



Metropolitan St. Louis Sewer District

Process Review – Construction Change Orders

Fiscal Year 2016

February, 2016

This report is intended solely for the use of The Metropolitan St. Louis Sewer District (“MSD”) and is not intended to be and should not be used by any other parties without the prior written consent of MSD.

The St. Louis Metropolitan Sewer District Process Review- Construction Change Orders

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INTRODUCTION AND SCOPE

The process area of construction change orders was last reviewed in 2011. The 2011 engagement resulted in the identification of five overall *Opportunities for Improvement*. Based on follow-up procedures, all recommendations have been addressed and implemented since the issuance of the 2011 report. The scope period for this 2015 engagement began at the point in time the previous engagement concluded.

Since the completion of the 2011 engagement, a Consent Decree (the Decree) between the United States of America (EPA), the Missouri Coalition for the Environment Foundation and Metropolitan St. Louis Sewer District (“MSD”) was entered with an Effective Date of April 27, 2012. As a result of the Decree requirements, the District, developed and implemented **Project Clear**, which contains a very large new construction component, **Build System Improvements**. In Fiscal years 2013, 2014, and 2015 the District budgeted \$152 million, \$153 million, and \$182 million, respectively, for wastewater system construction costs.

With construction activities continuing and actually increasing since the last engagement, the importance of maintaining effective procedures and controls around the area of construction change order processing has remained a significant objective for the District.

During the 3-year period of 1/1/12 – 12/31/14 the District processed approximately \$7.7 million in change order transactions, representing 305 individual line item transactions, which is an average of approximately 100 line item transactions per calendar year. During this period, 180 projects were initiated. (See section below for “Scope” specifics.)

Scope

The scope of the audit focused on the procedures and controls for processing and executing construction change orders. In addition to reviewing the actual change order process, change order transactions for construction contracts were reviewed for the scope period of 1/1/12 through 12/31/14 and included the following:

- Projects initiated during the scope period.
- Change orders occurring during the scope period.
- Change orders affecting cost (increases and decreases).

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OBJECTIVES

Objectives

The overall objective of this engagement was to ensure the adequacy of the procedures and controls for processing construction change orders and managing related construction contracts. Specific objectives were to ensure:

- The District's current internal controls related to the processing, review, and approval of change orders are adequately designed and implemented.
- District policies and/or contract specifications are adequately designed and implemented.
- Changes order transactions:
 - Are accurately calculated (mathematically).
 - Are supported by adequate documentation and proper approvals.
 - Are priced appropriately (labor and labor burden, types of material, material quantities/takeoffs, mark-ups, etc.)
 - Exclude indirect or overhead costs from calculation of change order direct costs.
 - Do not include owner-provided items in the pricing.
 - Properly reflect application of sales taxes.
 - Are priced accurately and consistently for portions of work performed by subcontractors.
 - Accurately reflect or comply with contract terms.
 - Represent a legitimate change in scope (i.e. work included in the change order is not already included in the base contract).
 - Are in compliance with contract allowances, contingencies, and District contract specifications.
- Change orders representing potential deletions or reductions in scope are properly credited to the District.

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METHODOLOGY

Methodology

To accomplish the above objectives, Internal Audit (IA):

- Held discussions and performed walkthrough procedures with personnel from Engineering to gain an understanding of the procedures utilized to generate, review, approve, and document change order transactions.
- Reviewed District contract specifications governing changes or extra work.
 - Reviewed contract specifications of like-entities.
- Determined and defined the change order population for the scope period of 1/1/12 through 12/31/14 by:
 - Identifying the projects initiated during the scope period.
 - Obtaining a listing of change orders for each project.
 - Determining the dollar amount of each change order for the scope period.
- Based on a review and analysis of the defined population, made a selection of change order transactions for detailed testing and review procedures:
 - Requested and reviewed supporting documentation.
 - Requested and reviewed the related contracts.
 - Applied the criteria outlined in the *Objectives* section, above, when testing each transaction.

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OVERALL CONCLUSION AND RESULTS

In the opinion of Internal Audit, in all significant respects, the controls and procedures utilized to administer the construction change order process are effectively designed and implemented. However, IA did note matters that are opportunities for strengthening and improving the documentation that is completed and maintained to support the process. These opportunities are discussed in detail in the *Opportunities for Improvement* section of this report.

Initial Inherent Business Process Risk: Moderate Risk # Overall Assessment of Engagement Results: Satisfactory **

DEFINITIONS

How Results Are Assessed

** Engagement results are evaluated as *Satisfactory*, *Generally Satisfactory* or *Unsatisfactory*.

- **Satisfactory** (*clean opinion*) – No significant engagement findings² or material weaknesses³ were noted. Engagement findings¹ may have been noted.
- **Generally Satisfactory** (*qualified opinion, i.e. “except for”*) – Results contain significant engagement findings². No material weaknesses³ were noted.
- **Unsatisfactory** (*adverse opinion, immediate Management attention required*) – Significant engagement findings² and/or material weaknesses³ were noted.

Types of Findings

1. Engagement Finding (#Low Risk): An engagement finding is a condition that could adversely affect the organization but is less severe than a significant engagement finding or significant deficiency. Classification includes process or control deficiencies that are not significant deficiencies as well as includes other low risk or low impact conditions.

2. Significant Engagement Finding (# Moderate to High Risk): A significant engagement finding is a condition that could adversely affect the organization. Definition includes all types of findings, such as irregularities, waste, ineffectiveness, conflicts of interest, illegal acts, errors, and significant deficiencies in internal control over financial reporting as well as other significant internal control weaknesses. A significant deficiency is defined as a deficiency, or a combination of deficiencies, in internal control over financial reporting that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

3. Material Weakness (# High Risk): A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the financial statements will not be prevented or detected and corrected in a timely basis. For internal audit purposes, the definition also includes material and/or severe irregularities, waste, ineffectiveness, conflicts of interest, illegal acts, errors, and other material control weaknesses, etc.

(The term “material weakness” should be thought of as a serious category of significant engagement findings and/or significant deficiencies. However, not all significant engagement findings and significant deficiencies are material weaknesses.)

^ - Definitions are based on guidance from the IIA Standards, GAAS, and the PCAOB.

- Risk is assessed at the District (Entity) Level. (Risk to the District as a whole)

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OPPORTUNITIES FOR IMPROVEMENT

1. Supporting Documentation for Change Order Transactions

Described below are specific areas in which the supporting documentation for change order transactions appears to need some strengthening or improvement:

A. Pricing Methodology:

When processing a change order, the District utilizes a process in which a series of pricing methods are evaluated to determine the most cost-effective approach for the additional work. The progression is as follows:

1. Original contract unit prices (when exist, always takes precedence).
2. Lump sum or unit pricing proposed by contractor and agreed to by District for the change order work.
3. Use of Force Account (time and material)

In most of the transactions reviewed by IA, the above evaluation process was not adequately documented, making it difficult to assess the reasonableness or cost-effectiveness of the pricing.

The force account approach involves time and material (cost plus mark-up) pricing with the following mark-ups:

- Wages – 35%
- Materials – 15%
- Sub-Contractor – 10%

IA reviewed the mark-up provisions in the contract specifications for entities similar to the District. Based on that review, the above percentages do appear to be reasonable.

Recommendation:

IA recommends that the District take steps to more effectively document the pricing evaluation procedures performed when “pricing out” change order transactions.

Specifically, IA recommends the use of a standardized form (see *recommendation at item D below*) to summarize the overall process. The form, at a minimum, would capture the following:

- Results of the analysis of the pricing methodologies listed above.
- The calculated and accepted pricing amounts along with a documented conclusion regarding the pricing selected.
- A documented supervisory review and approval.

The form should be adequately supported by pricing documentation received from the contractor and/or documentation developed internally explaining or detailing the pricing.

OPPORTUNITIES FOR IMPROVEMENT

Process Owner Responses: The Engineering Department agrees with the recommendation presented above.

Engineering's current written Change Order protocol defines the steps that the construction management staff performs to determine the appropriate Change Order payment method, but acknowledges that documentation in this area is lacking. A form/checklist will be developed to document the relevant information considered when making a determination of the appropriate pricing approach. The check/list will include a space for the Program Manager to note approval of the selected approach.

Dates of Implementation: This form/checklist is currently being developed and its use will be implemented no later than June 1, 2016.

B. Costs for Use of Equipment (Force Account):

In some instances, costs for the use of contractor-owned or contractor-rented equipment may be assessed and billed by the contractor. Those costs are restricted under the provisions of the District's Construction Specification Book (Spec. Book). The provisions in the Spec. Book restrict the amounts charged to the rates contained in the Rental Rate Blue Book (EquipmentWatch.com). When reviewing supporting documentation, IA noted that the District's review or analysis of the rental rates was not documented. It is possible that adequate review procedures may have occurred; however, the procedures are not apparent as they were not properly documented.

The rates reviewed by IA did appear to be reasonable based on a review of the Rental Rate Blue Book.

Recommendation:

IA recommends that the District document the analysis and review/approval of equipment rental rates and costs. Procedures may include the following:

- Documenting a review and approval of equipment rates on contractor-provided schedules/invoices.
- Maintaining documentation supporting rate reasonableness, on file, from the Rental Blue Book site.
- If the equipment is to be utilized for an extended period (6 months or more), maintain or require the contractor to provide a rental recap schedule. A rental recap schedule will capture the cumulative equipment rental charges for the project. (See *Contract Provision recommendation at item 3.*)

Process Owner Responses: The Engineering Department agrees with all three recommendations presented above.

With regard to the first two recommendations, the equipment rate review completion date and the name for the responsible party will be incorporated into a form/checklist. The form/checklist will include a space for the Program Manager (or his/her designee) to indicate that the supporting documentation has been reviewed and found to be complete.

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OPPORTUNITIES FOR IMPROVEMENT

Implementation of the third recommendation will occur following modification to the District's Standard Construction Specification language.

Dates of Implementation: The form/checklist is currently being developed and its use will be implemented no later than June 1, 2016. See Item 3 regarding implementation date relative to rental recap schedule requirements.

C. Labor Rates (Force Account):

IA noted the following with respect to labor rates:

- Often rates were not supported by a contractor-provided wage rate schedule. In some instances, wage rate schedules were not maintained in the file; in other instances rate schedules were on file but the schedules did not agree to the rates actually being charged.
- The components of the rates were not adequately identified. Specifically, IA was unable to determine if the rates contained such items as tool adders or a profit margin. It is necessary to identify such components to effectively prevent any potential duplicate or excessive charges.

Recommendation:

To adequately document the accuracy and reasonableness of labor rates, IA recommends that the District take the following steps:

- a) Maintain on file contractor-provided labor rate schedules that agree to and support current contractor billings.
 - Rate schedules should detail the components of the rates.
 - If necessary, require contractors to provide certified payroll records.
- b) Document review and approval of rates. (*See checklist recommendation at item D below.*)

Process Owner Responses: The Engineering Department agrees with both the recommendations presented above.

Engineering's current written Change Order protocol requires the submittal of a schedule of labor rates by the contractor for Force Account work. To ensure that these rates are received, reviewed and approved, these actions will be incorporated into a checklist that will annotate the date that each of these events occurred and the individual responsible.

Should there be any concern regarding the contractor's schedule of labor rates, Engineering will direct the contractor to submit certified payroll for those months during which the force account work is being performed. The decision as whether or not certified payroll submittal will be required will be annotated on the checklist to be developed. The checklist will include a space for the Program Manager (or his/her designee) to indicate that the supporting documentation has been reviewed and found to be complete.

Dates of Implementation: The checklist is currently being developed and its use will be implemented no later than June 1, 2016.

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OPPORTUNITIES FOR IMPROVEMENT

D. Overall Documentation

Regarding the overall supporting documentation, there did not seem to be any type of systematic approach to the development and maintenance of the documentation, which, in certain instances, resulted in deficiencies or errors in the documentation for certain change order transactions.

Specific examples are as follows:

- Contract # 20081, project # 11885: A \$4,000 error was made in the manual calculation, resulting in a \$4,000 overpayment.
- Contract # 20143, project #11825: A \$2,000 error was made in the manual calculation, resulting in a \$2,000 overpayment.
- Contract # 20003, project # 10782: A \$5,000 reduction to a line item was agreed to with the contractor; however the amount was not documented and reflected in the supporting documentation.
- Contract #20033, project #10121: There are differing amounts that appear in the final documentation, \$76,790 and \$61,664, making it unclear as to which amount should have been added to the contract through the change order. (The \$61,664 appears to have been a clerical error (“typo”) on the document.)
- Contract # 10776, project # 10727: The change order calculation involved a credit of \$92,000. Supporting documentation for the credit could not be located. (Apparently was handled via e-mail. Unable to locate e-mails as well.)
- Contract # 10708, project # 11055: The change order was originally issued in the amount of \$14,900. Subsequent to the documented change order, the pay application was revised to \$16,390. The \$1,490 increase was not documented. (The \$1,490 represented the prime’s mark-up for work performed by the sub.)

Recommendation:

Internal Audit recommends that the District:

- Update existing procedures and incorporate a standard checklist for the change order process. Include steps addressing, mathematical accuracy, superseded documents, required supporting documentation (documentation required to be present in file), as well as a documented supervisory review. **Incorporate the recommendations in items A, B, and C, from above, into the procedures and checklist. (Also, include sales tax guidelines and review. See recommendation at item 2 below.)**
- The form should also include a section to document written change order requests that are denied. The additional section should document the basic nature of the request and the reason for the denial. All such denied requests should be kept on file and logged.
- Provide training for personnel involved in the process. Ensure the strengthened procedures are understood and implemented properly.

OPPORTUNITIES FOR IMPROVEMENT

Process Owner Responses: The Engineering Department agrees with the recommendations presented above.

Engineering's current written Change Order protocol will be updated to require a documented peer review of all mathematical calculations and the documented supervisory review of all supporting documentation including the verification that the appropriate justification is provided when a previously approved change order is superseded by a subsequent document revision.

The \$4,000 and \$2,000 overpayments are in the process of being recovered by the District through a deduction from future payments, in one case, and an actual payment to be received (by 2/12/16) from the contractor in the other case.

A section will be included on the form to document written change order requests that are denied. All denied requests will be kept on file and logged.

Upon completion of the protocol update and the development of the previously mentioned form/checklist, training will held for all Construction Management staff.

Dates of Implementation: The protocol update and form/checklist will be completed and implemented no later than June 1, 2016. Staff training will be conducted in the month of June 2016.

Overall Risk Rating for Items 1.A. – 1.D., above

Risk Rating at District (Entity) Level: Low

Risk Rating at Business Process Level: Moderate

OPPORTUNITIES FOR IMPROVEMENT

2. Sales Tax

IA noted one instance in which the District approved and paid an invoice that contained sales tax:

- Contractor (contract #10728, Project #10665) paid sales tax for materials and passed those costs on to the District. The amount of sales tax charged to the District, including a 10% markup, was \$3,515.75. The contract between the District and each contractor stipulates that contractors are to purchase materials utilizing the sales tax Project Exemption Certificate (FORM 5060) provided for each project.

Recommendation:

IA recommends that the District:

- Consider pursuing recovery of the funds described above.
- Incorporate sales tax guidelines when updating the procedures and developing a checklist for the change order process (*see recommendation at item 1. D.*).

Risk Rating at District (Entity) Level: Low

Risk Rating at Business Process Level: Moderate

Process Owner Response: The Engineering Department agrees with both the recommendations presented above.

With regard to the first recommendation, Engineering has contact the contractor for this project and even through this contract was completed and closed in September 2014; the contractor has agreed to refund the sales tax and mark-up amount of \$3,515.75 to the District.

With regard to the second recommendation, Engineering's current written Change Order protocol will be updated to incorporate the sales tax guidelines and this matter will also be addressed in the previously mentioned form/checklist, training will held for all Construction Management staff. The form will include a space for the Program Manager (or his/her designee) to indicate that the supporting documentation has been reviews and that no sales tax has been included in the change order amount.

Date of Implementation: The District expects to receive a reimbursement in the amount of \$3,515.75 in mid-February of 2016 from the contractor.

The Change Order protocol update and form/checklist will be completed and implemented no later than June 1, 2016.

OPPORTUNITIES FOR IMPROVEMENT

3. Construction Contract Provision – Cumulative Rental Charges

Currently, the District’s contract language contains no provisions for limiting cumulative equipment rental charges.

Recommendation:

To protect the District from being charged cumulative equipment rental charges that are excessive, IA recommends the addition of a contract provision that limits cumulative rental charges to 75% of each equipment item’s value. Example language is as follows:

- *“The total rental cost of any contractor-owned item may not exceed 75% of the purchase price of any comparable item for the duration of the project.”*

Risk Rating at District (Entity) Level: Low

Risk Rating at Business Process Level: Low

Process Owner Response: This change in language will be incorporated in the Master Project Specifications for inclusion in all future Project General Specifications.

Date of Implementation: The new specification language is currently being developed and will be incorporated in the contract documents for all projects to be advertised for bid on or after June 1, 2016

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MSD Internal Audit:

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