MANAGEMENT REVIEW OF
CITY ENGINEERING DEPARTMENT
PHASE I REPORT
(City Project No. E16245)

PREPARED FOR
THE CITY OF CORPUS CHRISTI, TEXAS

PREPARED BY
FRANK BROGAN CONSULTING
SAN ANTONIO, TEXAS
(April 19, 2016)

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April 19, 2016

Mr. Ron Olson, City Manager
City of Corpus Christi
P.O. Box 9277
Corpus Christi, Texas 78469-9277

Subject: Management Review of City Engineering Department -Phase I Report

Dear Mr. Olson:

The attached report was performed in accordance with a Contract for Professional Services dated February 8, 2016. The purpose of the Management Review was to evaluate the performance of the City Engineering Department and make recommendations to improve the efficiency and operational effectiveness of the department.

A phased approach to the Management Review was agreed upon during negotiations since it was clear that many areas needing review could be fairly evaluated in a relatively short time frame while it was not clear if other areas would require more time and effort. Any areas needing further investigation were to be identified during the first phase. The decision to do any further study (i.e. Phase II) would be made by the City after a review of the Phase I report conclusions and recommendations. The majority of the areas needing review were fully evaluated and addressed in this Phase I Report.

The Management Review included a series of interviews with individuals both internal and external to City Hall, review of a significant amount of information provided by staff, and review of standard practices for many components of the engineering and construction process. The Engineering Department's workload, staffing, organizational structure and operating processes were examined including its use of augmented staff. This report includes recommendations for improvements in these areas and outlines areas needing further research.

I appreciate the opportunity to assist the City of Corpus Christi in this review.

Sincerely,

Frank C. Brogan

Cc: Margie C. Rose, Deputy City Manager
Saundra Thaxton, Assistant Director of Strategic Management

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1. Executive Summary:

This report reflects the findings and recommendations of Frank Brogan Consulting who was retained by the City of Corpus Christi to conduct a Management Review of the City of Corpus Christi Engineering Department, evaluate its performance and make recommendations to improve the efficiency and operational effectiveness of the department. This review also considered and evaluated eight specific questions (See Appendix A – Questions for the Engineering Competitive Review) or areas of concern that were identified by the City. This report also includes a number of observations and recommendations that involve issues and changes needed both internal as well as external to the City Engineering Department.

The City Engineering Department has been tasked with the execution of a major capital works program consisting of over 200 projects with an estimated cost in excess of $300 million. These projects include tax payer approved bond programs (majority for streets improvements) and a sizeable ongoing capital improvement program needed to maintain basic city services. The Engineering Department has been criticized for the slow progress made on many of these projects and for cost overruns that have required additional city funding. Because of this criticism, the City Manager's office of Strategic Management requested this study.

This study included a series of interviews with over fifty individuals that work directly or indirectly for the City or who do business with the city such as construction contractors and consulting engineers. The Engineering Department's workload, staffing, organizational structure and operating processes were examined. Its use of temporary "augmented" staff was also examined.

It should be noted that the City Engineering Department is operating under new management and supervision. The Director of Engineering Services was hired from the outside thirteen months ago. The Executive Director of the Public Works was promoted to this position from another department approximately sixteen months ago. These changes in management were the result of turnover that had previously occurred. They took over a program that was already in trouble and have worked diligently to implement an extensive plan (involving 107 separate problems or issues) to correct these pre-existing problems.

After conducting the interviews and reviewing all the available information**,** it is clear that progress is being made by the individuals now in charge. Processes have been significantly improved but the results of these improvements are not yet fully apparent to everyone outside City Hall that is working on City projects. Some have noticed the improvements while others have not. It will take additional time for these results to be widely recognized.

The City Engineering Department has tried valiantly to execute its assigned mission but needs improvement in three main areas. These include improved staffing resources, more efficient processes and better management/understanding of the expectations placed on the Department.

First, the single most important thing the City can do to continue the process of improving the performance of the Engineering Department is to improve the staffing resources available to the department. Excessive turnover, a significant number of vacant positions and the continued use of augmented staff does not provide a stable workforce with the necessary corporate knowledge required to efficiently and effectively execute the Department's assigned duties and satisfy the public's expectations. This need overshadows all other areas that need improvement. This issue must be solved in order to maintain and continue the progress that has already been made.

Second, many of the city processes, external as well as internal to the department, are slow and inefficient which cause delays in execution of projects and create a high level of complaints from those doing business with the City. Some of the more frequent problem areas cited involve the difficulty in negotiating engineering fees, delays in getting contracts approved, changes in staff, changes in project scope, delays in getting timely responses to important design or construction issues and delays in payments made to contractors.

Third, a better understanding and approach to managing the expectations placed on the department is needed. The public's expectation that a project will be completed within budget and within a reasonable timeframe after bond approval is entirely understandable and reasonable. Therefore this fact must be considered in how bond programs are formulated and presented to the public. Projects must be better scoped, scheduled and estimated before they are presented to the voters to prevent delays, problems and cost overruns. Some major projects require a great deal of advance planning. A realistic assessment of the City's capacity to execute a bond program must also be considered when bond programs are formulated in order to satisfy the public's expectations. Additionally, once a bond issue is approved, the city needs to improve the way it communicates not only the status of the bond projects, but also the overall progress made so that the public can better understand how these programs are progressing.

2. Introduction:

This report was performed in accordance with a City of Corpus Christi Contract for Professional Services – "Management Review of the City Engineering Department", with a scope of work described in Exhibit A (Proposal from Frank Brogan Consulting dated February 5, 2016). Work on a Phase I scope of work was authorized to begin on February 8, 2016. A phased approach was agreed upon as being necessary since it was clear that many areas could be fairly evaluated in a relatively short time frame while it was not clear (at the outset of negotiations) if other areas

would take more time and effort. Any areas needing further investigation were to be identified during the first phase. The decision to do any further study (i.e. Phase II) would be made by the City after a review of the Phase I report conclusions and recommendations. Mrs. Saundra Thaxton, Assistant Director of Strategic Management, was the designated point of contact for this study and her assistance throughout this study was most helpful and appreciated. Others providing invaluable assistance include Valerie Gray, Executive Director of Public Works, Jeff Edmonds, Director of Engineering Services and Capital Programs, Aurora Parlamas, Assistant Director of Support Services and Vickie Marsden, Business Unit Manager. Their help was also most appreciated.

3. Purpose and Objectives:

The purpose of this review was to provide the City Manager with an independent evaluation of the performance of the Engineering Department and recommendations for areas needing improvement. This review is a part of the City Manager's continuing efforts to review all city departments and ensure that every effort is made to achieve maximum efficiency of city government for the citizens of Corpus Christi.

The City Manager stated during an interview that he "lacked confidence in the City's ability to deliver a project on time and on budget". This candid statement clearly underscored the importance and need for this study. The City's Engineering Department has come under criticism and close scrutiny for the delays and cost overruns experienced on city projects, most notably being the bond projects approved by the voters in 2012 and 2014.

The City Manager provided a detailed list of eight areas of concern (see Appendix A) that were the primary focus of this investigation. This list asked for an evaluation of: project schedules, project costs, staffing, processes, change orders, accountability, conflicts of interest and reputation.

4. Interviews, Information and Analysis:

The Phase I assessment included interviews with individuals both internal and external to city hall, review of a significant amount of information provided by staff and review of standard practices for many components of the engineering and construction process. The author would like to thank all of the individuals interviewed that provided so much of their time. The author would also like to thank City staff for their assistance in gathering the large amount of data that was provided for review. Without their help this assessment would have taken much longer and not been as complete or as thorough.

Interviews:

Interviews were held with over fifty individuals working at City Hall and those doing business with the city (i.e. contractors and engineering consultants) to get their views on how the City Engineering Department operates and where it needs improvement. These included interviews with individuals with the following connection or interface with the City:

a. Full time city staff that work in the City's Engineering, Legal, Risk Management and Finance Departments and the City Manager's office.
b. Contract staff working on a temporary basis in the Engineering Department.
c. Consulting Engineers that design projects for the City
d. Contractors that regularly bid on city construction projects
e. Chairman of the current City Street Committee
f. Former city staff members

Information Review and Analysis:

City staff provided a vast amount of information (See Appendix B) to assist in this management review. Information from other sources was also reviewed and considered in the preparation of this report. The information gained from the interviews and data provided was used to assess the performance of the Engineering department, form opinions and develop recommendations. Where applicable, data was compared against industry norms.

Changes Implemented by Current Management:

Under its current management and new staff, the City Engineering Department has made a number of significant improvements in the way it operates and executes projects. City staff provided a comprehensive list (See Appendix C – Engineering Services – Problem Identification/Resolution Report) that outlined over 107 problems that have been identified, describes the action already taken to address the problems and the strategy moving forward to fully resolve these problems. The problems addressed were identified and organized into three major categories:

a. Administrative Problems
b. Project Development Problems
c. Project Execution Problems

A close review of this list of problems and changes that were made shows that the Engineering Department has made substantial progress at improving its operations. It has modernized its operations, implemented more efficient processes (i.e. online bidding) and organized and trained

its staff to better accomplish its mission. It is clear that progress is being made by the individuals now in charge. Processes, procedures and personnel have been significantly improved but the results of these improvements are not yet fully apparent to everyone outside City Hall that is working on City projects. Some have noticed the improvements while others have not. It will take additional time for these results to be widely recognized.

5. Evaluation and Recommendations:

A. Staffing Resources:

The Engineering Department has an authorized staffing level of 73 full time employees. The Director of Engineering Services has requested this number be increased by an additional 9 full time employees for a total of 82 full time employees to properly execute the department's assigned duties. These additional positions have not been approved or funded.

Of the authorized staff, currently there are 46 positions filled (63%) and 27 vacant positions (37%). Last year, City staff requested and received approval by the City Council to retain 16 outside consultants (commonly referred to as "augmented staff") at a cost of $2.6 million to fill in for some of the vacant positions and help expedite the completion of the capital and bond program projects. The augmented staff are contract employees that are paid for the hours of work they provide. Three of these sixteen outside consultants work a full forty hour week for the City. The rest work approximately 27 hours per week on City business while the remainder of their time is spent working for their full time employer at their offices on other projects. As a result, the 16 augmented staff provide a total of 12.3 full time equivalents (FTE's) for City positions. When added to the full time regular city staff, this equates to a total of 58.3 FTE positions filled thus leaving an effective vacancy rate of 20%. (Note: For comparison purposes, the preceding FTE calculations were based on a city employee being away from work six weeks a year for combined vacation, sick leave and holidays).

The most serious shortage of personnel is in the ranks of the Project Engineers and Project Managers. This makes up over half (54%) of the current vacancies. Currently there are:

Positions (FTE*)	Authorized	City Staff	Augment*	Vacant
Project Mgrs/Engineers	13	6	4.4	2.6
Percent		46%	**34%**	**20%**

The use of augmented staff has helped the City get projects designed and under construction and was the only viable option at that time. They have brought experience and knowledge from the private sector which has been beneficial to the process. Without question, the City would not

have accomplished as much work as it has without their help. However, the use of such staff should only be viewed as a temporary and partial solution. It does not fully solve the current staff resource needs and is not a long term solution.

Areas of concern regarding the current staffing situation:

1. Project Managers/Engineers still have far too many projects to manage and thus must limit their time to the most pressing duties. One project manager reportedly has over eighty projects assigned to him. As a result, with respect to Project Managers and Project Engineers, the following occur:
    a. Must rely on other personnel to review plans (i.e. plan reviewers).
    b. Not able to spend enough time monitoring consultant design progress.
    c. Not able to respond quickly enough to consultants questions and reviews.
    d. Not able to follow projects during construction. Called only for problems.
    e. Not enough time to always research better solutions or the latest technical developments.
    f. Encourages transfers to other departments where workload is less

2. Augmented staff project engineers are not at work all five days of the week

3. Augmented staff project engineers are not "there for the long term".

4. Augmented staff Project Managers and Engineers costs an average 62% more than that required to hire someone of equal skills at market level including city benefits (i.e. $258,000 per year versus $159,000 per year) based upon the same city FTE equivalent work basis mentioned above.

5. Turnover leads to a loss of corporate knowledge which increases risk of problems occurring and past mistakes being repeated. It also results in more time being taken to research issues, find solutions and make decisions. This cannot be fully made up for by the use of augmented staff.

6. Turnover and changes in project managers/engineers creates problems and delays for consultants and contractors when project directions or decisions are changed.

7. Because of turnover and the use of temporary staff, top level positions have to make decisions or perform duties best left to Project Managers/Engineers.

8. Shortages in staff resources negatively impact the Engineering Department's ability to improve processes or find better technical solutions and designs.

9. With an expected large volume of construction projects that will be awarded by the City this year, there is a significant lack of available construction inspectors on staff and the City will have to rely on additional augmented staff inspectors.

B. Staffing Organization:

The Engineering Department is organized into three separate divisions consisting of Project Management, Construction and Survey and a Support Services Division (See Appendix C). The Project Management Division is divided into functional fields of project responsibility such as streets, airport/marina, facilities/parks, and utilities. This Division develops and supervises the design of all city projects. The Construction and Survey Division (located away from City Hall) provides construction management and inspection of all city projects and some private projects involving city infrastructure such as subdivisions. This Division is also responsible for surveying of construction and property boundaries. The Support Division provides a wide variety of administrative support services such as project finance, legal review, records management, project bidding support, etc.

Currently the Director of Engineering Services only has one authorized full time position (Assistant Director of Support Services) to assist in management of the three divisions. The other two divisions lack a full time authorized staff member to oversee their operation but are being overseen by two mostly full time augmented staff.

Recommendations regarding the current staff organization:

1. The Director of Engineering Services needs a strong second in command (Asst. Director position) to serve as the Chief Engineer for the City of Corpus Christi. This position is currently being filled by an augmented staff person working approximately 35 hours per week. This position would directly oversee the Project Management division and be a primarily technical position. This position would free the Director from getting bogged down in technical issues such as fee negotiations, technical approaches, design review, problem resolution, etc.

   It is critical that this position be a full time city employee that can over time amass and maintain a significant level of corporate knowledge and guide development and growth of the engineers working for the city. This person would be the one that engineers would call if they had a problem on a project that they could not resolve with their assigned project manager.

2. The Director of Engineering also needs an experienced senior position (Asst. Director position) to serve as the Chief of Construction and oversee the Construction and Survey

Division. This position is currently being filled by an augmented staff person working approximately 35 hours per week. This person would ensure projects are constructed in accordance with the plans and specifications, all work is properly inspected, problems in the field are resolved promptly and that construction activities are coordinated effectively with public needs. This person would be the one that contractors would call if they had a problem on a project that they could not resolve with their assigned project inspector.

3. The Director of Engineering Services should be more of an administrative position and deal with larger issues such as reporting to and working with the City Manager, responding to City Council requests, dealing with the public, making sure that the other City departments were properly supported by Engineering, and ensuring that the Engineering Department is accomplishing its goals and objectives, etc. The Director of Engineering should be responsible for making sure that the City's longer term issues are properly addressed such as planning for future bond projects and major improvements or changes to the City's utility and operating systems.

4. The Engineering Department needs to develop the ability to do some smaller (and more frequent) design projects in-house. This will help keep staff productive if and when the project workload ever slows down. Project managers can then design projects in-house when work is slow. It also reinforces staff credibility with consultants and contractors and improves staffs ability to accurately and fairly negotiate, assess and monitor performance by outside engineers and contractors.

5. The Engineering Department's project managers and engineers need more construction experience. Several contractors remarked that City staff doesn't understand what it takes to construct a project. The Engineering Department should continue its efforts to rotate assignments between Project Management and Construction Divisions especially as new engineers are hired.

6. Due to the organizational and physical separation of the Construction Division from the Project Management Division there is a "Silo effect" where project managers are not involved in the construction process as much as they should be. This limits the feeling of being responsible for the entire project. Project managers hand off the project to the Construction Division. In the future when adequate staffing resources are provided, the Engineering Department may want to consider the "Cradle to Grave" form of project management where one person is in charge of a project from its inception all the way through design, bidding and construction. This puts one person in charge of the entire process and cuts down on the finger pointing that occurs between the groups that work in the field and those that work in the office. (Note: Before making a major organizational

change like this, more study and analysis is needed. A lesser approach would be to co-locate both Divisions in the same work area.)

7. At some later point, the Engineering Department should consider hiring one or two engineers that are experienced in building design, heating/cooling systems, etc. to better manage these projects.

8. The City should reevaluate its premise that since work will slow down after the current bond programs are completed the city should minimize its hiring of Engineering Department staff. All indications are that infrastructure needs will continue and the City must have sufficient resources to carefully plan and execute these programs.

C. <u>Salary Issue:</u>

The City's current compensation plan is the most significant obstacle to providing the necessary staff resources that the Engineering Department needs to carry out its assigned duties and responsibilities. The recruitment process and salaries offered to prospective employees and paid to existing staff are insufficient to attract, maintain and develop an effective staff in the Engineering Department. Recent surveys have shown that the salaries for the Engineering Department are substantially below (10 to 20%) the private sector (without bonuses) and generally well below (10 to 17%) that paid by other public agencies. In the current competitive market for project managers and engineers, the City must adjust its salary scale.

The impact of the City's current compensation plan is considered to be the primary reason for the tremendous turnover in staff that the Engineering Department has experienced. Data from the City indicates that the Engineering Department lost over 30% of its remaining staff in 2015 and lost another 10% in January of this year alone. Turnover is most acute in the engineering and construction inspections positions in the department. Of the fifteen local private and public entities surveyed recently, the City is the only organization reporting an annual turnover rate in excess of 10%. This is a very serious issue that has a major negative impact on the Engineering Department.

<u>Recommendations regarding the issue of compensation:</u>

1. Continue to improve recruiting process
   a. Continue to shorten the time it takes to process, rate and approve hiring requests
   b. Continue to advertise in national publications and professional organization websites
   c. Don't list salaries that are below market (i.e. step 1 salary levels)
   d. Continue participating in on-campus recruitment programs for graduate engineers
   e. Utilize professional recruiting firms for mid and upper level positions

f. Consider hiring bonuses and relocation expense reimbursement

2. Establish professional development and career path for engineers
   a. As engineers gain experience they should receive salary increases tied to market
   b. Professional development is essential for new graduate engineers
   c. Need salary incentive for younger engineers to get professional license
   d. Engineers should be encouraged and reimbursed for attendance at technical society meetings and conferences. Helps motivate and train staff. It also improves working relationships with the local engineering community.

3. Review and adjust salaries of existing staff
   a. Set at levels comparable to local and state market
   b. Conduct effective performance evaluations and reward performance

4. Recover increased costs
   a. Review and adjust amounts charged to capital projects and operating departments for services provided to properly reflect cost and value of service provided. Consider implementing a fixed percentage rate for reimbursement in lieu of time sheets.
   b. Lower project contingency budgeted for all projects (above $200,000 in cost) from 10% to 7.5% after bids are received.

While there may be reluctance to increase salaries in one City department and not all others, it must be made clear that an effective and efficiently operated Engineering Department can and will save the City money. Project engineers, project managers and inspectors make decisions every day that greatly affect the initial cost of a project, future maintenance costs and project performance or durability. Engineering involves a great deal of individual judgement. Projects can be over-designed or under-designed, both of which are costly mistakes. When dealing with hundreds of millions of dollars in construction projects, an overlooked issue can cost millions to fix and a creative solution can also save millions. Project delays (engineering and construction) related to staffing shortages can also increase costs. The additional costs required for a reasonable pay structure is a very small percent of the city's overall construction program and is cheap insurance. There is also the impact on and protection of the public to consider. It is essential that the City pay the costs that are needed to properly staff the Engineering Department, because the alternative will be more expensive.

It should be noted that the City is paying a total of $2.6 million per year for the city equivalent of 12.3 augmented full time staff which equates to an average (for all positions) of $211,400 per year. This same number of dollars could be used to hire an equivalent of 19.6 full time city employees at market value with full city benefits (overall average $132,300 salary and benefits).

D. A/E Consultant Process

During the course of this study, one process identified that clearly needs improvement was the way the Engineering Department selects, negotiates fees and generally administers the work of various architectural and engineering (A/E) consultants that the City hires for assistance in executing various projects. A great deal of input was received from the consulting community that warrants a closer look at this process. This input generally regarded four main areas: selection, fee negotiation, contract approvals and coordination with the City during the design process. The area that was most commented upon was the way the City negotiates its fees with consultants. Under its new management, the Engineering Department has been working to correct past problems and improve this process.

Recommendations for the A/E Selection Process:

1. Continue efforts to minimize the number of Request for Qualifications (RFQ's) that are issued to reduce the time and expense that consultants incur when soliciting work from the City.
   a. Issue annual RFQ for all anticipated projects grouped into major categories such as streets, water and waste water, airport and marina.
   b. Let consultants submit one statement of interest indicating which projects they feel most qualified and interested in performing.
   c. Only issue individual RFQ's for very specialized or very large projects.
   d. Utilize standard industry form SF330 for A/E qualifications and selection process to simplify and standardize the submittal requirements.

2. Have the same committee that reviews the RFQ submittals and prepares the short list also conduct the actual interviews. In this way, all members of the committee are equally briefed and informed on each team's qualifications. The Project Manager or Engineer that will be responsible for the project must be a member of this committee.

3. Wait on short listing and interviewing firms for a particular project if that project is not ready to proceed. No need to go through the process if a project is not ready to proceed. This will also ensure that the project manager for the City and the Consultant project staff are the same individuals that will be working on the project.

4. Maintain accurate records of past performance by consultants on City projects to include: ability to meet submittal schedules, number and cost of change orders required to correct any deficiencies or problems with design. This information could be included in the fee negotiation data base discussed below.

Recommendations for the A/E Fee Negotiations Process:

1. Projects must be better defined and costs estimated before fee negotiations begin.

2. The Engineering Department needs a reasonable and defensible basis for fee negotiations.

3. Some consultants reported having to go through five or six iterations of fee negotiations before finally agreeing on fees. This is excessive, delays projects and highlights the current problem.

4. Since State law prohibits bidding of engineering services, the Engineering Department should develop and maintain an accurate and searchable data base of fees paid on past projects to be able to compare fees paid on other similar projects and use this data for future fee negotiations. This information should include:
   a. Type and size (construction cost) of projects
   b. Dates when the work was performed
   c. Name of A/E firm performing the project and the name of their project manager
   d. Name of the Engineering Department's project manager
   e. Total costs for basic services, total cost for special services and combined total
   f. Number of drawings per project and average cost per sheet for basic services
   g. Total number of hours spent per project for basic services
   h. Average man hour cost overall for basic services
   i. Percent Fee calculations based on cost of basic service, special services and total costs divided by construction costs.

5. Personnel assigned to negotiate fees should have credible design experience to understand what it takes to perform the requested services.

6. The Engineering Department should not use Augmented Staff to negotiate engineering fees when it involves one competitor negotiating a fee with another competitor. This creates a potential conflict of interest and adversarial relationship when one competitor negotiates fees with another competitor.

7. The Project Budget and estimated construction cost must be clearly identified when negotiating engineering fees. If such costs are not known, then the Engineering Department should continue to use a time and expense form of contracting to better scope the project before a lump sum fee for design services is negotiated. The estimated project budget and construction costs should be clearly stated in every design contract. It is understood that current management has implemented this process.

8. Continue efforts to adopt an industry standard contract form published by the Engineers Joint Contracts Document Committee (EJCDC) with slight modifications. These documents are widely used by public agencies and represent a fair and balanced contract that incorporates the latest and best thinking in contract relations among all parties.

9. Continue to maximize the use of Master Services Agreements with individual service orders to reduce contract negotiation and review time.

10. Consider a different project definition and scope documents for non-roadway type projects that will be more applicable to other types of projects.

11. The Engineering Department should continue its consideration of contracting with engineering consultants using hourly rate charges with a "not to exceed fee cap" as soon as it has sufficient staff resources to more closely monitor the progress of its design consultants. This method has the potential to save money on future projects and reduce the time it takes to negotiate fees.

Recommendations for the A/E Contract Approvals:

1. The City and the Engineering Department need to find a way to speed up the contract approval process for the larger contracts. The Engineering Department has done this for the smaller contracts which are more within their control. All of the consultants interviewed complained of the lengthy process it takes to negotiate and get final authorization to begin work. There were reports of it taking three to six months or even longer to get the larger design contracts approved.

2. The City should adopt an electronic signature approval process (i.e. DocuSign) to speed approvals and avoid documents getting lost. Currently project managers have to physically track down documents to find out where they are in the approval process thus wasting valuable time. For contracts below $50,000 consider using a system tied to e-mail where an individual can select a button to approve and that approval is automatically entered into the City's purchasing and accounting system.

3. Have standard guidelines and documents in place for Risk Management and Legal so that if standard guidelines and documents are followed and contracts are below a certain level, review by these departments is not needed or at least can be expedited.

4. Reduce the number of times a contract must be presented to the City Council. If a project has been approved by the voters (bond program) or is listed in the approved capital budget and falls below a certain threshold then it would appear reasonable and legal to

only have to present it once to City Council under the emergency provision granted in the City Charter. This would not only shorten the approval time but also save critically short staff time.

5. Reduce the time requirement that an agenda item be submitted "in final form" with all signatures two and a half weeks before an agenda item is scheduled for Council action. Let supporting signature approvals occur while project is in the two and a half week waiting period before Council action.

6. In lieu of the future agenda posting requirement and to ensure the Council is adequately briefed on upcoming contracts, consider a monthly project status and forecast report that is sent to each council person advising them of current status and upcoming project agenda items.

Recommendations for A/E Project Coordination:

1. The Engineering Department's project managers and project engineers should meet on a regular basis to review project progress. This should be done at a minimum on a monthly basis and more often when critical issues are being decided. This is in addition to the regular submittal schedules currently used by the Engineering Department.

2. When projects are submitted for review (i.e. 30%, 60%, 90% or 100%) it is imperative that timely responses are provided by not only the Engineering Department but also the Operating Departments that are involved with the project. It was pointed out that city contracts typically include a two week period for these reviews but it typically takes much longer and many times responses to questions are not complete. Each Operating Department should identify their representative for each project before a project is started and this representative must commit to providing responses on the agreed schedule.

E. Construction Process

During the course of this Phase I study, interviews were held with four contracting companies that bid on various projects for the city. These included Hass Anderson, Bay Ltd, Clark Pipeline Services and Ray-Tec. They provided some very valuable insight into the problems and difficulties they encounter when working on city projects. All recognized and commented on the shortage of adequate staff resources and excessive turnover in the Engineering Department. The contractors stated that their most pressing needs for a successful project were related to four key areas: getting paid on time, having decisions made quickly in the field, processing change orders quickly and reducing down time. They also made other observations and recommendations for improvements in the construction process.

Regarding the need for prompt payment, there was a difference of opinion on the issue of the city taking too long to pay its contractors. Some reported the city took as long as two to three months to get paid, while others stated that they were paid in a reasonable amount of time (less than 30 days). The Engineering Department has increased its efforts and improved its processes (i.e. electronic payments) to speed up payments in the recent past. This is an important issue that does affect the number of contractors that are able to work for the city and offer competitive bids. The larger contractors have the financial resources to pay their subcontractors as the work is performed and not make them wait until the contractor is paid. The smaller contractors typically cannot do this and are forced to use a "pay when paid" policy of paying their subcontractors which is a problem that limits the number of subcontractors able to work for the city. Most subcontractors need to be paid very quickly (i.e. weeks instead of months) for their work. This is an area that the Engineering Department should continue to monitor and ensure the payment process is as quick and efficient as possible.

The other three needs expressed by the contractors all have one common element and that regards the time it takes the city to make a decision. Contractors talked about excessive delays in getting decisions made in the field such as when utility conflicts are discovered. The city inspectors are sometimes able to make a decision but other times have to wait until someone else such as the city project manager, the design consultant or someone from the utility departments are called in to look at the problem. They mentioned that change orders take too long to process which some attributed to the city having one person assigned to approve all change orders. The impact of delays in making these decisions can sometimes require the contractor to halt work and wait thus incurring down time and added expense for labor and equipment. These collective delays add time and cost to a contractors project which they must anticipate and factor in when they bid on future city projects. The Engineering Department has implemented processes to improve this response time.

There were some other observations and recommendations that the contractors made which are worth noting. They said that the staffing shortage and turnover was very detrimental to their construction projects because it added uncertainties, delays and costs to their projects. They commented that the city inspectors were spread too thin and had too many projects to inspect. Some commented on inefficient processes taking too long and cited examples of it taking 90 days from bid opening to get final contract approval and notice to proceed, which far exceeds other public entities. Most were concerned about labor and material shortages, due to the hot construction market, affecting their ability to bid on future city projects. Two of the contractors remarked that they were not able to compete effectively on city road projects where asphalt pavement was specified because there are only two suppliers of hot mix asphalt in Corpus Christi and they are both owned or controlled by two local contractors. They recommended that the City design and bid all roadway projects with asphalt and concrete pavement options to get more

competitive bids. They also commented on the inefficiencies and added costs incurred in the construction processes when too many traffic flow sequences were imposed on the various projects.

Findings:

There are many areas where the city can help improve the construction process and get more contractors interested in bidding on city projects

Recommendations regarding the Construction Process:

1. The Engineering Department needs additional staff resources including inspectors
2. Turnover must be minimized to achieve a stable workforce
3. Corporate knowledge must be rebuilt
4. City Manager and top departmental personnel need to reach out to construction community and build better working relations
5. Continue efforts to speed up contractor payments - provide faster review of work completed, pay amounts not in dispute, and inform contractors of areas of disagreement.
6. Reduce the time it takes to get contracts awarded – Consider approval with one city council reading under the emergency provisions for projects already approved by the voters and included in the budget
7. Reduce the time it takes to process and approve change orders. Consider approval with one city council reading under the emergency provisions
8. Continue efforts to provide Project managers with more construction experience by rotating assignments or using "Cradle to Grave" form of project management.
9. Prepare longer term (i.e. six months) forecast of future city project bids and coordinate dates with other public agencies such as TxDot to avoid schedule conflicts
10. Publish bidding results within 24 hours of bid opening, even if preliminary results.
11. Continue efforts to make sure construction schedules are reasonable to avoid contractors having to include liquidated damages in their bid and hope they get more time approved
12. Continue efforts to make sure required construction sequencing for traffic control purposes is carefully balanced with contractors work efficiency. Having to fully complete street segments causes multiple stops and starts in utility work.
13. Improve accuracy of design plans and completeness of underground utility information (varies with design consultants, too much reliance on "contractor to verify")
14. Improve design plans by deleting standard details that are not used on the project, only include those that are to be used.
15. Continue efforts to improve consistency of inspections and quality standards

16. Review and revise city specs as needed to include acceptable "industry standard" construction tolerances – terms such as "line and grade" for utility purposes are subjective and open to interpretation
17. Implement efforts to build a partnership between the City and its contractors
18. Continue to include equivalent roadway sections for both asphalt and concrete pavements to increase pool of bidders.
19. Ensure projects are promptly closed out when completed.
20. Consider letting some engineering consultants perform construction phases services on some projects.
21. Consider co-locating the engineering and inspection departments

F. Change Orders

Change orders on construction projects are very common and a necessary part of the construction process. Their need and use must be fully understood and carefully managed. In a perfect world, plans would always be 100% accurate, project scopes would never change and conditions in the field would always be the same as they are on paper. If this were always the case there would be no need for change orders. But this is not reality. It is not possible to be perfect, but it is possible to do a very good to excellent job. Project managers should always strive to minimize the need for change orders by having projects well scoped at the beginning and designed properly with the best information.

From an industry perspective, conditions in the field are often different from what is shown on construction drawings. The location of private utilities and pipelines installed by others is sometimes not well recorded. Changes in utility systems can be made during repair projects and this information may not be properly recorded. In older sections of the city, older infrastructure (some abandoned) dating back many decades ago is not well documented or even known. Even with a comprehensive survey to locate underground utilities which the City Engineering Department is currently doing, some utilities may not be discovered. Ground conditions can also vary from what soil borings indicate.

During the course of this study, information on projects currently in progress and recently completed were examined to determine if there was an excessive use or cost of change orders.

A construction status report dated 2/11/16 on "Projects in Progress" indicates that on 41 projects currently in progress with a construction value of $344 million, there were a total of 106 change orders with a combined total of $8.44 million. This represents an average of 2.6 change orders per project and an average value (percent of construction) of 2.45%.

If you remove two "outlier" projects (Bayfront Development and CC International Airport Runway/Taxiway projects), the numbers are significantly lower. The total drops to 74 change orders with a total value of $4.25 million for an average of 1.9 change orders per project and an average value of 1.3%. The scope of this first phase did not permit a closer examination of these two projects but it was reported that the change orders for the CC International Airport project were related to changes in FAA regulations.

The City also provided another report dated 2/11/16 on "Projects in Close Out" which indicates that on 10 recently completed projects with a total value of $57.5 million, there were 38 change orders with a combined value of $1.81 million. This represents an average of 3.8 change orders per project with an average value of 3.14%. If one "outlier" project (Williams Drive) is removed, the average number drops to 2.8 change orders per project and an average value of 1.34%. The scope of this first phase did not permit a closer examination of this project.

For comparison purposes an average of five (5) change orders per project with a total value of 5% of original contract is quite common in the construction industry on multi-million dollar roadway and utility projects.

Findings:

From a review of the information provided by the City, the number and cost of change orders encountered on City projects is well within commonly accepted industry standards and considered very good.

Recommendations for Change Order Process:

1. Continue to maintain a searchable data base on change order history. This information should include:
   a. Type and size (construction cost)
   b. Date when project was constructed
   c. Contractor and Engineer
   d. Categorize by causation (i.e. design error, inadequate research of underground utilities, undocumented and unforeseeable site conditions, change in project scope, change in construction scheduling, etc.)

2. Continue to examine this database for trends and use in future contract selection/award process.

3. After bids are received, lower the 10% budget contingency used in the City's capital program to 7.5% on future projects to reflect the lower amount used for change orders.

4. Consider the use of a sliding scale of contingencies for change orders where a larger percentage is used for smaller projects and a smaller percentage is used for larger projects.

G. Engineering and Administrative Fees

This study examined the amounts budgeted and paid by the City for project contingency, administrative, and engineering costs which collectively make up a significant share (25%) of the amount budgeted for each project. On $300 million in projects, this represents a significant cost of $75 million.

Currently the City budgets 10% for project contingencies. Typically contingencies are established to provide funding for potential changes in project costs. These changes can occur as projects are more fully scoped and designed, costs of materials and labor increase and as change orders occur. However, the amount needed for project contingencies varies over the course of a project. A larger contingency is needed when projects are first conceived. But as projects develop in design and are bid, a lower contingency is needed.

The City also budgets various amounts for administrative costs related to in-house services such as construction inspections, contract administration, engineering services and printing. From the sample reports provided, this appears to equal 7% of the amount budgeted for each project. A report prepared by the accounting firm of Collier, Johnson and Woods, P.C. dated May 13, 2014 indicated that the multiplier (3.1768) used by the City to charge employees time and costs to projects results in a charge that exceeds the actual costs incurred and made several recommendations for tracking actual costs and adjusting the amounts budgeted for project administrative costs. Current management is tracking actual costs based on timesheets and recovering necessary costs. At this point, the scope of the first phase does not permit closer examination and further recommendation. A thorough analysis of this issue may justify part or all of the additional funding needed to provide the staffing resources required by the Engineering Department.

Engineering costs are typically the cost the City incurs when it hires outside consulting firms to design its projects. There was a significant amount of discussion during the interviews regarding whether or not the fees charged to the city were excessive. The Engineering Department provided summaries of fees paid to consultants on the 2012 and 2014 bond projects for use in this study. Copies of consultant contracts and city agenda information were also provided. This data was reviewed, analyzed and compared to other industry standards.

Findings:

The results are inconclusive and further research is needed to determine if the fees paid on prior bond programs were reasonable or excessive.

Recommendations for Engineering and Administrative fees:

1. After bids are received, lower the 10% budget contingency used in the City's capital program to 7.5% to reflect the lower amounts used for change orders.

2. Implement the recommendations of the Collier, Johnson & Woods report.

3. Conduct a more thorough analysis of the engineering fees paid on past city projects to determine if fees are excessive or in line with industry standards.

H. Accountability

Accountability was one of the City Manager's eight areas of concern (see question #4 in Appendix A – Questions for the Engineering Competitive Review). Specifically it was stated that "There is an impression that there was too much finger pointing when projects go badly". It further asked if there was enough accountability in the department, who was held accountable and can practices be improved.

During the interviews, there were conflicting reports of who caused what problems on two city projects. Some design engineers blamed the contractors. Some contractors blamed the design engineer. Some blamed City staff. Some blamed problems on decisions made by former city staff that have since left. It is not known at this time if this is a frequent occurrence on city projects or an isolated issue. But only two projects (both 2012 bond projects) were mentioned when this topic was discussed. There was not enough time budgeted and information available during this Phase I study to make a final, fair and accurate assessment of this issue with regard to these two projects.

Further study of this topic may be covered during a later Phase II assignment or departmental staff may be able to address this concern. However, from the preliminary information gathered it appears that if there is a lack of accountability it is due to a lack of adequate staff resources. Staff may be too busy solving the day to day problems that arise and don't have enough time to decide who really made what mistakes and hold them appropriately accountable. In some cases the problems that arise can be attributed to a collective series of decisions or events that occurred which are interrelated and cloud the issue of proper accountability.

Findings:

Preliminary information does not adequately determine if there is a lack of accountability in the Engineering Department. It does appear that the turnover in city staff and lack of adequate staff time to fully monitor projects, investigate problems and take appropriate action is a contributing factor. This appears to be a past and present issue.

Recommendations:

1. Engineering Department staff may be better able to answer this concern
2. Defer this topic until adequate staff resources are restored to implement corrective action.

I. Potential for Conflicts of Interest with Augmented Staff and others:

The Engineering Departments significant use of augmented staff has raised questions about the potential for conflicts of interest. As previously mentioned, the Engineering Department utilizes 16 augmented staff at all levels of the department. Over 50% of the Project Managers and Project Engineers are augmented staff. Many of these augmented staff are employed full time by local consulting engineering firms but work a significant portion of their time at the City. Other augmented staff are independent contract staff with no outside firm affiliation.

The question regarding a potential for a conflict of interest mainly centers on the augmented staff that work for the outside consulting engineering firms. These employees work both inside and outside of City Hall. Six of these are registered professional engineers licensed in the State of Texas and are subject to a code of ethics holding them to "the highest standards of honesty and integrity". It should be noted that the Texas Board of Professional Engineers actively and aggressively investigates all complaints of improper behavior by licensed engineers.

The potential for conflicts varies according to the duties given the augmented staff but generally increases at the higher capacity at which the augmented staff serves. The concern is that they may see or do something while working for the City that gives their full time employer a competitive advantage over their competitors. Or they may purposely, to advance their own firm, make some decision or action that is detrimental to one of their competitors. No evidence has been presented or observed that indicates that either of these have taken place.

The Engineering Department is aware of this potential and has created certain processes to guard against any such conflicts. These include the creation of policies and procedures that "build a firewall" around such augmented staff. A firewall is an information barrier that is erected to prevent exchanges or communications that could lead to a conflict of interest. The Engineering Department has executed agreements with the augmented staff that identifies any projects they

are working on outside of City Hall that might be a conflict when they are working inside City Hall and further outlines a plan of action for dealing with such projects. Unfortunately, this firewall forces the Director of Engineering Services or other city staff, whose time is already in short supply, to perform and manage certain tasks that the augmented staff being "firewalled" are not able to do. This reduces to some degree the effectiveness of the augmented staff.

One area of concern was the current department organizational chart lists two senior level positions (Asst. Director) being held by augmented staff from one firm. One serves as the Chief Engineer (Assistant Director for Project Management) and the other serves as the Chief of Construction (Assistant Director of Construction and Surveys). No evidence was discovered that would indicate that either of the individuals holding these positions act in any way other than in the best interest of the City. The Director of Engineering Services has built firewalls around these two individuals to guard against any conflicts. But there is an appearance that you have one firm in charge of all City projects even though total responsibility is vested in the Director of Engineering Services. This may be fine if that is all that firm does. But to the degree that the City contracts with this same firm on future projects could raise questions or concerns about potential conflict of interests or the appearance of one that must be carefully considered. The Engineering Department is aware of this issue and has precluded this firm from participating on future city projects while serving in this current capacity.

Another potential area for a conflict of interest that was discussed involves hiring consulting engineering firms to design city projects that are adjacent to or connected with a private development on which the same engineering firm is also employed. An example of this would be if the City hires the same engineering firm to design a public roadway leading up to a private development. The City could find itself having to resolve a design or construction issue with the developer but having to rely on the same consulting firm to advise the city of the merits of an issue when that consulting firm represents both sides. The consulting firm is required to notify both parties of any potential conflicts in advance, but the City should take note of all such conflicts and consider them in selecting or awarding any contracts.

Another area of concern involves the use of augmented staff to negotiate engineering fee contracts with their competitors. This is occurring due to a shortage of staff resources. There is no indication that augmented staff are involved with negotiating engineering fees with their full time employer. However the use of augmented staff for fee negotiations is not a good idea when it occurs between two competitors.

Another area of concern is the use of augmented staff inspectors that work for one of the local consulting engineering companies. If augmented staff inspectors inspect work designed by their own full time employer there can be a concern that they may not be impartial when deciding if a problem in the field is related to an engineering mistake made by their employer or

is a problem related to construction quality. This is normally not a problem and is common for consulting firms to provide construction inspections as a part of their overall services. However, city staff reported a problem with this issue on two prior projects and does not allow this. Also, if augmented staff inspectors are called to inspect work designed by their competitors there can also be a concern. No evidence was found to indicate that any inspectors acted inappropriately and this is considered to be much less of an issue. However several consulting firms did express concern about this issue with the City's plans to increase the use of augmented staff inspectors for the upcoming surge in construction projects.

There could be other areas of potential conflict of interest but which were not fully reviewed in this study. Other areas could possibly include any "moonlighting" of city staff working for outside contractors or engineers which might affect their decisions. This subject was not part of this study, was not explored in any of the interviews and no mention was made of this by any of the people interviewed. The City has a policy that addresses this issue.

Findings:

1. No evidence of an actual conflict of interest was found

2. The Department's use of augmented staff requires firewalls and forces shifting of work to avoid conflicts.

Recommendations regarding Potential Conflicts of Interest Concerns:

1. Create and fill two Assistant Director positions with full time city staff

2. Discontinue the use of augmented staff for fee negotiations with competitors as soon as sufficient staff resources are provided

3. Hire additional full time city inspectors and limit the use of augmented staff inspectors to peak work load situations

4. Consider sourcing augmented inspectors from a firm not engaged in designing any projects for the City

5. Continue to ensure that all augmented staff have firewall agreements

J. Reputation of the Engineering Department:

The Engineering Department is widely viewed by those inside and outside of City Hall as being a department that has good leadership but is tremendously overloaded and understaffed to the point that they cannot get all of their work done. This overshadows all other opinions about the department. The following is a recap of frequent comments made during the interviews which best illustrates the reputation of the Engineering Department:

1. Good people trying to do an impossible job
2. Things have improved in the last six to twelve months
3. On the verge of collapse if one or two key people leave
4. Just need more people
5. Turnover is killing them
6. The City doesn't pay enough to hire anyone
7. Project Managers are producing but are overloaded and totally stressed out.
8. Not a desirable work environment
9. People are afraid to make decisions
10. Takes forever to get a decision made
11. People aren't recognized or rewarded for their hard work
12. Constantly interrupted by City Council requests
13. Some degree of conflict exists between Engineering and Operating departments
14. Need more construction experience

Findings:

The Engineering Department does not have a bad reputation. Their reputation is that they are trying their best to get the job done, but don't have the necessary resources to do it properly. Despite these shortages, current management has made numerous improvements in the last twelve months to improve their processes and hire new staff.

Recommendations for Engineering Department's Reputation:

1. The Department must be provided the necessary staff resources

2. Turnover must be minimized to achieve a stable workforce

3. Use of augmented staff should be more strategically planned to accommodate peak workload periods. Consider a longer term (i.e. three to five year) contract arrangement to maximize efficiency and effectiveness.

4. Corporate knowledge must be rebuilt by acquiring and maintaining a stable workforce.

5. Engineering and Operating Departments must be partners

6. Staff should be encouraged and supported in making timely decisions

7. Professional growth should be supported and encouraged by city personnel and compensation policies.

K. <u>Expectations – Management and Understanding:</u>

A better understanding and approach to managing expectations placed on the Engineering Department is needed. The public's expectation that a project will be completed within budget and within a reasonable time frame after bonds are approved and the City Council approves a budget is entirely understandable and reasonable. Therefore this fact must be considered in how bond programs and budgets are formulated and presented. Information on overall progress must also be properly conveyed to ensure that the public is well informed.

Projects must be better scoped, scheduled and cost estimated before they are presented to the public for approval (i.e. bond programs) or to the City Council for budget approval in order to ensure accuracy. The Engineering Department should continue its current efforts to do this. Ideally all projects should be fully permitted, designed and "shovel ready" so that projects could move directly into the construction phase after voter or budget approval. But this would require that the City prioritize future projects and budget funds for project development (i.e. permitting, land acquisition and design) well in advance of voter or budget approval because of the massive number of needed infrastructure projects. Also project development must be "current" as construction costs can become out of date and infrastructure conditions can change over time. Alternatively and at a minimum, projects should be preliminarily designed (i.e. 30%) or a Preliminary Engineering Report prepared so that all major project features and costs are known and permitting and land acquisition needs are identified before projects are presented for voter or budget approval.

There should also be consideration given to the City's capacity to execute a bond program when formulated. Large changes in the size and timing of bond programs complicates the process of executing projects and places great strains on staff resources. The City should endeavor to have regular (i.e. every two to three years) and manageable sized bond programs to minimize the impact this has on staff resource planning. For example, a $50 million bond program every two years would be much more efficiently executed than a $125 million bond program every five years. This could help minimize the perception that projects take too long to complete.

Information on project status must also be properly conveyed so that the public can not only see how their particular projects of interest are progressing but also see the progress being made on the overall program of bond and budgeted projects. Currently, staff provides regular reports listing the status of each project. These reports could be enhanced by providing total program information using basic metrics such as number of projects designed, projects bid, projects constructed and dollars spent over time. Staff should be encouraged and supported to seek out and give presentations at community gatherings and various organization meetings (i.e. civic club lunch programs) to convey program progress and answer questions. Staff is currently working on this issue.

Recommendations regarding Managing Expectations:

1. Continue the process of hiring one or two engineering firms to properly define, scope and cost projects before A/E selection and fee negotiation. This will give a more reasonable basis on which to negotiate fees and avoid some of the Bond 2014 fee problems.

2. Or continue the alternative process of making tentative A/E selection and have them prepare project scope and cost estimate on an hourly not to exceed basis before negotiating final design fees.

3. Projects should be at least 30% (preferably 100%) designed before being presented for final funding approval (bond or budget approval). Alternatively, a Preliminary Engineering Report can be prepared.

4. Large variations in bond program timing and size should be minimized.

5. Recommend City Council adopt a policy on how future bond programs are formulated and prepared. For example, if a $10 million roadway project is "expected" to be completed within two years after voter approval, then the project must be fully designed, permitted and right of way acquired (i.e. "shovel ready") before the project is presented to the voters. This advance work can take up to two years to complete. Further recommend City staff implement processes to execute this policy.

6. Progress reports should include total program progress as well as individual project progress over time using basic summary metrics

7. Provide additional staff resources so that staff can give more programs at various civic groups and organization meetings

6. Conclusions – Responses to City Manager's Questions

The majority of these concerns were previously discussed in Section 5 above. A brief summary of the answers to these questions and areas of concern are noted below in ***bold italics*** with referral to prior report sections where these issues are more fully discussed:

Concern #1:	There is an impression that works gets bottlenecked in Engineering, that projects are not completed in a timely fashion, and that work generally moves too slowly.
Question #1.a:	Is that true?
Answer #1.a:	***Not entirely, the 2014 bond projects appear to be moving faster than the 2012 bond projects***
Question #1.b:	If it is true, what is causing the problem?
Answer #1.b:	***Inadequate staff resources, excessive turnover, loss of corporate knowledge and slow city processes (See Section 5.A-K)***
Question #1.c:	If it is true, how can it be fixed?
Answer #1.c:	***Make salaries competitive, acquire adequate staffing, minimize turnover, continue efforts to speed up all (internal and external) city processes for contract negotiations, reviews and approvals (See Section 5.A-K)***

Concern #2:	Because of the impressions that work moves too slowly, there are questions about whether the department has the right processes to get the work done correctly.
Question #2.a:	Does the department have effective processes in place?
Answer #2.a:	***Yes. (See Section 5.A-K)***
Question #2.b:	Can they be improved? How?
Answer #2.b:	***Yes, (See Section 5.A-K)***

Concern #3:	Because of the impression that work moves too slowly, there is a question about whether staff is competent to do the work right and whether there is enough staff to do the volume of work assigned to the department.
Question #3.a:	Do we have qualified and competent staff?

Answer #3.a: ***The staff generally as a group appears qualified and competent. However, Phase I Study did not evaluate the performance of individual staff members.***

Question #3.b: Do we have enough staff?

Answer #3.b: ***No. There is a tremendous shortage of city staff and the use of augmented staff is a short term stop gap solution that does not provide the long term stability on which the department can grow and operate most effectively. (See Section 5.A-K)***

Concern #4: There is an impression that we have too many change orders on projects?

Question #4.a: Do we have too many change orders?

Answer #4.a: ***No, the overall number and cost for change orders are very reasonable and well within industry standards (See Section 5.F - Findings)***

Question #4.b: If so, how can they be better managed?

Answer #4.b: ***Change order process can be improved (See Section 5.F - Recommendations)***

Concern #5: There is an impression that there is too much finger-pointing when projects go badly.

Question #5.a: Is there enough accountability in the department?

Answer #5.a: ***Results are inconclusive, more investigation is needed (See Section 5.H)***

Question #5.b: Does the department take responsibility when it should?

Answer #5.b: ***Results are inconclusive, more investigation is needed (See Section 5.H)***

Question #5.c: Are contractors held appropriately accountable?

Answer #5.c: ***Results are inconclusive, more investigation is needed (See Section 5.H)***

Question #5.d: Are design engineers held appropriately accountable?

Answer #5.d: ***Results are inconclusive, more investigation is needed (See Section 5.H)***

Question #5.e: How can these practices be improved?

Answer #5.e: ***More investigation is needed (See Section 5.H)***

Concern #6:	There is an impression that there are conflicts of interest within the department. An example is an augmented staff consultant, working within the department and still competing for contracts issued by the department.
Question #6.a:	Do we have this or other conflicts of interest in the department?
Answer #6.a:	***No evidence of an actual conflict of interest was found***
Question #6.b:	If so, how do we correct the problem?
Answer #6.b:	(***See Section 5.I)***
Question #6.c:	If not, how do we correct the false impression?
Answer #6.c:	***Make it clear to all that the two top augmented staff members are prohibited from competing on any future contracts while serving in their current position***

Concern #7:	There is an impression that projects cost too much and that engineering and administrative costs of projects are too high.
Question #7.a:	Are the impressions true?
Answer #7.a:	***Generally not. Some records on engineering costs were found to be incorrect which has created a wrong impression.*** ***See Section 5.G-Findings and Recommendations***
Question #7.b:	If so, how do we fix it?
Answer #7.b:	***(See Section 5.G- Findings and Recommendations)***
Question #7.c:	If not, how do we correct the false impression?
Answer #7.c:	***(See Section 5.G – Findings and Recommendations)***

Concern #8:	There is an impression that the department has a bad reputation.
Question #8.a:	Does the department have a bad reputation?
Answer #8.a:	***The Department does not have a bad reputation. It has a reputation of being tremendously overloaded and understaffed.***

Question #8.b: If so, how do we fix it?
Answer #8.b: ***(See Section 5.J -Findings and Recommendations)***

Question #8.c: If not, how do we correct the false impression?
Answer #8.c: ***(See Section 5.J -Findings and Recommendations)***

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7. Areas Needing Further Research

As mentioned in the Introduction, a phased approach was agreed upon as being necessary since it was clear that many areas could be fairly evaluated in a relatively short time frame while it was not clear (at the outset of negotiations) if other areas would take more time and effort. Any areas needing further investigation were to be identified during the first phase. The decision to do any further study (i.e. Phase II) would be made by the City after a review of the Phase I report.

The following areas are considered incomplete and need further evaluation by city staff or by a Phase II study:

1. Competency of individual staff members

2. Evaluation of Engineering fees charged by engineering consulting firms

3. Accountability issues regarding staff, consulting engineers and contractors

Appendix A – Questions for the Engineering Competitive Review

The following questions were provided by Ron Olson, the City Manager of Corpus Christi:

1. There is an impression that works gets bottlenecked in Engineering, that projects are not completed in a timely fashion, and that work generally moves too slowly.
   a. Is that true?
   b. If it is true, what is causing the problem?
   c. If it is true, how can it be fixed?

2. Because of the impressions that work moves too slowly, there are questions about whether the department has the right processes to get the work done correctly.
   a. Does the department have effective processes in place?
   b. Can they be improved? How?

3. Because of the impression that work moves too slowly, there is a question about whether staff is competent to do the work right and whether there is enough staff to do the volume of work assigned to the department.
   a. Do we have qualified and competent staff?
   b. Do we have enough staff?

4. There is an impression that we have too many change orders on projects?
   a. Do we have too many change orders?
   b. If so, how can they be better managed?

5. There is an impression that there is too much finger-pointing when projects go badly.
   a. Is there enough accountability in the department?
   b. Does the department take responsibility when it should?
   c. Are contractors held appropriately accountable?
   d. Are design engineers held appropriately accountable?
   e. How can these practices be improved?

6. There is an impression that there are conflicts of interest within the department. An example is an augment staff consultant, working within the department and still competing for contracts issued by the department.
   a. Do we have this or other conflicts of interest in the department?
   b. If so, how do we correct the problem?
   c. If not, how do we correct the false impression?

7. There is an impression that projects cost too much and that engineering and administrative costs of projects are too high.
    a. Are the impressions true?
    b. If so, how do we fix it?
    c. If not, how do we correct the false impression?

8. There is an impression that the department has a bad reputation.
    a. Does the department have a bad reputation?
    b. If so, how do we fix it?
    c. If not, how do we correct the false impression?

Appendix B – Information Provided by the City

1. Organizational Baseline Audit - 12/12/13
2. Capital Program Presentation to City Manager – 12/4/14
3. Capital Program Presentation to City Council – 2/17/15
4. Engineering Services – A Year in Review – 12/17/15
5. Peer review by the American Society of Civil Engineers
6. Engineering Services Department Assessment Data (3 ring binder)
7. Engineering Services Department – Policies and Procedures
8. 2015-2016 Adopted Capital Budget and Capital Improvement Planning Guide
9. 2012 and 2014 bond program projects
10. Street Committee Reports
11. Organizational Charts (with current positions, vacant positions, augmented staff, etc.)
12. Project Schedule charts
13. Staff salaries
14. Retirement Eligibility in the Engineering dept.
15. Consulting Engineering contracts (sampling)
16. Change Order history
17. Forms used for Contractor Pay Requests, A/E Consultant Performance, etc.

Appendix C - ENGINEERING SERVICES – PROBLEM IDENTIFICATION /RESOLUTION REPORT*

*Source - City of Corpus Christi Engineering Department