the new period. |
| Submitted On |  |  | Macro clears both these values |
| Submitted By |  |  |
| Line Detail (white rows) | Forecast Information | User entered | n/a | Copy macro clears all these cell values. |
| Copy Sheet Success – Pop-up dialog | OK | Button | Click to close dialog and set focus to the new worksheet. |  |

#### Copy to New Sheet – Business Rules

| **Rule ID** | **Business Rule Description** | **Notes** |
| --- | --- | --- |
|  | VBA code needs to clear all “This Period” unit quantities on new sheet so user starts with zero values. |  |
|  | VBA code needs to update all cell formulas under “Totals to Date” (both units and extended) to get values from the previous periods sheet (copy from sheet). |  |
|  | Copy macro should call reusable VBA code that gets PO Detail to refresh the following tabs with any approved PO changes: PO Detail; Tally; and the new period cost tracking worksheet. |  |
|  | PO changes should not be applied to any previous period worksheets that have already been submitted. Only the last period sheet (if not submitted) and the new period sheet (if applicable) will be updated. |  |
|  |  |  |
|  |  |  |
|  |  |  |

# Information Architecture

## Logical Data Model

No Entity Relationship Diagram (ERD) is available at this time. There will not be any foreign key constraints added to the tables since the data is simply a replication from the Data Warehouse DB2 tables. The integrity of relational data will be as clean as the DB2 data. No other processes or application will be performing write operations to these tables.

## Physical Data Model

### ProTool Data Source

The following ProTool tables will be used for this solution.

**Table: AuditEvents**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Nullable** | **Indexes** | **Comments** |
| Audit\_Event\_ID | int | No | PK |  |
| Audit\_Event\_Dsc | varchar(500) | Yes |  |  |

An AuditEvent shall be added to the table for Forecast Export and a separate entry for Forecast Import.

**Table: Audit**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Nullable** | **Indexes** | **Comments** |
| Company\_Cd | int | No | PK |  |
| Project\_No | varchar(500) | No | PK |  |
| User\_ID | varchar(10) | No | PK |  |
| Audit\_ID | Int | No | PK | Sequential number based on the User ID |
| Audit\_Event\_ID | Int | No |  | Pulled from AuditEvents table |
| Audit\_Date | Datetime | No |  |  |
| Version\_No | Smallint | Yes |  | Estimate Version |
| Estimate\_Year | varchar(4) | Yes |  | Estimate Year |
| Scope\_Version\_No | Smallint | Yes |  | N/A to this solution as such it will be NULL |
| Admin\_Fl | Bit | No |  | Denotes the ProTool role of the person making the auditable event. 1 if Admin, 0 if not. |

An Audit entry shall be added to the table each time the forecast is exported from or imported into ProTool.

**Table: Audit**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Nullable** | **Indexes** | **Comments** |
| Company\_Cd | int | No | PK |  |
| Project\_No | varchar(500) | No | PK |  |
| User\_ID | varchar(10) | No | PK |  |
| Audit\_ID | Int | No | PK | Sequential number based on the User ID |
| Audit\_Event\_ID | Int | No |  | Pulled from AuditEvents table |
| Audit\_Date | Datetime | No |  |  |
| Version\_No | Smallint | Yes |  | Estimate Version |
| Estimate\_Year | varchar(4) | Yes |  | Estimate Year |
| Scope\_Version\_No | Smallint | Yes |  | N/A to this solution as such it will be NULL |
| Admin\_Fl | Bit | No |  | Denotes the ProTool role of the person making the auditable event. 1 if Admin, 0 if not. |

An Audit entry shall be added to the table each time the forecast is exported from or imported into ProTool.

**Table: EstimateYearByCategories**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Nullable** | **Indexes** | **Comments** |
| **Company\_Cd** | varchar(3) | No | PK |  |
| **Project\_No** | Int | No | PK |  |
| **Cost\_Category\_Cd** | Smallint | No | PK | Determines the Project Cost Group to associate to the budget amount |
| **Version\_No** | Smallint | No | PK |  |
| **Amount** | Int | No |  | The budget amount for a specific project, estimate year, version, project cost group. |
| **Estimate\_Year** | varchar(4) | No | PK |  |
| Contingency | Int | Yes |  |  |
| User\_Id | varchar(10) | Yes |  |  |
| Trans\_Date | Datetime | Yes |  |  |
| January | Float | Yes |  |  |
| February | Float | Yes |  |  |
| March | Float | Yes |  |  |
| April | Float | Yes |  |  |
| May | Float | Yes |  |  |
| June | Float | Yes |  |  |
| July | Float | Yes |  |  |
| August | Float | Yes |  |  |
| September | Float | Yes |  |  |
| October | Float | Yes |  |  |
| November | Float | Yes |  |  |
| December | Float | Yes |  |  |

This table will need to be joined with the EstimateYears table (the EstimateYears table contains the Approved to Spend flag for a specific estimate year/version) to determine which rows in the EstimateYearByCategories table contain the budget information (broken down by Project Cost Group) to be pulled back in the summary tab in the tracker spreadsheet. Those fields indicated in bold (in the table above) are those fields that will be used for this solution.

**Table: EstimateYears**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Nullable** | **Indexes** | **Comments** |
| Company\_Cd | varchar(3) | No | PK |  |
| Project\_No | Int | No | PK |  |
| Estimate\_Year | varchar(4) | No | PK |  |
| Version\_No | Smallint | No | PK |  |
| Cost\_Category\_Cd | Smallint | No | PK | This field needs to be added to the EstimateYears table |
| January | Float | Yes |  |  |
| February | Float | Yes |  |  |
| March | Float | Yes |  |  |
| April | Float | Yes |  |  |
| May | Float | Yes |  |  |
| June | Float | Yes |  |  |
| July | Float | Yes |  |  |
| August | Float | Yes |  |  |
| September | Float | Yes |  |  |
| October | Float | Yes |  |  |
| November | Float | Yes |  |  |
| December | Float | Yes |  |  |
| Year\_Approval\_Fl | Bit | Yes |  |  |
| Year\_Approval\_ID | varchar(10) | Yes |  |  |
| Year\_Approval\_Date | Smalldatetime | Yes |  |  |
| Budget\_Version\_Cd | Smallint | No |  |  |
| Preliminary\_Program\_FL | Bit | No |  |  |
| Original\_Program\_FL | Bit | No |  |  |
| Contingency | Float | Yes |  |  |
| User\_ID | varchar(10) | Yes |  |  |
| Trans\_Date | Datetime | Yes |  |  |

This is the table used to store the monthly forecasts. This is the primary table to be used in this solution.

**Table: LockingDateByMonth**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Nullable** | **Indexes** | **Comments** |
| ID | int | No | PK |  |
| Month\_Name | nvarchar(20) | No |  |  |
| DateToLock | Int | No |  | Determines the date in which all non-admin users are locked from the forecast interface |
| Admin DateToLock | Int | No |  | Determines the date in which the forecast interface is open for all future months to all users. The current month is officially closed on this date. |

This table will be used during submission as a validation step to determine whether the user can submit and which months the user is able to submit.

**Table: CostCategories**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Nullable** | **Indexes** | **Comments** |
| **Cost\_Category\_Cd** | smallint | No | PK |  |
| Cost\_Category\_Key | varchar(75) | Yes |  |  |
| **Cost\_Category\_Desc** | varchar(75) | No |  |  |
| Capital\_Active\_Fl | Bit | No |  |  |
| Capital\_Cost\_Retire\_Fl | Bit | Yes |  |  |
| OM\_Active\_Fl | Bit | No |  |  |
| Capital\_Display\_Order | Int | Yes |  |  |
| OM\_Display\_Order | int | Yes |  |  |
| Cost\_Category\_Type | varchar(50) | No |  |  |
| Parent\_Cd | smallint | Yes |  |  |

Those fields indicated in bold above are the only fields likely to be used in this solution

**Table: Projects**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Nullable** | **Indexes** | **Comments** |
| **Company\_Cd** | varchar(3) | No | **PK** |  |
| **Project\_No** | Int | No | **PK** |  |
| Project\_Type\_Cd | Smallint | No |  |  |
| **Title** | varchar(80) | No |  |  |
| Originating\_Person\_ID | varchar(10) | No |  |  |
| Facility\_ID | varchar(6) | Yes |  |  |
| Work\_Management\_ID | varchar(50) | Yes |  |  |
| **Project\_Status\_Cd** | Smallint | No |  |  |
| Funding\_Source\_Cd | Smallint | No |  |  |
| Funding\_Basket\_Type\_Cd | Smallint | Yes |  |  |
| Funding\_Basket\_Level\_Cd | Smallint | Yes |  |  |
| Project\_System\_Status\_Cd | Smallint | No |  |  |
| Multi\_Year\_Fl | Bit | No |  |  |
| Mandatory\_Fl | Bit | No |  |  |
| Quickplace\_Link | varchar(500) | Yes |  |  |
| Preliminary\_Survey\_Fl | Bit | No |  |  |
| Overwrite\_Protected\_Fl | Bit | Yes |  |  |
| Cost\_Center | varchar(4) | Yes |  |  |
| SUPPLY\_TYPE\_CD | Smallint | Yes |  |  |
| SUPPLY\_COMMENTS | varchar(8000) | Yes |  |  |
| Funding\_Project\_No | varchar(10) | Yes |  |  |

Those fields indicated in bold above are the only fields likely to be used in this solution

## Data Conversion Specifications

There will be no data conversion required for this solution.

# Infrastructure Architecture

## Environment Topology diagrams

Insert Topology Diagram Here

## IT Resources

|  |  |
| --- | --- |
| Application Source Code Location | TBD |
| Database Deployment Scripts | TBD |
| SQL Server DEV  (ProTool DB) | Connection String:  Provider=SQLOLEDB.1;Data Source=BW2CHADBSQLT09\S2K8TST;Initial Catalog=ProTool; User ID=ProTool;Password=tin9cup |
| SQL Server TEST  (ProTool DB) | Connection String:  Provider=SQLOLEDB.1;Data Source=BW2CHADBSQLT09\S2K8TST;Initial Catalog=ProTool; Integrated Security=SSPI |
| Active Directory Name (URL) |  |
| AD Root Container |  |
| AD Group  (ProTool DB Access) | TBD |

## Security Specifications and Access Matrix

1. **Forecast Tracker Excel Spreadsheet Template**
   1. The spreadsheet worksheets will be protected with a password. The appropriate IT support shall have access to the password for future debugging and development.
   2. The spreadsheet macro VBA code shall be protected with a password so it cannot be viewed or modified. The appropriate IT support team shall have access to the password for future debugging and development.
   3. The original spreadsheet template with source code will be stored in source control completely unprotected just in case the passwords become lost. This will allow future review and development and safeguard against losing the source code logic.
   4. MS Office application will disable the VBA macros in Excel 2007 and Excel 2010. However, the default trusted macro settings allows the users to click “Enable Macros” in the yellow Security Warning bar displayed when opening the spreadsheet for the first time. Then, they can answer yes to trust the file thereafter when prompted.

1. **ProTool Database Components**

Access to the SQL Server; ProTool database; and permissions to execute appropriate stored procedures will be enforced and managed using an Active Directory group. This will limit user access to only the Field Cost Tracking (FCT) authorized users.

Active Directory Group Name: **TBD**

## Backup and Recovery Design

All backup and recovery activities should be covered under the existing ProTool support. There are changes required to the current backup and recovery plan (for ProTool)

# Revision History

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