

CASE STUDY

Integrated Data Model with Custom Reporting

Utilizing expertise in Unifier and SQL Developer, DRMcNatty architected a wholly new data model that allowed the client to view information taken from multiple sources in one user-friendly report.

CLIENT

Sanitation District



PROJECT

Custom BI Reporting for Unifier

LOCATION

Southern California

TOOLS

Oracle Primavera
Unifier
Business Intelligence (BI)

SERVICES PROVIDED

Custom Report Design



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OVERVIEW

The Sanitation District had been utilizing Unifier for project management and recently implemented recording contractor pay applications. They needed to output a printed report of the schedule of values progress and requested assistance from DRMcNatty to implement and design.

CHALLENGES

With Unifier hosted in the original Skire shared database, no direct access to the data schema is possible. The query process in Unifier does not provide adequate error trapping when writing the Data View for a report query. Additionally, the Unifier data design complicates data retrieval and display because of how the data is stored.

The most significant challenges were:

- No direct access to the Sanitation District database schema.
- Pay Application (Pay App) data stored in the Pay App BP tables are incomplete and can only record progressed items. This requires creating a more complex SQL query to retrieve a simple report.

Below is a list of some complex issues for the report ing effort:

- No Cost Breakdown Structure (Cost Sheet) by WBS Codes used in Pay Apps. Instead, cost broken down using Work Packages (Bid Items) created outside of the Cost Sheet.
- Mapping tables were used to make the association between Contract, Contract Line Items, SOV, Pay App, Pay App Line Items, Change Order and Change Order Line Items.
- Requirement to display all Bid Items in the report for the latest Pay App regardless of whether a Bid Item has been progressed or not. This required referencing the full SOV in addition to current Pay App line item data. In Unifier, Pay App Line Items are only created if progress is entered.
- District hosted legacy environment differs slightly to the newer Unifier versions.
 - No access to Enterprise Views (basic info on tables/views)
 - No direct query access to the database using a query tool such as SQL Developer.
- This resulted in the District not knowing which tables are needed to create a report. Debugging complex SQL directly from Unifier DataView is time consuming since error handling is not always adequate.

CASE STUDY



SOLUTION

DRMcNatty renewed the data structure utilizing a demo instance of Unifier. This allowed our direct access to database tables through a database query tool (SQL Developer). We incorporated our understanding of the Pay Application process (found in other tools such as Primavera Contract Management) and our expertise in SQL and report generation to complete this design.

RESULTS

DRMcNatty created the data model required and the report layout based on the client's original markup, successfully mining the data from the various table sources found in the Unifier data structure.

PROGRESS PAYMENTS							
Report Date: 09/30/2014 02:53 pm					Pay Period From: 08/06/2014		
Project Name: Joint Outfall C - Unit 1 Relief Trunk Sewer Phase II					Pay Period To: 09/05/2014		
Project Number: JO-P-0412					Record Number: PAY-0010		
Bid Items	Description	Scheduled Value	\$ Current Period	\$ Completed Prior	Total Completed (To Date)	% Completed	Units Completed (To Date)
Bid Item No 01	For mobilization, including but not limited to, bonds, insurance, implementation of Web-based project management, submittals, and yard	\$900,000.00	\$0.00	\$900,000.00	\$900,000.00	100	1.00
Bid Item No 02	For the construction of approximately 478 linear feet of 90-inch diameter 270° PVC lined tunneled rubber gasketed reinforced concrete pipe (RGRCP) between approximate Stations 56+30 and 58+55, and between approximate Stations 129+77 and 132+30, including all work and materials	\$1,601,300.00	\$220,000.00	\$0.00	\$220,000.00	13.74	65.67
Bid Item No 03	For the construction of approximately 5,138 linear feet of 90-inch diameter unlined tunneled RGRCP between approximate Stations 58+55 and 109+93, including all work and materials	\$14,530,264.00	\$1,060,760.00	\$8,706,578.00	\$9,767,338.00	67.22	3453.80
Bid Item No 04	For the construction of approximately 1,984 linear feet of 90-inch diameter unlined tunneled RGRCP between approximate Stations 109+93 and 129+77, including all work and materials.	\$6,190,080.00	\$0.00	\$0.00	\$0.00	0	0.00
Bid Item No 05	For the construction of approximately 32 linear feet of 90-inch diameter 270° PVC lined RGRCP between approximate Stations 132+38 and 132+70, including all work and materials.	\$80,000.00	\$0.00	\$0.00	\$0.00	0	0.00
Bid Item No 06	For construction of Junction Structure No. 1 at Station 132+73.70 with PVC liner, including precast channel and all work and materials.	\$600,000.00	\$0.00	\$0.00	\$0.00	0	0.00
Bid Item No 07	For construction of Siphon Structure No. 1 at Station 56+27.46 with PVC liner, including the construction of the 90-inch diameter PVC lined reinforced concrete conduit between approximate Stations 56+13 and 56+20, and all work and materials.	\$500,000.00	\$0.00	\$267,600.00	\$267,600.00	53.52	0.54
Bid Item No 08	For construction of Siphon Structure No. 2 at Station 132+33.92 with PVC liner, including all work and materials.	\$400,000.00	\$0.00	\$0.00	\$0.00	0	0.00
Bid Item No 09	For construction of Siphon Access Structure at Station 109+93 with PVC liner, including all work and materials.	\$1,000,000.00	\$0.00	\$700,000.00	\$700,000.00	70	0.70
Bid Item No 10	For the relocation of approximately 104 linear feet of 10-inch diameter steel jet fuel pipeline at the potential tunneling pit location between approximate Stations 56+02 and 56+52, including additional padding, testing and shutdown, cathodic protection survey and report and all work and materials.	\$416,000.00	\$0.00	\$416,000.00	\$416,000.00	100	104.00
Bid Item No 11	For the temporary relocation and permanent replacement of approximately 350 linear feet of 6-inch PVC landfill gas collection system line at the potential tunneling pit between approximate Stations 109+68 and 110+18, including all work and materials.	\$29,750.00	\$0.00	\$14,875.00	\$14,875.00	50	175.00
Bid Item No 12	For the relocation of five (5) oil/gasoline/jet fuel lines including the protection in place of existing Praxair Nitrogen line, and the cutting and capping the idle 6-inch Paramount Oil and BP Pipeline lines, reinstalling the Paramount Oil line, removal of all interfering lines that have been relocated or capped and all work and materials incidental thereto as shown on Sheet Nos. C-27 through C-33 of the Plans and in accordance with Section 3.5.4 and Appendix A of the Special Provisions.	\$2,135,000.00	\$0.00	\$2,085,000.00	\$2,085,000.00	97.66	0.98
Bid Item No 13	For the relocation of the 12-inch Kinder Morgan firewater line including the removal of interfering portions, reinstalling the line after sewer construction is completed and all work and materials.	\$170,000.00	\$0.00	\$145,000.00	\$145,000.00	85.29	0.85
Bid Item No 14	For the relocation of the 8-inch Unknown line (if found to be active) within the Kinder Morgan Carson Terminal and all work and materials.	\$245,000.00	\$0.00	\$7,350.00	\$7,350.00	3	0.03



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