

AUDIT TEAM

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<i>Mark K. Stonecipher</i>	<i>Ward 8</i>



August 28, 2018

The Mayor and City Council:

The Office of the City Auditor has completed an audit to evaluate the status of recommendations and related management responses included in our previous audit report dated June 5, 2012, relating to construction administration procedures ensuring timely completion of street projects.

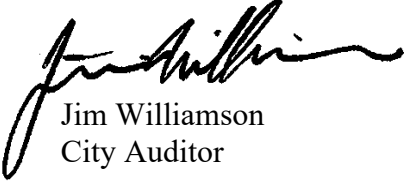
Based on the results of our audit, as of December 31, 2017, we believe that previous recommendations to improve controls over capital street project construction administration have been partially implemented.

Recommendations for continued project construction administration improvements, discussed in more detail in the attached report, include the following:

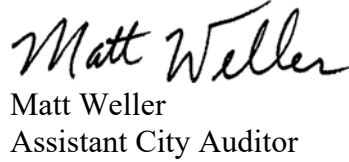
- Authorized timeframes given for contractor completion of street resurfacing projects often exceed what is necessary and the reasonableness of authorized timeframes given for street project construction, in general, continue to be unresolved. An external street construction expert should be engaged to determine the reasonableness of authorized timeframes for completing street resurfacing and construction projects. See Status 1, 2, and 3.
- Construction contracts should be modified to specify that substantial completion of the work is expected within a certain number of calendar days or by a certain date. See Status 4.
- Construction timeline management should be fully documented for all projects. See Status 7, 8, and 9.
- Documented liquidated damage assessments should be performed for all delayed projects and policies governing waived or reduced liquidated damages should be developed. See Status 10.
- Project construction timeline data should be fully accumulated and used to improve project timeliness and measure performance. See Status 11, 12, 14, and 15.
- Daily construction inspections should be conducted and construction timeline management should be documented for unit-price contract street resurfacing projects. See Recommendation 16.

EXECUTIVE SUMMARY: Audit Report 18-02

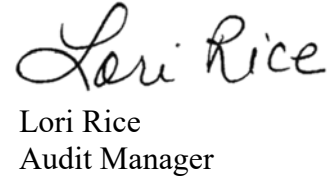
The content and emphasis of items included in this report have been discussed with appropriate management representatives to assure a complete understanding of the observations arising from our audit. Management responses are attached to this report in their entirety.



Jim Williamson
City Auditor



Matt Weller
Assistant City Auditor



Lori Rice
Audit Manager

**CAPITAL STREET PROJECT CONSTRUCTION ADMINISTRATION
FOLLOW-UP AUDIT**

AUDIT OBJECTIVE, SCOPE, BACKGROUND, AND METHODOLOGY

The objective of this audit was to evaluate the status, as of December 31, 2017, of recommendations and related management responses included in our previous report dated June 5, 2012 on our audit of capital street project construction administration.

Our previous audit revealed that established procedures for administering capital project construction were not adequate to ensure timely completion of street projects. Construction timelines and processes for managing those timelines were not adequately developed and project timeline information was not adequately accumulated and assessed. Though certain street projects assessed during that audit were completed within authorized timelines, the reasonableness of the authorized timeframes could not be determined for those projects.

On September 12, 2017, Oklahoma City citizens demonstrated a continuing desire for improved streets by approving a temporary, 27-month one-cent sales tax projected to generate \$240 million for street and street-related projects such as streetscapes, sidewalks, trails, and bicycle infrastructure. On the same ballot, citizens also approved street projects totaling more than \$490 million as part of a 10-year, \$967 million General Obligation Bond package.

Restricted traffic flow resulting from street construction projects inconveniences citizens. Managing project construction to timely completion will be critical to minimizing the inconvenience experienced by citizens as the number of planned street projects increases.

Procedures performed during this audit included compilation and assessment of construction project timelines; review and assessment of contract provisions and related enforcement; review of all pertinent information included in project files; and interviews of management regarding processes, procedures and controls.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The following presents the status of findings, related recommendations and management responses from our previous audit. Each status is followed by management's response. Management responses are attached to this report in their entirety.

STATUS OF RECOMMENDATIONS FROM PREVIOUS REPORT

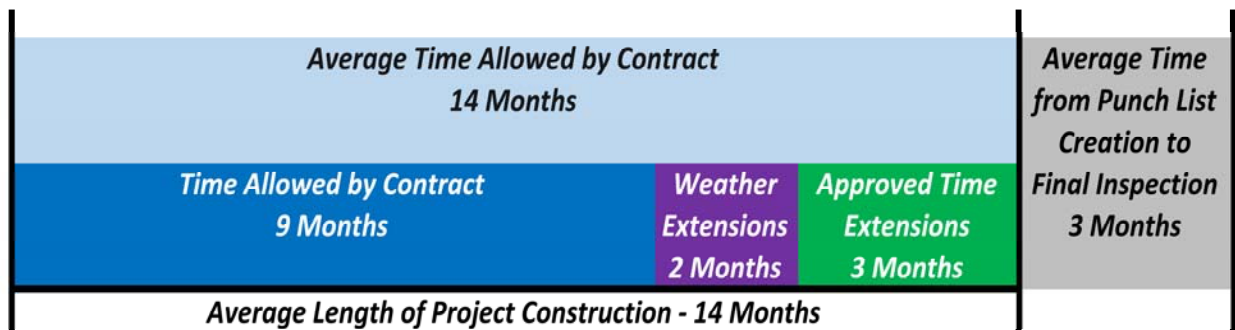
Previous recommendations to improve controls over capital street project construction administration have been partially implemented.

Street Construction Project¹ Timelines

Prior Audit Results

The average length of project construction for 9 street construction projects² final accepted in fiscal year 2011 (2011) was the same as the average time contractually allowed for completion³, 14 months, as shown in Exhibit 1.

Exhibit 1. Average Construction Timeline for 2011 Street Construction Projects



The reasonableness of time allowed for project completion could not be determined because industry standards or other benchmarks were not available. However, project completion within the time allowed on average, given the significant control weaknesses discussed in our previous report, suggested that time allowed for completion might be excessive.

We recommended that, after implementation of our process recommendations, consideration be given to allowing contractors to propose varying construction timelines and prices for street construction projects to establish the reasonableness of time allowed given funding available.

¹ Of the projects collectively referred to as street construction projects, at least half are widening projects while the other projects are construction of streetscapes or other street improvements. Separate assessment was not deemed necessary for the purposes of this follow-up audit.

² Two street widening projects reviewed during the 2012 audit were significantly delayed by utility relocation, were deemed anomalies, and were therefore excluded from our calculation of average project construction lengths.

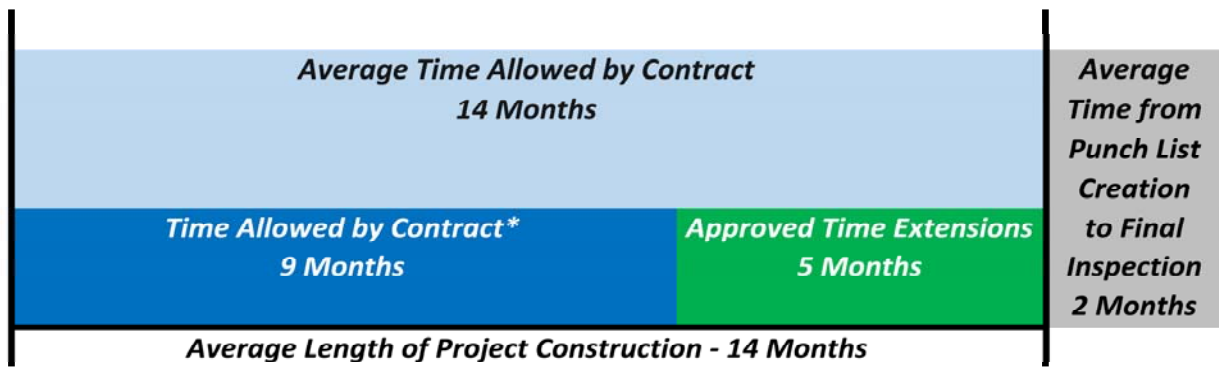
³ Construction contracts did not specify when counts of work days used by contractors to complete projects should end, therefore, the date when the project punch list was created, which is the substantial completion date, was used as the date of project completion.

Status 1

Not Addressed. Proposal of varying construction timelines by contractors was allowed for one street construction project immediately following the previous audit. Management stated varying construction timelines were not solicited for other projects because of the and additional costs and complexity involved.

The average length of project construction for 8 street construction projects final accepted by the City Council during calendar year 2017 (2017) was again the same as the average time contractually allowed for completion, 14 months, as shown in Exhibit 2.

Exhibit 2. Average Construction Timeline for 2017 Street Construction Projects



*Time allowed by contract for calendar year 2017 projects included weather days.

One project was completed in more than 2 months less time than was contractually allowed even though City inspectors documented no work was performed equating to approximately 2 months during the project.

Our previous audit recommendations addressing the significant control weaknesses identified in administering project construction have only been partially implemented, as discussed later in this report. Continued completion of street construction projects within the allowed time on average, given those continuing control weaknesses, suggests the risk of allowing excessive time for project completion continues.

Contracting with a street construction expert to assess the reasonableness of time allowed for completion of street construction projects should be considered (See Status 2 & 3).

Management Response 1

Agree with recommendation. Engaging a consultant is advantageous and timelines for street construction projects can vary widely. Public Works utilizes engineers of record to establish reasonable timelines on a project by project basis. Since different types and scopes of work are

anticipated for future street projects, timelines will be different than projects that were previously completed.

Provided budget is available, Public Works is agreeable to engaging an expert to review project timelines, however would request that the Auditor's Office help identify experts to bid on the proposal. Public Works will work with the Auditor's Office to develop a scope of work by January 1, 2019.

Street Resurfacing Project Construction Timelines

Prior Audit Results

Street resurfacing contracts include multiple locations where resurfacing work is to be performed. We noted that, for resurfacing projects final accepted in 2011, unexplained delays significantly increased as the number of project locations increased.

We recommended construction timelines be managed separately, with separate completion deadlines, for each location within a project to allow for identification of when delays occur. Additionally, we recommended consideration be given to limiting the number of locations included in a project to a number that could be reasonably managed to timely completion.

Management proposed, alternatively, to implement a system for phasing multiple-location projects to assist in tracking progress and encourage timely work completion while also ensuring total project values sufficiently encourage bidding.

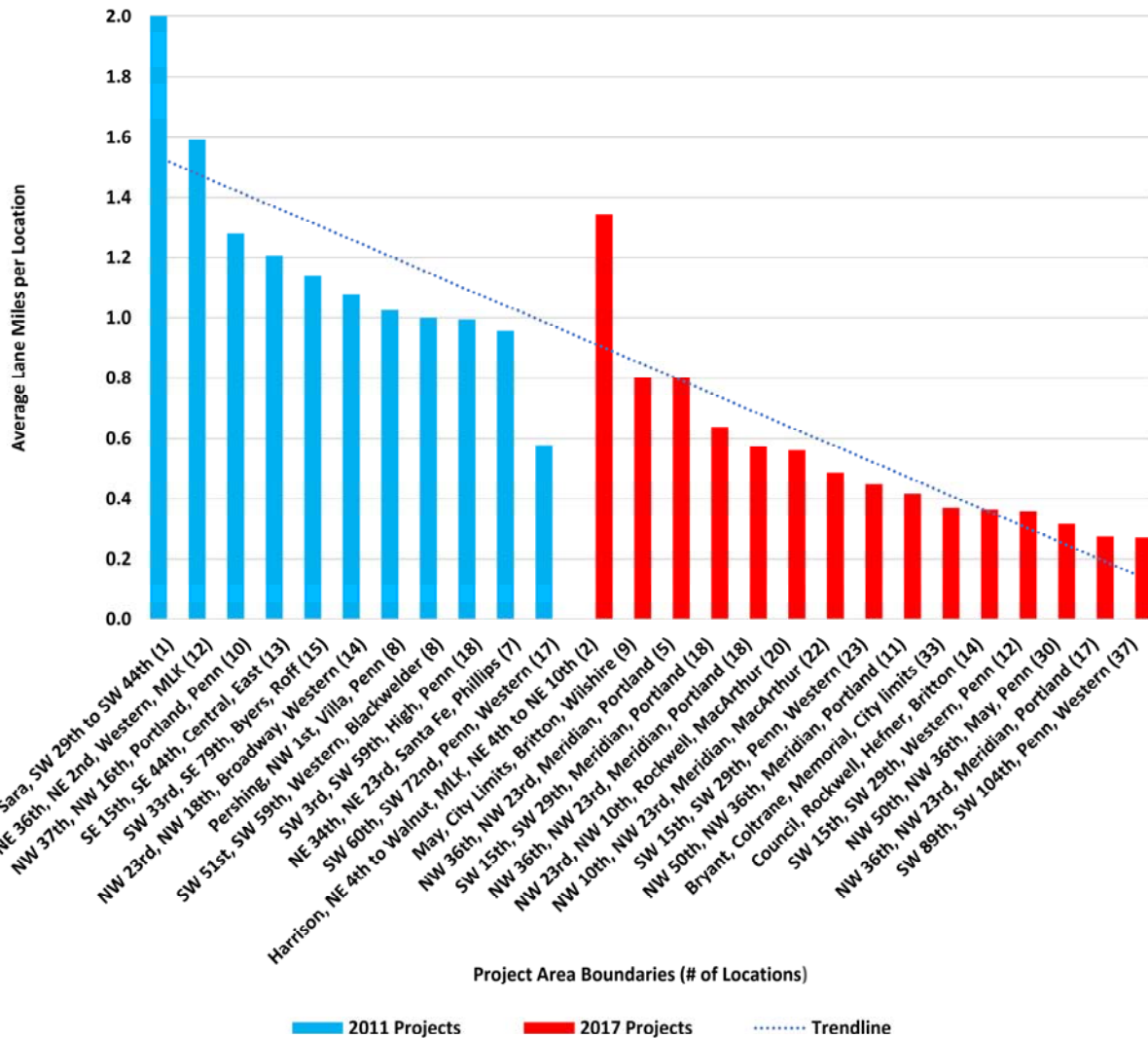
Status 2 & 3

While projects are completed within authorized timeframes on average, the authorized timeframes are frequently excessive.

The average number of lane miles per project location decreased significantly, from an average of 1.2 lane miles per location for 2011 projects to 0.5 lane miles per location for the 15 street resurfacing projects final accepted in 2017⁴, as shown in Exhibit 3 below.

⁴ Count excludes 2 street resurfacing projects final accepted in 2017 for which project construction timeline information was not available. See Additional Recommendation 16 below.

Exhibit 3. Street Resurfacing Project Average Lane Miles per Project Location Comparison



The average length of construction time per lane mile was essentially the same for 2017 (43 calendar days) and 2011 (40 calendar days) street resurfacing projects as shown in Exhibit 4 below. However, average calendar days contractually allowed for project completion increased significantly to 37 calendar days for 2017 street resurfacing projects from 21 calendar days for 2011 projects.

Exhibit 4. Average Street Resurfacing Project Construction Timeline per Lane Mile Comparison

2017 Projects

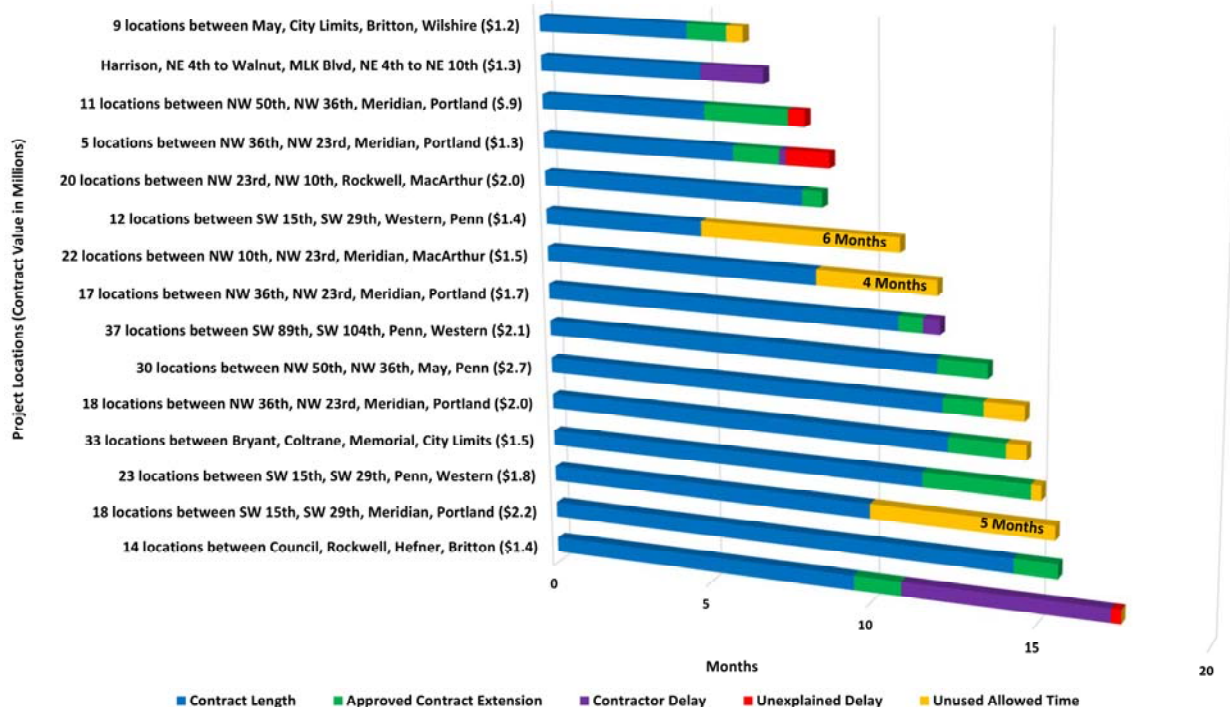


2011 Projects



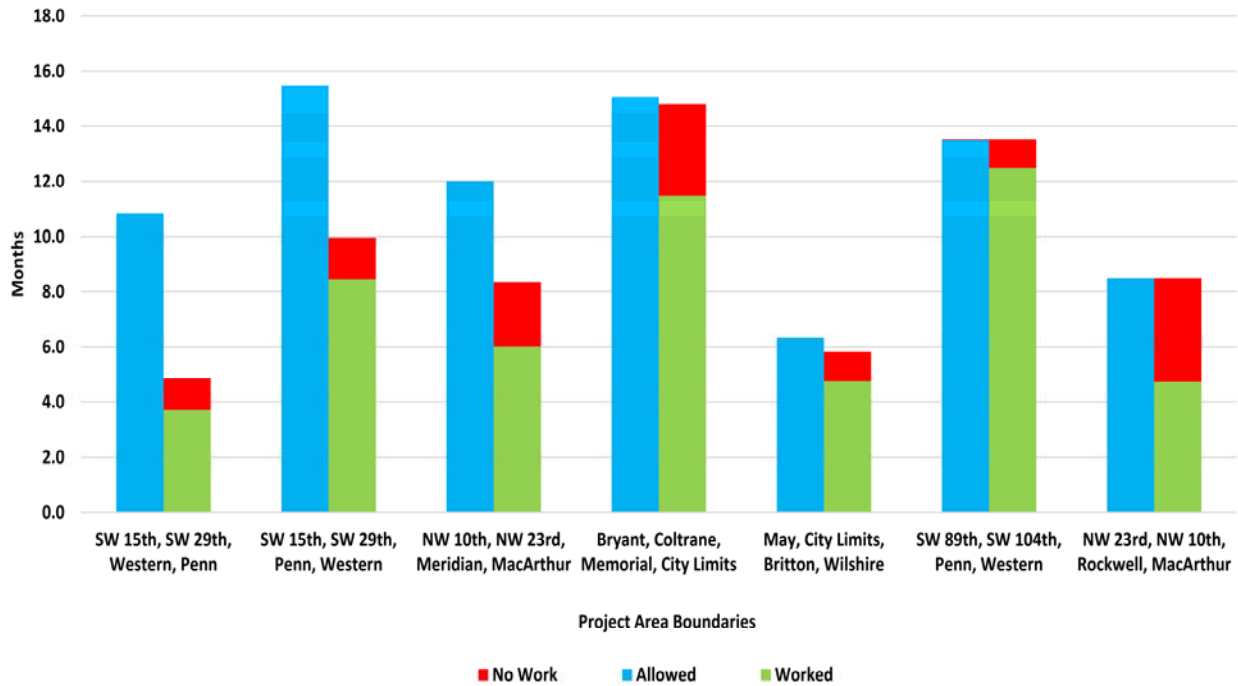
Of the 15 street resurfacing projects final accepted in 2017, 10 were completed within the amount of time contractually allowed for completion. Three of these projects were completed in significantly less time than allowed, as shown in Exhibit 5.

Exhibit 5. Construction Timelines by Project for 2017 Street Resurfacing Projects



Further, 7 of the street resurfacing projects finishing within the allowed time had days throughout the project where City inspectors documented no work was being performed, equating to an average of 2 months, as depicted in Exhibit 6 below.

**Exhibit 6. Cumulative Days Not Worked
2017 Street Resurfacing Projects Finished Within Allowed Time**



The temporary, 27-month one-cent sales tax approved by citizens on September 12, 2017 is projected to generate \$168 million in additional funding for street resurfacing projects. This funding will be in addition to annual General Obligation Bond funding for street resurfacing projects that has averaged nearly \$23 million over the last 5 fiscal years.

A street construction expert should be contracted to assess the reasonableness of time allowed for street resurfacing projects. Significantly more time per lane mile was contractually allowed for completion of 2017 street resurfacing projects compared to 2011 projects. The observed increase in time allowed for completion is likely excessive given the continuing significant weaknesses identified during our previous audit and the number of projects completed in less time than allowed and/or within allowed time, while also including significant time where no work is performed. See Status 1.

Management Response 2 & 3

Agree with modification. Engaging a consultant is advantageous and timelines for street construction projects can vary widely, even more so when comparing arterial resurfacing

projects to residential resurfacing projects. Public Works utilizes engineers of record to establish reasonable timelines on a project by project basis.

Provided budget is available, Public Works is agreeable to engaging an expert to review project timelines, however would request that the Auditor's Office help identify experts to bid on the proposal. Public Works will work with the Auditor's Office to develop a scope of work by January 1, 2019.

For the 2017 Bond and 2017 Sales Tax funded resurfacing projects, the department has established unit price contracts for the implementation of these projects. Work orders are written, with costs estimated based on bid unit prices. As an incentive to work quickly, contractors may receive additional work orders once they complete assigned projects. The department has also modified the project specifications for traditional bid projects to include completion dates (in lieu of working days) and liquidated damages when contractors fail to work on a project for more than 3 days after issuance of a work order. These projects are expected to be completed in four to six weeks, on average, therefore we do not plan to utilize formal project timelines for these projects. However, there will be daily inspection and monitoring of progress. Public Works staff will continue to monitor the effectiveness of unit price contracts and continue to make updates to project specifications to promote timely completion.

Auditor's Position 2 & 3

The reasonableness of time allowed for street resurfacing projects completed using unit-price contracts should be included in the street construction expert's scope of work. As stated in Recommendation 16, construction timeline management should be documented for unit-price contract street resurfacing projects.

Defining Project Deadlines

Prior Audit Results

Construction contracts did not specify when counts of work days used by contractors would end. Field Services personnel, responsible for counting work days used, ended the counts at varying points in construction timelines. Project completion deadlines were not clear since when counts of work days used would end was not mutually agreed upon.

We recommended construction contracts specify when work day counts will end, counts end as specified, and the specification represent substantial completion of the project. We also recommended consideration be given to contractually specifying construction timelines, including substantial completion, in terms of days of traffic restriction rather than work days.

Status 4

Partially Implemented. Construction contracts specify full completion of the project is expected within a certain number of calendar days or by a certain date. However, substantial completion is contractually defined as functionally complete for the intended purpose but having a list of incomplete or defective work. These inconsistent contract terms lead to confusion in when projects are deemed complete. Day counts or recognized dates of completion were beyond the date of substantial completion, by more than 2 months on average, for 6 of the 23 reviewed projects.

Construction contracts should be modified to specify that substantial completion of the work, as defined, is expected within a certain number of calendar days or by a certain date. This modification will provide clarity regarding the date to be used in determining the timeliness of project completion. See Status 10.

Management Response 4

Agree with recommendation. To avoid inconsistent contract terms, by January 1, 2019 we will make adjustments to the special provisions and notice to proceed to reflect the substantial completion date. (see attachment Special Provisions)

Status 5

Addressed. Substantial completion is contractually defined as when the work is functionally complete and can be fully utilized for its intended purpose. Days of traffic restriction should be minimized under this approach when liquidated damages are enforced in accordance with contract provisions (see Status 10).

Management Response 5

Addressed from previous audit.

Approval of Street Closures

Prior Audit Results

Temporary, complete street closures had been allowed on certain street widening projects to realize shorter construction timelines and lower contractor-agreed-upon costs.

We recommended consideration be given to requesting contractor proposals of varying construction timelines and prices with and without temporary, complete street closures for street widening projects, when practical, given traffic counts and alternate access routes.

Status 6

Addressed. Temporary, complete street closures are generally being considered during project design.

Management Response 6

Addressed from previous audit.

Documented Evidence of Timeline Management

Prior Audit Results

Significant deficiencies were identified in the evidence of construction timeline management by Project Managers. We recommended that Project Managers:

- Obtain project construction schedules at the beginning of construction and updated schedules throughout construction from contractors, and retain those schedules for use in managing construction timeline progress.
- Routinely assess project progress in terms of work days used by contractors and interact with contractors regarding progress, including periodically confirming work day counts and documenting discussions of plans for completing delayed projects on time.
- Completely document evidence of construction timeline management, including reasons for, length of, and details relating to all projects delays, and approvals or denials of all requests from contractors for extensions of time to complete projects.

Status 7

Partially Implemented. In response to our previous recommendation, management began obtaining project construction schedules from contractors at the beginning of construction and updated schedules throughout construction (with each payment request). However, management stated that the schedules are generally not used to manage project timelines. A substantial amount of the project construction schedules expected to have been obtained for 2017 projects were not found in the project files.

Project construction schedules obtained from contractors should be consistently retained and used to manage construction timelines.

Management Response 7

Agree with recommendation. Project specifications for traditional bid projects require receipt of updated construction schedules with each payment request on large projects. Public Works will work with staff to better enforce this requirement with contractors. By January 1, 2019, we will develop and host training classes with project managers and other involved staff to ensure consistent application of departmental policies and use of standard documents.

Status 8

Partially Implemented. While not using the contractor-submitted project construction schedules discussed in Status 7, 5 of the 8 Project Managers on 2017 projects routinely assessed project progress through other means and documented interactions with contractors regarding project progress.

Progress assessments in terms of days used and documented interactions with contractors regarding progress should be routinely carried out by all Project Managers for all projects.

Management Response 8

Agree with recommendation. It is critical that project progress be monitored and documented in the Construction Management System (CMS). Public Works will work with staff and provide training where necessary to improve consistency. We will also investigate increasing the frequency of project update meetings from monthly to bi-weekly to provide more opportunities to discuss and track progress by daily reports, and data entered in the CMS. By January 1, 2019, we will have held several training classes with project managers and other involved staff to ensure consistent application of departmental policies and use of standard documents.

Status 9

Partially Implemented. Dispositions of contractor requests for extensions of time to complete projects are documented, however, the details relating to project delays are not documented.

Project Managers should document the reasons for, length of and details relating to all project delays in the project files for all projects.

Management Response 9

Agree with recommendation. It is critical that project progress be monitored and documented in CMS. Public Works will work with staff and provide training where necessary to improve consistency. We are working to standardize documents for use by project managers to notify contractors of the status of projects, late completions and project delays. By January 1, 2019, we will develop and host training classes with project managers and other involved staff to ensure consistent application of departmental policies and use of standard documents.

In FY 19, the department will have new Leading for Results (LFR) measures for the total days added to contracts, along with the number of days added for scope change, adverse weather and utility relocation. Staff is currently working on a method to capture this data in CMS, where it will be tracked by individual project, then aggregated for reporting in LFR.

Enforcement of Liquidated Damage Provisions

Prior Audit Results

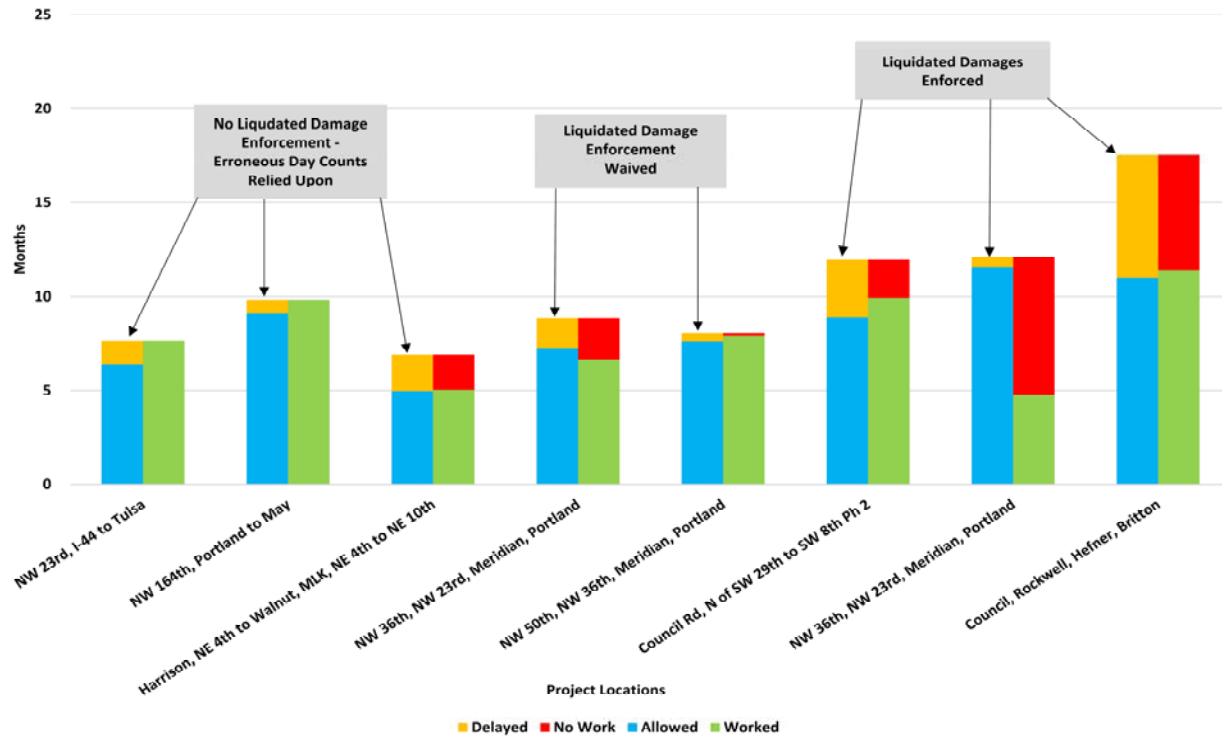
Enforcement of liquidated damage provisions in contracts could not be considered when contractors failed to complete projects within the number of work days allowed because of a lack of evidence of construction timeline management. The inability to enforce liquidated damage provisions significantly restricted construction timeline management efforts.

We recommended enforcement of liquidated damage provisions be considered for each delayed project based on documented assessments of construction timeline management evidence accumulated by the Project Manager.

Status 10

Partially Implemented. Liquidated damage provisions were enforced for 3 delayed 2017 projects and waived for 2 others. However, liquidated damages, totaling up to \$60,000, were not enforced for 3 delayed projects because Project Managers relied upon erroneous City inspector counts of days used by the contractor rather than using a calendar to calculate days used. As shown in Exhibit 7 below, several projects where enforcement was waived or erroneous counts were used also had days where City inspectors documented no work was performed.

Exhibit 7. Liquidated Damage Enforcement on Delayed 2017 Street Projects



Additionally, assessments of construction timelines to determine if enforcement should be considered, decisions to waive enforcement, authorization of enforcement waivers, and reasons for enforcing damage amounts less than contractually required were not documented.

Project Managers should document assessments of construction timelines for all delayed projects, calculating days used by the contractor on the project using a calendar, to determine if liquidated damage enforcement should be considered. See Status 4. Policies should be developed to govern and require documentation of:

- Reasons for waiving or reducing liquidated damages (e.g., observed contractor effort, isolated occurrence, extraordinary weather, other extenuating circumstances).
- Authorizations of decisions to waive or reduce liquidated damages.

Management Response 10

Agree with recommendation. Public Works will work with staff to develop a consistent method for monitoring and reporting construction delays and enforce liquidated damages when required by contract. By January 1, 2019, Public Works will develop a written departmental policy to formalize the procedures for applying liquidated damages on projects.

Data Accumulation and Assessment

Prior Audit Results

Sufficient, relevant construction timeline data was not centrally accumulated or assessed by Project Managers to identify recurring causes of construction delays. Data relevant for managing construction timelines such as expected project completion dates, actual completion dates, and quantifications of time extensions or construction delays by reason were not accumulated or assessed.

We recommended data relevant for managing construction timelines and identifying recurring causes of construction delays be accumulated by Project Managers in a centralized database. We also recommended the accumulated data be routinely assessed by Project Managers for recurring causes of delays that could be addressed through process changes or improvements.

Status 11

Partially Implemented. Projected and actual project completion dates are accumulated in a Construction Management System (CMS) database. However, for 2017 projects, 30% of the dates were not entered and 60% of the entered dates were inaccurate. Quantifications of approved extensions and construction delays by reason are not accumulated in CMS.

All data relevant for managing construction timelines, including quantifications of approved extensions and construction delays by reason, should be accurately accumulated in CMS.

Management Response 11

Agree with recommendation. It is critical that project progress be monitored and documented in CMS. Public Works will work with staff and provide training where necessary to improve consistency. We will also investigate increasing the frequency of project update meetings from monthly to bi-weekly to provide more opportunity to discuss progress of projects and data inconsistencies, and improve the data in CMS. By January 1, 2019, we will develop and host training classes with project managers and other involved staff to ensure consistent application of departmental policies and use of standard documents.

Status 12

Not Implemented. Data currently accumulated in CMS is not sufficient to identify causes of recurring project construction delays.

Once accumulated as recommended above, project delay data should be assessed routinely for recurring causes that can be addressed through process changes or improvements.

Management Response 12

Agree with recommendation. It is critical that project progress be monitored and documented in CMS. Public Works will work with staff and provide training where necessary to improve consistency. By January 1, 2019, we will develop and host training classes with project managers and other involved staff to ensure consistent application of departmental policies and use of standard documents.

In FY 19, the department will have new LFR measures for the total amount of days added to contracts, along with the number of days added for scope change, adverse weather and utility relocation. Public Works engineering managers will utilize the updated and improved information to better identify areas of delay to address current and future needs in managing construction contracts.

Contractor and Architectural/Engineering (A/E) Firm Performance Evaluation

Prior Audit Results

Documented evaluations of the timeliness of contractor performance were not performed by Project Managers and routinely presented to the Prequalification Review Board (Board) to consider before approving or renewing contractor prequalification. A/E firm evaluation forms including criteria affecting construction timelines were not completed at project completion and were not available for consideration in selection of A/E firms for future projects.

We recommended Project Managers perform documented evaluations of contractor timeliness, the results be routinely considered by the Board, and prequalification denial be considered for contractors consistently demonstrating an inability to complete projects within authorized timelines. We also recommended that A/E firm evaluations be completed at project completion and performance with respect to activities affecting construction timelines on previous projects be considered in selecting A/E firms for future projects.

Status 13

Addressed. A request to reconsider prequalification status, including a documented status for each incomplete project, is presented to the Prequalification Review Board for consideration when a contractor is behind schedule on several projects.

Management Response 13

Addressed from previous audit.

Status 14

Not Implemented. A/E firm evaluations are not completed at project completion and are not considered in selections of A/E firms for future projects.

A/E firm evaluations should be completed and performance with respect to activities affecting construction timeliness of previous projects considered in future A/E firm selections.

Management Response 14

Agree with recommendation. Additional positions have been identified to assist the Contract Administration division with these efforts and make current the A/E firm consultant selection and performance database. By January 1, 2019, the department will establish a procedure for review of this information during the A/E selection process.

Performance Measurement

Prior Audit Results

Public Works included “the percentage of construction projects completed on time” as a Leading for Results (LFR) performance measure in their fiscal year 2011 and 2012 budgets but did not calculate the measure or use the measure to manage performance.

We recommended “the percentage of construction projects completed on time” be measured and the result used as an indicator of the success of or need for improvement in construction project administration processes.

Status 15

Not Implemented. “The percentage of infrastructure projects completed on time” included as a LFR performance measure in the Public Works budget is not correctly calculated. The result of the current calculation of the measure is the percentage of infrastructure projects achieving final acceptance within 90 calendar days of final inspection, which is a separate LFR measure.

The percentage of infrastructure projects completed on time should be correctly calculated and used to assess construction project administration performance.

Management Response 15

Agree with recommendation. By September 30, 2018, Public Works will work with staff to make necessary changes to LFR reporting and will also implement review processes to ensure accuracy in the future.

ADDITIONAL RECOMMENDATION

The following recommendation resulted from development of the status of recommendations in our previous report and is intended to provide further suggestions for improving street project construction administration processes. The recommendation is immediately followed by management's response. Responses from management are attached to this report in their entirety.

Unit-Price Contract Street Resurfacing Projects

Unit-price contracts⁵ were used for 2 street resurfacing projects final accepted in 2017. City inspectors did not perform daily inspections of the work performed for either project, though the completed projects were inspected before final acceptance.

Additionally, construction timeline management was not documented for either project. Established deadlines or calendar days allowed for project completion; when project construction began or was substantially complete; and routine project progress assessments and related interactions with the contractor were not documented.

Daily construction inspections and documented construction timeline management reduces the risk that contractors are not held accountable for work quality and timely completion.

Recommendation 16

Daily construction inspections should be conducted and construction timeline management should be documented for unit-price contract street resurfacing projects. Construction timeline management documentation should include at a minimum:

- An established completion deadline or number of calendar days allowed for project completion.
- The beginning and substantial completion date of project construction.
- Routine assessments of construction progress and related interactions with contractors.

Management Response 16

Agree with modification. Sales tax funded projects have received daily construction inspections for the unit price street resurfacing projects. The completion dates are a date certain and are included in each work order. Routine assessments of progress and related interactions with

⁵ Unit-price contracts are based on estimated quantities of materials to be used in the project and related prices. The final price of the project is dependent upon the quantities of materials needed to carry out the work. Contracts used for the other street resurfacing projects final accepted in 2017 provided fixed final prices for completion of the specified projects.

contracts are handled as part of the daily inspections. Although liquidated damages are not anticipated on the unit price contracts, contractors not completing work within specified times will not receive additional work orders.

Auditor's Position 16

The 2 unit-price contract street resurfacing projects examined during the audit were not sales tax funded projects and were not managed as described in management's response.

As stated in Auditor's Position 2 & 3, the reasonableness of time allowed for street resurfacing projects completed using unit-price contracts should be included in the street construction expert's scope of work. See Status 2 & 3.



MEMORANDUM

The City of
OKLAHOMA CITY

TO: Jim Williamson, City Auditor

THROUGH: Jim Couch, City Manager

FROM: Eric J. Wenger, Public Works Director

DATE: August 15, 2018

SUBJECT: Audit #10-08 - Public Works – Capital Street Project Construction Administration Follow-Up Audit

The following are Public Works' responses to recommendations outlined in the recent Capital Street Project Construction Administration Follow-Up Audit.

1. Agree with recommendation. Engaging a consultant is advantageous and timelines for street construction projects can vary widely. Public Works utilizes engineers of record to establish reasonable timelines on a project by project basis. Since different types and scopes of work are anticipated for future street projects, timelines will be different than projects that were previously completed.

Provided budget is available, Public Works is agreeable to engaging an expert to review project timelines, however would request that the Auditor's Office help identify experts to bid on the proposal. Public Works will work with the Auditor's Office to develop a scope of work by January 1, 2019.

- 2/3. Agree with modification. Engaging a consultant is advantageous and timelines for street construction projects can vary widely, even more so when comparing arterial resurfacing projects to residential resurfacing projects. Public Works utilizes engineers of record to establish reasonable timelines on a project by project basis.

Provided budget is available, Public Works is agreeable to engaging an expert to review project timelines, however would request that the Auditor's Office help identify experts to bid on the proposal. Public Works will work with the Auditor's Office to develop a scope of work by January 1, 2019.

For the 2017 Bond and 2017 Sales Tax funded resurfacing projects, the department has established unit price contracts for the implementation of these projects. Work

orders are written, with costs estimated based on bid unit prices. As an incentive to work quickly, contractors may receive additional work orders once they complete assigned projects. The department has also modified the project specifications for traditional bid projects to include completion dates (in lieu of working days) and liquidated damages when contractors fail to work on a project for more than 3 days after issuance of a work order. These projects are expected to be completed in four to six weeks, on average, therefore we do not plan to utilize formal project timelines for these projects. However, there will be daily inspection and monitoring of progress. Public Works staff will continue to monitor the effectiveness of the unit price contracts and continue to make updates to project specifications to promote timely completions.

4. Agree with recommendation. To avoid inconsistent contract terms, by January 1, 2019 we will make adjustments to the special provisions and notice to proceed to reflect the substantial completion date. (see attachment Special Provisions)
5. Addressed from previous audit.
6. Addressed from previous audit.
7. Agree with recommendation. Project specifications for traditional bid projects require receipt of updated construction schedules with each payment request on large projects. Public Works will work with staff to better enforce this requirement with contractors. By January 1, 2019, we will develop and host training classes with project managers and other involved staff to ensure consistent application of departmental policies and use of standard documents.
8. Agree with recommendation. It is critical that project progress be monitored and documented in the Construction Management System (CMS). Public Works will work with staff and provide training where necessary to improve consistency. We will also investigate increasing the frequency of project update meetings from monthly to bi-weekly to provide more opportunities to discuss and track progress by daily reports, and data entered in the CMS. By January 1, 2019, we will have held several training classes with project managers and other involved staff to ensure consistent application of departmental policies and use of standard documents.
9. Agree with recommendation. It is critical that project progress be monitored and documented in CMS. Public Works will work with staff and provide training where necessary to improve consistency. We are working to standardize documents for use by project managers to notify contractors of the status of projects, late completions and project delays. By January 1, 2019, we will develop and host training classes with project managers and other involved staff to ensure consistent application of departmental policies and use of standard documents.

In FY19, the department will have new Leading for Results (LFR) measures for the total days added to contracts, along with the number of days added for scope change, adverse weather and utility relocation. Staff is currently working on a method to capture this data in CMS, where it will be tracked by individual project, then aggregated for reporting in LFR.

10. Agree with recommendation. Public Works will work with staff to develop a consistent method for monitoring and reporting construction delays and enforce liquidated damages when required by contract. By January 1, 2019, Public Works will develop a written departmental policy to formalize the procedures for applying liquidated damages on projects.
11. Agree with recommendation. It is critical that project progress be monitored and documented in CMS. Public Works will work with staff and provide training where necessary to improve consistency. We will also investigate increasing the frequency of project update meetings from monthly to bi-weekly to provide more opportunity to discuss progress of projects and data inconsistencies, and improve the data in CMS. By January 1, 2019, we will develop and host training classes with project managers and other involved staff to ensure consistent application of departmental policies and use of standard documents.
12. Agree with recommendation. It is critical that project progress be monitored and documented in CMS. Public Works will work with staff and provide training where necessary to improve consistency. By January 1, 2019, we will develop and host training classes with project managers and other involved staff to ensure consistent application of departmental policies and use of standard documents.

In FY19, the department will have new LFR measures for the total amount of days added to contracts, along with the number of days added for scope change, adverse weather and utility relocation. Public Works engineering managers will utilize the updated and improved information to better identify areas of delay to address current and future needs in managing construction contracts.

13. Addressed from previous audit.
14. Agree with recommendation. Additional positions have been identified to assist the Contract Administration division with these efforts and make current the A/E firm consultant selection and performance database. By January 1, 2019, the department will establish a procedure for review of this information during the A/E firm selection process.
15. Agree with recommendation. By September 30, 2018, Public Works will work with staff to make necessary changes to LFR reporting and will also implement review processes to ensure accuracy in the future.

16. Agree with modification. Sales tax funded projects have received daily construction inspections for the unit price street resurfacing projects. The completion dates are a date certain and are included in each work order. Routine assessments of progress and related interactions with contracts are handled as part of the daily inspections. Although liquidated damages are not anticipated on the unit price contracts, contractors not completing work within specified times will not receive additional work orders.

Attachments

Capital Street Project Construction Administration Follow-Up Audit

Special Provisions of the Construction of Public Improvements (pages 5, 22, 24)

Excerpt from Special Provisions of the Construction of Public Improvements

of Public Improvements", and in the Bid Documents, are applicable to the Bidding Documents.

1.1.3 The "Bid Date" and "Bid Time" are the date and time for the receipt of Bids as provided in the Notice to Bidders.

1.1.4 The "Architect/Engineer" is that person or firm under contract with the City, Trust, or other contracting entity to prepare the plans and specifications for and supervise the construction of the Work.

1.1.5 The "Bid Security" is that security submitted with the Bid which shall be in the form of a certified check, cashier's check or Bid Bond equal to five percent (5%) of the Bid or of an irrevocable letter of credit in the amount of five percent (5%) of the Bid and issued in accordance with the provisions of the Public Competitive Bidding Act of 1974, as amended. (61 Okla. Stat. 2011, §107) The calculation of the amount of the Bid Security shall be as provided in Section 4.2.1 of these Instructions to Bidders. Provide the Bid Bond through the Electronic Bidding Process. Irrevocable Letters of Credit, certified check and/or cashier's check must be hand delivered to the Office of the City Clerk, 2nd Floor, Municipal Building, 200 N. Walker Avenue, Oklahoma City, Oklahoma 73102 prior to Bid Time.

1.1.6 "Prequalification" or "Pre-qualified" shall mean that prior to the Bid Date the Bidder is listed by the Contractor's Prequalification Board as "Pre-qualified" for the type or types of Work required for the project.

1.1.7 "Completed" shall mean that the Work shall have been constructed in accordance with the plans and specifications and other Bidding Documents and is fully completed, the final inspection(s) have been made, and any corrections made to the satisfaction of the City Engineer.

1.1.8 "Acceptance" shall mean the formal recorded acceptance of the project by the City Council of the City of Oklahoma City or Awarding Public Entity.

1.1.9 "Small and Disadvantaged Local Business Subcontracting Program" shall mean that program which implements the policy adopted by the City Council of the City of Oklahoma City resolution of June 3, 2008, to promote and encourage the use of small and disadvantaged local businesses as subcontractors on public construction contracts and to require contractors performing public construction contracts to submit a Small and Disadvantaged Local Business Subcontracting Plan.

1.1.10 The "Electronic Bidding Process" shall mean a bid process through electronic means only. All signatures will be applied through electronic methods. Electronic Bidding Process is available at www.bidsync.com. For any assistance in completing the Electronic Bidding Process, please contact BidSync by email at support@bidsync.com or telephone at 800-990-9339.

1.1.11. The "Bidder Acknowledgment" shall mean that the Bidder prepared this Bid and, before preparing the Bid, carefully read and examined the Bidding Documents and any other documentation or information. Bidder is familiar with and able to comply with all the provisions

The Defect Bond guarantees the Contractor shall timely repair any defect and maintain or provide for the timely maintenance of any repair on the project for a specified term. The term of the Defect Bond shall be as provided in the Special Provisions and in an amount equal to one hundred percent (100%) of the Contract amount. The Defect Bond shall be made in favor of the City of Oklahoma City.

19. Time of Completion. Work on this project shall commence immediately following the Notice to Proceed with and estimated Completion Date of [COMPLETION DATE]. The Notice to Proceed will be issued on [NTP Date]. In the event that the City gives a Notice to Proceed past the date above, the City may change the Completion Date accordingly. The rate of progress shall be such that the whole Work will be performed in accordance with the Contract Documents, Plans, Specifications and approved Change Orders and Amendments and the premises be cleaned within the time stated herein, unless an Extension of Completion Date is approved by the City Engineer in the manner hereinafter specified.

19.1 Flex Start. The Contractor may submit a written request for up to a sixty (60) day Flex Start date prior to Award of Contract. If the request is granted by the City Engineer, the Completion Date will be adjusted by Change Order in accordance with 108.03 in the Standard Specifications. Flex Start will begin on the date of Award of Contract.

19.2 Extension of Completion Date. The Contractor may request an extension in time when a delay occurs which is beyond the Contractor's control. A claim for such extension must be submitted to the City Engineer in writing by the Contractor within seven (7) days from and after the time when the alleged cause of delay occurred.

If adverse weather conditions are the basis for a claim for extension of the completion date, such claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the construction activities occurring on the critical path of the construction schedule.

Any Extension of Completion Date for adverse weather will only be approved for time only, no additional charges, costs or compensation, in any amount, for the contractor or subcontractors will be considered.

If the satisfactory execution and completion of the Contract should require work or materials in greater amount or quantities than those set forth in the contract, then the Contract time may be increased.

In adjusting the time for completion of the project, all strikes, lockouts, unusual delays in transportation or any condition over which the Contractor has no control unless and except delays by a subcontractor deemed to be within the control of the Contractor and any suspensions of activities ordered by the City Engineer for causes not the fault of the Contractor shall be excluded from the computation of the Contract time for the completion of the work. No allowance shall be made for delays or suspensions of the prosecution of the work due to the fault of the Contractor.

Architect/Engineer and City Engineer, the most recently submitted or accepted construction schedule shall be utilized in planning work activities. The City shall not be responsible for any delays to work or changes to the construction schedule in the absence of an accepted construction schedule.

In the event that the Contractor is not able to conform to the latest submitted or accepted construction schedule, a recovery schedule shall be developed and submitted with the next monthly schedule update. The recovery schedule shall be considered a revision to the schedule that must be approved by the Architect/Engineer and City Engineer. The recovery schedule must show completion of the project within the time allowed on the project unless the City Engineer grants an extension of time.

19.5. Substantial Completion: A project is considered substantially complete when the following items have been performed.

19.5.1 The work and/or designated phases of construction, as identified in the Contract Documents, is functionally complete and can be fully utilized for the intended purpose including any field changes, substitutions, change orders, amendments, and agreement of quantities approved in accordance with Standard Specification section 108.03.

19.5.2 A Substantial Completion Walk-through has been performed and a list of incomplete or defective work has been identified, itemized and included on the punch list. **(For building/facility projects only)** A value for the punch list items must be identified.

19.5.3 **(For building/facility projects only)** A Certificate of Occupancy has been issued by the City of Oklahoma City Development Services and a Substantial Completion letter has been issued by the City Engineer on the project. At no time shall a Certificate of Occupancy be construed as substantial completion or that a phase of the project is considered useable by the City.

19.5.4 Contractor will submit final quantities and as-built drawings to Engineer of Record for processing.

19.5.4 The City Engineer will issue a letter of Substantial Completion.

19.6 Completion of Punch List. When a Project is declared Substantially Complete, the Contractor must complete the Punch List within thirty (30) Calendar days. Liquidated damages will be assessed for each day beyond the thirty (30) Calendar days in accordance with 111.09 of the Standard Specifications. Extension of the thirty (30) Calendar days to complete the Punch List due to adverse weather conditions is limited to actual lost days.

19.7 Final Acceptance. Prior to final acceptance and release of retainage by the awarding public agency the following must be complete:

19.7.1 A final walk-through has been performed verifying all items are complete.

19.7.2 **(For paving, utility, drainage, and parks projects only)** A directory containing the firm name of each subcontractor and material supplier on the project, subcontractor's and material suppliers address, telephone number, and representative to contact for repair and/or maintenance.

19.7.3 **(for building/facility projects only)** A copy of the Architect/Engineer's color and finish schedule with any subsequent revisions duly noted. Information must include project manufacturer's name, style name and product number, for all paints, flooring and other finish