City of Toledo

LINCOLN COUNTY, OREGON

Building Facilities Plan

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APPENDICES

Appendix A: Supplemental Supporting Material

Section 1

1.0 Executive Summary

1.1. *Background*

The City of Toledo is located approximately 10 miles east of the City of Newport just off of Oregon State Highway 20. The City provides a full array of public utilities and services to approximately 3,500 residents within the City Limits. These utilities and services include:

- Fire protection and regional training
- Police, safety and dispatch
- Potable water service
- Wastewater services
- Library
- Transportation, roads, and pedestrian services
- City parks and recreational opportunities
- City swimming pool
- City government and administration
- Grounds maintenance
- Stormwater and drainage

To provide these services, the City operates out of a number of locations, buildings and structures throughout the community. These city buildings vary in style, age, condition, and function.

The purpose of this planning effort is to provide an evaluation of each of the City's critical buildings, identify deficiencies and needed improvements, and provide the City with recommendations and a capital improvement plan for each building. The City should then seek funding and follow a prioritized plan for implementing improvements over the planning period (20 years = 2012 to 2032).

The buildings that were studied as part of this planning effort included the following (in no particular order of importance):

- City Hall
- The Police Station
- The Fire Station
- The City Library
- The City Pool Facility
- Public Works Shop
- The Water Treatment Plant Buildings
- The Sewer Treatment Plant Buildings

1.2. *Summary of Inspections and Repair Alternatives of Existing Facilities*

A comprehensive on-site inspection was completed for each building over a two day period (August 31st to September 1st 2011). During this inspection process, a number of professionals with specific expertise were gathered together to inspect, evaluate, and review the condition of the buildings. They identified

deficiencies and worked with the engineering team to develop alternatives to address the deficiencies and cost estimates for the potential improvements.

The inspection team included the following professionals:

- A general civil engineer (Civil West PE) – focus on civil issues with overlap into many other areas including traffic, parking, site issues, drainage, wastewater, potable water, etc.
- A mechanical engineer (Civil West PE) – focus on HVAC and environmental issues, plumbing, mechanical systems, etc.
- An electrical engineer (Civil West) – focus on electrical service, code issues, condition of electrical equipment, on-site power needs (backup), communications, etc.
- Structural engineer (ZCS SE & PE) – focus on structural deficiencies, seismic deficiencies, etc.
- Code specialist (ZCS) – focus on fire and life safety, ADA issues, building code deficiencies, etc.
- Contractor (Bill Leitner) – focus on constructability issues, cost assistance, repair issues, etc.

Upon completion of the detailed inspection of each location, the individual observations and opinions of the experts were combined together and reported for each site. A summary of the inspection, condition, noted deficiencies, and repair alternatives for each site are provided in Table 1.2 below. Detailed cost estimates and project descriptions can be found in Section 4 of this Plan.

Table 1.2 Summary of City Facilities, Deficiencies and Rehabilitation Alternatives

Summary of Facility	Deficiencies found during Inspection	Rehabilitation Alternatives Considered
City Hall This historic facility is used to house City offices and the City Council chambers. It was constructed long before modern building codes and has undergone multiple renovations and additions. The structure has significant deficiencies due to its age and condition.	• Structural irregularities and discontinuities may result in a building collapse during a seismic event. • Extensive water damage and rot was observed. • The HVAC, plumbing, and electrical systems are out of building code compliance and in need of replacement. • Poor lighting where it has not yet been updated. • The facility has no fire alarm and the egress routes are confusing. • The pedestrian access does not meet federal ADA and Oregon Structural codes. • Foliage around the structure is contributing to exterior damage. • Parking is poor with no available expansion room. • Water enters in under council chamber doors. • Safety and security issues exist at the front lobby and council chambers. • Inadequate records storage facilities. • Council chambers sound system performs poorly. • Council chambers need modern technology upgrades for meetings with	1. Address high priority maintenance and safety concerns only. 2. Complete a full rehabilitation and seismic analysis. The facility would be required to meet all modern building codes. 3. Demolish the structure and rebuild on current site 4. Relocate City Hall to a new site combining City offices and Police Station. 5. Relocate City Hall to an available suitable building facility. 6. Relocate City Hall and the Police Station to an available suitable building facility in the community.

	lighting, audio-visual technology, internet and information, and security considerations. • Windows throughout the building are non-functional, leaky, or broken. • Cracks and fissures in the walls allow moisture to penetrate the building causing paint to blister on the inside of the building. • Heating and air conditioning is very deficient throughout the building. • Some portions of the building exhibited mold and potentially dangerous environmental conditions. • IT resources are generally inadequate for modern office requirements. • The building has generally outlived its useful life.	
Summary of Facility	**Deficiencies found during Inspection**	**Rehabilitation Alternatives Considered**
Police Station This facility is located in a repurposed bank building on old Highway 20. It houses the police and 911 call center offices as well as the radio communications center. There are two structures on site; the main office building and a small generator/lockup storage shed.	• Exterior rot was found on beam-ends and the siding of both buildings. • Interior lighting is poorly arranged and does not function properly for occupants. • The HVAC system is unbalanced, unbraced, and is poorly ducted. • There is insufficient working space for the existing personnel. • A further evaluation is necessary to determine if the facility meets or exceeds OSSC requirements for an essential facility. • The building appears to be settling in poor soil conditions causing cracks an movement in the siding and exterior features. • The building is located squarely in a flood plain. This is not acceptable for a critical facility. • The generator shed access is dangerous and the attached bike shed is rotten. • Many window seals are broken. • Lack of second exit from second floor. • There is inadequate security features for the facility considering it is open 24 hours per day and the potential for a lobby breach or incursion. • Poor parking layout makes improper use of property.	1. Fully rehabilitate existing structure, and add additional building space. 2. Fully rehabilitate structure without additional building space. 3. Relocate to a new facility combining Police and City Hall functions. 4. Relocate police operations to a new site or existing building elsewhere in the community combined with our without City Hall.

	• Site not really fit for expansion or upgrade due to the flood plain issue. • Drainage facilities all plugged and choked with debris. • An outdoor pond and water feature causing rot to occur in siding.	
Summary of Facility	**Deficiencies found during Inspection**	**Rehabilitation Alternatives Considered**
Fire Station The Fire Station houses the local fire department equipment, personnel, and houses the backup 911 emergency call system. The site includes a single structure housing, offices and equipment bay and garage for trucks and equipment. The facility was recently constructed in 2006.	• No cooling was installed to the electrical communications room. This makes the room very prone to overheating. • There is no ceiling insulation which requires heating a larger building envelope. • Nearby large trees have caused damage to the roof during storms. • The primary entrance sidewalk slopes into the door causing water damage in the building near the entry.	1. Address the identified deficiencies through a maintenance project.
Summary of Facility	**Deficiencies found during Inspection**	**Rehabilitation Alternatives Considered**
City Library The library provides books and electronic information access to the community. It is a two story structure with a meeting room on the lower floor. The library is located in the same complex as Arcadia Park and the City Pool.	• Parking is constricted by trees and landscaping islands significantly limiting the accessibility, maneuverability and effectiveness of the parking area. • Sidewalks have been lifted and broken by tree roots and ground movement. • Minor deterioration was found in the electrical system along with insufficient egress lighting. • The building exterior has damage to the siding, gutters, and support beams. • ADA parking and interior configuration violations. • A newly installed fire alarm panel has not been tested. Building has a poor egress plan and fire protection deficiencies. • A building addition has removed essential seismic resisting systems in the original structure. • There is a history of vandalism and mischief in the area. There is inadequate lighting and security equipment.	1. Address the identified deficiencies through a maintenance project. 2. Build a new library facility. 3. Undertake a major remodel.

	• Some drainage and water handling deficiencies around building. • The large trees have damaged sidewalks and become a maintenance problem for the roof, downspouts, etc.	
Summary of Facility	**Deficiencies found during Inspection**	**Rehabilitation Alternatives Considered**
City Pool The pool has been in place for well over 50 years. Originally an outdoor pool, it was later converted to an indoor facility. The building has serious structural and corrosion related damages. The site includes the pool building, changing rooms, a storage shed and a pump/filter shed.	• Large cracks were observed in the pool bottom. • The CMU walls supporting the roof are cracked and seismically unbraced. • The roof needs replaced and lacks seismic restraints. • Pumps and controls to the filter system need replaced. • The electrical system is corroded and outdated. • The pool has no ventilation as the existing system has not functioned for years. • The siding, trim, gutters and pool pump/filter shed need extensive repairs. • Additional bathroom space and renovations are needed. • Lack of recirculation drains violate state codes. • A history of vandalism and break-ins suggests the need for increased security, lighting, cameras, etc. • Rotted columns required recent emergency repairs to prevent a potential collapse • Changing rooms require remodeling and updates and a family changing room to be added. • Poor parking availability. • Inadequate seating area for viewing meets/swimming events.	1. Rehabilitate and seismically retrofit the existing structure with major remodeling needs. 2. Convert the facility to an outdoor pool. The existing roof structure would be removed and the remaining buildings (changing rooms) rehabilitated. 3. Construct a new pool facility at the present location. 4. Construct a new pool facility at a new site. 5. Undertake critical maintenance activities to extend the useful life of the facility.
Summary of Facility	**Deficiencies found during Inspection**	**Rehabilitation Alternatives Considered**
Public Works Shops The shop complex is a relatively modern facility used for maintenance and storage of the Public Works department equipment. The facility consists of two	• There is inadequate storage and working space. • Heating systems are undersized or non-operational. • Storage racks and stairs are not properly anchored to structure to resist seismic forces. • Disability access on site is poor. • Water is entering buildings due to poor	1. Address the identified deficiencies through a maintenance project.

buildings, a main shop and a secondary storage building.	site grading. • There is some degradation of the metal siding on the buildings. • Fire protection door hardware is missing. • Site is located in the floodplain.	
Summary of Facility	**Deficiencies found during Inspection**	**Rehabilitation Alternatives Considered**
Wastewater Treatment Plant (WWTP) The WWTP facility treats the City's sewage prior to discharge into the Yaquina River. It was constructed in 1954, with the last major update completed in 2000. A separate study (WWTP Facilities Plan, Civil West, 2012) will evaluate the processes and operation of the plant. This study evaluates three structures; the control building, blower building and process building.	• Seismic detailing and attachment of roof to wall is missing. • Catwalks have deterioration and non-galvanized bolts are corroding. • Minor non-structural maintenance is needed at the control building. • The control building roof needs replaced. • Caulk and paint are missing on building exterior. • There is little available parking at the main entrance. • Heater and controls in chemical room is positioned improperly. • Older electrical conduit outside the plant is corroding. • Some of the catwalks have degraded and require maintenance and code upgrades.	1. Address the identified deficiencies through a maintenance project.

1.3. *Summary of Recommended Improvements*

Table 1.3 summarizes the estimated cost and recommendations for each facility. Alternative repair option costs are presented when appropriate.

Table 1.3 Summary of Recommended Improvement to City Facilities

Facility	Recommended Improvements	Estimated Cost
City Hall Alternative 1	• Repair unsafe and critical facilities and perform repairs to vital systems.	$518,900.00
Alternative 2	• Perform an evaluation and rehabilitation to meet OSSC requirements. • Rebuild Electrical system, HVAC system, and install a new fire alarm system. • Perform Extensive repairs to building roof and exterior. • Rebuild damaged upstairs portion above city council chambers. • Install new plumbing fixtures. • Reconfigure building egress to meet ADA and fire codes. • Add parking to accommodate 20 more	

	parking spaces.	*$2.3-million to $3.2-million*
Alternative 3	• Demolish and rebuild existing structure with a new one.	$2,820,950.00
Alternative 4	• Relocate City Hall and combine with Police Station at new site.	$4,859,400.00
Alternative 5	• Relocate City Hall to an available suitable building facility.	$1,899,400.00
Alternative 6	• Relocate City Hall and combine with Police Station an available suitable building facility. • ***If this alternative is determined to not be feasible, we recommend undertaking Alternative 1 to complete critical maintenance on the facility.***	***Our Recommendation*** **$3,022,600.00**
Facility	**Recommended Improvements**	**Estimated Cost**
Police Station	• Evaluate and rehabilitate the structure to meet OSSC requirements for an essential facility. • Seismically brace mechanical equipment. • Perform a full lighting retrofit. • Upgrade electrical service size to 400A. • Perform an HVAC analysis and reconfigure heating/cooling system inside building. • Replace damaged windows and add safety glazing to building entrance. • Rebuild generator/bike shed for safer access. • Provide safe fire exit for upstairs personnel. • Reconfigure building to meet ADA accessibility codes. • Construct an addition to facility to house additional personnel.	$839,500.00
Alternative 1		
Alternative 2	• Do items in above list but not add additional space or 400A electrical service.	$584,200.00
Alternative 3	• Move facility to a new site and combine with City Hall. • ***If this alternative is determined to not be feasible, we recommend the completion of Alternative No. 2 to complete critical maintenance on the facility.***	***Our Recommendation*** **$3,022,600 (Shared Cost with City Hall Project)**
Fire Station	• Minor drainage and ventilation, painting and eventual roofing improvements recommended. • Add insulation to building ceilings to reduce heating loads.	**$72,750.00**
City Library	• Complete seismic rehabilitation of improper	**$390,950.00**

	addition and missing seismic ties in building. • Improve site drainage and realign roof downspouts. • Replace the controls to the heating system. • Add additional lighting to building and replace damaged electrical circuits. • Test new fire alarm and add any necessary lighting and sensors. • Modify the parking lot, repair sidewalks and improve disability access to the site.	
Facility	**Recommended Improvements**	**Estimated Cost**
City Pool Alternative 1	• Evaluate and rehabilitate the attachment of walls to the roof structure. • Perform crack mitigation repairs to the CMU wall in the pool structure. • Replace the roof, gutters, siding and repaint the exterior. • Replace or repair pump/filter shed. • Build an addition to house a new family bathroom. • Reconfigure the existing bathrooms to meet ADA compliance. • Repaint the interior walls. • Resurface the pool and all the concrete flooring in the facility and connect overflow gutters to code. • Install a new automated ventilation system. • Rebuild the electrical system to modern standards. • Reconfigure the parking lot for better handicapped access.	$2,360,525.00
Alternative 2	• Complete the above modifications but only to the bathrooms, shed and offices. • Remove the pool roof structure, convert pool into an outdoor pool.	$1,679,000.00
Alternative 3A	• Construct a new outdoor pool facility at a new site.	$2,964,000.00
Alternative 3B	• Construct a new indoor pool facility at a new site. • ***If this alternative is determined to not be feasible, we recommend the undertaking of Alternative No.4 to complete critical maintenance items.***	***Our Recommendation*** **$4,680,000.00**
Alternative 4	• Undertake critical maintenance projects to extend the useful life of the facility.	$521,925.00

Facility	Recommended Improvements	Estimated Cost
Public Works Shops	• Address weather exposure damage of exterior beams & columns. • Seismically restrain storage equipment • Repair and upgrade HVAC systems. • Install new gate and lighting at entrance. • Install a basic fire alarm system. • Modify site for ADA code compliance. • Expand shop and covered area to house outdoor equipment.	**$302,350.00**
Facility	**Recommended Improvements**	**Estimated Cost**
Water Treatment Plant	• Perform a seismic evaluation and rehabilitation to meet OSSC requirements for an essential facility. • Make repairs to gutters, roof and siding. • Scrape and repaint both buildings. • Replace the control room floor. • Re-assess the control room lighting and replace corroded electrical conduit. • Complete general maintenance including minor painting, heating, fire protection and site landscaping.	**$408,752.00**
Facility	**Recommended Improvements**	**Estimated Cost**
Wastewater Treatment Plant	• Minor seismic rehabilitation efforts are recommended. • Ungalvanized anchors used on catwalks and outdoor structures must be replaced. • Storage racks need braced for safety. • Caulk and paint exterior areas, especially those left unpainted. • Replace outdoor corroded conduit and non-watertight electrical fittings. • Perform minor maintenance and landscaping work. • Replace control building roof.	**$245,800.00**

1.4. *Summary of Capital Improvement Plan*

Table 1.4 outlines the Capital Improvement Plan (CIP), by priority, as established in this study.

Table 1.4 Recommended CIP by Facility and Urgency

Priority	Site and Description
1	**City Hall –Alternative 6 New Site-** The City Hall building is, by far, the oldest and most deficient structure. While it has historical significant and value to the City, the structure and other components have outlived their useful life by decades. The repairs required to this building are significant and the parking situation cannot be solved affordably. The City should move its offices to a new location. To maintain historic value, perhaps another public use for the current structure could be found and, as a historical structure, a non-profit agency may find success in funding its rehabilitation. Our recommendation is

	to purchase the available suitable building facility, remodel it and expand it to include new City Hall facilities combined with a new Police Station. **Estimated Cost: $3.0-million.** It should be noted that, depending on the existing building that is utilized, this cost could vary greatly and be significantly less than this estimate. However, we have planned for a wider range of contingency due to the unknowns associated with this option. Alternatively, if a major capital project is deemed not feasible, then critical maintenance efforts should be undertaken at the existing building. **Estimated Cost: $519,000.**
2	**City Pool Alternative 3B New Indoor Pool–** The City Pool has significant structural, electrical, and mechanical deficiencies requiring repair. We did not find rehabilitation of the existing pool to be a viable option. Therefore, it is recommended that the City construct a new pool facility at a new location to provide adequate space for parking, spectation, and multiple uses. **Estimated Cost: $4.7-million.** Alternatively, if a major capital investment in the pool is not feasible, critical maintenance projects should be undertaken to extend the useful life of the facility. **Estimated Cost: $522,000**
3	**The Police Station Alternative 3 New Site -** While the police and 911 Center is relatively modern and remodeled, the space is crowded and the configuration of the structure needs significant changes. The facility is also located in a flood plain. Therefore, the CIP recommendation for the police facilities is to combine them with a new City Hall facility to be located at the available suitable building facility. **Estimated Cost: Included in the $3.1-million estimate for City Hall** Alternatively, if major capital improvements are not feasible, critical maintenance should be undertaken at the existing building. **Estimated Cost: $584,000**
4	**The City Library-** The library has structural, mechanical and minor problems with other systems, such as ADA compliance. The library can be repaired and brought up to current requirements affordably. **Estimated Cost: $391,000**
5	**The Water Treatment Plant-** WTP requires some structural repairs and updates to other parts of the plant. For this report we are only focusing on the areas not directly associated with treatment conditions. Fresh water is vital to the community and we highly recommend an essential facility seismic analysis along with a variety of maintenance projects. **Estimated Cost: $410,000**
6	**The City Shops –** The shops have some requirements for extra storage, poor mechanical problems and some minor site repairs. The site itself will work for the City, but some planning needs put into the sizing of the facility and the amount of storage available. A number of maintenance and improvement projects are recommended to upgrade the shop facilities. **Estimated Cost: $300,000**
7	**The Wastewater Treatment plant-** WWTP has some deferred maintenance and safety concerns to avoid reactive repairs. A number of maintenance and upgrade projects are recommended for the plant. **Estimated Cost: $245,000**
8	**The Fire Hall-** The new fire station is in excellent condition. A few minor repairs can be accomplished and serve the City for a long time. **Estimated Cost: $73,000.**
Total	**Total Estimated CIP Project Costs: ~$9.12-million if Cap. Improvement Projects are undertaken as recommended.** **If maintenance projects are undertaken: ~$3.04 million**

Priorities 1-3 should be considered the highest priority and should be undertaken within the next 5 years as the City is able to fund the projects. If the suitable building facility is available now, the City should move quickly to investigate the building further to confirm its viability as a potential home for City business and seek to secure the property if it is found to be appropriate and without other liabilities or problems.

The remaining projects should be undertaken over the following 5-10 years as funding is available. Smaller projects, such as the Fire Hall maintenance upgrades should be undertaken sooner if funding is available.

A more specific potential schedule and Gantt chart is provided in Section 5 of this Plan. However, the ability of the City to undertake projects will be largely controlled by available funding and having the political will to make the decisions to invest in the City buildings.

This CIP represents a significant investment for the City of Toledo. However, deferred maintenance and inflation will increase the project costs over time.

2.0 Introduction, Background and Need

Section 2

2.1. *Background*

The City of Toledo is a rural community of approximately 3,500 persons located just off Oregon Highway 20 approximately 10 miles east of the City of Newport. The City has, for some time, been primarily a mill town with a large and still active paper mill (GP) taking up much of the industrial land in the community. It is also home to the Port of Toledo, which provides moorage and repair facilities. The City has a long history as a boat building center with a still active manufacturing base.

The City provides a full array of public utilities and services to the residents in the community. This includes the following:

- Fire protection and regional training
- Police, safety and dispatch
- Potable water service
- Wastewater services
- Library
- Transportation, roads, and pedestrian services
- City parks and recreational opportunities
- City swimming pool
- City government and administration
- Grounds maintenance
- Stormwater and drainage

The City owns and operates out of a number of buildings and facilities in order to provide these services and departments to the community. The buildings vary by location, age, style, condition, and in many other ways.

Like most communities, the City has tried to maintain their building facilities with limited funds. Quite often, improvements have been based upon a reaction to need or a problem rather than a planned or orchestrated maintenance plan for the structures. Today, many of the City's buildings are in need of upgrades and others will require improvements during the planning period.

2.2. *Need for This Planning Effort*

The City desires to have a plan in place that allows them to be proactive regarding maintenance and upgrades to City buildings rather than reactive. The need for this planning effort is to provide the City with the planning information, recommended projects, budgets, schedules, priority ratings, and other planning criteria needed to facilitate a proactive building capital improvement plan.

Like water systems, sewer systems, and other public infrastructure, the City's buildings represent a significant investment and assets. As such, the City should actively seek to maintain and upgrade these facilities to preserve the assets for the public's use and for the continued operation of the city services.

This planning effort has been authorized by the City of Toledo for the purposes stated above.

2.3. *Report Organization*

The following sections comprise this City of Toledo Building Facilities Plan as presently constituted:

Section 1 – Executive Summary. This section provides a brief overview and summary of the Building Facilities Plan Report and is intended to provide the reader with the important facts and findings contained in the overall plan.

Section 2 – Introduction, Background and Need. This section provides information on the background of the issues and describes the need for the report so that readers understand why this report was necessary.

Section 3 – Summary of Inspections and Building Deficiencies. This section includes a detailed summary of the building inspections along with the deficiencies and issues that were discovered. Other evaluations will be included such as code issues, growth and functionality issues, etc.

Section 4 – Evaluations and Improvement Alternatives. This section will include review of each property and a discussion of potential alternatives that could be considered to address the deficiencies that have been identified at each location. Costs will be developed for those alternatives that are considered to be viable.

Section 5 – Recommendations and Capital Improvement Plan. This section provides specific recommendations for each property selected from the alternatives developed in Section 4. Projects will be grouped into priority categories and organized into a capital improvement plan. A recommended schedule for undertaking improvements is also provided.

Appendix. The Appendix includes information that is referenced in this study but is not included in the referenced planning documents.

3.0 Summary of Inspections and Building Deficiencies

Section 3

3.1. Summary of Inspection Process and Participants

To identify deficiencies, improvement needs, condition, and other qualities of the existing buildings, a detailed inspection effort was planned utilizing a wide array of individuals with specific talents and perspectives. Inspections were planned and undertaken over two days from August 31st to September 1st 2011.

Specific professionals were identified and included in the inspection process to put focus on certain aspects of each building. A list of those who participated in the inspection process is provided in the table below:

Area of Expertise	Focus of the experts interests
Public Works Lead	The lead public works staffer from the City previously had building maintenance responsibility and has years of experiences with all of the City buildings. He also has insight into City maintenance plans, needs, and building use.
General Civil Engineer	We included a general civil engineer on the inspection team to consider such things as traffic issues, parking, site issues, drainage, erosion, layouts, and other general civil engineering issues. The general civil engineer will also be responsible to pull all of the expert opinions and insights together into a cohesive and clear inspection effort.
Mechanical Engineer	The mechanical engineer will focus on the mechanical aspects of each facility. This will include such topics as plumbing, heating, air conditioning, environmental systems, water facilities, fire protection, pumps, boilers, valves, and other related facilities. The mechanical will collaborate with other professionals on some topics that include multiple areas of expertise.
Electrical Engineer	The electrical engineer will have responsibility for reviewing electrical and communication issues for each facility. This will include an inspection of the services and power supplies, wiring issues, panels, on-site power generation capabilities, phone, internet, and data systems, lighting, and related areas.
Structural Engineer	The structural engineer(s) will have responsibility to evaluate the structural integrity of each building including individual components of some buildings. This will include an evaluation of seismic issues, cracking and existing damage, movement, potential foundation (geotechnical) issues, loading, structural codes, and other related issues.
Codes Specialist	The codes specialist will consider a number of public building codes issues and complete an evaluation and commentary of potential code violation issues. This will not be from an enforcement perspective, but rather, from a notification perspective. Codes issues will consider three main areas: fire and life safety, ADA compliance, and structural issues. The codes specialist will provide insight on what issues and activities will initiate required improvements and what will constitute recommendations only.
Building Contractor	To round out our inspection team, we have included a general construction contractor to weigh in on constructability issues, condition, costs, and construction complications that the engineering team needs to be aware of. While it is valuable to have a team of engineers, having a contractor who is versed in the hands-on improvements will provide credibility and increased accuracy for the planning effort.

The above team worked together at each property to review each building in detail. This included walk through tours, inspection of crawl spaces and basements, along with roof inspections. Notes were kept by each inspector with comments and observations recorded. Upon completion of all inspections, the notes were compiled and utilized by planners to develop alternatives and recommendations to address current and projected building deficiencies.

Current building standards were used as a basis of observation. Deficiencies were determined if visual inspection and available plan documents found construction that failed to meet building codes. The referenced standards include:

- Oregon Structural Building Code (OSSC), 2010-Based upon the International Building Code 2009.
- Oregon Plumbing Specialty Code (OPSC), 2011-Based upon the American National Standard 2009 Uniform Plumbing Code.
- Oregon Mechanical Specialty Code (OMSC), 2011-Based upon NPFA 70 National Electrical Code 2011.
- Oregon Fire Code (OFC), 2010-Based upon the 2009 International Fire Code (IFC) and the National Fire Protective Association (NFPA).
- American's with Disabilities Act Standards (ADA), 2010-Presribed in the OSSC.

It should be noted that no destructive testing, confirmation of as-builts, special materials analysis, or other in depth or specific structural evaluations were completed as part of this study. Observations, experience, application of codes, and general engineering principles were utilized to draw conclusions about building conditions and structural integrity. Additional study and evaluation would be required to confirm some of these observations, if necessary. However, for the purposes of facilities planning, this level of analysis is not typical or the expense warranted.

3.2. *Building Summary*

Eight (8) buildings were identified as critical city facilities to be reviewed for this facilities plan. The buildings included the following:

- City Hall
- The Police Station
- The Fire Station
- The City Library
- The City Pool Facility
- The Public Works Shop and related buildings on the shop site
- The Water Treatment Plant Structures
- The Sewer Plant Structures

Figure 3.1, below, provides an aerial photograph of the City with the location of each facility identified.

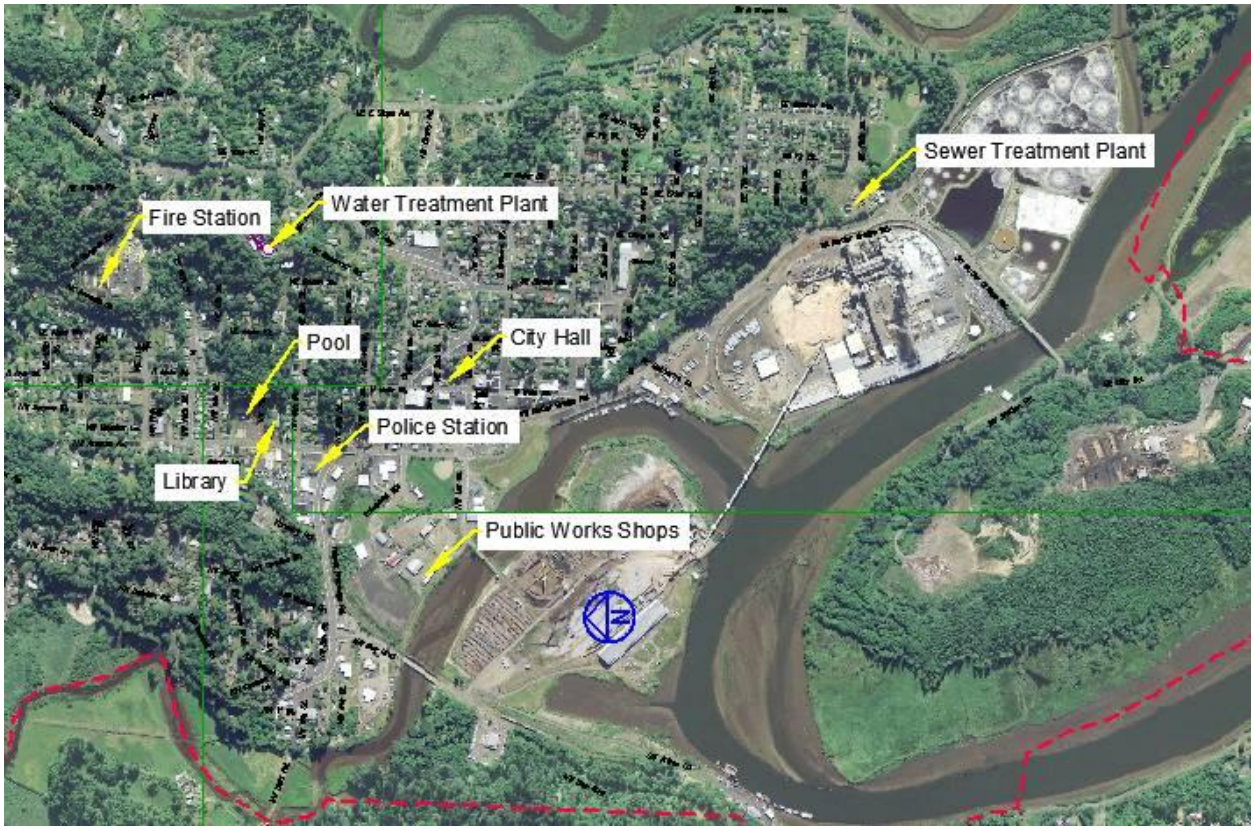

Figure 3.1 Aerial Map

The following sections provide a brief description of the existing properties, their use, age, and other general information. A Summary of the building inspections is provided in Section 3.3.

3.2.1. City Hall

The historic Toledo City Hall building is located on Main Street between 1st and 2nd Streets in downtown Toledo. The building was originally constructed in 1938, consisting of a police station, jail cell, two vaults, and a detached fire station. It has been expanded and remodeled several times over the last 70+ years. The historic City Hall building has classic architecture elements and is a well-loved part of the downtown streetscape.

Figure 3.2.1 City Hall

The building is located on a 0.58 ac parcel identified by the following tax map designations:

T11S R10W S17BB, TL#11400, &11600

The building includes space located on three separate levels and a basement level below the building. Approximately 8600 sf of area is enclosed within City Hall on the various levels. A summary of the areas on each level is provided below.

Currently, the use of the building is divided up as follows:

The main floor – The main floor provides the main entry on the front (west) side of the building. This floor includes the front counters where the public interacts with staff, pays water and sewer bills, and conducts other business. There are also a number of staff offices, a historic (museum) area, a conference room, storage space, restrooms, and other general purpose areas. Approximately 4208 sf of area is located on this main floor level.

Upper Floor – The upper floor is located over the main floor area of the building. It is accessed by stairs in the main foyer of the building and is primarily used as office space for the City Manager and other administrative staff. Approximately 880 sf of area is located on this upper floor level.

Main Floor Addition – The main floor of the southern addition is the former lower floor of the old fire hall area. It is currently used as a council chambers and meeting room as well as providing for public restrooms. Approximately 1911 sf of area is located on this level.

Upper Floor Addition – The upper floor of the addition was formerly the living quarters for the fire hall. This area has fallen into disrepair and is currently not used for any City purposes. (See inspection information in 3.3 below) Approximately 900 sf of area is located on this level.

Basement Area – There is a basement area located beneath the original building. The basement is divided into several rooms including wash rooms, storage areas and mechanical rooms. Crawl areas and drainage basins are accessed here. The basement is approximately 750 sf in area.
There is approximately 7000 sf of parking area available for City Hall that is divided into 31 parking spaces. This does not include on-street parking which adds another six spaces on the west and north side of City Hall.

Table 3.2.1 – Summary of Existing Building
City Hall

Number of Structures	One structure interconnected across the property on a number of levels.
Total Square footage	8600
Approximate year of construction	1938
Main purpose for structure	Administration of City services, management, public meetings, and generally carrying out the business of the City.
Available dedicated parking spaces	31 and 12 on-street spaces
Electrical Service	400A 120/240V Delta Service
Fire System	None
ADA Access	Level entrance to Council, ramp on North
HVAC	Two heat pumps, 5 ton & 2 ½ ton, wall and baseboard heaters

3.2.1.1. *City Hall Structural/General Observations and Deficiencies*

The original city hall building consists of two single-story wings and a central two-story structure. A partial basement is located under the two-story area of the building. The original fire station consists of a single two-story structure. Both buildings have concrete perimeter walls supporting a light-timbered wood floor and roof framing. The exposed framing in the original fire station apartments appears to be typical of construction practices for the time period. The original fire station portion of the building is a daylight basement structure. The north wall of the building is a retaining wall structure creating an apparatus bay (where emergency vehicles are stored). In 1962 an addition extended the apparatus bay.

Figure 3.2.1.1A Basement Rot and Standing Water

The extension of the apparatus bay consists of a single-story structure with perimeter CMU (concrete masonry unit) walls supporting a light-timber wood roof. The elevation of the roof structure is near the second floor of the original fire station. The original apparatus bay and its extension were converted into the current council chambers and restroom facilities in 1978.

In the 1960's, an addition was constructed to create the current museum and three small offices. The office addition is a single-story buried perimeter CMU wall structure with light-timber wood floor and roof framing. The addition is the full length of the city hall building. The connections between floor and roof framing to CMU walls were not observed. A stairway and second story addition above the main building was also completed at this time. The connections between the first and second stories were not observed as well.

Visual inspections and review of the existing plans reveal that the structure does not meet OSSC seismic requirements. The basement and original fire station stairways are not constructed to current standards. Extensive repairs to the roof and damaged interior structures are needed. A summary of the structural/general deficiencies is located in Table 3.2.1.8.

Significant water damage caused by a roof failure has occurred to the second story of the original fire station. Other water damage is actively occurring from window leaks, lack of crawlspace and outer wall vapor barriers, as well as at uncovered door entries. This has resulted in paint blisters near the front reception desk and water intrusion near the council chamber doors. Some white mold was visible in the crawlspace and, to a much greater extant, in the area above the council chambers. Pooling water and open storm drains may be contributing to the mold and rot occurring in the crawlspace.

A significant deficiency exists in the lobby and public areas of City Hall. Considering the safety and security of City personnel, office staff have little to separate them from the general public. Generally, it is appropriate to have control routing, barriers, glass partition, high counters, and other obstacles to prevent the public from accessing the private working areas of staff.

Figure 3.2.1.1B Unprotected Front Desk Area

The front office should also include features such as panic buttons, alarms, security cameras, and other features so that staff have some means of requesting assistance in the event of a irate customer or a physical threat is encountered. During the inspection, staff openly discussed their concerns about their direct exposure to the public. In light of violent encounters in other cities across the country, the City must take these kinds of scenarios seriously.

The same type of security concern is present in the City Council chambers. The existing layout of the chambers does nothing to prevent close and immediate access from the entry way to the council members on the rostrum. Generally, there should be steps, a partition, or a high counter separating the council from the public area.

Should the Council face an armed assailant, there is little between them and those who may seek to do harm. It may not be possible, given the current configuration or space, to overcome this in the existing council chambers.

Figure 3.2.1.1C Extensive Water Damage

3.2.1.2. *City Hall Plumbing Observations and Deficiencies*

The plumbing system consists of water supply, sewer, steam, and storm drain piping. The major water supply and sewer systems are in satisfactory condition. Water supply lines include a mixture of pipe materials, including PVC, copper, galvanized and brass. Several of the water supply fittings transition

improperly between dissimilar materials, contributing to electrolysis corrosion. The sewer fittings consist of ABS, PVC, cast iron and flexible rubber couplings. Abandoned steam pipe lines from the old boiler system were observed throughout the building.

Open catch basin drains are located inside the building crawlspaces under the building. These catch basins receive water from the roof downspouts, which drain through the center of the building. The drains are deteriorating and are covered with temporary grates used as rodent barriers. As the roof is near the end of its life, it now pools water before draining into the downspouts.

Figure 3.2.1.2 Plumbing Corrosion

Many plumbing fixtures are in need of replacement. All the fixtures in the upstairs of the old fire hall need replaced and should have their sewer traps capped until such time. The fixtures in the basement are in poor condition. The bathroom nearest to the main building entrance needs additional privacy dividers.

3.2.1.3. *City Hall Mechanical (HVAC) Observations and Deficiencies*

The heating system for City Hall is not sufficient for the facility. Only two heat pumps serve the building, providing partial cooling to drop ceiling areas. The front office has "Picawatt-style" wall heaters controlled from a shared thermostat that makes temperature control difficult. Old baseboard heaters are found in other locations. The building needs a new heating and cooling system with better controls for the different zones of the building, possibly reutilizing the existing heat pumps. The old boiler heating system registers are still in place.

Energy efficiency at the site should be improved to lower heating requirements. Existing windows are not energy efficient. Insulation was observed to be both insufficient and absent in several locations.

Figure 3.2.1.3 Front Office Heater Controls

3.2.1.4. *City Hall Electrical Observations and Deficiencies*

City Hall needs major upgrades to the electrical system. The existing service has been replaced recently with a modern 400A 120/240 Delta service entrance and panel. A modern distribution subpanel supplying part of the building is installed alongside the newer service entrance. Insufficient ground bonding was noted at the new service as all conductive pipe systems should be bonded to the grounding bar. Only a single driven ground rod and secondary bond to the water supply were observed.

The old main distribution panel and several subpanels in the mechanical room are extremely outdated. In addition, the main panel across from the public works director's office is an old Pushomatic style breaker panel. The breakers are very sensitive to being tripped and the panel has no ground connections.

Above the old fire hall, which houses the city council chambers, is a significant amount of water damage and dry rot. The light fixtures are damaged, the outlets need replaced, and the entire level needs rewired. Some portions of the level are being used for storage and appliances.

Circuits inside the building are haphazardly arranged due to multiple renovations. Some portions such as the upstairs of the main building and the council chamber appear to meet code. The remainder of the building should be updated to modern codes. This should include modern fire alarms and lighting.

The electrical disconnects to the heat pumps on the roof are corroded and difficult to open. There is also exposed wiring and boxes under the building and in mechanical closets.

Lighting in the building is a mixture of fluorescent and incandescent fixtures. Like the structure of the site, lights are a patchwork of different remodels and retrofits with no consistency in fixture styles. Some of the offices have up-to-date illumination while the hallway corridors and basement areas do not. Pull chain style incandescent fixtures with exposed bulbs were observed in the basement and above the council chambers, which are not allowed by code.

Figure 3.2.1.4 Poor Wiring on Wall Surface

City Hall is an old masonry structure without the convenient wall cavities to install modern high speed communications and fiber lines. As a consequence, surface mounted and less than ideal wiring methods have to be used to install modern internet and intranet connections. The networking was not professionally installed as the City has had to improvise to interconnect the computer and networking systems.

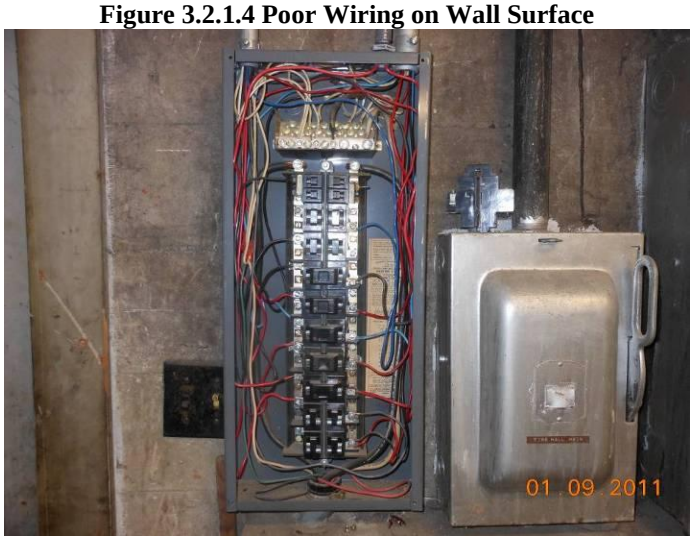

Figure 3.2.1.4B Outdated Pushomatic Basement Panel

Network cabling is routed throughout the building for internet access. The building crawlspace and elevated floors are used for routing the cabling. The cable was observed to be lying on the ground in large loops. The cable should be neatly tied and supported every 32 inches from the floor joists.

Audio and recording equipment in the council chambers no longer meets the City's needs. It is difficult for meeting attendants to hear in the back of the chamber due to poor acoustics. Many cities have moved

beyond taped recordings and provide live telecasts and webcasts of their meetings as well as digital replays over the internet. The City lacks the equipment and network infrastructure at City Hall to accomplish this. Also, there is no internet or network access in the council chambers with the exception of wireless service. As such, files and records kept on the recorders computer are manually transferred.

3.2.1.5. *City Hall Fire Safety Observations and Deficiencies*

The facility is a public building used primarily for the City administration activities and public assembly. A portion of the second floor area over the council chambers is an old fire department dorm that has been abandoned. The second floor area over the original City Hall is currently used as office space. This area is accessed by a set of stairs leading to the front lobby area. The main level is split into two elevations leading into the council chambers area. The basement located directly below the old City Hall is limited to equipment and minor storage. The building has several additions resulting in a mixed arrangement of spaces. The arrangement of office space does not promote a primary means of safe travel from the building. These paths can cause confusion for occupants trying to exit the building during an emergency. The upper floor rooms do not have a secondary fire escape route. The facility also lacks a fire alarm system.

3.2.1.6. *City Hall ADA Accessibility Observations*

The facility is at the bottom of a steep hillside with a retaining wall behind it. The main entrance to the building is up a flight of stairs, or through a ramp provided to a side entrance to the building. An at-grade entrance to the council chambers and public restrooms with a direct route to an ADA parking stall is provided. There is no elevator in the multi-story structure.

Figure 3.2.1.6 Unsealed Handicapped Ramp with Rot

The main floor has separate single occupant restrooms for men and women, while the lower floor has separate multi-fixture restrooms. Both of the upper floor additions lack wheelchair accessibility. The facility violates many ADA code provisions. See Table 3.2.1.8 for a list of the deficiencies.

3.2.1.7. *City Hall Site Observations and Deficiencies*

The site does not have enough parking or expansion room to add sufficient parking. Curbside parking must be used for visitors to access the building. Suitable adjacent property for parking expansion either contains existing structures or is at inconvenient elevation difference from the facility.

Landscaping attention is required around the building perimeter. Several shrubs and arborvitae trees are growing too close to the building causing damage to the exterior walls.

Figure 3.2.1.7 Landscaping work required

City Hall is served by fiber data service to the building though the fiber infrastructure has not been extended to the work stations. Therefore, the building does not have the direct fiber connections necessary to serve as a response center during an emergency similar to the Police and Fire Stations. During a disaster, it is possible the building offices would not remain functional, necessitating a relocation of staff to another site to conduct City business while the building is repaired and evaluated.

3.2.1.8. *City Hall Deficiencies Table*

A summary of deficiencies is located in Table 3.2.1.8.

TABLE 3.2.1.8 CITY HALL DEFICIENCY BY CATEGORY

City Hall Deficiencies	
Structural/General	1: The basement crawl space floods. 2: Structural irregularities and discontinuities are present between upper and lower floors. 3: Upper apartment of original fire station has compromised roof structure with leaks. Mold and musty odors are present and strong. 4: Roof and floors are not properly anchored to concrete walls to resist lateral forces. 5: Suspended ceiling not properly seismically braced. 6: Front steps are split and need repair. 7: Old fire station stair treads are unsafe and landing plywood is too thin on basement stairs. 8: Extensive dry rot and some mold are present in basement and old fire station. 9: Water damage to several rooms in the old fire hall requires ceiling tiles, drywall, and insulation repairs. 10: Roof requires replacement soon. 11: Front exterior needs scraped and touchup paint and other areas need caulk and touchups. 12: Several interior rooms could be painted and have drywall patched. 13: Back hall area carpet needs replaced. 14: Office sizes and layouts are not functional and front counter is also not functional. 15: Utility closet needs floor and drywall repair. 16: Out-of-plumb basement doors need re-hung. 17: Windows are old and energy inefficient. Many do not open. 18: Window jambs are rotten and leaking. 19: Council chamber doors leak badly during storms. 20: Vault storage area too small for current needs. 21: Walls leak during storms causing paint on interior to bubble and swell. 22: Security concerns for front office staff and city council chambers. 23: Little to no room to expand to provide additional staffing or programs. 24: As a historic building, major renovation will be difficult and costly. 25: No panic button, cameras, or barriers to separate front staff from the public.
Plumbing	1: Water heater is new but appears undersized. 2: Roof drains discharge into catch basins under building, some drains are abandoned and one is buried and severely rusting. 3: Open storm drains under building contribute to high moisture and deterioration. 4: Sewer lines are a mixture of cast iron, PVC, and ABS and mostly in good condition. 5: Water lines are a mixture of galvanized, PVC and copper. Electrolysis visible at some joints between dissimilar materials, galvanized pipe fittings are rusting. 6: Abandoned upstairs of fire hall has dry traps and old fixtures, traps should be sealed to prevent sewer gas entry. 7: All old fire hall fixtures need replaced. 8: Bathroom near main entrance needs partitions between water closets.
Mechanical	1: Building contains an old steam system which has been abandoned. Unnecessary components have not been removed.

City Hall Deficiencies	
Mechanical Cont.	2: Front office contains Picawatt heaters with only one thermostat, no A/C and old steam registers are present. 3: 5 Ton 3 phase Trane heat pump and a 2 1/2 Ton Carrier A/C and gas unit are located on the roof. They only partially cool the drop ceiling areas. 4: The building lacks an integrated system to heat and cool areas. Insulation is lacking.
Electrical	1: Additional grounding connections required at new service entrance. All steam, water and steel structural systems should be bonded to the ground bus. 2: Push-o-matic breaker panels in main hallway and basement need replaced. The other old distribution panels and junction boxes in mechanical room need replaced. 3: Sound system for the council chambers has poor acoustics and insufficient volume. 4: Building is old and not configured for modern high speed network connections and electronics. Existing connections are not professionally installed. 5: Exposed wiring in boxes in raised floor areas, missing wire nuts and covers. 6: Network cabling lying on floors is unsupported. 7: No grounds or GFCI protection in basement sink. 8: No grounded outlets exist in old fire station apartments. 9: GFCI by north Carrier HVAC unit is nonfunctional and should be weather rated. The other A/C unit disconnect is corroded and needs replaced. 10: Entire Electrical system in old fire hall is damaged and requires new fixtures. 11: Insufficient convenience receptacles exist throughout building. 12: Low voltage wiring on building exterior is poorly routed. 13: Some surface mount conduit is poorly run and lights are switched in wrong rooms. 14: There is no equipment to telecast or web stream council meetings. 15: Updated and standardized lighting is needed in halls and some offices. 16: Better outdoor lighting is needed.
Fire	1: No posted occupant load. 2: Exits not per code or discharge per code. 3: Doors subject to blockage and being locked. 4: Egress not clear and dead-end corridors present. 5: Single means of egress from second level office space. 6: Aisle access way width is inadequate. 7: Emergency lighting not per code. 8: Exit marking not per code. 9: Corridors and associated doors not properly rated. 10: No fire detection system, no audible or visual alarms; no sprinkler system. 11: Single means of escape from second floor.
ADA Accessibility	1: Parking stall slope is greater than 2%. 2: Only 1 ADA parking above grade has a sign which is visible when a vehicle is parked in space. 3: Parking stall width and adjacent access aisle are inadequate. 4: There is no signage from the parking stall not located adjacent to accessible entrance. 5: Van accessible space does not meet requirements. 6: Landing at ramps is not level for distance of 60 inches. Handrail at exterior ramp is not properly shaped (easy to grasp), the landing in front entrance is not level, and the

	handrail has dry rot and needs replaced.
City Hall Deficiencies	
ADA Cont.	7: Not enough space exists between doors in series. 8: Handrails do not have proper extensions beyond top and bottom tread, the handrail at the interior stairs is not properly shaped or mounted correct distance from wall. 9: Restrooms are not appropriately identified, the maneuvering clearances and clear floor spaces are not adequate, and grab bars at toilets not compliant with ADA code. 10: Location, clear space and width of water fountain height is inadequate. 11: Meeting room tables do not have proper knee clearance and there is no ramp to raised platform at council table. 12: No audible or visual alarms inside building. 13: No elevator or ramp access to either second floor structure. 14: No safety handrails are installed on front entrance steps. 15: Tripping hazard at the council dais.
Site	1: Foliage needs removed and trimmed back from building as it is causing damage to building exterior. 2: Parking is insufficient and site needs better drainage to move water away from building. 3: Lack of safety glass and partitions at main lobby entrance. 4: No safely configured entrance to council chambers to protect the public.

3.2.2. Police Station

The City's police station is located in a repurposed building near the intersection of old Highway 20 and Northwest A Street. The structure was formerly a bank in the 1970's. It was purchased by the City and remodeled for use as a police station in 2000-01.

Figure 3.2.2A Police Station

The police station building is located on a 0.64 ac parcel. The tax lot designation of the property is:

T11S R10W S07DD, Tax Lot #3000

The building includes two floors of area. A description of the current use of this area is summarized below:

Main Floor – The main floor is accessed on the east side of the building by the public. The main lobby allows the public to access dispatch personnel through a safety glass enclosure. The rest of the building is not open or accessible to the public. The main floor includes office space, a dispatch center, a briefing room, an evidence room, a holding cell (room), and some limited storage. The main floor includes approximately 4378.5 sf of space.

Upper Floor – The upper floor provides limited office space for police personnel and some storage. The upper level is accessed through a stairwell located off the main hallway on the main floor. The upper floor includes approximately 1053 sf of space.

The building is located adjacent to approximately 17,225 sf of dedicated parking for the police station. The parking is currently divided into approximately 29 dedicated parking spaces.

Figure 3.2.2B Police Station Parking

Table 3.2.2 – Summary of Existing Building
Police Station

Number of Structures	Two, Main building and generator/bike lockup shed
Total Square footage	5838
Approximate year of construction	1970's, Remodeled and repurposed in 2000-2001
Main purpose for structure	Administration of the City's police forces and operations.
Available dedicated parking spaces	29
Electrical Service	200A 120/208 Wye, 30kW Backup Generator
Fire	Fire alarm panel with visual and audible alarms and pull handles
ADA Accessibility	Level grade Entrance, no upstairs access
HVAC	Heat Pumps and Auxiliary Heat units

3.2.2.1. *Police Station Structural/General Observations and Deficiencies*

The building was originally constructed as a bank in the 1970's. In the 2000/2001, the facility was converted to its current configuration for use as a police station. The facility is a light wood framed structure with a light-timber plate trussed and a gable roof. As part of the original construction, a large overhang along the front wall of the building serves as a cover for the teller windows. A large vaulted area was also created in the front lobby. During the police station remodel, this vaulted area was in-filled with a new second floor area. This new floor consists of light timber wood floor framing supported by additional glulam beams. Additional posts were added to support the new floor. The original building and new additional posts are supported by the original timber pile deep foundation elements and concrete perimeter grade beams and interior pile caps.

An addition to the south side of the building was included in the police station remodel. It also consists of a light timber plate truss roof structure supported by plywood shear walls, and a deep foundation system similar to the original construction.

The exterior of the building has some rot and cracks in the siding that need filled with caulk. The gutters and roof flashing require attention to remedy water damage. The building shows evidence of settling throughout with visible cracks, and windows and doors out of plumb. The storage situation is tight and items are stored improperly in attics and crawlspaces. Several leaking windows require replacement, particularly in the conference room. Access to the generator shed is unsafe, and the adjoining bike lockup area is both insecure and rotten. Insulation coverage in the attic walls is inadequate.

The primary entrance to the building was observed to be secure with locking doors and a phone to contact staff to gain access. The protective glass at the building entrance does not have bulletproof or blast glazing.

Figure 3.2.2.1A Fogging in Windows

Figure 3.2.2.1B Crowded Police Offices Upstairs

3.2.2.2. *Police Station Plumbing Observations and Deficiencies*

Water supply piping in the building was observed to be copper pipe. The drain piping was observed to be schedule 40 PVC. Plumbing deficiencies in the police station were limited to minor maintenance issues. The copper water supply pipe insulation is deteriorating and missing in some locations. There are some running toilets inside the building. No deficiencies were noted in the drain systems of the building.

Figure 3.2.2.2 Uninsulated Water Pipes

3.2.2.3. *Police Station Mechanical (HVAC) Observations and Deficiencies*

The building is heated and cooled by heat pumps, auxiliary heating units upstairs, and a dedicated wall conditioning unit for the communications equipment room servicing the dispatch center. Poor heating and cooling patterns characterize the climate systems installed in the station. The duct registers are placed at odd locations throughout the lower floor. Due to the fact that heat rises, forcing cool air upstairs will create a more efficient temperature control system.

The air handler installed in the attic needs improved ducting and is not properly restrained to the structure. The outside air exchanger pulls in gasoline fumes from the neighboring gas station, and it could use an intake louver to cut off airflow when tanks are refueled.

3.2.2.4. *Police Station Electrical Observations and Deficiencies*

Electrical service to the police station is provided by a 200 amp 208V service. The building service is small considering expansion needs and the high volume of electronics being used. A backup 30kW generator is located in a small shed to the north of the building to provide emergency power to communication and 911 centers. The generator is in good condition and sizing is sufficient for the emergency needs of the facility. The communications room for the radios and 911 center contain a UPS (uninterruptible power supply) system to further provide emergency power if the backup generator is down and to avoid power loss during power transfers. An automatic transfer switch located in the mechanical room controls backup power and is connected to two main distribution panels.

Three antennas are located on the north end of the main structure. The police station serves as the primary radio communications center for dispatch of emergency services, with secondary communications to the fire station. It did not appear the antennas were properly grounded and a follow up investigation on them should be performed.

Figure 3.2.2.4 Poor Generator Building Access

The station has been configured with ample lighting, however, this lighting is poorly placed resulting in many areas of either too much or too little light. Some light fixture ballasts have stopped working, and repairs have been delayed in anticipation of installing higher efficiency lighting. The upstairs lighting appears to have been installed for a different office configuration than the current one. Insufficient convenience receptacles are available in some offices.

3.2.2.5. *Police Station Fire Safety Observations and Deficiencies*

The police station facility is a two story building with the main level at grade. The trusses provide for a bonus room upstairs that houses the officer's desks and lockers, as well as storage space in the attic. The upper level is accessed by only one set of stairs leading to the hallway on the main level. The hallway on the main level is a definable path of egress for the main level office, dispatch, break room, and second level offices. The hallway has several exits signs and the exit doors have adequate panic hardware. Fire

extinguishers are placed in strategic locations throughout the space. The facility is equipped with a fire alarm system which includes visual and audible alarms. A pull station is located at the fire panel.

3.2.2.6. *Police Station ADA Accessibility Observations*

The building sits down a gentle slope from the adjacent highway. The main entrance is at-grade and there is a direct route to the ADA parking stalls. Most of the activity at the police station is on the main floor, with cubicles and storage lockers for the officers upstairs in the bonus room. The main floor has one accessible unisex restroom facility. A list of ADA code violations can be found in Table 3.2.2.8

Figure 3.2.2.6 Handicapped Stall, Toilet does not meet sizing Requirements

3.2.2.7. *Police Station Site Observations and Deficiencies*

The site setting is a low depression adjacent to "A" Street and old Highway 20. The landscaping and parking configuration could both be improved at the site. The building has experienced settling. Parking is a problem created by poor placement of parking islands and poor configuration of entrances. Landscaping behind the building interferes with parking. The storm drains in the parking lot to the north of the building are plugged with mud.

The decorative pond near the building is contributing to dry rot on the exterior. Landscaping and foliage are pressed up against the siding and need to be trimmed more often or permanently removed.

The main building is located approximately 2 feet below the 100 year floodplain and is not protected from floodwaters. The generator building is walled to protect it from the floodplain, but this has created a poor and unsafe entrance.

Figure 3.2.2.7A Remove Foliage

Figure 3.2.2.7B Poor Parking Behind Building

3.2.2.8. *Police Station Deficiencies Table*

A summary of deficiencies is located in Table 3.2.2.8.

TABLE 3.2.2.8 POLICE STATION DEFICIENCY BY CATEGORY

Police Station Deficiencies	
Structural/General	1: Addition contains suspect shear and gravity connections. 2: Existing 2nd floor posts eccentrically load the interior pile and cap. 3: Large overhang on north creates a high heel truss configuration. At this location there are no transfer devices to the shear walls below. 4: No uplift connection is at large front overhang. 5: Water heaters, fan unit, ceiling fan and lights are not seismically braced. 6: Building space is too small for police personnel. 7: Seismic detailing does not meet prescribed seismic requirements for an essential facility. 8: Several windows have broken seals and leak. 9: Siding and outdoor lettering needs caulk and paint in several spots, experiencing cracks, gaps at butt joints, and rotting trim. 10: Generator shed has unsafe access; wall has been created for flood purposes, shed outbuilding have rot to repair. 11: Rot found in impound area for bikes and area is insecure. 12: Gutters leak at all corners and need replaced. 13: Stairs are too narrow, and carpet to them needs replaced. 14: Gun storage is insecure and sloppy. 15: Interior doors show signs of settling. 16: Safety glass needed for employee protection. 17: Ceiling shows cracks from settling. 18: Some holes need patched in bathroom floor.
Plumbing	1: Copper pipe insulation needs replaced. 2: Toilets are leaking/running. 3: Walk-in shower needs lip to hold water.
Mechanical	1: Air Exchanger faces gas station and brings odors & fumes inside building.
Police Station Deficiencies	
Mechanical Cont.	2: 1st Floor registers are in odd locations and force uneven airflow. 3: No heat upstairs with only two auxiliary units, one is not functioning. 4: Very uneven heating throughout rooms, some are too cold and some too hot, the thermostat is centralized with no zonal controls. 5: Air handler in attic just blows into attic space on south side of building. 6: Heating unit not attached in attic.
Electrical	1: Outside outlets are not weather rated. 2: Lighting under canopy controlled by a timer but seen on during the daylight. 3: Briefing room has several burnt out ballasts that need changed or different lighting installed. 4: Briefing room has insufficient receptacles, outlet in chief's room coming out of the wall, and most offices could use more outlets. 5: Upstairs lighting looks configured incorrectly. It is likely not installed based upon current office configuration. 6: Junction box is broken off wall in attic crawl access.

	7: Too much lighting in control room as several bulbs are removed; we recommend per room lighting analysis.
Fire	1: Only one second level exit exists. 2: Exit enclosures are not free of storage. 3: Exits are not marked per code. 4: Doors in corridor are not properly rated.
ADA Accessibility	1: ADA parking stalls are not the shortest distance to accessible entrance. 2: No accessibility sign is above grade when vehicle parked in space and no van accessible parking is designated. 3: Handrail heights vary outside acceptable range and do not have proper extensions beyond top and bottom tread. Handrail at interior stairs is not properly shaped. 4: Restroom is not appropriately identified as accessible. Not all items are at accessible heights. 5: Grab bars at toilets are not compliant to ADA code. 6: Braille or large print operation directions are not available at phone and fountains. 7: Meeting room table lacks required knee height clearance. 8: Exit doors are not equipped with tactile symbols.
Site	1: Foliage and pond are too near building, causing dry rot. 2: Parking island should be removed for more space. 3: Traffic access from old Hwy 20 is awkward. 4: Pavement is settling on east of building. 5: Storm drains are plugged with mud. 6: Landscape areas from behind buildings for straight in parking should be removed. 7: Site is located in a flood plain. This is highly inappropriate for a critical facility.

3.2.3. Fire Station

The City recently completed the construction of a new fire station facility located off Northeast Burgess Road near the school bus barn and shop facilities. The new fire station was constructed in 2006 and provides the City with storage for fire trucks and equipment, provides living space for on-duty fire personnel, includes administrative offices and meeting rooms for fire department staff, kitchen facilities, and has general meeting space for public meetings as well as emergency management and response facilities.

Figure 3.2.3 Fire Station

The building is located on a 1.54 ac parcel just south of the intersection of Northeast Arcadia Drive and Northeast Burgess Road. The tax map designation for the parcel is:

T11S R10W S08CA, Tax Lot# 800

The building is a single story building with approximately 13,324 sf of area available on the first floor. This includes all living, office, and the apparatus bay.

There is approximately 14,000 sf of dedicated and paved parking area available to the station. There are approximately 55 dedicated spaces laid out for the station to utilize though most of the parking is the property of the Lincoln County School District. While these spaces could be used in an emergency, the only spaces that are dedicated to the station are the several directly facing the building and those around the back side of the building.

The fire station is the City's official Emergency Operations Center (EOC). As such, it houses all the necessary communication equipment, backup power equipment, and other facilities to serve this purpose. The central IT server for the City is located in the electrical/communications room in the new fire station.

Table 3.2.3 – Summary of Existing Building
Fire Station

Number of Structures	One
Total Square footage	13,324
Approximate year of construction	2006
Main purpose for structure	Administration of the City's fire protection forces and operations. Emergency Operations Center (EOC).
Available dedicated parking spaces	55
Electrical Service	400A 120/208V Wye, 150kW Backup Generator
Fire	Recent Fire alarm system to code
ADA Access	Level First Floor Main entrance
HVAC	Gas forced air heat, no cooling

3.2.3.1. *Fire Station Structural/General Observations and Deficiencies*

The facility consists of three separate but connected light timbered wood framed structures with trussed gable roofs. The outer wings house administrative services and quarters for the fire department personnel. The center building houses the apparatus bay. The apparatus bay is taller than the adjoining wings, creating a vertical irregularity. This structural irregularity was accounted for in the original structural design.

The front entrance has water damage from an improper sidewalk slope. Several floor tiles need replaced and a drain installed in the sidewalk.

Figure 3.2.3.1 Front Entrance Water Damage

3.2.3.2. *Fire Station Plumbing Observations and Deficiencies*

No deficiencies or minor maintenance needs were noticed in the plumbing system. The building has been recently constructed to current codes.

3.2.3.3. *Fire Station Mechanical (HVAC) Observations and Deficiencies*

Natural gas forced air heat is used to condition the fire station. No A/C or cooling system is present in the building. The attic rafters are insulated, however the ceiling is not. The large attic conditioned space creates additional unnecessary heating demands.

Figure 3.2.3.3 Un-cooled Electronics

The electrical/communications room contains no active ventilation or cooling. Heat is provided to the room, however there is no way for cooler air to enter the room. Staff have compensated for this by leaving ceiling tiles and the room door open. A new vent could be installed either through the roof or outside wall.

The laundry room ducting from the gas dryer may have damage and should be inspected by a HVAC expert.

3.2.3.4. *Fires Station Electrical Observations and Deficiencies*

Power to the building is supplied by a 120/208V 400A Wye service. No deficiencies were observed in the electrical system other then the lack of ventilation in the electrical/communications room. High heat will degrade the lifespan of electronic instruments and eventually cause them to cease functioning. It is important to remedy this situation. A large backup generator (150kW) is on site to provide emergency power. A secondary 911 location center is at the fire hall to provide emergency services during a catastrophe if the primary 911 center at the police station is shut down.

3.2.3.5. *Fire Station Fire Safety Observations and Deficiencies*

The fire system is constructed to modern codes. No fire safety deficiencies were observed.

3.2.3.6. *Fire Station ADA Accessibility Observations*

The facility was built within the last five years on a fairly level lot with an expanse of pavement in front. The main entrance is at-grade with a direct route to the ADA parking stalls. The public portion of the fire station has a large meeting room and separate men's and women's multi-fixture restrooms. No ADA violations were observed.

3.2.3.7. *Fire Station Site Observations and Deficiencies*

Other than the sidewalk sloping into the front door, the site is in good condition. The site is provided with ample parking. The fire station is considered an essential facility which must continue to operate during an emergency or natural disaster. The City reports trees around the building are causing damage from falling limbs and debris.

Figure 3.2.3.7 Tall Trees near Building

3.2.3.8. *Fire Station Deficiencies Table*

A summary of deficiencies is located in Table 3.2.3.8.

TABLE 3.2.3.8 DEFICIENCY BY CATEGORY

Fire Hall Deficiencies	
Structural/General	1: Attic trusses are being used for storage. 2: There is no insulation over the ceiling tiles. 3: Baseboard in laundry room needs repaired. 4: Insufficient concrete expansion joints in floor system and cracks have occurred.
Plumbing	None
Mechanical	1: Mechanical ventilation needed in electrical/communication room. No A/C located in the building. 2: Laundry room ducting should be looked at and the sheetrock patched.
Electrical	None, other than overheating potential of electrical room.
Fire	None
ADA	None
Site	1: Sidewalk to front door slopes into building and water damage is occurring. Drain and floor tile repairs are needed. 2: Structure receives damage from nearby trees. 3: During storms large trees have dropped branches on building causing damage to roof. Trees need to be removed or pruned to avoid future damage.

3.2.4. City Library

Figure 3.2.4 City Library

The City of Toledo owns and maintains a public library located near the intersection of Northwest A and 7th Streets. The Library is located in an area which is home to the City's pool, a park and playground, tennis court facilities, a skate park, and a trail head.

The building is located on a 0.57 ac parcel that includes the library building and parking areas. The parcel is identified by the following tax map designations:

T11S R10W S18CC, Tax lots 11600, 11700 & 11800

The building was constructed in 1974 and expanded in around 1993-94. The library includes two floors of space that are currently used as follows:

Main Floor – The main floor is accessed from the main entrance on the north side of the building. The main floor is home to the book stacks and shelves in the library as well as some meeting space and office areas. This floor was expanded to the west in the 93-94 expansion to provide for more shelf space area. The main floor includes approximately 7440 sf of area.

Lower Floor – The lower floor of the library includes the area beneath the 93-94 expansion area. This area includes some meeting space and a multipurpose room along with storage and mechanical areas. There is approximately 1680 sf of area on the lower floor.

There is approximately 12,650 sf of parking area available to serve the library in its current configuration. This area is divided up into approximately 33 parking spaces.

Table 3.2.4 – Summary of Existing Building
City Library

Number of Structures	One
Total Square footage	7,440 ft² main floor, 1680 ft² bottom floor
Approximate year of construction	1974 with expansion in 1993-94
Main purpose for structure	City Library, meeting space and library administration
Available dedicated parking spaces	33
Electrical Service	600A 120/240V Single Phase
Fire	Alarm panel with remote sensors and pull handles, new panel untested
ADA	Designated parking with access ramps
HVAC	Seven heat pumps controlled by individual thermostats, four 4-ton, two 5-ton, one 3.5-ton

3.2.4.1. *City Library Structural/General Observations and Deficiencies*

The original building is a single-story light-timber wood-framed structure built on a slab-on-grade. The roof consists of light-timber plate wood trusses in a hip roof configuration. The perimeter exterior walls are plywood shear walls.

Due to sloping grade across the site, the addition to the building on the west side is a two-story addition with a daylight basement. The addition consists of a light-timber structure with a low sloped roof. The roof structure consists of evenly spaced glulam beams with secondary evenly spaced 2x rafters between the beams. The slope is created using 2x over framing. The floor framing is similar to the roof structure. Primary glulam beams support secondary 2x floor joists.

The 1993 expansion resulted in the removal of lateral system primary components along the marriage line has compromised the roof diaphragm.

The exterior siding and exposed beam-ends have visible rot which can easily be repaired. A wood fence on the south side of the building is leaning and rotted. The suspended ceilings inside the building are not braced and many ceiling tiles are discolored.

Figure 3.2.4.1A Trim Rotting Beam

Figure 3.2.4.1B Fence is Defunct

3.2.4.2. *City Library Plumbing Observations and Deficiencies*

The library plumbing conforms to the standards in place at the time it was constructed and is in typical condition for its age. The interior plumbing does not need any major attention. On the exterior, the gutter downspouts are misaligned with their catch basins. Some of these catch basins need cleaned out. The water heater drain pan upstairs is leaking because it is not attached to its drain pipe.

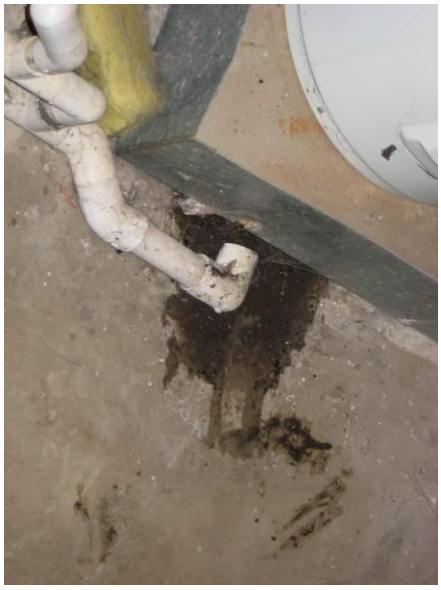

Figure 3.2.4.2A Water Heater Pan Disconnected

Figure 3.2.4.2B Downspouts Misaligned with Drains

3.2.4.3. *City Library Mechanical (HVAC) Observations and Deficiencies*

Seven heat pumps are installed at two locations outside the building. There are problems with the balancing of heat in the building, especially in the office areas. We suspect a detailed heating analysis would find that the system is oversized. Each heat pump is controlled by a different thermostat with no standardized controls across units. The condensate drains in the upstairs units drain into a floor drain

which is plugged. The systems are in overall good condition and should provide comfortable conditions for the structure if properly sized, controlled, and maintained.

3.2.4.4. *City Library Electrical Observations and Deficiencies*

Electrical power to the library is provided by a 600 amp 120/240V single phase service. The main service panels are in good condition and are sized to power the loading of the lighting and climate control required by the building. Lighting is good in the building but it was noted that there is limited egress lighting visible for night hours. There was observed to be only a limited number of floor receptacle circuits available for future computer expansion. The outside stage area contains an outdoor circuit which needs replacement due to corrosion.

Figure 3.2.4.4 Stage Area & Retaining Wall where Circuits need Replaced

High speed internet cabling is connected to the building through some external conduits. The conduit and connection are satisfactory for the library's current needs. The internet connection terminates in the main floor mechanical room.

3.2.4.5. *City Library Fire Safety Observations and Deficiencies*

The facility is a wood-framed structure at grade with a two-story addition that has a daylight basement on the downhill side. The majority of the main level is used as a library with book shelves and tables for reading. The staff offices are located behind the counter. The lower level is divided into a meeting area on one side and a mechanical room on the other. Smoke detectors appear to be placed throughout the structure with fire alarm pull stations at the exits. The fire alarm panel has recently been replaced. The only emergency lighting is present at the main assembly door exit.

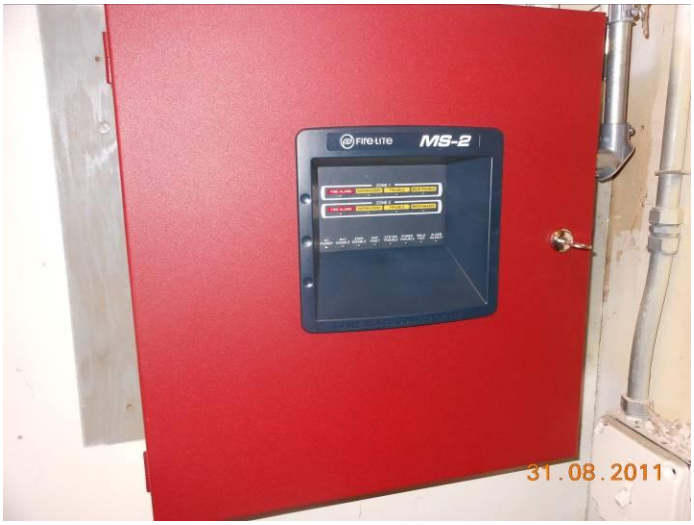

Figure 3.2.4.5 New Fire Panel

3.2.4.6. *City Library ADA Accessibility Observations*

The main entrance is at-grade and there is a direct route to an ADA parking stall, while the basement entrance is below grade and accessed by means of a ramp or flight of stairs. The library is housed on the main floor, with a flight of stairs running down to a public meeting room and storage room in the basement. The main floor has separate single occupant restrooms for men and women, and the basement has a single occupant unisex restroom.

3.2.4.7. *City Library Site Observations and Deficiencies*

Parking is positioned to the east of the library and is poorly arranged. The parking lot is broken up with many partitions and large trees. Parking spaces therefore are constricted and space inefficient. Removing the trees and partitions would free up additional and wider spaces. The sidewalks to the building, from the parking lot, are cracking and breaking from the tree roots. The concrete appears to be original to the building construction.

Figure 3.2.4.7A Sidewalk Cracking

Figure 3.2.4.7B Tree Roots Intruding

Figure 3.2.4.7C Parking Islands and Foliage Reducing Available Parking

Trees located near the building are not only damaging the sidewalks, but their roots can damage the foundation and they drop debris on the roof and gutter system.

3.2.4.8. *City Library Deficiencies Table*

A summary of deficiencies is located in Table 3.2.4.8.

TABLE 3.2.4.8 LIBRARY DEFICIENCY BY CATEGORY

Public Library Deficiencies	
Structural	1: A shear wall was removed during construction of the addition. Therefore there is not adequate lateral support in a seismic event. 2: Exposed beam ends on addition have suspect cracks. 3: Retaining wall of addition has shifted. 4: Rot is in siding at downspouts. 5: Modification to roof trusses of the original building may have reduced the truss capacity. 6: Shear transfer mechanisms between roof and west shear wall were not observed. 7: Suspended ceilings are not seismically braced. 8: Attic ducting is not seismically braced. 9: Doors and windows have gaps which need caulked and painted. 10: Siding and exterior beams have some exposed rot which needs repaired. 11: Exterior beams need new flashing installed. 12: Wood fence is failing and should be replaced. 13: Ceiling tiles are old and discolored. 14: Bathroom needs minor touchup and paint work.
Plumbing	1: Downspouts are not lined up with catch basin drains. 2: Water heater drain pan is leaking and not attached to drain pipe.
Mechanical	1: Building has 7 heat pumps installed on individual thermostats. Thermostats should be standardized. 2: Condensate drains from upstairs units flow to a plugged floor drain. 3. Largest heat pump is for offices and is oversized. The unit cycles too often and temperature control is difficult.
Electrical	1: Lighting is adequate; however egress lighting is limited and should be improved. 2: Outdoor receptacle circuit to stage area is corroded and needs replaced. 3: Computer outlet access needs improved in the main library area 4: Better outdoor lighting and CCTV monitoring are needed.
Fire	1: Front door is locked on one side and egress through intervening rooms is not acceptable. 2: Not all assembly area exits have emergency lighting. 3: Stairway between first and second floors is not enclosed with fire ratings. 4: No audible or visual alarms are present. 5: New fire panel with existing components needs to be tested.
ADA Accessibility	1: Only one ADA parking stall and it is not van accessible. 2: Parking stall slope is greater than 2% 3: Landing at ramp basement inadequately size and main entrance is not level. 4: Handrail is not present both sides of basement ramp nor mounted correct distance from wall.

Public Library Deficiencies	
ADA Cont.	5: Knobs on bathroom are too difficult to grasp. 6: Stair handrails lacking proper extensions beyond top and bottom tread. Handrail on interior stairs is not properly shaped. 7: Restrooms are not properly identified nor are restroom clearances adequate. 8: Restroom item heights are incorrect, protective pipe covering is missing from lavatory, and toilet grab bars are not code compliant. 9: Clear space in front of drinking fountain is inadequate. 10: Meeting room floor is not non-slip. 11: Building lacks audible and visual alarms.
Site	1: Parking setup is poor and congested with landscape islands taking up a large space. 2: 120 feet of sidewalk needs replaced. 3: Tree roots are lifting and breaking sidewalk. 4: Old broken concrete outside should be replaced. 5: Vandalism occurring at night. 6: Trees near entrance are too large and need removed. Damaging roof, sidewalks, and other parts of building.

3.2.5. City Pool

The City owns and operates a swimming (aquatic) facility directly located across from the entrance to the City Library. The pool was originally constructed as an outdoor facility (approximately 1950s) and was enclosed by a building around 1964. The building is located near the intersection of Northwest A and 7th Streets. The pool is located in an area that includes many public facilities including the public library, parks, a skate facility, and trailheads to a wooded trail system.

Figure 3.2.5A City Pool

The building currently houses the pool area, changing rooms, lobby, mechanical facilities, and a small observation and seating area.

The building is located on the western end of two larger parcels with a total property area of approximately 1.47 ac. The tax map designation for the pool property is:

T11 R10W S08CC, Tax lots #10900 &11200

Figure 3.2.5B Inside Building

The total area inside of the pool building is approximately 9,335 sf.

Much of the mechanical equipment, pumps, filters, chemical feed systems and other equipment are located in small outbuildings immediately to the west of the pool structure.

The pool itself is approximately 36’ x 75’ and ranges from 3’ deep on the shallow end to 6’ deep on the deep end of the pool. The pool can be divided into 5 swim lanes for lap swimming or opened up for general purpose swimming.

Table 3.2.5 – Summary of Existing Building
City Pool

Number of Structures	One for Pool Two separate outbuildings housing mechanical equipment to the immediate west of building.
Total Square footage	9,335
Approximate year of construction	1950, original outdoor pool construction with the addition of the building in 1964
Main purpose for structure	Public aquatics facility, swim lessons, recreation, school swim programs, team swimming, etc.
Available dedicated parking spaces	7
Electrical Service	400A 120/240V Delta
Fire	No fire alarm; Exit lights and fire extinguishers only
ADA	Level access from entrance
HVAC	Natural gas unit, recently replaced 2009, 1 million Btu

3.2.5.1. *City Pool Structural/General Observations and Deficiencies*

The construction date of the original in-ground pool is approximately 1950. The complex originally contained an open-air pool with a bathhouse structure. Around 1960, a glulam roof structure supported by wide-flange (WF) steel columns, partial height CMU perimeter walls with upper wood wall infills was installed over the pool to partially enclose it. The south side of the pool structure was left open.

In 1973 the pool structure was remodeled. As part of this remodel, the original bathhouse structure was replaced with the current building. The existing light timbered 2x rafter and purlin roof framing was replaced with 4x purlins spaced farther apart. The light-timbered frame infill wall framing between the WF steel columns along the north side was also replaced with heavier CMU walls. The CMU walls extend to the underside of the upper windows. The south side wall was enclosed to match the north side. All of the framing surrounding and above the windows from the 1960 structure remain. The bathhouse was replaced with a CMU perimeter structure with a heavy timber roof structure. At a later date, a random number of the upper windows were removed and replaced with painted plywood panels. The connection of these panels to the structure is unknown.

Extensive rot is present on both the main building siding and the pump/filter outbuilding. The protective exterior paint layers are peeling off the building and exposing bare wood. The composition sloped roof and flat roof are near their end of life and require replacement soon. Interior work is needed in the area of trim and paint. The pool structure is cracked. The cracks appear to be dated and not contributing to leakage which would be indicative of future pool failure. Various seismic detailing issues exist related to the CMU wall and timber roof systems.

Figure 3.2.5.1A Pump and Filter Building

Figure 3.2.5.1B CMU Wall Cracks

Figure 3.2.5.1C Pool Building Roof

In September of 2011, several steel columns supporting the roof structure had to be repaired. The connections to the floor were extremely corroded. A concrete collar was poured around the columns to stop the corrosion and reinforce the floor connections. The collars may not stop the corrosion but will provide additional stability to the structure. A permanent floor connection will eventually be required.

Figure 3.2.5.1D Pool Column Repairs Completed September 2011

3.2.5.2. *City Pool Plumbing Observations and Deficiencies*

The plumbing components in the building vary from original steel pipe to more recent plastic fittings. The hot water heater is a newer variety in good condition with some visible evidence of past leaks on the copper piping. The visible interior piping is showing surface corrosion. The bathrooms have no apparent plumbing deficiencies. The piping in the filter rooms is satisfactory. The pool drain is limited as the pipe is only 4-inches in diameter. The filter media is due to be changed and the pumps are at the end of their useful life.

Pool overflow water enters a perimeter gutter and is discharged into the City storm drain system. State code mandates that the overflow water be recirculated.

Figure 3.2.5.2 Circulation Pump

3.2.5.3. *City Pool Mechanical (HVAC) Observations and Deficiencies*

Significant deficiencies exist in the ventilation system. Humidity control is non-functional and has been for many years. The pool staff opens doorways to manually ventilate the building. Only the heating system is functional. The ventilators on the roof and the heat recovery dehumidification system do not function. The building heater was replaced in 2009 with a new gas furnace that is already experiencing corrosion. The portion of the building enclosing the furnace is not providing adequate moisture protection.

Figure 3.2.5.3 New Furnace Corrosion Evident

3.2.5.4. *City Pool Electrical Observations and Deficiencies*

The facility is supplied with a 120/240V 400A Delta service. The electrical service and most of the wiring were installed at the same time the building structure was constructed. The electrical system is not up to code for this type of facility and has significant corrosion problems from being exposed to high humidity and chlorinated water. The lighting lacks switches and is controlled by circuit breakers.

Portions of the lighting and receptacles have been updated with GFI protection and sealed fixtures. These fixtures can continue to be used safely. Attention is needed in the pump and filter building, where better safety lockouts are needed on the vacuum system. The controls to the heating, ventilation, and pumps are out-dated, manually run, and contain some corrosion.

Figure 3.2.5.4 Extensive Electrical Corrosion and Outdated Panels

3.2.5.5. *City Pool Fire Safety Observations and Deficiencies*

The facility is an enclosed public pool with associated locker rooms and front desk area. The facility is located at grade with one main entry/exit and a second exit located at the front half of the structure. The exits from the locker rooms are signed with emergency lighting. A fire extinguisher can be found near the second exit. An approved occupant limit is not posted to determine the required fire safety measures.

3.2.5.6. *City Pool ADA Accessibility Observations*

The building in question sits on a hillside facing the public library building. The main entrance is at-grade with a direct route to an ADA parking stall. The building has separate locker rooms for men and women with bathroom stalls and sinks. There is adequate maneuvering in the locker rooms and pool area proper. A list of ADA code deficiencies is located in Table 3.2.5.8.

3.2.5.7. *City Pool Site Observations and Deficiencies*

The City Pool is part of Arcadia Park and located across from the library. An auxiliary storage shed and pump/filter shed are located to the west and below the main pool building. There is limited parking available that must be shared between all three facilities. Very little expansion room is available as part of the existing sites. The closest available space is the hillside to the east and above the pool area. The sidewalk and asphalt at the entrances are old and rough.

The Pool has history of criminal activity resulting from break-ins by persons wanting to swim and vandalism of the backside of the site. No CCTV monitoring equipment is present to watch the site or swimmers. Improved monitoring is important to dissuade criminal activity and protect the visitors and staff.

3.2.5.8. *City Pool Deficiencies Table*

A summary of deficiencies is located in Table 3.2.5.8.

TABLE 3.2.5.8 POOL DEFICIENCY BY CATEGORY

City Pool Deficiencies	
Structural/General	1: Numerous cracks in the CMU walls exist, especially around door openings. 2: A large crack in the east wall around mechanical return louver extends from corner of opening up to top of wall. 3: Seismic detailing and attachment of CMU walls to structural elements were not observed. 4: The removal and replacement of the original wood walls with CMU walls has increased the demand on the columns during a seismic event. No strengthening was observed which creates a potential loss of column strength during a seismic event. 5: Large number of windows are located along longitudinal direction of the building. 6: Minimal shear transfer between roof and CMU walls. 7: Unknown detailing for infill plywood panels minimizes acceptance of panels as shear walls. 8: Out-of-plane transfer between top of CMU walls and steel columns to the bathhouse roof structure is unknown. 9: Checking and twisting of main and secondary beams in locker rooms is occurring. 10: No seismic bracing of HVAC units and ducting observed. 11: New roof, gutters, caulking and painting are needed. 12: Extensive siding rot was observed. 13: Pool outbuilding is rotted extensively and needs replaced. 14: Rotting bathroom partitions need replaced. 15: Upper window trim is leaking and wood decay was observed. 16: Interior walls need scraped, painted and sealed. 17: Pool deck settlement cracks were observed. 18: The pool floor has a longitudinal crack. 19: Deterioration of steel columns at base has compromised column strengths and connectivity to the foundation.
Plumbing	1: Inadequate pool water turnover, it should be 6 hours and is currently 8 hours. 2: New pumps, motors, and filter rebuild is needed. 3: Pool drain pipe is undersized, should be 6", it is currently 4". 4: Overhead water pipes need rust removed and repainted.

City Pool Deficiencies	
Plumbing Cont.	5: 100 Gallon water heater in good condition but some nearby fittings have leaked. 6: Pool overflow drains into storm drain system and is not recirculated.
Mechanical	1: Roof mechanical ventilators are not operational and have not been used in years. 2: Large ventilator on wall does not work, blower does work but heat recovery system does not. 3: Room only controlled for heat, humidity controls do not function. 4: Existing vent fans inadequate. 5: Registers in bath area rusted, should be stainless or aluminum.
Electrical	1: Electrical system is experiencing systematic corrosion due to high humidity and chlorine. 2: Circuit breakers are being utilized for light switches. 3: Pump controls are run from breakers, automation and soft-start motors should be added with switch controls into pump room. 4: Weather rated enclosures should be used inside as the pool is equivalent to an outdoor location. 5: Emergency vacuum bypass switch is wired-in; if switch is left on it could be dangerous to swimmers. 6: Lighting is acceptable in some areas where updates included sealed weather proof fixtures; in other areas new fixtures are needed. Newer pool designs utilize more natural light to reduce energy consumption. 7: Main service is underground, meter is not readily visible. 8: Grounding system is not readily visible and has not been inspected.
Fire	1: No posted occupant load (recommended 300 max) exists. 2: Emergency lighting at the second exit is lacking.
ADA	1: The access aisle does not meet the minimum width requirements. 2: The ADA parking stall does not meet the minimum width requirements. 3: Ground and floor surfaces have abrupt changes in surface elevation that exceed ¼" in height. 4: Vertical elevation changes between ¼" – ½" are not beveled. 5: Some items protrude more than 4 inches into the path of travel of pedestrians. 6: Restrooms are not appropriately identified with handicapped signs. 7: Toilet stall sizes and grab bars are not compliant with ADA codes. 8: Water fountain width is not adequate. 9: Standardized textured surfaces for tactile warnings not present at subsurface pool. 10: Audible and visual alarms are not present inside the building.
Site	1: Parking is inadequate. 2: Sidewalk is rough in places. 3: Vandalism and break-ins occurring when pool is closed.

3.2.6. Public Works Shop and Shop Site Buildings

The public works shop is located just off of NW 1st Street on the west side of the City. The public works shop campus is located on a 2 acre parcel north of Depot Slough and accessed off the west end of NW 1st Street. The map and tax lot information for the property is:

T11S R10W S18A, TL#3800

The site is home to two separate buildings and other storage and facilities. The facilities are utilized by the City's public works department to house equipment and materials, complete work, and provide security to City property.

Figure 3.2.6.A Main Shop Building

The main building is approximately 100' x 84' enclosing around 8400 square feet of shop and work space inside the building. The northern side of the building includes a three-sided shed-roof addition that is used to park, store, and protect City trucks and equipment from the elements. The main building is divided up into a number of sections internally. A number of overhead doors and man doors provide access to the building from the exterior.

The main building is a slab on grade pre-engineered metal building with interior mezzanines consisting of light timber framing not supported by the metal building systems. The building was constructed in 2001-02 and is in relatively good condition today.

Figure 3.2.6.B Storage Building

A second building is located on the site to the south of the main shop building. The second building is a three-sided structure open on the north side and primarily used for material storage for piping, lumber, vehicles, and other equipment. The size of the storage building is approximately 124' x 24' providing approximately 2976 square feet of storage.

The storage building is a pole-barn type structure with wood framing and supports over a dirt floor. Corrugated metal provides roofing and wall siding. Like the main building, the storage building is in relatively good condition.

The site is accessed through a manual gate structure. A chain link fence surrounds the entire site.

Table 3.2.6 – Summary of Existing Building
City Shop Buildings

Number of Structures	Two separate buildings- one main shop facility and one storage building
Square footage	11,376
Approximate year of construction	2001-02
Main purpose for structure	Housing equipment, vehicles, material, and other public works items. Provides a lunch area, office space, and storage for public works.
Electrical Service	Dual 200A 3-Phase 120/208V Main Panels
Parking	No dedicated parking, site is gravel lot
Fire Alarm System	None
ADA accessibility	None, currently level grade gravel
HVAC	Heat pump and multiple resistance heaters

3.2.6.1. *City Shops Structural/General Observations and Deficiencies*

The lean-to building is a cantilever pole structure typical of similar use buildings. The cantilever poles consist of evenly spaced wood posts creating uniform sized bays. The poles support double light-timbered wood trusses at each pole line with 2x (two-by X dimensioned) wood purlins evenly spaced. The floor is a graveled surface. According to building drawings, the poles are embedded into native backfill piers. The structure is partially enclosed and open to the east.

The main shop building is a typical manufactured metal building with moment frames and cross braced bays. It is roofed and sided with metal panels and the floor is a slab-on-grade. A partially enclosed lean-to area on the east side is part of the original metal building system. The interior area of the building has been partitioned off into several different occupancy types, from automotive to staff break rooms to offices. There are storage mezzanines above office areas. These storage mezzanines are posted with a load rating of 125 pounds per square foot.

Maintenance is needed on the exterior of the buildings. There is damage to metal siding including holes and dented panels. The bay door weather-stripping no longer provides a weather tight seal. Concrete cutting and patching is required of the east bay door entrance due to water leaking through the bay door.

3.2.6.2. *City Shops Plumbing Observations and Deficiencies*

No significant deficiencies were observed in the plumbing system. The visible plumbing is PVC and CPVC. The hot water tank is in good condition.

3.2.6.3. *City Shops Mechanical (HVAC) Observations and Deficiencies*

The heating systems consist of a heat pump, multiple resistance unit heaters, and wall heaters. Wall mounted thermostats control the heating system. Some of the wall heaters are non-functioning resulting in an inability to maintain a comfortable working environment. The heat pump is of inadequate size for the shop area it services. The exterior walls are not insulated which reduces the effectiveness of the installed heaters.

The maintenance shop has a blower mounted on the wall for the ventilation of fumes. Maintenance staff are forced to open doorways to provide the blower with makeup air due to the lack of a fresh air intake.

The air compressor is due for replacement. Air piping from the compressor is missing a condensate drain. No other deficiencies were observed in the air piping distribution network.

Figure 3.2.6.3 Old Air Compressor

3.2.6.4. *City Shops Electrical Observations and Deficiencies*

Electrical site power is provided through an underground feeder entering the main shop building through a current transformer cabinet. Two main 120/208V 200A panels at the service entrance distribute power throughout the main building and to a subpanel in the storage building. The electrical system on site is in good condition with only minor deficiencies. The City stores a trailer mounted backup generator on site.

The electrical service size and condition is adequate for the facility. Heating loads are moderate as temperatures are kept cooler than an equivalent office building. There is a large quantity of dedicated welding circuits; however, it is unlikely that more than one or two of these circuits will ever be in use simultaneously.

On the north side of the building is an empty underground PVC conduit stub-out. This appears to be for future expansion or another building. If this future facility consists of more than lighting loads the main service size should be revisited.

The exterior and interior lighting at the facility is adequate. One important lighting deficiency is the lack of security lighting at the front gate entrance.

3.2.6.5. *City Shops Fire Safety Observations and Deficiencies*

The facility is a typical metal building shell with interior spaces partitioned off for different uses. The interior space consists of open bays for maintenance and equipment loading, and is also partitioned off into wood framed office spaces with storage mezzanines above. The finish floor of the building is located at grade with the exception of the mezzanines. The mezzanines are primarily used for storage with a couple of areas partitioned off for office space. The repair garage is separated by a fire wall. Flammable materials appeared to be properly stored in clearly marked fire rated cabinets. Fire extinguishers can be found throughout the facility. Exit doors are clearly marked.

3.2.6.6. *City Shops ADA Accessibility Observations*

The building sits on a gravel lot with no paved parking. The main entrance is at-grade with a direct (gravel) route to a marked ADA parking stall. The shop area is a slab-on-grade with two mezzanines accessed by means of staircases. The building has a single occupant unisex restroom on the main floor. The configuration described above does not meet ADA code requirements. See Table 3.2.6.8 for the list of code deficiencies.

3.2.6.7. *City Shops Site Observations and Deficiencies*

The general site area has unsafe access, storage, and storm drainage issues. Gravel and grading is needed around the buildings to improve drainage and move standing water away from buildings. Water intrusion problems were observed at the east end of the main shop building. Equipment trailers and grounds items are stored outside due to insufficient storage space.

Vehicle access to the shops is controlled by a manually operated chain link gate. No security system or lighting is provided at the gate creating an unsafe entrance.

The site is located in a floodplain; however, the building floors are raised above the 100 year flood elevation. The gravel parking and driveways are located either at or slightly below the floodplain, which puts outdoor equipment and personnel evacuation at risk.

Figure 3.2.6.7 Additional Storage Needed

3.2.6.8. *City Shops Deficiencies Table*

A summary of deficiencies is located in Table 3.2.6.8.

TABLE 3.2.6.8 CITY SHOPS DEFICIENCY BY CATEGORY

Shops Deficiencies	
Structural	*Lean-to Building* 1: Weather deterioration in columns of lean-to structure. 2: Pipe storage racks lack seismic force resisting load path to foundation. *Main Building* 3: Weather deterioration of exposed steel columns and main beams. 4: Only one side of main frame beams and columns is braced. 5: Elevated mezzanines, mechanical equipment and heaters not seismically braced to structure. 6: Metal panels on shop buildings need maintenance repairs and holes patched. 7: Bay doors need new weather-stripping.
Plumbing	No significant deficiencies found.
Mechanical	1: Heat pump sizing too small. 2: Shop blower requires a fresh air intake; door must be opened for it to function. 3: Some wall heaters do not function. 4: Air compressor needs replaced. 5: No condensate drain in air piping from air compressor.
Electrical	1: Weather rated receptacles advisable in outdoor locations. 2: Minor items such as missing screws on panels or junction box covers. 3: Lighting efficiency should be improved if incentives are available. 4: Lighting and power gate are requested at front entrance for security.
Fire	1: Equipment subject to rupture is stored under or adjacent to stairway. 2: 3-hour door closer not installed in auto shop. 3: No alarm system present.
ADA Accessibility	1: No accessibility sign visible in parking space designated parking space. 2: Parking space marked ADA accessible is not code compliant. 3: No paved route to accessible entrance from parking space. 4: Handrails lack proper extensions beyond top and bottom stair tread. 5: Restrooms items not mounted at accessible heights, restroom clearances and doorways not compliant with ADA code. 6: Meeting room table lacking adequate knee clearance; building lacking audible and visual alarms. 7: No distinguishable primary accessible entrance.
Site	1: Drainage problems found at west bay door. 2: Structure is too small to house grounds shop and ground equipment. 3: Site overall has drainage problems and is located in a floodplain. 4: Auxiliary Shop grade is low and should be raised with gravel. 5: Site should be graded around buildings to drain water away from walls. 6: Parking and drive access are located below the 100 year floodplain.

3.2.7. Water Treatment Plant

The City owns and operates a potable water system that includes numerous facilities throughout the community. The core of this system is the potable water treatment plant which is located on NE Reservoir Road (north of NE Beech and Highway 20). The water plant property includes a number of structures including tanks, a control and operations building, chemical building, and others. Structures that are involved in the treatment process were evaluated as part of the City's recently completed Water System Master Plan (2010, Civil West). For the purposes of this Building Facilities Plan, the only structures that will be evaluated are the main control building and the chemical building.

Figure 3.2.7A Water Treatment Plant (WTP)

The plant site is located on a 2.30 ac parcel. The tax map designation for the property is:

T11S R10W S08CD, Tax Lot#4500

The main structures for consideration in this study are the treatment plant building on the southwest end of sedimentation tanks and filters, and the chemical building located to the northwest of the main treatment plant facility on the lower plant site. The treatment plant buildings were constructed around 1979. The treatment plant buildings are further described as follows:

Main Treatment Plant Building – The main building is a two-story wood frame building that houses equipment and operations areas. The use of each floor is further described below:

The upper floor of the main treatment plant building houses the controls and operator's offices for the water plant facility. It also houses the laboratory and other related facilities used for the operation and administration of the water plant. The upper floor includes approximately 1152 sf of area.
The lower floor of the main treatment plant building houses the piping gallery, pumping equipment, backup generator and other treatment plant

Figure 3.2.7B Main Control Building Lab

components. The lower floor has a high ceiling (nearly two stories itself) to make room for the equipment, valves, and piping. The lower floor includes approximately 1152 sf of area.

Chemical Building – The chemical building is located adjacent to the main building on a lower level than the main facility. The roof of the chemical building sits just slightly above the ground elevation of the main treatment plant site. The ground level of the chemical building is a full floor (plus) below the ground level of the main site. The chemical building houses chemical feed equipment, chlorine generation equipment, chemical storage, and general storage for the treatment facilities.

Figure 3.2.7B Main Building Mechanical Piping

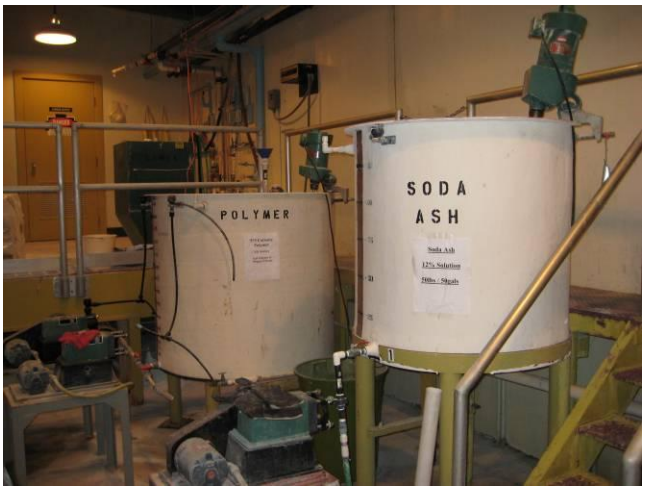

Figure 3.2.7D Chemical Tanks

Figure 3.2.7E Chlorine Tank

Table 3.2.7 – Summary of Existing Building
Water Plant Facilities

Number of Structures	Two
Total Square footage	3232 Chemical Building, 2304 Control Building
Approximate year of construction	1979
Main purpose for structure	Operation, administration, and maintenance of the water treatment plant facility. Housing equipment, chemicals, storage, and operational components for the facility.
Available dedicated parking spaces	N/A
Electrical Service	600A 277/480V, 100kW Backup Generator
Fire	No Fire Alarm System
ADA Accessibility	N/A
HVAC	Unit Heaters

3.2.7.1. *Water Treatment Plant Structural/General Observations and Deficiencies*

Two of the three structures were observed at this site. The treated water reservoir (clearwell), water filtration tank and filter backwash tank are not included in this assessment. Only the two-story control building and the chlorination storage building are included in this assessment.

The two-story control structure currently houses the control room for the entire facility on the second floor. The ground floor houses pumping and distribution equipment for the plant. The pump room and distribution system is partially below grade. The structural system consists of perimeter CMU and concrete shear walls on the first floor, and perimeter wood shear walls on the second floor. One of the first floor concrete shear walls is shared with the filtration tank. The shear wall separates the filtration media and finalized water from the pumping gallery. The second floor structure consists of glulam beams with 3x T&G (tongue & groove) decking. The roof structure is similar in nature. According to the existing drawings the T&G decking is overlaid by plywood.

Figure 3.2.7.1 Roof and Gutter Repairs

The chemical building is a single-story partially buried building. The main retaining wall is a concrete wall, with exposed walls made of CMU. The roof structure consists of glulam beams supporting T&G decking similar to the control building. The filter backwash tank is separated from the storage portion by a concrete wall.

The overall structural condition for the two buildings appears to be in good standing. No major structural deficiencies were observed. Continual maintenance of the buildings as currently observed will help alleviate further structural deterioration.

Deterioration that was observed on the exposed beam ends on both buildings. The buildings require new gutters, flashing and roofing. The building exterior needs repainted and there are rotten trim boards to replace. The main control building upstairs flooring will need replacement soon.

3.2.7.2. *Water Treatment Plant Plumbing Observations and Deficiencies*

The plumbing surveyed as part of this study consisted of the bathrooms, water heater and office/lab areas. Process plumbing for the treatment plant was analyzed in the Water Master Plant (Civil West, 2010). No major deficiencies were noticed when surveying the plant. The pipe was observed to be constructed of PVC and copper.

3.2.7.3. *Water Treatment Plant Mechanical (HVAC) Observations and Deficiencies*

Heating is provided to the buildings from unit heaters. The heaters are in good condition except for one unit corroding in the chlorine room. There is also some corrosion on ventilation system registers in the chemical room.

Figure 3.2.7.3 Rusted Heater

3.2.7.4. *Water Treatment Plant Electrical Observations and Deficiencies*

Power is provided to the building through a 600 amp 277/480 volt three-phase service. A Westinghouse 100kW diesel generator provides backup power to the site. The automatic transfer switch is an older model that does not have full-featured automatic controls. A large automatic intake louver provides combustion air. Wire and conduit are in good condition except for some outside exposed areas where uncoated EMT and junction boxes are heavily rusted, especially in the sump area.

The lighting in the office/lab area upstairs has 3 out of 4 lighting bulbs removed. The facility is not staffed at night and natural lighting is more than sufficient for operator tasks. There is no outdoor lighting around the lower perimeter of the treatment basins. Walkways are sufficiently lit at night to perform maintenance tasks.

The electrical components in chemical rooms in the lower building are dated but in good condition. There is no plant SCADA system, but a Dialog Elite autodialer is installed to notify operators of emergencies.

Figure 3.2.7.4 Control Panel and Dialer, Only Partial Lighting Used

3.2.7.5. *Water Treatment Plant Fire Safety Observations and Deficiencies*

The facility has a two-story structure adjoining a large concrete water tank, and a large CMU building that houses the chemical additives. The second level of the two-story structure is used as office space by the staff for monitoring the facility. The lower level of this structure is used for equipment. The second level office space has two exits via stairs leading to the ground level. The chemical storage building has one exit at grade. Fire extinguishers can be found throughout the facility.

3.2.7.6. *Water Treatment Plant ADA Accessibility Observations*

The facility sits atop a hill with paved access around the perimeter of the main treatment plant. The main entrance is at-grade with a direct route to an ADA parking stall, but the second floor is accessible only by means of a staircase. The upper floor has a single occupant unisex restroom.

3.2.7.7. *Water Treatment Plant Site Observations and Deficiencies*

The site is in satisfactory condition. Sufficient parking is available for the required personnel and there is a locked gate for security. There is some foliage on site which should be removed to prevent damage.

Figure 3.2.7.7 Minor Foliage Problems, Spray and Remove

3.2.7.8. *Water Treatment Plant Deficiencies Table*

A summary of deficiencies is located in Table 3.2.7.8. It should be reiterated that other deficiencies related to the process, operations, and treatment facilities themselves is discussed separately in the City's 2010 Water Master Plan.

TABLE 3.2.7.8 WATER TREATMENT BUILDINGS DEFICIENCY BY CATEGORY

Water Treatment Plant Deficiencies	
Structural/General	*Control Building* 1: Cracks are around door openings in CMU walls. 2: Exposed beam ends are suspect for rot. 3: Unbraced CMU walls located at stairs. 4: Out-of-lane anchorage of walls to floor is unknown. 5: Sloshing from water in filtration basin has potential to damage pump galley wall. 6: No visible seismic bracing for overhead piping. 7: Unbraced staircase is on exterior of building *Chemical Building* 7: Exposed beam ends are suspect for rot. 8: Chemical damage is under tanks on slab, door jams, and interior face of CMU walls. Some damage is powdery and some is spalling. 9: Suspect ties exist to support beams. 10: Sloshing from water in backwash tank has potential to damage building support wall. 11: There is no visible seismic bracing on piping and raised platform construction is suspect. *General* 12: The buildings need repainted. 13: Chlorine room doors are rusting and need painted. 14: Dry rot is located on trim boards of roof overhang. 15: The gutters need replaced, flashing and roofing also need attention. 16: The metal stairs needs repainted. 17: Door sill tiles have water damage. 18: Floor in control building will need replaced soon.
Plumbing	N/A, no obvious deficiencies in personnel areas, process was evaluated in Water Master Plant (Civil West, 2010).
Mechanical	1: Heater in the chemical room needs replaced.
Electrical	1: Control room contains too much lighting. Natural lighting is sufficient, only 1 bulb is being used in T8-4 bulb fixtures 2: Control room has insufficient receptacles. 3: Outdoor lighting around basins is insufficient. 4: Older Westinghouse generator is still useful but lacks automated test controls due to old transfer switch. Newer controls need added via new ATS. 5: Main outdoor pumps have significant corrosion at boxes and conduit. Other areas of plant where conduit is only galvanized show corrosion.
Fire	1: Exit marking is not per code.
ADA	N/A
Site	1: Weeds around building need removed and downspouts adjusted. 2: Outside planter needs removed or repaired. 3: Stairwell joint needs weeds removed.

3.2.8. Wastewater Treatment Plant

The City owns and operates a wastewater system that includes piping, manholes, pump stations, and a wastewater treatment plant. The WWTP includes a number of buildings that will be reviewed as part of this study. The tanks, treatment equipment, and treatment processes will be evaluated and studied as part of the City of Toledo Wastewater Facilities Plan (Civil West, 2012) that is being undertaken concurrently with this Building Facilities Plan study.

Figure 3.2.8 Sewer Plant

The treatment facility is located at 1105 SE Fir Street.

The plant site is located on a 4.12 ac parcel. The tax map designations for the property are:

T11S R10W S17CA, Tax Lots 8100 & 7900

The main structures for consideration in this study are the lab and office building on the southeast entrance and the two pump and control buildings nearby. The treatment plant buildings were constructed around the year 2000. The treatment plant buildings are further described as follows:

Lab and Office Building- The lab and office building is a single story CMU and timber frame building that houses the operator offices, chemical storage, laboratory, and a small workshop. The building has wood panel siding and a combination sloped composition and flat roof.

Chemicals are delivered through a pair of rolling bay doors. Dechlor chemicals are stored in a wood-framed addition. The interior lab and office are small and all available storage space is being utilized. The floor space includes approximately 2000 sf of area.

Blower Building- The blower building is a single story CMU building housing three plant blowers and their associated controls. It was constructed in 2000, and is approximately 493 sf in area. The building has a flat roof and painted CMU exterior.

Process Building- The process building is divided into three rooms housing pumping equipment and the plant electrical control room. It was constructed in 2000 and is approximately 1100 sf in area. The building has a composition roof and split face CMU exterior.

Table 3.2.8 – Summary of Existing Building
Wastewater Plant Facilities

Number of Structures	Three
Total Square footage	Control Building 2000 sf, Blower Building 493 sf , Process Building 1100 sf
Approximate year of construction	1954, Last upgrade in 2000
Main purpose for structure	Operation, administration, and maintenance of the water treatment plant facility. Housing equipment, chemicals, storage, and operational components for the facility.
Available dedicated parking spaces	Graveled area, limited parking near entrance, additional parking above or near clarifier
Electrical Service	1200 Amps 277/480V Wye
Fire	No fire alarm system
ADA Accessibility	N/A
HVAC	Greenheck makeup air system, Unit Heaters

3.2.8.1. *Wastewater Treatment Plant Structural/General Observations and Deficiencies*

The facility is a collection of numerous CMU buildings and concrete treatment tanks. The buildings observed at the site include the main plant control building, blower building, and process building. The remaining concrete tanks and miscellaneous structures are not included in the report. However, while at the site we did observe the structural steel catwalk at the City's request.

All three buildings are similar in nature consisting of single story structures with perimeter CMU walls with light timbered wood framed roofs. The control building consists of a single story structure with an adjacent taller structure. The taller building area houses vehicle access and vehicle passage to the plant. The process building and blower building are partially buried.

The catwalk reviewed included the walkway between treatment unit 1 and treatment unit 2. The catwalk consists of structural steel channels supporting a metal walkway. The catwalk is free spanning between treatment unit 1 and the flow control structure. Splice connections in the channels were observed. All primary elements were galvanized.

Figure 3.2.8.1 Un-galvanized Anchor

3.2.8.2. *Wastewater Treatment Plant Plumbing Observations and Deficiencies*

No obvious deficiencies were observed in the plumbing system that is not part of the WWTP Facilities plan.

3.2.8.3. *WWTP Mechanical (HVAC) Observations and Deficiencies*

The main control building, blower and process buildings are the only areas surveyed as part of this study. The other parts will be evaluated in the WWTP facilities plan.

The control building and lab area has a Greenheck KSU make up air ventilator installed on the roof. The unit is in good condition. The chlorine room contains a unit heater to maintain humidity and temperatures. The unit heater is not positioned properly and cannot maintain the climate setpoint. A portable unit heater is currently being used to keep the room at the proper setpoint.

The other buildings utilize electric unit heaters and ventilation fans. No deficiencies were found in the blower or process buildings.

Figure 3.2.8.3 Roof HVAC Unit

3.2.8.4. *Wastewater Treatment Plant Electrical Observations and Deficiencies*

Power is provided to the site from a 1200 amp 277/480 volt three phase electrical service. Several transformers are located on site to provide 120/240V and 120/208V to other processes. A 300kW Kohler diesel generator provides backup power. The automatic transfer switch and main panels are all located in the main electrical room which houses the breakers and SCADA control system. There is room for expansion inside the main electrical room for future components and controls.

Many of the electrical boxes and conduit connections are in like-new condition from the plant expansion completed in the late 1990's. A few of the outdoor boxes do not have a watertight conduit fitting which still allows moisture to get into the interior circuitry. There is some corrosion occurring in areas of the plant where the electrical system has not been updated, such as on the old clarifiers.

Figure 3.2.8.4 Conduit Blocking Doorway

3.2.8.5. *Wastewater Treatment Plant Fire Safety Observations and Deficiencies*

The facility is a collection of numerous CMU/wood buildings and concrete treatment tanks. The occupied building is located at grade and used for maintenance and monitoring activities. The adjacent buildings are used to house the stationary equipment on the site.

3.2.8.6. *Wastewater Treatment Plant ADA Accessibility Observations*

The facility sits on a level lot that slopes up at the rear with wastewater tanks on top. The main entrance is at-grade with a direct route to the parking area. The main portion of the facility is connected by concrete walkways, but some buildings have a single step up to the door, and many of the tanks are up flights of stairs. The office building has a single occupant unisex restroom facility.

3.2.8.7. *Wastewater Treatment Plant Site Observations and Deficiencies*

The WWTP is located at the bottom of one of Toledo's many steep slopes on Butler Bridge Road. The area is fenced off and grassy. The area will be evaluated in the Wastewater Facilities Plan. One site problem of note is the limited parking for staff or visitors.

Figure 3.2.8.7 Drive Access Area

3.2.8.8. *Wastewater Treatment Plant Deficiencies Table*

A summary of deficiencies is located in Table 3.2.5.8.

TABLE 3.2.5.8 DEFICIENCY BY CATEGORY

Wastewater Treatment Plant Deficiencies	
Structural/General	1: Out-of-plane force tie elements between roof and CMU walls were not observed. 2: Out-of-plane force tie elements between the upper and lower roof on the control building were not observed. 3: Upper and lower roof structure of control building may not be detailed to resist pounding effects. 4: Storage racks and non structural pipe are not braced to structure. 5: Catwalks show wear and deterioration. 6: Rusting and spalling occurring to nongalvanized anchor bolts. 7: Structural anchorage to foundation elements are starting to spall. 8: Unfinished areas with just drywall need painted and taped. 9: Screens in vents need replaced. 10: Caulking and paint work on exterior needed.

Wastewater Treatment Plant Deficiencies	
Structural/General (continued)	11: Inside walls needs painting and patching in control building. 12: Rafter overhangs are unpainted. 13: Roof pools water and needs replaced soon.
Plumbing	N/A, no obvious deficiencies in personnel areas, process to be evaluated in Wastewater Treatment Facilities Plan.
Mechanical	1: Chlorine room heater is positioned poorly; a portable unit heater is being used due to circulation patterns.
Electrical	1: Some fittings to Nema 3R or 4X boxes are not watertight. 2: Older portions of plant are experiencing corrosion to conduit and boxes. 3: Workshop room is dimly lit. 4: Some low voltage lines are sloppily arranged.
Fire	None
ADA	N/A
Site	1: Very little parking exists with the sludge truck taking up the most room.

3.3. *Building Inspections Summary*

In summary, the current building statuses are:

- City Hall – Requires many expensive repairs and updates, is deficient in many code areas, though the structure appears sound with the exception of seismic considerations. Parking improvements to the site will be costly. The building layout and space are insufficient for the City's needs without reconfiguration and additional space. A seismic rehabilitation study is highly suggested. The general condition and functionality of the facility is poor.

- Police Station – The building needs many maintenance improvements and repairs. The building layout and space are insufficient for the City's needs without reconfiguration and additional space. The structure likely does not meet Essential Facility code. The facility is also located within a flood plain making further investment in the facility questionable.

- Fire Station – Facility is in excellent condition with only minor repairs needed.

- City Library – Building is in relatively good condition though it needs some structural repairs and maintenance. The use of the current parking area is very poor and tree roots and ground movement have created many dangerous sidewalk conditions. Security upgrades should be performed to address vandalism and mischief that has consistently taken place in and around the library in off hours.

- City Pool – Significant rot, structural, ventilation and electrical problems were observed in this structure. The facility requires extensive and highly costly upgrades. The viability of the facility to continue to be used is questionable. Security concerns also exist with the pool due to a history of break-ins, vandalism, and mischief.

- Public Works Shops – The facilities at the shop site are in overall good condition. More space is required inside and under cover for storage of valuable equipment. Also, a number of repairs, improvements, and enhancement are required to bring the shop up to standard.

- Water Treatment Plant (WTP) – Exterior repairs and maintenance are needed. An Essential Facility Seismic Study and subsequent bracing are recommended to be undertaken. Other repairs and maintenance projects are also needed to extend the useful life of the facilities buildings.

- Wastewater Treatment Plant (WWTP) – The structures require some seismic anchoring and maintenance repairs. Parking at the entrance is limited. Other maintenance and repair projects are required to extend the useful life of the facilities buildings.

Section 4

4.0 Evaluations and Improvement Alternatives

This section provides rehabilitation recommendations for each facility discussed in the study. Alternate repair strategies are presented when appropriate. The projects and repairs recommended in this section should be considered "high-level" or preliminary in nature. While we have made efforts to be as specific as possible, it should be understood that the recommendations are preliminary and will require additional planning, design, and engineering support.

4.1. *Basis for Rehabilitation Costs*

Cost estimates for the recommended improvements are based upon time, material, and overhead fees for similar projects. This planning effort is not an exhaustive analysis as the estimates are based upon a brief physical inspection followed by review of plans provided by the City. When appropriate, we have recommended further study of the sites by experts in a particular discipline.

We have included a 30% contingency for each project to account for unexpected or unknown costs that may occur in the planning or construction process. As planning for the facilities moves closer toward construction, the number of "unknowns" diminishes and the contingency is lowered.

Engineering and architectural support costs have been estimated at 20% of the project. These costs include services for structural engineering studies, engineering details, architectural drawings, specifications, and contract documents. The Engineer and/or Architect is also responsible for overseeing the contractor and ensuring the improvements are built to the plans. Smaller non-critical maintenance repairs can be completed by city staff or local contractors directly.

Where engineering studies or analyses have been recommended in this report, the study cost is built into the rehabilitation method. For example, if a seismic analysis is required for a structure, seismic bracing of the wall may cost $100,000, and of the roof $50,000.

The cost of the seismic bracing would be: $100,000 + $50,000 = $150,000

The contingency is 30%, therefore the improvement cost is: $150,000 X 130% = $195,000

Engineering & Architectural Fees are estimated as a project percentage.

Total project costs $195,000, E&A Fees are 20% so that: $195,000 X 20% = $46,800

Engineering and Architectural fees are then estimated at $46,800 for the seismic bracing of the rehabilitation project. The $46,800 will cover a structural investigation, calculations and detail drawings, as well as specifications and construction inspection and architectural support.

4.1.1. ENR Cost Indexing

Over time, prices typically increase as inflation reduces the value of money. In order to allow budget planning in the future for the projects prepared in this study, the projects can be compared to the Engineering News Record (ENR) Construction Cost Index (CCI).

The ENR CCI provides an index numbering system that allows conversion of project costs across time periods. Construction costs of projects are determined monthly and assigned a number relative to an absolute baseline year cost.

The ENR Construction Cost Index uses an established value of 100 for the year 1913. The index value for December 2011 used in this report is 9171. For instance, if a project cost $10,000 to construct in 1913, the cost to construct it today would be $917,100 based upon growth in the ENR CCI. A graph is presented in Figure 5.6 which shows the ENR CCI recent trends.

Over the last 10 years the ENR index has grown approximately 3.5% per year. If that trend continues, a $100,000 project in this report will cost approximately $111,000 in three years and $141,000 in ten years to complete.

As the City makes decisions and budgets for repairs to the facilities, it should consult the estimates in this report and apply the ENR index to them. Otherwise, budgetary planning will underestimate true costs of completing the work.

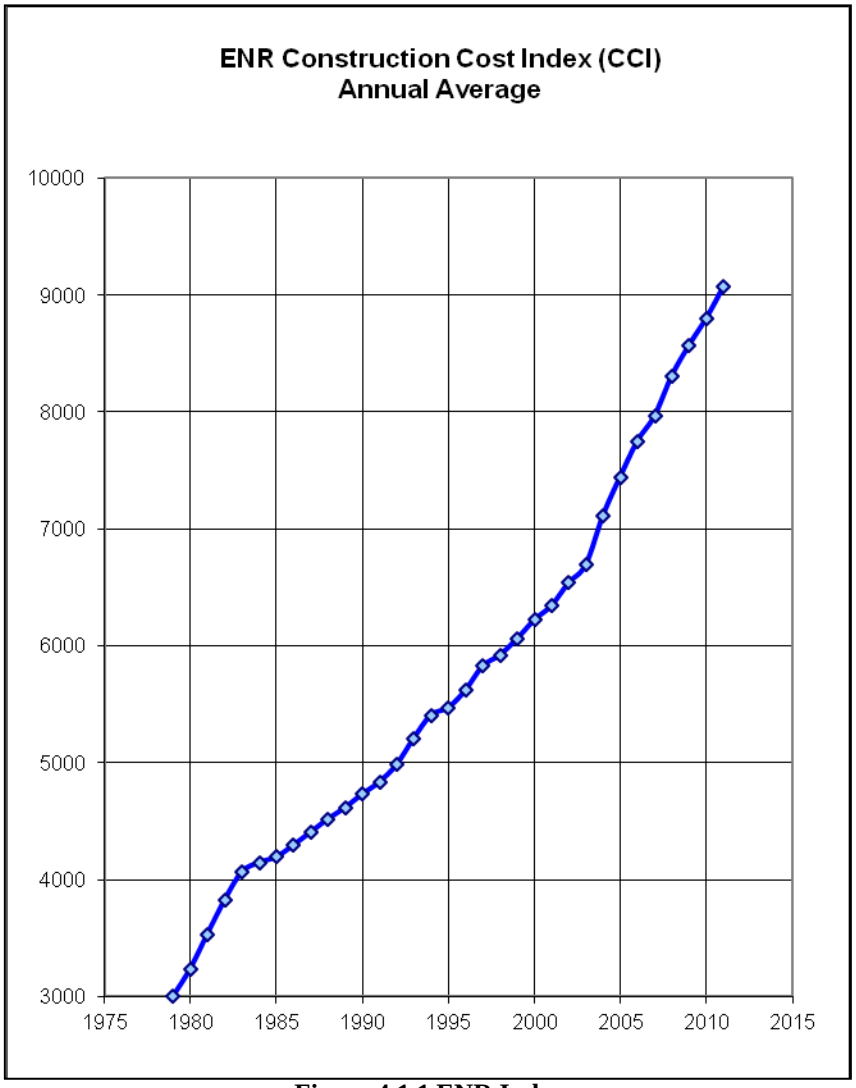

Figure 4.1.1 ENR Index

4.2. *City Hall Recommended Improvements*

City Hall is a historic building that has not been updated to keep up with code and maintenance requirements. It requires many repairs and is not structurally prepared for an earthquake. Since repairing the structure is very costly, we have included improvement alternatives for the City to consider. The following sections and Table 4.2.8 are the recommendations based upon the deficiencies from Section 3.2.1.

4.2.1. City Hall Structural/General Recommendations

The structural condition of the building appears to be in good standing for its age, initial design life expectancy and environment. However, due to certain deficiencies in the lateral system, the building may not meet the intent of collapse prevention during an earthquake. The building may survive an earthquake, but, due to the unknown reliability of the existing connections and systems, major damage to main structural elements may render the building unsafe. It is recommended that a full seismic rehabilitation study and plan be developed to better assist with rehabilitation of the building. During this rehabilitation study, a priority of rehabilitation items should be developed to help establish long-term planning. The study should include the building additions and resolve the connections between the original and new construction.

A study of the ground water in the near vicinity of the building should be made and a drainage system around the building be implemented. This should be done to minimize the standing water currently under the building.

Numerous repairs should be completed to the non-structural portions of the building. A complete remodel of the upstairs structure above the council chambers is required or the area will need to be abandoned and disabled. The facility needs a new roof, exterior paint and sealing, and new stairways. Water damage repairs, ceiling tile replacements and insulation repairs are recommended.

The building entrances need to be protected from driving rains. Safety improvements are also recommended to control access to the entrances. The front lobby should be reconfigured to provide the staff with protection while handling the public, including reorganized counter space and safety glass. The side entrance to the council chambers should be enclosed to protect from inclement weather and provide access control while meetings are conducted.

4.2.2. City Hall Plumbing Recommendations

For the age of the facility and the condition of the other facets of the building, the plumbing system is in good shape. Code items such as supply line sizes and vent sizes were not able to be directly observed, therefore further deficiencies with those items may be identified during any remodel. The water lines should have fittings replaced to remedy the corrosion problems. The old fire hall plumbing fixtures located above the council chambers are damaged and should be replaced or properly plugged and abandoned.

The bathrooms require attention from an accessibility standpoint. It is recommended to remodel the bathrooms to provide the handicapped access required and add new dividers between fixtures to the bathroom nearest to the main entrance.

Open storm drainage sewer connections under the building must be replaced and sealed to prevent the standing water and crawlspace rot from continuing. The storm drain systems should be repaired in conjunction with the roof replacement and adjustment of downspouts.

4.2.3. City Hall Mechanical Recommendations

The mechanical components of City Hall are adequate to heat the building, but not to cool and maintain reasonable controls over the temperature. The front lobby particularly has a poor heating arrangement. A package heating/cooling system is recommended where zonal controls can be maintained for offices. The existing heat pumps could be reutilized in such a system if combined with more intelligent programmable controls. The raised floors and drop ceiling tile areas in the building provide working space to install additional ducting. Additional insulation is recommended in all wall, floor and ceiling cavities.

4.2.4. City Hall Electrical Recommendations

The electrical system requires significant upgrades, particularly on the first floor, basement, and the old fire hall. The breaker panels for these areas have long been outdated and do not meet the current grounding, over current protection, and conductor wiring codes. It is recommended to rewire these areas and to install additional receptacles and lighting to modern standards. A fire detection system and wall-socketed low voltage signals should be terminated at the same time into wall plates. Several dangerously exposed wires and open junction boxes were observed and these should immediately be repaired.

Improvement also should be made to the low voltage systems. The City should also be connected into the fiber network directly to the Fire Station. A professional installation of intranet lines should be completed in all the offices. New equipment is required in the council chambers including audio and digital recording equipment. Audio improvements in the council chambers should include acoustical damping panels to reduce noise reflection.

4.2.5. City Hall Fire Safety Recommendations

Compared to a modern facility the fire safety condition of this building is substandard. A significant number of egress deficiencies could result in panic and confusion during an emergency lowering the chances of escaping successfully. Absence of a secondary fire exit to the City Manager and Recorder's offices creates a low likelihood of escape if the stairway is blocked. The lack of detection and extinguishment equipment further reduces these chances. Further code evaluation of each specific exit travel is recommended to determine if deficiencies can be corrected through proper signage, detection, and extinguishment systems or if reconfiguration of the floor plan is necessary.

4.2.6. City Hall ADA Compliance Recommendations

From the standpoint of the public nature of the building, its accessibility is substandard. ADA issues are typically a high priority because of the tendency for barriers to incur fines or lawsuits. A general approach to move towards ADA compliance is to start from the parking lot and make your way into the building. Both marked ADA parking stalls would need to be modified as indicated in Table 3.2.1.8 to be brought up to code. The accessible entrances would need to be properly labeled, with signage guiding individuals from the parking spaces to the proper entrance to suit their needs.

The next step would be ensuring accessibility of routes throughout the building. Doors would need to have proper opening forces and handles that don't require excessive grasping and twisting. Items attached to walls and ceilings would have to be kept from encroaching into the accessible route. In addition, an

individual in a wheelchair must currently travel outside the building to get from public works department on the main floor to the council chambers or accessible public restrooms on the adjacent lower floor. Accessibility barriers in the individual rooms would need to be addressed; proper mounting heights of items in bathrooms, proper clearances and access ramps in public rooms for individuals in wheelchairs, and proper door clearances to access these rooms. The drinking fountain does not have the proper clearances, and would require replacement.

The lack of an elevator or ramp to both second story structures violates accessibility codes. An elevator is recommended up to the City Manager and Recorder's office and a second elevator is needed if the old fire hall upstairs is used for any purpose besides storage. A level ramp from the street to the second story structure was considered, but the extreme slope of the road is not acceptable for disabled parking.

4.2.7. City Hall Site Recommendations

The existing site requires landscaping cleanup work. Tree and shrubs should be removed or pruned back from the building. Weeds should be removed from around the foundation and all landscaping should slope away from the building for drainage.

The parking situation is poor with little room for expansion. The present site is not ideal as there is no room to expand parking without building an expensive garage or demolishing nearby buildings. If the old fire hall is renovated to allow additional staff on site, the parking situation will become worse.

4.2.8. City Hall Rehabilitation Alternatives

A number of alternatives were considered to address the deficiencies in the City Hall facilities. They are summarized in the following sections.

4.2.8.1. *City Hall Rehabilitation Alternative 1 – Minimum Maintenance Upgrades*

The first alternative to consider includes provisions to repair the base essentials in the building. Only the immediate maintenance needs would be repaired to allow the building to remain functional for a relatively short period of time. It will continue to have accessibility, fire safety, and seismic deficiencies. The upstairs in the old fire hall would remain unusable.

We do not recommend this option, but without sufficient financial resources to undertake more extensive repairs, the City may need to address some or all of these immediate maintenance needs.

Note, where appropriate, we have developed an estimated take-down schedule for projects that are more maintenance-oriented in nature. The purpose for this is to assist the departments within the City in forecasting maintenance budgets if and or when major capital expenses are not practical in a single year or through a single project.

Alternative 1 under the City Hall upgrades section is an example of this type of project. While it would be ideal to be able to construct a new City Hall in a new location, it may not be practical for the City at this time. Therefore, Alternative 1 focuses on maintenance projects that can be done to further extend the useful life of the current facilities. This may not, however, change our recommendations for the improvement of disposition of existing buildings in the City.

TABLE 4.2.8.1 SUMMARY OF MAINTENANCE REPAIRS TO CITY HALL-ALTERNATIVE 1

						Estimated Budget Takedown Schedule										
Discipline	**City Hall**	**Units**	**Qty**	**Price**	**Total**	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Structural/	Reroof building	Sq ft	6,000	$15.00	$90,000.00	$35,000.00	$35,000.00	$20,000.00								
General	Repair dry rot (not upstairs damage)	Ea	1	$30,000.00	$30,000.00		$5,000.00	$5,000.00	$5,000.00			$5,000.00	$10,000.00			
	Painting outside, caulking, sealing	Sq Ft	15,000	$3.00	$45,000.00				$15,000.00	$15,000.00	$15,000.00					
	Indoor painting in several rooms	Ea	1	$10,000.00	$10,000.00		$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00					
	Replace exterior windows with energy efficient vinyl and repair leaking jambs	Ea	27	$800.00	$21,600.00				$8,000.00	$5,000.00	$5,000.00	$3,600.00				
	Replace carpet	Sq ft	1,500	$4.00	$6,000.00					$2,000.00	$2,000.00	$2,000.00				
	Install a controlled entry at front lobby with safety glass and door	Ea	1	$20,000.00	$20,000.00	$8,000.00									$12,000.00	
	Construct awnings over leaking entrances	Ea	3	$2,000.00	$6,000.00		$2,000.00	$2,000.00	$2,000.00							
	Health Hazard Evaluation and Mitigation	Ea	1	$30,000.00	$30,000.00	$3,000.00				$10,000.00	$10,000.00	$7,000.00				
Mechanical	Heating Upgrades	LS	1	$40,000.00	$40,000.00				$10,000.00	$10,000.00	$10,000.00	$10,000.00				
Plumbing	Fix dissimilar pipe material problems	Ea	1	$15,000.00	$15,000.00							$7,500.00	$7,500.00			
Electrical	Install proper ground bonding	Ea	1	$2,000.00	$2,000.00			$2,000.00								
	Repair exposed and unsafe wiring	Ea	1	$4,000.00	$4,000.00			$4,000.00								
Site	Grounds work outside removing foliage	Ea	1	$3,000.00	$3,000.00		$1,000.00	$1,000.00	$1,000.00							
	Parking lot patching and ADA labeling	Ea	1	$10,000.00	$10,000.00								$5,000.00	$5,000.00		
	Contingency			30.00%	$99,800.00	$13,800.00	$13,500.00	$10,800.00	$12,900.00	$13,200.00	$13,200.00	$10,600.00	$6,800.00	$1,500.00	$3,600.00	$0.00
	Architecture & Engineering			20.00%	$86,500.00	$12,000.00	$11,700.00	$9,400.00	$11,200.00	$11,500.00	$11,500.00	$9,200.00	$5,900.00	$1,300.00	$3,200.00	$0.00
			Total		**$518,900.00**	**$71,800.00**	**$70,200.00**	**$56,200.00**	**$67,100.00**	**$68,700.00**	**$68,700.00**	**$54,900.00**	**$35,200.00**	**$7,800.00**	**$18,800.00**	**$0.00**

4.2.8.2. *City Hall Rehabilitation Alternative 2*

The second option is to repair all the major deficiencies at the City Hall facility and bring it up to modern safety and seismic codes. There is not an easy or practical solution to the parking problem. We have included estimated pricing for acquiring a nearby parcel of land and clearing it for a new parking lot as Alternate B. Alternate A is without additional parking.

This alternative will create additional useable space through repairs to the old fire hall upstairs. It also addresses dangerous emergency egress paths and public safety concerns. The building rehabilitation is focused on remedies to all the deficiencies listed in Section 3.2.

TABLE 4.2.8.2 SUMMARY OF REPAIRS TO CITY HALL- ALTERNATIVE 2

Discipline	City Hall	Units	Qty	Price	Total
Structural/	Reroof building	Sq Ft	6,000	$15.00	$90,000.00
General	Shear walls to foundation, attach roof and floors to foundation walls	Sq Ft	8,600	$32.00	$275,200.00
	Brace ceilings w/ new ceiling tiles as well	Sq Ft	8,600	$5.00	$43,000.00
	Replace Stairways	Ea	2	$6,000.00	$12,000.00
	Repair dry rot	Ea	1	$30,000.00	$30,000.00
	Rebuild Fire Hall second level	Sq Ft	900	$125.00	$112,500.00
	Painting outside, caulking, sealing	Sq Ft	15,000	$3.00	$45,000.00
	Indoor painting in several rooms	Ea	1	$10,000.00	$10,000.00
	Replace exterior windows with energy efficient vinyl and repair leaking jambs	Ea	27	$800.00	$21,600.00
	Replace carpet	Sq Ft	1,500	$4.00	$6,000.00
	Install a controlled entry at front lobby with safety glass and doorway	Ea	1	$20,000.00	$20,000.00
	Install a covered & reconfigured entrance at council chamber to mitigate water intrusion and increase room	Sq Ft	150	$160.00	$24,000.00
	Construct awnings over leaking entrances	Ea	2	$2,000.00	$4,000.00
Plumbing	Reroute storm drainage system, cover drains under building	Ea	1	$40,000.00	$40,000.00
	Fix dissimilar pipe material problems	Ea	1	$15,000.00	$15,000.00
	Replace outdated Fixtures	Ea	1	$7,500.00	$7,500.00
Mechanical	Rebuild Heating System, replace heaters and new ducting	Ea	1	$40,000.00	$40,000.00
Electrical	Install proper ground bonding	Ea	1	$2,000.00	$2,000.00
	Rewire outdated wiring in building, add circuits, replace outdated panels, replace lighting in ceiling grids	Ea	1	$165,000.00	$165,000.00
	Repair low voltage wire runs, professionally install computer networking	Ea	1	$55,000.00	$55,000.00
	Repair exposed and unsafe wiring	Ea	1	$4,000.00	$4,000.00
	Install new sound equipment and mount acoustical panels	Ea	1	$15,000.00	$15,000.00
	Add webcasting equipment	Ea	1	$6,000.00	$6,000.00
Fire	Install Fire alarm System	Ea	1	$30,000.00	$30,000.00
	Add emergency signs and lighting	Ea	1	$10,000.00	$10,000.00
	Reconfigure accessways and hallways to fire code	Ea	1	$30,000.00	$30,000.00
ADA	Reconfigure access and doorways for ADA compliance in addition to fire code line item	Ea	1	$25,000.00	$25,000.00
	Reconfigure access ramp and make repairs outside	Ea	1	$7,500.00	$2,000.00
	Repair ADA parking site	Ea	1	$5,000.00	$5,000.00
	Elevators to second floor structures	Ea	2	$150,000.00	$300,000.00
	Reconfigure meeting room equipment for ADA	Ea	1	$6,000.00	$6,000.00
Site	Grounds work outside removing foliage	Ea	1	$3,000.00	$3,000.00
	Contingency			30.00%	$436,200.00
	Architecture & Engineering			20.00%	$378,000.00
	Alternative 2A No Additional Parking		Total		$2,268,000.00
	New Land Acquisition		1	$500,000.00	$500,000.00
	New surface parking spaces on additional property	spac	20	$5,000.00	$100,000.00
	Contingency			30.00%	$616,200.00
	Architecture & Engineering			20.00%	$534,000.00
	Alternative 2B Offsite Surface Parking		Total		$3,204,000.00

4.2.8.3. *City Hall Rehabilitation Alternative 3*

Another option we considered is building a new facility either at the same site by removing the first facility, or by using a new location. For space requirements, we will assume 250 square feet required per city employee, and estimate 25 employees on site for the future. 2500 square feet will be used for the council meeting area. This gives a total of 8750 square feet required. A conservative cost estimate of $175 per square foot will be used.

TABLE 4.2.8.3 CITY HALL REPLACEMENT- ALTERNATIVE 3

	City Hall	Units	Qty	Price	Total
	Demolish Existing Building	Sq ft	8,600	$20.00	$172,000.00
	Construct a new Building	Sq ft	8,750	$175.00	$1,531,250.00
	Resurface Existing Parking Lot	Sq ft	7,000	$15.00	$105,000.00
	Contingency			30.00%	$542,500.00
	Architecture & Engineering			20.00%	$470,200.00
			Total		$2,820,950.00

4.2.8.4. *City Hall Rehabilitation Alternative 4*

The City could identify a better site with an existing building and a better parking situation and combine the facility with the police station. The cost of renovating a site will vary based upon the condition of the building. The City could maintain the Old City Hall as a museum, community center, or donate it to a non-profit for restoration and repurposing. We have estimated the size of a combined facility at around 14,000 square feet for the purposes of this exercise.

TABLE 4.2.8.4 CITY HALL RELOCATION- ALTERNATIVE 4

	City Hall	Units	Qty	Price	Total
	Land Acquisition	Ea	1	$500,000.00	$500,000.00
	Building Remodel & Addition	Sq ft	14,000	$160.00	$2,240,000.00
	Parking and Surface Improvements	Sq ft	25,000	$15.00	$375,000.00
	Contingency			30.00%	$934,500.00
	Architecture & Engineering			20.00%	$809,900.00
			Total		$4,859,400.00

4.2.8.5. *City Hall Rehabilitation Alternative 5*

During the preparation of this study, the now vacant suitable building facility located along the old Hwy 20 was listed for sale. The site has more than enough room to house all the City Hall offices as well as expansion room and abundant parking. Further, the structure is attractive as it was constructed under modern seismic and wind load codes. The facility can be remodeled affordably to meet the City's needs.

This alternative assumes the City will pay the full asking price and further invest in the building to remodel and upgrade it. The current building is likely to be large enough to house both the needs of City Hall and the Police Department though some remodeling will be required. This alternative considers that the remodel requirements will be relatively minor with no major expansion required.

TABLE 4.2.8.5 AVAILABLE SUITABLE BUILDING FACILITY- ALTERNATIVE 5

	City Hall	Units	Qty	Price	Total
	Land & Building Acquisition	Ea	1	$600,000.00	$600,000.00
	Building Remodel & Communications updating	Sq ft	9,500	$65.00	$617,500.00
	Contingency			30.00%	$365,300.00
	Architecture & Engineering			20.00%	$316,600.00
			Total		$1,899,400.00

4.2.8.6. *City Hall Rehabilitation Alternative 6*

The site identified for Alternative 5 has more overall square footage (9,500 vs. approximately 8,600) than the existing City Hall, but it may not contain enough room to house both the City Hall and Police/Dispatch functions comfortably without some expansion effort.

Both existing facilities (Police Dept. and City Hall) are in need of expansion, major improvement or relocation. This alternative includes purchasing the available suitable building facility and constructing an addition to house the police and dispatch services. This is our recommended alternative as it is both lower cost than remodeling City Hall, and it solves the space and floodplain concerns at the Police Station.

TABLE 4.2.8.6 AVAILABLE SUITABLE BUILDING FACILITY- ALTERNATIVE 6

	City Hall	Units	Qty	Price	Total
	Land & Building Acquisition	Ea	1	$600,000.00	$600,000.00
	Building Remodel & Communications updating	Sq ft	9,500	$65.00	$617,500.00
	Building Addition for Police and Dispatch Services	Sq ft	4,500	$160.00	$720,000.00
	Contingency			30.00%	$581,300.00
	Architecture & Engineering			20.00%	$503,800.00
			Total		$3,022,600.00

This option includes a budget based around a currently available building. If this building is not deemed suitable or is purchased by someone else, another building may not be available or may require different or greater improvements to facilitate the City needs. As this cannot be predicted, this alternative is provided with a budget that would work in many instances but not all. Any other existing building would require a specific review and evaluation before being considered as a candidate for remodel and rehoming City Hall and/or the Police Department.

4.2.9. City Hall Alternative Comparison Table

Table 4.2.9 highlights the advantages and disadvantages between the investigated alternative for rehabilitating City Hall.

TABLE 4.2.9 City Hall Alternatives Comparison Table

Alternative	Advantages	Disadvantages	Estimated Cost
1. Maintenance Repairs	1. Lower cost. 2. Most important structures will be repaired.	1. Continued risk to occupants from human and natural disasters. 2. No improvements to existing facility. 3. All non-immediate repairs will not be completed.	$518,900
2A. Existing Structure Rehab	1. Lower cost than building a new facility. 2. The existing space will be more useable. 3. Code violations will be addressed. 4. Old fire hall living quarters can be utilized.	1. Parking situation remains poor. 2. The site will continue to lack the modern conveniences of a new facility. 3. No affordable areas to expand to once renovation s are complete.	$2,268,000
2B. Existing Structure Rehab with Parking	1. Lower cost than building a new facility 2. The existing space will be more useable. 3. Code violations will be addressed. 4. Old fire hall living quarters become reusable. 5. Improved parking space.	1. Even if a site is available, the price and proximity will result in a continued poor parking situation. 2. The site will continue to lack the modern conveniences of a new facility. 3. No affordable areas to expand once renovation is complete.	$3,204,000
3. Building Replacement on existing site	1. A new modern structure will be in place supporting new technology built to higher standards. 2. More affordable than finding a new site.	1. Loss of a well loved historic structure. 2. Parking situation can only be marginally improved. 3. Temporary Facilities are required during construction.	$2,820,950
4. Relocate to new site	1. A new modern structure will be in place supporting new technology built to higher standards. 2. Parking can be greatly improved. 3. Consolidation of City functions into one building will streamline processes.	1. Very high cost. 2. Old city hall will deteriorate more quickly once unoccupied.	$4,859,400
5. Relocate to an available suitable building facility.	1. Structure is more modern and can be renovated more cost effectively than city hall. 2. Ample parking space. 3. Potential for expansion. 4. Adequate room for all City hall offices.	1. Old city hall will deteriorate more quickly once unoccupied. 2. Site has not been investigated and may have unknown deficiencies. 3. Property may not remain on market in time to secure funds.	$1,899,400
6. Relocate to an available suitable building facility and consolidate Police & Dispatch	1. Structure is more modern and can be renovated more cost effectively than city hall. 2. Ample parking space. 3. Potential for expansion. 4. Adequate room for all City hall offices. 5. Consolidation of City functions into one building will streamline processes.	1. Old city hall will deteriorate more quickly once unoccupied. 2. Site has not been investigated and may have unknown deficiencies. 3. Property may not remain on market in time to secure funds.	$3,022,600

4.3. *Police Station Recommended Improvements*

The Police Station is located in a repurposed bank building. Unfortunately, the remodeling left an awkward layout that has neither enough working space nor balanced lighting and heating. The building requires costly exterior and interior repairs. The City should investigate finding a more suitable structure, such as one combining other City departments. Since repairing the structure will be costly, we have included improvement alternatives for the City to consider. The following sections and Table 4.3.8 include the recommendations based upon the deficiencies discussed in Section 3.2.2.

4.3.1. Police Station Structural/General Recommendations

The structural condition of the building appears to be reasonable. However, due to certain deficiencies in seismic connections the building does not meet the intent of an essential facility. The building may survive an earthquake, but it may not remain functional and may need serious rehabilitation after the earthquake. It is recommended that the above known deficiencies be rehabilitated and a full structural investigation be implemented to further evaluate the structural systems of the original building and addition.

There is evidence of foundational settling which would be typical in a fill area or old flood plain. Movement is apparent in the siding and in some interior features.

The police station needs exterior and interior repairs. Many windows have broken seals and should be replaced. The siding, gutters, and flashing all need rehabilitated. The stairway to the upstairs offices is too narrow. There is no secondary exit from the upstairs offices.

4.3.2. Police Station Plumbing Recommendations

Minor work is required to the plumbing fixtures and water supply piping. The plumbing system is in good condition. We recommend replacing the water supply insulation as it is degrading. The toilets should have their flush mechanisms and wax rings replaced. The shower area requires the installation of a lip to prevent water spillage.

4.3.3. Police Station Mechanical Recommendations

The mechanical systems in the police station are configured incorrectly for the building. The upstairs requires cooling and the mounting deficiencies in the attic unit need corrected. We recommend an overhaul of the system and to re-route ducting and registers to provide balanced climate control in the building. An operable louver which can be closed during tank refueling is recommended to control the air intake facing the gas station.

4.3.4. Police Station Electrical Recommendations

The electrical and communications system in the building is in excellent condition for the current building configuration needs. Two areas of need are the lighting configuration which is very poor and the service entrance which is too small for significant expansion. We recommend a lighting analysis followed by reconfiguring the lighting in the entire building with high efficiency light fixtures. A new 400 amp service entrance is recommended for the police station if it is expanded.

4.3.5. Police Station Fire Safety Recommendations

The fire safety condition of the main level is good, however, the single exit from the second level creates significant increase of risk for occupants trapped on the second level during an emergency. A second emergency exit from the second level via an egress window with an area of rescue or stairs is recommended. The other deficiencies listed in Table 3.2.2.8 are minor and easily corrected with proper signage and space management.

4.3.6. Police Station ADA Accessibility Recommendations

From the standpoint of the public nature of the building, its accessibility is in decent shape. That said, ADA issues are typically a high priority because of the tendency for barriers to incur fines or lawsuits. A general approach to move towards ADA compliance is to start from the parking lot and make your way into the building. The locations of the marked ADA parking stalls could need to be moved closer to the walkway that leads to the main entrance.

The next step would be ensuring accessibility of routes throughout the building. Doors would need to have proper opening forces and handles that don't require excessive grasping and twisting. Items attached to walls and ceiling would have to be kept from encroaching into the accessible route. The handrail at the stairs should be replaced with a compliant handrail at the proper height. Accessibility barriers in the individual rooms would need to be addressed; proper mounting heights of items in bathrooms and proper clearances for individuals in wheelchairs.

4.3.7. Police Station Site Recommendations

The present site for the station is in good shape with underutilized space. The major site problems are the landscaping which is too close to the building and the parking should be more efficiently arranged. We recommend removing the pond and foliage away from the building to stop water damage. The parking lot can be reconfigured by removing parking islands and removing landscaping behind the building to allow straight-in parking.

The location is below the 100 year floodplain and floodwaters could potentially rise 1-2 feet inside the structure. The typical solution to floodplain construction is to either raise the site or to extend the foundation height. Raising the current site is impractical and increasing the foundation height would be very expensive. The present risk is that a significant flood would make the site unusable and permanently damage the dispatch electronic systems.

4.3.8. Police Station Alternatives

A number of alternatives were considered to address the deficiencies in the Police Station facilities. They are summarized in the following sections.

4.3.8.1. *Police Station Rehabilitation Alternative 1*

The first alternative presented includes the provision to repair the present location and to add additional working space. The cost estimate is included in Table 4.3.8.1

TABLE 4.3.8.1 SUMMARY OF REPAIRS TO POLICE STATION- ALTERNATIVE 1

Discipline	Police Station	Units	Qty	Price	Total
Structural/	Seismic upgrades to structure	Ea	1	$100,000.00	$100,000.00
General	Brace mechanical equipment	Ea	1	$5,000.00	$5,000.00
	Reroof building and address roof sheathing attachments	Ea	1	$30,000.00	$30,000.00
	Repair windows	Ea	10	$500.00	$5,000.00
	Repair siding and repaint	Sq Ft	4,500	$6.00	$27,000.00
	Replace gutters	Lf	300	$6.00	$1,800.00
	Replace stairs to be adequate width	Ea	1	$25,000.00	$25,000.00
	Add safety glass at front counter	Ea	1	$3,500.00	$3,500.00
	Repair and rebuild generator shed and bike storage for safer access	Ea	1	$15,000.00	$15,000.00
	Construct an addition to the side of the building	Sq Ft	1,000	$160.00	$160,000.00
Plumbing	Insulate piping	Ea	1	$2,000.00	$2,000.00
	Maintenance to toilets and shower	Ea	1	$500.00	$500.00
Mechanical	Replace air handling system, ducting and controls to balance heating and cooling	Ea	1	$80,000.00	$80,000.00
	Add intake louver control for fumes	Ea	1	$2,000.00	$2,000.00
Electrical	Perform lighting analysis and reconfigure lighting in building	Ea	1	$60,000.00	$60,000.00
	Add additional receptacles	Ea	1	$10,000.00	$10,000.00
	Install 400 amp service	Ea	1	$25,000.00	$25,000.00
	Install weather rated receptacles	Ea	1	$2,500.00	$2,500.00
Fire	Add second fire escape from upstairs	Ea	1	$10,000.00	$10,000.00
	Repair exit signs and problems, new fire doors	Ea	1	$3,000.00	$3,000.00
ADA	Add tactile signs	Ea	1	$2,000.00	$2,000.00
	Make handrails compliant	Ea	1	$2,000.00	$2,000.00
	ADA complaint meeting tables	Ea	1	$2,000.00	$2,000.00
Site	Reconfigure parking lot for improved access and ADA compliance	Ea	1	$25,000.00	$25,000.00
	Reconfigure back parking lot to create more space	Ea	1	$10,000.00	$10,000.00
	Contingency			30.00%	$121,700.00
	Architecture & Engineering			20.00%	$109,500.00
			Total		**$839,500.00**

4.3.8.2. *Police Station Rehabilitation Alternative 2*

Another option for the City is to repair the Police Station without adding additional working space. The recommended repairs will make the existing space more functional without the significant expense of an addition. However, this does not address the space and crowding problems and the fact that the critical facility is located in a flood plain.

As a maintenance-based project, the following estimate includes a budget take-down schedule to assist the department in their maintenance budget projections.

TABLE 4.3.8.2 SUMMARY OF REPAIRS TO POLICE STATION- ALTERNATIVE 2

						Estimated Budget Takedown Schedule										
Discipline	**Police Station**	**Units**	**Qty**	**Price**	**Total**	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Structural/	Seismic upgrades to structure	Ea	1	$100,000.00	$100,000.00										$50,000.00	$50,000.00
General	Brace mechanical equipment	Ea	1	$5,000.00	$5,000.00				$2,500.00	$2,500.00						
	Reroof building and address roof sheathing attachments	Ea	1	$30,000.00	$30,000.00										$15,000.00	$15,000.00
	Repair windows	Ea	10	$500.00	$5,000.00		$5,000.00									
	Repair siding and repaint	Sq Ft	4,500	$6.00	$27,000.00	$10,000.00	$10,000.00	$7,000.00								
	Replace gutters	Lf	300	$6.00	$1,800.00			$1,800.00								
	Replace stairs to be adequate width	Ea	1	$25,000.00	$25,000.00										$12,500.00	$12,500.00
	Add safety glass at front counter	Ea	1	$3,500.00	$3,500.00		$3,500.00									
	Repair and rebuild generator shed and bike storage for safer access	Ea	1	$15,000.00	$15,000.00			$7,500.00	$7,500.00							
Plumbing	Insulate piping	Ea	1	$2,000.00	$2,000.00				$2,000.00							
	Maintenance to toilets and shower	Ea	1	$500.00	$500.00			$500.00								
Mechanical	Replace air handling system, ducting and controls to balance heating and cooling	Ea	1	$80,000.00	$80,000.00					$20,000.00	$20,000.00	$20,000.00	$20,000.00			
	Add intake louver control for fumes	Ea	1	$2,000.00	$2,000.00			$2,000.00								
Electrical	Perform lighting analysis and reconfigure lighting in building	Ea	1	$60,000.00	$60,000.00					$15,000.00	$15,000.00	$15,000.00	$15,000.00			
	Add additional receptacles	Ea	1	$10,000.00	$10,000.00					$2,500.00	$2,500.00	$2,500.00	$2,500.00			
	Install weather rated receptacles	Ea	1	$2,500.00	$2,500.00									$2,500.00		
Fire	Add second fire escape from upstairs	Ea	1	$10,000.00	$10,000.00	$5,000.00	$5,000.00									
	Repair exit signs and problems, new fire doors	Ea	1	$3,000.00	$3,000.00			$1,500.00	$1,500.00							
ADA	Add tactile signs	Ea	1	$2,000.00	$2,000.00			$1,000.00	$1,000.00							
	Make handrails compliant	Ea	1	$2,000.00	$2,000.00			$1,000.00	$1,000.00							
	ADA complaint meeting tables	Ea	1	$2,000.00	$2,000.00					$1,000.00	$1,000.00					
Site	Reconfigure parking lot for improved access and ADA compliance	Ea	1	$25,000.00	$25,000.00									$25,000.00		
	Reconfigure back parking lot to create more space	Ea	1	$10,000.00	$10,000.00									$10,000.00		
	Contingency			30.00%	$84,700.00	$3,000.00	$4,700.00	$4,500.00	$3,100.00	$8,200.00	$7,700.00	$7,500.00	$7,500.00	$7,500.00	$15,500.00	$15,500.00
	Architecture & Engineering			20.00%	$76,200.00	$2,700.00	$4,300.00	$4,100.00	$2,800.00	$7,400.00	$7,000.00	$6,800.00	$6,800.00	$6,800.00	$14,000.00	$14,000.00
			Total		**$584,200.00**	**$20,700.00**	**$32,500.00**	**$30,900.00**	**$21,400.00**	**$56,600.00**	**$53,200.00**	**$51,800.00**	**$51,800.00**	**$51,800.00**	**$107,000.00**	**$107,000.00**

4.3.8.3. *Police Station Rehabilitation Alternative 3*

A third option is to relocate the police station. The cost for this will vary. We recommend any relocation consideration be included with the relocation alternative for City Hall. By combining space, the City can reduce operating and remodeling costs. The estimated cost is approximately $3-5 million. See Tables 4.2.8.4, 4.2.8.5, and 4.2.8.6 in the City Hall improvement alternatives for the cost breakdown.

Our recommended alternative includes provisions to expand the available suitable building facility to include a new home for the police department.

4.4. *Fire Station Recommended Improvements*

The Fire Station is a modern and up-to date facility. Only minor repairs are required at this location. The following sections and Tables 4.4.8 include the recommendations based upon the deficiencies from Section 3.2.3.

4.4.1. Fire Station Structural/General Recommendations

If the City does not already have a maintenance plan in effect for this building, one is recommended. This maintenance plan shall include the maintenance of all exterior envelope features, as well as the internal workings of the building. This maintenance plan will keep the building from falling into disrepair.

4.4.2. Fire Station Plumbing Recommendations

This facility was constructed recently in compliance with current code requirements. We observed no plumbing deficiencies at this facility.

4.4.3. Fire Station Mechanical Recommendations

The electrical/communications room needs a ventilation or cooling system installed. We recommend installing a ventilation system with a fresh air intake if the space remains uninsulated. The building also lacks insulation in the ceilings which would save on heating costs. Insulating the building will provide a long term cost savings.

The average gas bill is approximately $2800 per year. As a rough estimate we estimate a 20% energy savings will be gained if the large attic is insulated. If the net present value is calculated for the installation cost of $16,700, the payback period is approximately 21 years if 8% energy inflation and a 4% interest rate are used. There is no cooling in the building and none is recommended unless insulation is installed. The costs for the improvement could be significantly less and the payback sooner if the City uses in-house manpower resources to install the insulation.

4.4.4. Fire Station Electrical Recommendations

This facility was constructed recently in compliance with current code requirements. We observed no electrical deficiencies at this facility.

4.4.5. Fire Station Fire Safety Recommendations

This facility was constructed recently in compliance with current code requirements. We observed no fire safety risk at this facility.

4.4.6. Fire Station ADA Accessibility Recommendations

This facility was constructed recently in compliance with current code requirements. We observed no accessibility barriers at this facility.

4.4.7. Fire Station Site Recommendations

This facility has experienced damage from nearby tree limbs during storm events. We recommend the trimming and removal of problem trees. No other deficiencies were identified with the site.

4.4.8. Fire Station Recommendation Table

Table 4.4.8 lists the limited repairs needed at this location. As this project is primarily a maintenance project, a takedown schedule has been included to assist the Department in their annual maintenance budgeting. It should also be pointed out that the Fire Department has already been actively budgeting for maintenance of their facility in the future. For example, the department has already been budgeting and saving for an eventual roof replacement and major painting project that is scheduled to be undertaken around the years 2023 and 2020 respectively. Each department in the City would be wise to plan for long term and major maintenance projects in this manner.

TABLE 4.4.8 SUMMARY OF REPAIRS TO FIRE STATION

						Estimated Budget Takedown Schedule											
Discipline	**Fire Hall**	**Units**	**Qty**	**Price**	**Total**	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Structural/ General	Repair baseboard in laundry room	Ea	1	$250.00	$250.00	$250.00											
	Outdoor Painting	LS	1	$10,000.00	$10,000.00	$1,250.00	$1,250.00	$1,250.00	$1,250.00	$1,250.00	$1,250.00	$1,250.00	$1,250.00				
	Roof Replacement*	LS	1	$15,000.00	$15,000.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00
Mechanical	Add ventilation to electrical room	Ea	1	$5,000.00	$5,000.00		$5,000.00										
	Insulate ceiling tiles	Sq Ft	13,324	$1.25	$16,700.00		$2,500.00	$2,500.00	$2,500.00				$2,500.00	$2,500.00	$2,500.00	$1,700.00	
	Repair laundry room ducting	Ea	1	$500.00	$500.00		$500.00										
Site	Repair sidewalk drainage into building, replace floor tiles and install drain	Ea	1	$2,500.00	$2,500.00	$1,250.00	$1,250.00										
	Contingency			30.00%	$15,000.00	$1,100.00	$3,400.00	$1,400.00	$1,400.00	$600.00	$600.00	$600.00	$1,400.00	$1,000.00	$1,000.00	$800.00	$300.00
	Architecture & Engineering			20.00%	$7,800.00	$600.00	$1,800.00	$800.00	$800.00	$400.00	$400.00	$400.00	$800.00	$600.00	$600.00	$400.00	$200.00
			Total		**$72,750.00**	**$5,200.00**	**$16,450.00**	**$6,700.00**	**$6,700.00**	**$3,000.00**	**$3,000.00**	**$3,000.00**	**$6,700.00**	**$4,850.00**	**$4,850.00**	**$3,650.00**	**$1,250.00**
	*Note-Takedown schedule does not include monies that have been budgeted prior to 2012 for this project																

4.5. *Library Recommended Improvements*

The City Library is an older building that was renovated to provide space. The renovations compromised the structure. The facility also needs maintenance and accessibility repairs; however it is in good condition. The following sections and Table 4.5.8 summarize the recommendations based upon the deficiencies from Section 3.2.4.

4.5.1. Library Structural/General Recommendations

The structural condition of the building appears to be in good standing for its age, and initial design life expectancy. However, due to certain deficiencies in the lateral force resisting system, the building may not meet the intent of collapse prevention during an earthquake. The building may survive an earthquake, but, due to the unknown reliability of the existing connections and systems, major damage to main structural elements may render the building unsafe. It is recommended that the above known deficiencies be rehabilitated to achieve a collapse prevention rehabilitation objective.

New shear walls should be installed along the original west wall of the building and properly attached to the addition roof structure and the original construction. A wall monitoring program should be established to verify the retaining wall for the addition does not continue to move. Proper seismic bracing of the suspended ceiling should be installed to minimize falling ceilings during a seismic event.

Small repairs are needed to seal the exterior of the building. The fence behind the building is collapsing and should be replaced. Some ceiling tiles are stained or damaged inside the building along with other minor maintenance work such as hole patching and touchup painting.

4.5.2. City Library Plumbing Recommendations

The plumbing in the library shows no major deficiencies. The downspouts and catch basin connections need realigned. The downspouts should be extended into the catch basins and provided with offset connections when required. A screw or chemically bonded connection should fasten the downspout to the catch basin to prevent another misalignment. The water heater drain pan needs properly connected and threaded to the drain pipes.

4.5.3. City Library Mechanical Recommendations

The heat pumps installed on site are sufficient and in good condition to continue to provide heating and cooling to the building. The building has a total of 29.5 tons of heat pump capacity which may be oversized. We recommend the City consult with an HVAC expert to properly calculate the heating loads the structure requires. It is recommended to install new controls to the units with a standardized thermostat. The large heat pump to the office area should either be switched with a smaller unit or given controls that can more appropriately cycle the unit to provide more stable temperature.

4.5.4. City Library Electrical Recommendations

The electrical system in the library is in good overall condition and needs little attention. The outdoor circuit to the east of the building servicing the outdoor stage needs replaced. Additional egress lighting is needed to allow entrance at night when the main lights are off and for fire escape. The emergency backup

lighting should be tested as well during installation of additional lights. We recommend adding several more receptacles to power computers. Receptacle placement should be coordinated with the library manager.

4.5.5. City Library Fire Safety Recommendations

The fire safety condition of the building is good with the exception of the items listed in Table 3.2.4.8. The exit through the offices behind the counter is of concern because the rout to the door is not clear and the door has a dead bolt. The exit down stairs is not clearly marked and is not enclosed with fire ratings. The exit in the northeast corner is not far enough from the main exit to be a safe second exit. A second exit at the south wall with emergency lighting is recommended. We also recommend testing the existing fire alarm system and research the need for installing interior audible and visual alarms.

4.5.6. City Library ADA Accessibility Recommendations

From the standpoint of the public nature of the building, its accessibility is reasonable. That said, ADA issues are typically a high priority because of the tendency for barriers to incur fines or lawsuits. A general approach to move towards ADA compliance is to start from the parking lot and make your way into the building. The slope of the marked ADA parking stall would need to be modified as indicated above to be brought up to code. The accessible entrances would need to be properly labeled, with signage guiding individuals from the parking space to the proper entrance to suit their needs. The exterior ramp to the meeting room in the basement would require a new handrail and adequate landings to be compliant.

The next step would be ensuring accessibility of routes throughout the building. Doors would need to have proper opening forces and handles that don't require excessive grasping and twisting. Items attached to walls and ceiling would have to be kept from encroaching into the accessible route. In addition, an individual in a wheelchair must currently travel outside the building to get from the library on the main floor to the meeting room in the basement. Accessibility barriers in the individual rooms would need to be addressed; proper mounting heights of items in bathrooms, proper clearances for individuals in wheelchairs, and proper door clearances to access these rooms. Neither of the bathrooms in the library is ADA compliant and would need significant renovation to reach code compliance. The drinking fountain does not have the proper clearances, and would require replacement.

4.5.7. City Library Site Recommendations

Additional drainage should be installed around the building to minimize the impact groundwater is having on foundation movement. Drainage modifications may include slope changes and French drains. We have recommended replacing part of the sidewalk and removing the parking lot islands and trees. Reconfiguring the parking lot will provide more available spaces and halt the damage large tree roots are causing. The trees near the front entrance have grown too large and the roots and limbs damage the site. We recommend removing the trees and grinding the stumps below the landscaping.

Vandalism is a recurring problem at the pool/library/park complex. Improved outdoor lighting and a CCTV system is recommended to discourage and better identify vandals. Four cameras and digital recording equipment should be installed to monitor the site.

4.5.8. City Library Recommendations Table

Table 4.5.8 summarizes the recommended repairs by discipline. As this project is largely a maintenance project, we have included a proposed maintenance takedown schedule to assist the Department in their annual maintenance budgeting process.

TABLE 4.5.8 SUMMARY OF REPAIRS TO LIBRARY

						Estimated Budget Takedown Schedule										
Discipline	**Public Library**	**Units**	**Qty**	**Price**	**Total**	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Structural/	Repair shear wall problems	Ea	1	$25,000.00	$25,000.00							$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00
General	Add seismic bracing to ceilings & replace tile grid	Sq Ft	7,440	$5.00	$37,200.00							$7,500.00	$7,500.00	$7,500.00	$7,500.00	$7,200.00
	Brace ducting	Ea	1	$5,000.00	$5,000.00		$2,500.00	$2,500.00								
	Repair modified truss	Ea	1	$5,000.00	$5,000.00							$2,500.00	$2,500.00			
	Caulk, cut, paint and repair exterior	Sq Ft	9,000	$3.00	$27,000.00							$7,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00
	Replace fence	Lf	150	$40.00	$6,000.00			$3,000.00	$3,000.00							
	Interior touchup work	Ea	1	$2,500.00	$2,500.00					$1,250.00	$1,250.00					
	Repair retaining wall	Ea	1	$3,500.00	$3,500.00										$1,750.00	$1,750.00
Plumbing	Repair downspouts	Ea	1	$1,000.00	$1,000.00			$500.00	$500.00							
	Repair water heater drain pan	Ea	1	$500.00	$500.00	$500.00										
Mechanical	Standardize heating control system	Ea	7	$350.00	$2,450.00		$2,450.00									
	Upgrade Heat Pump System	LS	1	$10,000.00	$10,000.00	$4,000.00	$4,000.00	$2,000.00								
Electrical	Install additional egress lighting for night circuits	Ea	1	$5,000.00	$5,000.00		$1,000.00	$2,000.00	$2,000.00							
	Repair and replace outdoor circuits	Ea	1	$3,500.00	$3,500.00		$1,000.00	$1,000.00	$1,500.00							
	Perimeter lighting to discourage vandalism	Ea	1	$5,000.00	$5,000.00	$500.00	$1,500.00	$1,500.00	$1,500.00							
Fire	Install fire alarm sensors and lights to new panel	Ea	1	$3,000.00	$3,000.00			$1,500.00	$1,500.00							
	Add emergency signs and lighting	Ea	1	$2,500.00	$2,500.00			$1,250.00	$1,250.00							
	Enclose vertical exit openings - door at bottom of stairs	Ea	1	$2,500.00	$2,500.00	$2,500.00										
ADA	Rebuild concrete ramps for access to basement and upstairs	Ea	1	$15,000.00	$15,000.00										$7,500.00	$7,500.00
	Repair improper handrails by adding extensions	Ea	1	$500.00	$500.00		$500.00									
	Repair ADA parking site	Ea	1	$5,000.00	$5,000.00				$2,500.00	$2,500.00						
	Fix restroom, drinking fountain, floor problems	Ea	1	$5,000.00	$5,000.00				$2,500.00	$2,500.00						
Site	Add drainage behind building to reduce settlement	Ea	1	$15,000.00	$15,000.00	$5,000.00	$5,000.00	$5,000.00								
	Reconfigure parking lot and grade for improved ADA access	Ea	1	$55,000.00	$55,000.00					$5,000.00	$15,000.00	$15,000.00	$20,000.00			
	Remove large trees near front entrance	Ea	2	$1,500.00	$3,000.00		$1,500.00	$1,500.00								
	Replace concrete sidewalks	Sq Ft	540	$10.00	$5,400.00	$400.00	$2,500.00	$2,500.00								
	Contingency			30.00%	$75,200.00	$3,900.00	$6,600.00	$7,300.00	$4,900.00	$3,400.00	$4,900.00	$11,100.00	$12,000.00	$5,300.00	$8,100.00	$8,000.00
	Architecture & Engineering			20.00%	$65,200.00	$3,400.00	$5,800.00	$6,400.00	$4,300.00	$3,000.00	$4,300.00	$9,700.00	$10,400.00	$4,600.00	$7,000.00	$6,900.00
			Total		**$390,950.00**	**$20,200.00**	**$34,350.00**	**$37,950.00**	**$25,450.00**	**$17,650.00**	**$25,450.00**	**$57,800.00**	**$62,400.00**	**$27,400.00**	**$41,850.00**	**$41,350.00**

4.6. *City Pool Recommended Improvements*

The City Pool facility includes an almost 50 year old building covering an even older pool. The building has significant structural, electrical and ventilation deficiencies. As repairing the structure will be very costly, we have included other improvement alternatives for the City to consider. The following sections and Tables are the recommendations based upon the deficiencies from Section 3.2.5.

4.6.1. City Pool Structural/General Recommendations

The structural condition of the building appears to be in good standing for its age, initial design life expectancy and environment. However, due to certain deficiencies in seismic connections the building may not meet the intent of collapse prevention during an earthquake. The building may survive an earthquake, but, due to the unknown reliability of the existing connections and systems, major structural damage to main structural elements may render the building unsafe. It is recommended that deficiencies in Table 3.2.5.8 be rehabilitated to achieve a collapse prevention rehabilitation objective, including a permanent solution to the recently repaired beams. This objective would meet the intent of the code.

The large crack in the pool bottom should be evaluated from a performance related standard and should be repaired to minimize water infiltration into the sub-grade supporting the pool.

The main pool building requires a new roof that includes both flat and sloped roof work. The gutters, siding and flashing require replacement. The outside of the structure has significant rot. In the interior, the walls all require paint and touchup work. It was observed painting work was in progress during our inspection. The City would like to add a family bathroom to the building and a cost estimate has been included for one.

The pool pump/filter shed has extensive rot in the walls. We recommend replacing the structure, however, the City should solicit quotes from a contractor regarding the cost to replace all the rotted sections.

4.6.2. City Pool Plumbing Recommendations

The plumbing in the pool building is in satisfactory condition with some minor maintenance details to complete. The piping should be repainted and fixtures monitored for leaks. The pump/filter shed requires more extensive work. The pumps are at the end of their life and the filter media is reportedly old. The pumps need to be replaced and the filters require new media.

Resizing the pumps and filters to increase the water turnover rate to every 6 hours is recommended to comply with statutes. We do not believe upsizing the pool drain as noted in Section 3.2.5 is cost effective.

The overflow from the pool flows into the storm drain system in violation of OAR 333-060-115 and does not circulate. A new gutter system with proper overflow recirculation drains is required.

4.6.3. City Pool Mechanical Recommendations

The mechanical systems are in poor condition and require complete replacement. High humidity is degrading the building structure, fixtures, and equipment. A new air ventilation system should be

installed with modern controls. The system should be automated to reduce reliance upon pool staff to properly operate the controls. The recent building furnace requires moderate repairs to prevent corrosion. The enclosure surrounding the furnace will be repaired by our recommended structural repairs.

If the pool were converted to an outdoor facility, the recent furnace could be repurposed to another large building. One good candidate would be to replace the unit heaters in the City Shops with a central furnace if a gas connection is available.

4.6.4. City Pool Electrical Recommendations

The electrical system at the pool needs replaced. The replacement needs to include panels, conduit, wire, and miscellaneous pump control boxes. Some parts and many light fixtures can remain, however most of them are over 40 years old and antiquated. Proper switching must be installed for lighting as circuit breakers are not rated to be used as a switch.

4.6.5. City Pool Fire Safety Recommendations

The fire safety condition of this facility is good. The building is to be limited to 300 occupants or a fire sprinkler system is required. We recommend posting the maximum occupant load of 300. We also recommend installing emergency lighting at the second exit as all exits for an assembly occupancy are required to have emergency lighting at all times.

4.6.6. City Pool ADA Accessibility Recommendations

From the standpoint of the public nature of the building, its accessibility is reasonable. That said, ADA issues are typically a high priority because of the tendency for barriers to incur fines or lawsuits. A general approach to move towards ADA compliance is to start from the parking lot and make your way into the building. The marked ADA parking stall would need to be modified as indicated above to be brought up to code. The accessible entrances would need to be properly labeled, and changes in elevation would have to be addressed.

The next step would be ensuring accessibility of routes throughout the building. Doors would need to have proper opening forces and items attached to walls and ceiling would have to be kept from encroaching into the accessible route. Accessibility barriers in the individual rooms would need to be addressed; proper mounting heights of items in bathrooms, compliant grab bars, and accessible stall sizes. The pool does not have adequate tactile warnings around the water edge.

4.6.7. City Pool Site Recommendations

The pool site is in good condition. The exterior concrete is wearing down and can be repaired or coated with a sealer or epoxy. The greatest need is additional parking. Reconfiguration of the library parking will help, however, adjacent land or some of the park area is required for additional parking. The hillside above the pool is a potential source of additional parking if the City is able to acquire an adjoining parcel of land, though extensive grading and a retaining wall would be required to address slope issues.

Vandalism is a recurring problem at the pool/library/park complex. Improved outdoor lighting and a CCTV system is recommended to discourage and better identify vandals. Eight cameras and digital recording equipment should be installed to monitor the site and pool interior.

4.6.8. City Pool Alternatives

A number of alternatives were considered to address the deficiencies in the City Pool facilities. They summarized in the following sections.

4.6.8.1. *City Pool Rehabilitation Alternative 1*

This first alternative includes rehabilitating the pool building to meet applicable codes. Alternative 1 will not bring the facility up to the same quality or feature set as a new pool, but will create a safer and more useful community resource than the current facility. Table 4.6.8.1 includes the approximate pricing for this alternative.

If the City chooses to repair the pool, we recommend consulting with a pool expert to evaluate the pool structure in depth. A typical pool study is approximately $15-25,000 and is very specialized.

TABLE 4.6.8.1 SUMMARY OF REPAIRS TO POOL-ALTERNATIVE 1

Discipline	Public Pool	Units	Qty	Price	Total
Structural/	Rehab pool and resurface	Ea	1	$200,000.00	$200,000.00
General	Repair CMU wall	Ea	1	$50,000.00	$50,000.00
	Seismically fasten CMU to steel columns and walls, brace window shear wall	Ea	1	$60,000.00	$60,000.00
	Seismic rehab of roof structure and incidentals	Ea	1	$70,000.00	$70,000.00
	Repair beams in bathrooms	Ea	1	$5,000.00	$5,000.00
	Brace HVAC	Ea	1	$2,500.00	$2,500.00
	Replace roof	Sq Ft	9,335	$15.00	$140,025.00
	Replace gutters	Lf	500	$6.00	$3,000.00
	Repair/replace/repaint siding	Sq Ft	10,000	$15.00	$150,000.00
	Replace pool outbuilding at existing location	Sq Ft	800	$85.00	$68,000.00
	Fill and seal all concrete floor cracks, even out surfaces for ADA guidelines	Ea	1	$80,000.00	$80,000.00
	Repaint interior walls of pool and bathroom areas	Ea	1	$20,000.00	$20,000.00
	Add a new family bathrooms	Sq ft	500	$160.00	$80,000.00
Plumbing	Replace pumps, motors and filters	Ea	1	$30,000.00	$30,000.00
	Reconnect outside drains to recirculate pool gutter overflow	Ea	1	$5,000.00	$5,000.00
Mechanical	Repaint overhead water pipes	Ea	1	$5,000.00	$5,000.00
	Install new mechanical ventilation system, demo old	Ea	1	$100,000.00	$100,000.00
	Replace bathroom registers	Ea	1	$1,000.00	$1,000.00
Electrical	Replace main electrical panels and add lighting switches	Ea	1	$40,000.00	$40,000.00
	Rewire main building and chemical building and new ventilator	Ea	1	$110,000.00	$110,000.00
	Add pump controls and switches	Ea	1	$15,000.00	$15,000.00
	Install weather rated enclosures	Ea	1	$3,000.00	$3,000.00
	Replace corroded fixtures near lockers and outside	Ea	1	$10,000.00	$10,000.00
	Install CCTV system cameras	Ea	8	$6,000.00	$48,000.00
Fire	Add emergency lighting and occupant max 300 sign	Ea	1	$2,500.00	$2,500.00
ADA	Rebuild bathrooms for ADA compliance	Ea	2	$60,000.00	$120,000.00
	Add tactile warnings to pool surface	Ea	1	$5,000.00	$5,000.00
	Add visual and audible alarms	Ea	1	$5,000.00	$5,000.00
	Repair ADA parking site	Ea	1	$2,000.00	$2,000.00
Site	Fix restroom, drinking fountain, floor problems	Ea	1	$5,000.00	$5,000.00
	Reconfigure parking lot and grade for improved ADA access	Ea	1	$75,000.00	$75,000.00
	Replace concrete sidewalks	Ea	1	$3,000.00	$3,000.00
	Contingency			30.00%	$454,000.00
	Architecture & Engineering			20.00%	$393,500.00
			Total		**$2,360,525.00**

4.6.8.2. *City Pool Rehabilitation Alternative 2*

The second pool alternative would be to remove the existing pool covering and convert it to an outdoor pool. Significant cost savings result from avoiding major repairs to the building. The big drawback is the community loses use of the pool during winter months unless other improvements are made to allow winter use of an outdoor pool such as the case in Coos Bay.

TABLE 4.6.8.2 SUMMARY OF REPAIRS TO POOL-ALTERNATIVE 2

Discipline	Public Pool	Units	Qty	Price	Total
Structural/	Rehab pool and resurface	Ea	1	$200,000.00	$200,000.00
General	Demolition of existing covering	Sq Ft	7,600	$15.00	$114,000.00
	Seismic rehab of remaining locker/office structure	Ea	1	$60,000.00	$60,000.00
	Repair beams in bathrooms	Ea	1	$5,000.00	$5,000.00
	Replace roof	Sq Ft	1,600	$15.00	$24,000.00
	Replace gutters	Lf	200	$6.00	$1,200.00
	Repair/replace/repaint siding	Sq Ft	3,000	$15.00	$45,000.00
	Replace pool outbuilding at existing location	Sq Ft	800	$85.00	$68,000.00
	Fill and seal all concrete floor cracks, even out surfaces for ADA guidelines	Ea	1	$80,000.00	$80,000.00
	Repaint interior walls of bathroom areas	Ea	1	$5,000.00	$5,000.00
	Add a new family bathrooms	Sq ft	500	$160.00	$80,000.00
Plumbing	Replace pumps, motors and filters	Ea	1	$30,000.00	$30,000.00
	Reconnect outside drains to recirculate pool gutter overflow	Ea	1	$5,000.00	$5,000.00
Mechanical	Replace bathroom registers	Ea	1	$1,000.00	$1,000.00
Electrical	Replace main electrical panels and add lighting switches	Ea	1	$35,000.00	$35,000.00
	Rewire remaining locker/office structures	Ea	1	$50,000.00	$50,000.00
	Add pump controls and switches	Ea	1	$15,000.00	$15,000.00
	Install CCTV system cameras	Ea	8	$6,000.00	$48,000.00
ADA	Rebuild bathrooms for ADA compliance	Ea	2	$60,000.00	$120,000.00
	Add tactile warnings to pool surface	Ea	1	$5,000.00	$5,000.00
	Repair ADA parking site	Ea	1	$2,000.00	$2,000.00
Site	Fix restroom, drinking fountain, floor problems	Ea	1	$5,000.00	$5,000.00
	Reconfigure parking lot and grade for improved ADA access	Ea	1	$75,000.00	$75,000.00
	Replace concrete sidewalks	Ea	1	$3,000.00	$3,000.00
	Contingency			30.00%	$322,900.00
	Architecture & Engineering			20.00%	$279,900.00
			Total		**$1,679,000.00**

4.6.8.3. *City Pool Rehabilitation Alternative 3*

A third option for the community is to build a new pool. We investigated recent pool construction and discussed typical pool costs with the pool expert at Robertson Sherwood Architects in Eugene. A new outdoor pool of the same size as Toledo is approximately $2,000,000. The City of Coquille is currently building a new outdoor public pool for approximately $1,750,000, including design costs, and the City of Veneta recently completed an outdoor pool for approximately $2,000,000.

The following tables summarize out the respective prices of an indoor and outdoor pool, assuming the City has to acquire new land.

TABLE 4.6.8.3A NEW OUTDOOR POOL ESTIMATE-ALTERNATIVE 3A

Discipline	Public Pool	Units	Qty	Price	Total
	Land Acquisition	Ea	1	$500,000.00	$500,000.00
	New Outdoor Pool	Ea	1	$1,400,000.00	$1,400,000.00
	Contingency			30.00%	$570,000.00
	Architecture & Engineering			20.00%	$494,000.00
			Total		$2,964,000.00

TABLE 4.6.8.3B NEW INDOOR POOL ESTIMATE-ALTERNATIVE 3B

Discipline	Public Pool	Units	Qty	Price	Total
	Land Acquisition	Ea	1	$500,000.00	$500,000.00
	New Indoor Pool	Ea	1	$2,500,000.00	$2,500,000.00
	Contingency			30.00%	$900,000.00
	Architecture & Engineering			20.00%	$780,000.00
			Total		$4,680,000.00

4.6.8.4. *City Pool Rehabilitation Alternative 4*

All of the above alternatives require a major investment in the pool facilities that is likely not to be feasible for the City to consider. While the pool facility is in poor condition, it is a valued asset to many in the community. As such, the City may choose to continue investing in its maintenance and upkeep to extend the useful life of the pool as much as possible.

With this in mind, a final maintenance alternative was developed drawing upon the most critical and practical maintenance items developed in the previous alternatives. The proposed project for Alternative 4 is summarized in the table below along with a takedown schedule that will be useful to the Department when considering potential annual maintenance budgets. We recognize that the proposed annual costs for the "critical" pool maintenance is not insignificant. However, the condition of the pool requires significant investment or the City must face the losing this valued facility.

TABLE 4.6.4.4 CRITICAL POOL MAINTENANCE AND TAKEDOWN SCHEDULE – ALTERNATIVE 4

						Estimated Budget Takedown Schedule										
Discipline	**Public Pool**	**Units**	**Qty**	**Price**	**Total**	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
General	Water Heater Improvements - domestic use	LS	1	$5,000.00	$5,000.00	$2,500.00	$2,500.00									
	Replace Roof	Sq Ft	9,335	$15.00	$140,025.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$14,025.00			
	Pool Gutter System Upgrades	LS	1	$5,000.00	$5,000.00	$5,000.00										
	Repair/replace/repaint siding, doors, windows	Sq Ft	10,000	$15.00	$150,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$24,000.00			
	Grind and fill concrete to eliminate hazards	LS	1	$2,000.00	$2,000.00		$500.00	$500.00	$500.00	$500.00						
	Repaint interior walls of pool and bathroom areas	LS	1	$20,000.00	$20,000.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00			
	Grinding and sealing of pool bottom, cracks	LS	1	$2,500.00	$2,500.00					$2,500.00						
	ADA Upgardes to bathrooms, general areas	EA	2	$5,000.00	$10,000.00	$5,000.00	$5,000.00									
	Contingency			30.00%	$100,400.00	$15,300.00	$14,000.00	$11,700.00	$11,700.00	$12,500.00	$11,600.00	$11,600.00	$12,200.00	$0.00	$0.00	$0.00
	Architecture & Engineering			20.00%	$87,000.00	$13,300.00	$12,100.00	$10,200.00	$10,200.00	$10,800.00	$10,100.00	$10,100.00	$10,600.00	$0.00	$0.00	$0.00
			Total		**$521,925.00**	**$79,600.00**	**$72,600.00**	**$60,900.00**	**$60,900.00**	**$64,800.00**	**$60,200.00**	**$60,200.00**	**$63,325.00**	**$0.00**	**$0.00**	**$0.00**

4.7. *City Shops Recommended Improvements*

The following sections and Table 4.7.8 describe the nature of the repairs and the estimated costs to the City Shops.

4.7.1. City Shops Structural/General Recommendations

The structural condition of the building appears to be in good standing for its age, and initial design life expectancy. The non-structural bracing components noted in section 3.2.6 should be rehabilitated to properly insure the life and safety of the occupants within the building during a seismic event.

If the City does not already have a maintenance plan in effect for this building, one is recommended. This maintenance plan shall include the maintenance of all exterior envelope features as well as the internal workings of the building. This maintenance plan will keep the building from falling into disrepair.

4.7.2. City Shops Plumbing Recommendations

No major deficiencies were noted during the plumbing inspection. The City should monitor the sinks and toilets for leaks and function.

4.7.3. City Shops Mechanical Recommendations

The heating system in the shops is inadequate to heat the shop or the smaller offices and meeting rooms. Several wall heaters require replacement. As the facility is a shop building, the City may wish to remain with an undersized heating system to reduce energy costs and ask that employees dress warmly on cool days. If a larger system is desired, adding insulation to the building envelope would be recommended to moderate increased energy costs.

4.7.4. City Shops Electrical Recommendations

The electrical system appears to be in good condition and sized for the present use of the shops. Some minor maintenance repairs are recommended as well as outdoor rated receptacles on the building exterior. Power and lighting for an automated gate should be installed from either the main shop or auxiliary shop panel.

We have recommended expanding the grounds area and constructing additional lean-to structures. The current main panels in the shop have very few spare breaker positions open. The existing lighting fixtures are efficient, therefore upgrades to even higher efficiency fixtures only makes financial sense if paired with utility or government incentives.

4.7.5. City Shops Fire Safety Recommendations

The fire safety condition of this facility is good. The building was constructed under recent code guidelines and appears to meet the intent of the code for fire safety. The fire deficiency items listed Table 3.2.6.8 can easily be corrected.

4.7.6. City Shops ADA Accessibility Recommendations

From the standpoint of the non-public nature of the building, its accessibility is reasonable. That said, ADA issues are typically a high priority because of the tendency for barriers to incur fines or lawsuits. A general approach to move towards ADA compliance is to start from the parking lot and make your way into the building. The gravel lot is a large ADA barrier for anyone attempting to enter the building. It is recommended that a paved ADA parking space and adjacent access aisle with a direct route to an accessible entrance be provided. This entrance would need to be properly labeled, have the necessary paved landing, and the required maneuvering clearances on both sides of the door.

The next step would be ensuring accessibility of routes throughout the building. Doors would need to have proper opening forces and handles that don't require excessive grasping and twisting. Items attached to walls and ceiling would have to be kept from encroaching into the accessible route. Then the individual rooms would need to be addressed; proper mounting heights of items in bathroom, proper clearances for individuals in wheelchairs, and proper door clearances to access these rooms.

4.7.7. City Shops Site Recommendations

The present site is well configured for the City's needs. This facility has the drawback of being located in a floodplain, however, relocating to new site would be costly. We recommend expansion of the covered space at the existing site to protect equipment and provide the grounds crew with sufficient space. The City possesses the necessary equipment onsite to gravel and grade around the building to improve drainage.

4.7.8. City Shops Recommendations Table

Table 4.7.8 summarizes the recommended repairs by discipline.

TABLE 4.7.8 SUMMARY OF REPAIRS TO CITY SHOPS

						Estimated Budget Takedown Schedule										
Discipline	**City Shops**	**Units**	**Qty**	**Price**	**Total**	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Structural/	Repair wood columns	Ea	1	$1,000.00	$1,000.00						$500.00	$500.00				
General	Seismic bracing to storage racks and mechanical equipment	Ea	1	$5,000.00	$5,000.00						$2,500.00	$2,500.00				
	Repair steel columns	Ea	1	$1,000.00	$1,000.00						$500.00	$500.00				
	Exterior metal repairs	Ea	1	$5,000.00	$5,000.00									$2,500.00	$2,500.00	
	Weather-stripping to bay doors	Ea	10	$150.00	$1,500.00	$750.00	$750.00									
Mechanical	New heat pump	Ea	1	$11,000.00	$11,000.00					$5,000.00	$6,000.00					
	New air compressor and condensate drain	Ea	1	$4,500.00	$4,500.00		$2,000.00	$2,500.00								
	Fresh air intake	Ea	1	$1,000.00	$1,000.00					$1,000.00						
Electrical	Receptacle replacement, fix minor electrical issues	Ea	1	$2,500.00	$2,500.00		$1,250.00	$1,250.00								
	Lighting and power gate w/ keypad & remotes	Ea	1	$12,000.00	$12,000.00		$6,000.00	$6,000.00								
Fire	Fire alarm system	Ea	1	$8,000.00	$8,000.00		$4,000.00	$4,000.00								
	Automatic door closer for fire barrier	Ea	1	$250.00	$250.00				$250.00							
ADA	Add signs, handrail extensions, modify restroom	Ea	1	$2,000.00	$2,000.00				$2,000.00							
	New meeting table	Ea	1	$2,000.00	$2,000.00				$2,000.00							
	Paved parking and access	Ea	1	$10,000.00	$10,000.00					$5,000.00	$2,500.00	$2,500.00				
Site	New awning	Sq ft	3,000	$10.00	$30,000.00	$5,000.00	$5,000.00	$10,000.00	$10,000.00							
	New grounds shop expansion, slab and pole structure	Sq ft	1,000	$85.00	$85,000.00							$30,000.00	$35,000.00	$20,000.00		
	Gravel and grading	Ea	1	$10,000.00	$10,000.00	$10,000.00										
	Contingency			30.00%	$57,600.00	$4,800.00	$5,700.00	$7,200.00	$4,300.00	$3,300.00	$3,600.00	$10,800.00	$10,500.00	$6,800.00	$800.00	$0.00
	Architecture & Engineering			20.00%	$49,900.00	$4,200.00	$5,000.00	$6,200.00	$3,800.00	$2,900.00	$3,200.00	$9,400.00	$9,100.00	$5,900.00	$700.00	$0.00
			Total		**$299,250.00**	**$24,750.00**	**$29,700.00**	**$37,150.00**	**$22,350.00**	**$17,200.00**	**$18,800.00**	**$56,200.00**	**$54,600.00**	**$35,200.00**	**$4,000.00**	**$0.00**

4.8. *Water Treatment Plant Recommended Improvements*

The WTP is a relatively modern structure for this community. It likely contains seismic deficiencies as it was constructed before seismic codes were put in place in Oregon. This study is limited to the control and chemical buildings and not their processes. The following sections and Table 4.8.8 are the recommendations based upon the deficiencies from Section 3.2.7.

4.8.1. WTP Structural/General Recommendations

It is recommended that all of the ends of existing glulam beams be further inspected for deterioration due to weather or insects. If none is found, an observation plan shall be implemented to maintain the structural integrity of the beams. We recommend the existing storage platform in the chemical building be demolished and re-built to meet prescribed code loading and construction practices.

As the buildings at this facility can be considered essential, as defined by the 2010 Oregon Structural Specialty Code, further structural analysis is recommended. Due to its age, it is unlikely it will meet seismic performance levels for an essential facility as prescribed by the current code. This evaluation will help identify unknown structural deficiencies and develop objectives to rehabilitate the buildings to meet or exceed current prescribed seismic load and detailing requirements for this essential facility. For the cost of this evaluation, refer to Section 4.1 which discusses how these fees are accounted for in Table 4.7.8.

Several non-structural repairs are required as well. Repainting is required on the exterior and interior rusted areas. Rot repairs are needed on outdoor trim and beams. We recommend replacing the gutters and performing repairs to the flashing and roofing system.

4.8.2. WTP Plumbing Recommendations

This facility was constructed in compliance with dated plumbing codes, however, we did not observe any obvious deficiencies with the plumbing system. The process plumbing was more thoroughly evaluated in the Water Master Plan (Civil West, 2010).

4.8.3. WTP Mechanical Recommendations

The mechanical systems are simple and in satisfactory condition. The rusted unit heater in the chemical room needs replaced. We recommend the City monitor the other unit heaters in the chemical building for corrosion.

4.8.4. WTP Electrical Recommendations

The electrical system is in good condition according to our observations. The abundant lighting in the control room can be replaced or left as is with bulbs removed to save money. The lighting utilizes electronic ballasts that can adequately support single bulb installations, but our estimate includes replacing the fixtures to avoid maintenance confusion. Areas where conduit and boxes have rusted out need replaced with corrosion resistant electrical fittings. We recommend additional exterior lighting around the base of the treatment basins for security purposes.

4.8.5. WTP Fire Safety Recommendations

The fire safety condition of this facility is good with the exception of the one item listed in Table 3.2.7.8. We recommend an additional exit sign to be posted at the second exit leading to the lower level.

4.8.6. WTP ADA Accessibility Recommendations

It is understood that this facility is innately inaccessible and generally not open to the public. The staff of the facility has familiarity with it that precludes the need for many of the code safety and accessibility features. Should the City wish to entertain accessibility compliance options for this facility, a very thorough investigation would have to be performed and improvements including elevators, expansion, and other major upgrades.

4.8.7. WTP Site Recommendations

The site is in overall good condition. Some landscaping work removing foliage away from structures needs completed.

4.8.8. WTP Recommendation Table

This facility does not require extensive repairs. To meet Essential Facility requirements we recommend a more in depth study of the treatment tanks. This cost is included in the engineering estimate and the $32 per square foot bracing estimate.

As the projects and recommended improvements at the water plant are largely maintenance oriented, we have provided a takedown schedule to assist the Department in budgeting and scheduling the proposed improvements. The recommendations and schedule are provided in the following table.

TABLE 4.8.8 SUMMARY OF REPAIRS TO WATER TREATMENT PLANT

						Estimated Budget Takedown Schedule										
Discipline	**Water Treatment Plant**	**Units**	**Qty**	**Price**	**Total**	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Structural/	Repair CMU walls and brace walls to control building & install proper seismic ties to basins, piping, beams and stairs	Ea	2,304	$32.00	$73,728.00		$15,000.00	$15,000.00	$15,000.00	$15,000.00	$13,728.00					
General	Brace mechanical equipment	Ea	1	$5,000.00	$5,000.00		$2,500.00	$2,500.00								
	Repair Exposed beam ends	Ea	2	$2,500.00	$5,000.00		$2,500.00	$2,500.00								
	Repair CMU walls and brace walls to chemical building & install proper seismic ties to basins, piping, beams and stairs	Ea	3,232	$32.00	$103,424.00		$20,000.00	$20,000.00	$20,000.00	$20,000.00	$23,424.00					
	Repair chemical damage in the lower building	Ea	1	$10,000.00	$10,000.00		$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00					
	Repair leakage and water damage in pipe gallery area	LS	1	$10,000.00	$10,000.00		$5,000.00	$5,000.00								
	Anchor backwash tank	Ea	1	$2,000.00	$2,000.00				$1,000.00	$1,000.00						
	Replace gutters	Lf	400	$6.00	$2,400.00			$800.00	$800.00	$800.00						
	Repaint building, stairs, doors	Sq ft	10,000	$3.00	$30,000.00			$7,500.00	$7,500.00	$7,500.00	$7,500.00					
	Replace control building floor	Sq ft	1,100	$5.00	$5,500.00			$1,200.00	$1,200.00	$1,200.00	$1,200.00	$700.00				
	Repair damaged trim pieces	Ea	1	$3,000.00	$3,000.00			$750.00	$750.00	$750.00	$750.00					
	Demolish and replace storage platform	Sq ft	400	$40.00	$16,000.00							$8,000.00	$8,000.00			
Electrical	Add additional receptacles	Ea	1	$5,000.00	$5,000.00				$2,500.00	$2,500.00						
	Install new ATS to generator and new controls	Ea	1	$7,500.00	$7,500.00		$4,000.00	$3,500.00								
	Replace rusted outdoor conduit	Ea	1	$15,000.00	$15,000.00				$7,500.00	$7,500.00						
Fire	Add additional fire markings	Ea	1	$500.00	$500.00	$500.00										
Site	Landscaping and weed removal	Ea	1	$2,000.00	$2,000.00	$2,000.00										
	Contingency			30.00%	$59,300.00	$500.00	$10,200.00	$12,200.00	$11,700.00	$11,700.00	$9,800.00	$1,800.00	$1,600.00	$0.00	$0.00	$0.00
	Architecture & Engineering			20.00%	$53,400.00	$500.00	$9,200.00	$11,000.00	$10,500.00	$10,500.00	$8,800.00	$1,600.00	$1,500.00	$0.00	$0.00	$0.00
			Total		**$408,752.00**	**$3,500.00**	**$70,400.00**	**$83,950.00**	**$80,450.00**	**$80,450.00**	**$67,202.00**	**$12,100.00**	**$11,100.00**	**$0.00**	**$0.00**	**$0.00**

4.9. *Wastewater Treatment Plant Recommended Improvements*

Only the WWTP buildings and structures were evaluated in this study. Process and treatment performance issues are being addressed in the City's Wastewater Facilities Plan that was being prepared concurrently with this study. The following sections and Table 4.9.8 are the recommendations based upon the deficiencies from Section 3.2.8.

4.9.1. WWTP Structural/General Recommendations

The structural condition of the buildings appears to be in good standing for their age and initial design life expectancy. However, due to certain deficiencies in seismic connections, the buildings may not meet the intent of collapse prevention during an earthquake. The buildings may survive an earthquake, but, due to the unknown reliability of the existing connections and systems, major damage to main structural elements may render the buildings unsafe. It is recommended that the above known deficiencies be rehabilitated to achieve a collapse prevention rehabilitation objective.

Continual maintenance of the buildings as currently observed will help alleviate further structural deterioration. It is recommended that the attachment of the roof structures to the perimeter CMU walls be further evaluated to determine if a rehabilitation effort is required to properly attach the roof to the walls.

All non-galvanized bolts and elements of the catwalk in Section 3.2.8 are advised to be replaced with galvanized elements to further extend the life of the structure. Rehabilitation of the anchor bolts at the bearings is required to minimize loss of strength during an earthquake.

Several maintenance projects need undertaken on the control building. We recommend that the roof be replaced soon and touchup work to repair rot on the exterior is performed.

4.9.2. WWTP Plumbing Recommendations

No plumbing repairs are needed at the WWTP. Process plumbing changes will be addressed in the WWTP Facilities Plan.

4.9.3. WWTP Mechanical Recommendations

The chemical room heater needs repositioned to better maintain chemical temperatures. No other mechanical deficiencies were observed in the studied structures.

4.9.4. WWTP Electrical Recommendations

Conduit fittings should be replaced with water-tight varieties in wet or outdoor locations. Several locations were observed to lack water-tight seals when entering weather tight enclosures. Corroded outdoor conduits, particularly those not installed in later plant upgrades, need replaced as well.

4.9.5. WWTP Fire Safety Recommendations

We observed no fire safety risk for the staff at this facility.

4.9.6. WWTP ADA Accessibility Recommendations

It is understood that this facility is innately inaccessible, and generally not open to the public. The staff of the facility has familiarity with it that precludes the need for many of the code safety and accessibility features. Should the City wish to entertain accessibility compliance options for this facility, a very thorough investigation would have to be performed.

4.9.7. WWTP Recommendations

The site needs additional parking. Expansion is difficult due to the entrance placement at the corner of the street and railroad tracks. We do not recommend taking any action to improve site parking.

As the recommended improvements at the wastewater plant are largely maintenance oriented, we have prepared a proposed maintenance takedown schedule that is intended to aid the Department as they plan and schedule maintenance during the planning period. The proposed improvements and takedown schedule are provided in the following table.

4.9.8. WWTP Recommendation Table

We have recommended several structural and maintenance repairs for the WWTP. The WWTP completed major improvements a decade ago and is in relatively good condition.

TABLE 4.9.8 SUMMARY OF REPAIRS TO WASTEWATER TREATMENT PLANT

						Estimated Budget Takedown Schedule										
Discipline	**Wastewater Treatment Plant**	**Units**	**Qty**	**Price**	**Total**	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Structural/	Install force tie elements in control building	Ea	1	$25,000.00	$25,000.00					$10,000.00	$10,000.00	$5,000.00				
General	Add bracing to storage racks and pipe	Ea	1	$10,000.00	$10,000.00					$2,500.00	$2,500.00	$5,000.00				
	Repair spalling bolts and anchors with galvanized ones	Ea	1	$15,000.00	$15,000.00		$7,500.00	$7,500.00								
	Install properly seismic ties to basins, piping, beams, stairs	Ea	2	$20,000.00	$40,000.00				$10,000.00	$10,000.00	$10,000.00	$10,000.00				
	Finish drywall areas	Ea	1	$1,000.00	$1,000.00	$500.00	$500.00									
	Caulk and paint on exterior of control building	Sq Ft	5,000	$3.00	$15,000.00		$5,000.00	$5,000.00	$5,000.00							
	Paint patching inside control building	Ea	1	$1,000.00	$1,000.00	$500.00	$500.00									
	Replace control building roof	Sq Ft	2,000	$15.00	$30,000.00			$10,000.00	$10,000.00	$10,000.00						
	Repair trim	Ea	1	$1,000.00	$1,000.00			$500.00	$500.00							
Mechanical	Reposition chlorine room heater	Ea	1	$1,000.00	$1,000.00		$1,000.00									
Electrical	Add watertight conduit fittings	Ea	1	$4,000.00	$4,000.00	$2,000.00	$2,000.00									
	Replace corroding conduit and boxes	Ea	1	$10,000.00	$10,000.00			$2,500.00	$2,500.00	$2,500.00	$2,500.00					
	Add lighting to workshop	Ea	1	$1,500.00	$1,500.00	$1,500.00										
	Fasten low voltage lines	Ea	1	$1,000.00	$1,000.00	$1,000.00										
Site	Landscaping and weed removal	Ea	1	$2,000.00	$2,000.00	$1,000.00	$1,000.00									
	Contingency			30.00%	$47,300.00	$2,000.00	$5,300.00	$7,700.00	$8,400.00	$10,500.00	$7,500.00	$6,000.00	$0.00	$0.00	$0.00	$0.00
	Architecture & Engineering			20.00%	$41,000.00	$1,700.00	$4,600.00	$6,700.00	$7,300.00	$9,100.00	$6,500.00	$5,200.00	$0.00	$0.00	$0.00	$0.00
			Total		**$245,800.00**	**$10,200.00**	**$27,400.00**	**$39,900.00**	**$43,700.00**	**$54,600.00**	**$39,000.00**	**$31,200.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**

Section 5

5.0 Recommendations and Capital Improvement Plan

5.1. *Overall Capital Improvement Plan*

The City must make a significant investment in their City buildings to extend their useful life and avoid even larger investments in the future. City Hall and the City Pool are in particularly poor condition. Fortunately, more reasonable repairs can be completed to many of the other structures that will greatly extend their useful life. It was noted during our investigation that many of the suggested repairs could have been avoided if better maintenance had been performed over the years. For example, painting, caulking and landscape work would have prevented many of the dry/wet rot repairs.

Table 5.1 summarizes the total recommended project costs for each building facility. These costs include all construction, contingency, engineering, architecture and planning fees. What are not included are any temporary facilities or unanticipated environmental costs though most should be covered within the included contingency for each project.

Note that the table indicated the annual maintenance takedown that is recommended for each year and for each project. For projects that were major capital investments (indicated as CAP), no costs are shown in the annual takedown schedule as it is assumed that alternatively funding, outside of the regular budget process, will be required. We also recognize that the annual takedown budgets recommended for all facilities are greater than is currently budgeted in the City and that financing this aggressive level of maintenance may require some special financing efforts that are outside of the scope of this study to consider.

Table 5.1 Recommended Capital Projects and Cost Total

				Estimated Budget Takedown Schedule for Maintenance Projects- if Applicable										
Recommended Project	**Description**	**Estimated Cost**	**Capital Improvement (CAP) or Maintenance Project (M)**	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
City Hall, Alternative No. 6	Relocate to and remodel existing facility	$3,022,600.00	CAP											
>>City Hall, Alternative No. 0	>>If not able to undertake Alt. 6, undertake maintenance	$518,900.00	M	$71,800.00	$70,200.00	$56,200.00	$67,100.00	$68,700.00	$68,700.00	$54,900.00	$35,200.00	$7,800.00	$18,800.00	$0.00
Police Station Alternative No. 3	Combine with City Hall Under City Hall Alt. No. 6	$0.00	CAP											
>>Police Station Alternative No. 2	>>If Police Sta. Alt. 3 is not possible, undertake maintenance	$584,200.00	M	$20,700.00	$32,500.00	$30,900.00	$21,400.00	$56,600.00	$53,200.00	$51,800.00	$51,800.00	$51,800.00	$107,000.00	$107,000.00
Fire Station Alternative No. 1	Maintenance projects	$72,750.00	M	$5,200.00	$16,450.00	$6,700.00	$6,700.00	$3,000.00	$3,000.00	$3,000.00	$6,700.00	$4,850.00	$4,850.00	$3,650.00
Library Alternative No. 1	Maintenance projects	$390,950.00	M	$20,200.00	$34,350.00	$37,950.00	$25,450.00	$17,650.00	$25,450.00	$57,800.00	$62,400.00	$27,400.00	$41,850.00	$41,350.00
Pool Alternative No. 3B	Construct new indoor pool on new site	$4,680,000.00	CAP											
>>Pool Alternative No. 0	>>If not able to undertake Alt. 3B, undertake maintenance	$521,925.00	M	$79,600.00	$72,600.00	$60,900.00	$60,900.00	$64,800.00	$60,200.00	$60,200.00	$63,325.00	$0.00	$0.00	$0.00
City Shops	Maintenance projects	$299,250.00	M	$24,750.00	$29,700.00	$37,150.00	$22,350.00	$17,200.00	$18,800.00	$56,200.00	$54,600.00	$35,200.00	$4,000.00	$0.00
Water Plant, Alternative No. 1	Maintenance projects	$408,752.00	M	$3,500.00	$70,400.00	$83,950.00	$80,450.00	$80,450.00	$67,202.00	$12,100.00	$11,100.00	$0.00	$0.00	$0.00
WWTP, Alternative No. 1	Maintenance projects	$245,800.00	M	$10,200.00	$27,400.00	$39,900.00	$43,700.00	$54,600.00	$39,000.00	$31,200.00	$0.00	$0.00	$0.00	$0.00
	Total	**$10,745,127.00**		**$235,950.00**	**$353,600.00**	**$353,650.00**	**$328,050.00**	**$363,000.00**	**$335,552.00**	**$327,200.00**	**$285,125.00**	**$127,050.00**	**$176,500.00**	**$152,000.00**

5.2. *Recommended Plan by Site Priority*

In recognition that communities cannot easily secure funds to repair all their deficiencies at one time, we have developed a prioritization plan to assist the City with identifying their facilities with the greatest improvement needs. The following is a prioritization plan where the City rehabilitates its sites based upon urgency and importance to the community. The following table summarizes our recommended CIP.

Table 5.2 Recommended CIP by Site Urgency

Priority	Site and Description
1	**City Hall –Alternative 6 New Site-** The City Hall building is, by far, the oldest and most deficient structure. While it has historical significant and value to the City, the structure and other components have outlived their useful life by decades. The repairs required to this building are significant and the parking situation cannot be solved affordably. The City should move its offices to a new location. To maintain historic value, perhaps another public use for the current structure could be found and, as a historical structure, a non-profit agency may find success in funding its rehabilitation. Our recommendation is to purchase the available suitable building facility, remodel it and expand it to include new City Hall facilities combined with a new Police Station. **Estimated Cost: $3.0-million.** Alternatively, if a major capital project is deemed not feasible, then critical maintenance efforts should be undertaken at the existing building. **Estimated Cost: $519,000.**
2	**City Pool Alternative 3B New Indoor Pool–** The City Pool has significant structural, electrical, and mechanical deficiencies requiring repair. We did not find rehabilitation of the existing pool to be a viable option. Therefore, it is recommended that the City construct a new pool facility at a new location to provide adequate space for parking, spectation, and multiple uses. **Estimated Cost: $4.7-million.** Alternatively, if a major capital investment in the pool is not feasible, critical maintenance projects should be undertaken to extend the useful life of the facility. **Estimated Cost: $522,000**
3	**The Police Station Alternative 3 New Site -** While the police and 911 Center is relatively modern and remodeled, the space is crowded and the configuration of the structure needs significant changes. The facility is also located in a flood plain. Therefore, the CIP recommendation for the police facilities is to combine them with a new City Hall facility to be located at the available suitable building facility. **Estimated Cost: Included in the $3.1-million estimate for City Hall** Alternatively, if major capital improvements are not feasible, critical maintenance should be undertaken at the existing building. **Estimated Cost: $584,000**
4	**The City Library-** The library has structural, mechanical and minor problems with other systems, such as ADA compliance. The library can be repaired and brought up to current requirements affordably. **Estimated Cost: $391,000**
5	**The Water Treatment Plant-** WTP requires some structural repairs and updates to other parts of the plant. For this report we are only focusing on the areas not directly associated with treatment conditions. Fresh water is vital to the community and we highly recommend an essential facility seismic analysis along with a variety of maintenance projects. **Estimated Cost: $410,000**
6	**The City Shops –** The shops have some requirements for extra storage, poor mechanical problems and some minor site repairs. The site itself will work for the City, but some planning needs put into the sizing of the facility and the amount of storage available. A number of maintenance and improvement projects are recommended to upgrade the shop facilities. **Estimated Cost: $300,000**
7	**The Wastewater Treatment plant-** WWTP has some deferred maintenance and safety concerns to avoid reactive repairs. A number of maintenance and upgrade projects are recommended for the plant. **Estimated Cost: $245,000**
8	**The Fire Hall-** The new fire station is in excellent condition. A few minor repairs can be accomplished and serve the City for a long time. **Estimated Cost: $73,000.**
Total	**Total Estimated CIP Project Costs: ~$9.12-million if Cap. Improvement Projects are undertaken as recommended.** **If maintenance projects are undertaken: ~$3.04 million**

5.3. *Recommended Schedule of Rehabilitation*

The following schedule is a rough estimate of potential project timing to undertake the improvements listed in Section 4 and the CIP. Many factors will affect the ultimate schedule, including funding availability, facility use, unexpected repairs, and changing City needs and priorities. It will also take the political will of the City Council to invest in the City facilities to the extent recommended.

Note, the times estimated do not include time to make decisions, obtain funding, and any special environmental or regulatory requirements. The timing only addresses typical planning, design, and construction times.

Table 5.3 Example of Schedule to Proposed Improvements

Improvement Tasks	Start Date	Amount of Work Completed	Minimum Days to Complete	Maximum Days to Complete
CITY HALL IMPROVEMENTS				
Relocate City Hall & Improve Site	01/01/2013	0	350	450
CITY POOL IMPROVEMENTS				
Build New City Pool	01/01/2014	0	350	450
POLICE STATION IMPROVEMENTS				
Consolidate Police & Build Addition at City Hall	01/01/2015	0	240	340
CITY LIBRARY IMPROVEMENTS				
New Roof and Exterior Repairs	05/01/2015	0	120	180
Site Drainage and Seismic Rehab	10/01/2015	0	120	180
Outdoors repairs, Tree Removal, Parking Improvements	05/01/2016	0	90	120
Interior Electrical, HVAC, Fire & ADA Improvements	05/01/2016	0	120	180
WTP IMPROVEMENTS				
Maintenance Repairs	04/01/2017	0	120	180
Seismic Rehabilitation	09/01/2017	0	180	300
CITY SHOPS IMPROVEMENTS				
Site grading & drainage, security gate & light	01/01/2013	0	120	180
Shops retrofit and expansion	01/01/2018	0	120	180
WWTP IMPROVEMENTS				
Maintenance Repairs	04/01/2019	0	90	180
Seismic Rehabilitation	09/01/2019	0	180	240
FIRE STATION IMPROVEMENTS				
Fire Station Improvements	01/01/2016	0	45	90

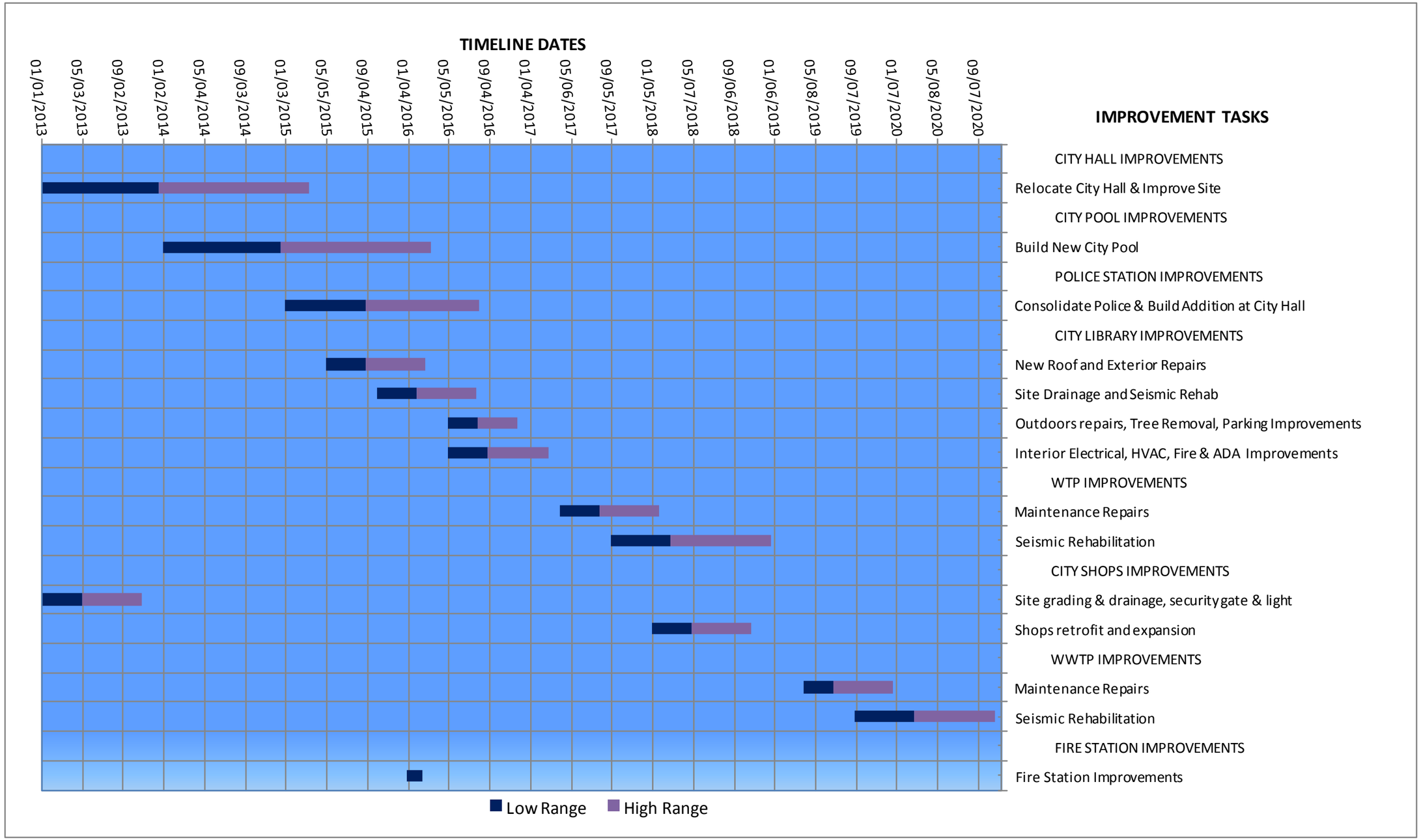

Figure 5.3 Example Chart of Proposed Improvements

APPENDIX A:

SUPPLEMENTAL SUPPORTING MATERIAL

City of Toledo Facilities Assessment Scoring Sheet

Building	Structural					FLS				Accessibility						
	Overall Building Condition	Structural Components	Nonstructural Components	Tier 1 Checklist Compliance	**Average - Structural**	Occupant Load, Exits and Doors	Egress and Protection	Detection, Alarm and Extinguishment	**Average - Fire, Life, Safety**	Parking	Walks, Curbs and Ramps	Entrances, Corridors and Stairs	Public Restrooms	Meeting Rooms	Hazards and Emergency Procedures	**Average - Accessibility**
Public Works Shop Complex	7	7	1		**5.0**	6	5	8	**6.3**	1	1	1	5	3	4	**2.5**
City Hall Complex	2	1	4		**2.3**	1	1	1	**1.0**	2	3	2	2	1	2	**2.0**
Public Library	4	2	7		**4.3**	2	2	2	**2.0**	3	2	3	1	4	3	**2.7**
Public Pool	1	3	6		**3.3**	4	4	8	**5.3**	5	4	5	3	8	1	**4.3**
Police Station	3	4	5		**4.0**	3	3	8	**4.7**	4	5	4	4	2	5	**4.0**
Fire Station	8	8	8		**8.0**	8	8	8	**8.0**	8	8	8	8	8	8	**8.0**
Water Treatment Plant *	5	5	2		**4.0**	5	6	8	**6.3**	8	8	8	8	8	8	**8.0**
Wastewater Treatment Plant *	6	6	3		**5.0**	8	8	8	**8.0**	8	8	8	8	8	8	**8.0**

1 = Worst ⟶ 8 = Best as compared to the other buildings in each column assessed.

* Water and Wastewater Treatment Plants were not analyzed for accessibility purposes due to the non-public nature of the facilities and the staff's intimate knowledge of the facilities. The scores shown are not an indication of the true accessibility of these facilities.

ZCS ENGINEERING

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo City Hall building located at 206 N Main Street in Toledo, Oregon. The purpose of this section of the investigation is to verify the general structural condition of the building based on information provided and visual observations of the building. The original City Hall and Fire Station plans, dated 1929 and 1939 respectively, and building addition plans, dated 1962, 1968 and 1978, were utilized in conjunction with site observations for the sake of assessing the general structural condition.

Within this report we have attempted to outline obvious and known structural deficiencies. The intent of the assessment is to gain knowledge of the building's structural systems for determining and warranting structural rehabilitations. All information in this report is based on review of the existing plans where available and visual observations. Structural analysis of the building was not performed as part of this data gathering. A site specific geotechnical evaluation was not performed to evaluate the supporting soils and overall site slope stability during and after an earthquake. All recommendations and conclusions are based on our understanding of the building's function and use, current building codes, current rehabilitation methods and professional engineering judgment. The following is a brief project description of the building observed.

2.0 Project Overview

The building included in the report consists of two original buildings constructed in the late 1920's and 1930's. The City Hall building consists of two single-story wings with a center two-story portion. A partial basement is located under the two-story area of the building. The Fire Station consists of a two-story structure. Both building have concrete perimeter walls supporting light timbered wood floor and roof framing. The exposed framing in the original Fire Station apartments appears to be typical of construction practices for the time period. The original Fire Station portion of the building is a

daylight basement structure. The north wall of the building is a retaining wall structure to create the apparatus bay. In 1962 an addition to the apparatus bay was extended.

The extension of the apparatus bay consists of a single-story structure with perimeter CMU walls with a light timbered wood roof. The elevation of the roof structure is near the floor of the original Fire Station. The original apparatus bay and its extension were converted into the current council chambers and restroom facilities in 1978.

In the 1960's, the building was added onto to create the current museum and public works offices. The office addition is a single-story buried perimeter CMU wall structure with light timbered wood floor and roof framing. The addition is the full length of the city hall building. The connections between floor and roof framing to CMU walls are unknown.

3.0 Outline of Deficiencies

The following deficiencies were noted in the current City Hall building.

- **Overall building condition:**
  - It appears the crawl space floods from time to time as evidenced by water staining on the concrete foundation walls
  - At the location of the two-story portion of the original City Hall building, there are no shear walls to foundation structure to properly transfer the forces to the ground, creating a vertical irregularity in the building's lateral force resisting system
  - The upper apartment of the original Fire Station has gone into disrepair; areas of obvious roof leaks have compromised the roof structure and finishes, and this area has also become a storage area with a concern that a fire may start in the unoccupied area unknown to occupants below
- **Structural components:**
  - Proper connections between the flexible floor and roof framing and heavy exterior concrete walls were not observed; typical construction practices of

the time did not attach the floor and roof framing to the walls to minimize the framing structures from slipping off the bearing supports

- **Nonstructural components:**
  - The suspended ceiling elements are not properly seismically braced

4.0 Conclusions and Recommendations

The structural condition of the building appears to be in good standing for its age, initial design life expectancy and environment. However, due to certain deficiencies in seismic connections, the building may not meet the intent of collapse prevention during an earthquake. The building may survive an earthquake, but, due to the unknown reliability of the existing connections and systems, major structural damage to main structural elements may render the building unsafe. It is recommended that a full seismic rehabilitation study and plan be developed to better assist with rehabilitation of the building. During this rehabilitation study, a priority of rehabilitation items shall be developed to help establish long-term planning. The study should include the building additions and resolve the connections between the original and new construction.

A study of the ground water in the near vicinity of the building should be made and a drainage system around the building be implemented. This should be done to minimize the standing water currently under the building.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo City Hall building located at 206 N Main Street in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing fire, life and safety (FLS) aspects of the building using information provided, a checklist produced by the National Fire Protection Association, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing FLS components.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable fire safety performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The City Hall facility in question is a public building used primarily for the City administration activities and public assembly. A portion of the second floor area over the council chambers is an old fire department dorm that has been abandoned. The second floor area over the original City Hall is currently used as office space. This area is accessed by a set of stairs leading to the front lobby area. The main level is split into two elevations leading into the council chambers area. The basement located directly below the old City Hall is limited to equipment and minor storage. The building has been added on several times over the years resulting in a mixed arrangement of spaces. The arrangement of office space does not promote a primary means of safe travel from the building. These paths can cause confusion for occupants trying to exit the building during an emergency.

3.0 Outline of Deficiencies

- **Occupant Load, Exits and Doors:**
  - No posted occupant load
  - Exits are not per code, and do not discharge per code

  - Doors are subject to blockage and being locked
- **Egress and Protection:**
  - Egress is not clear or unobstructed; dead-end corridors are present
  - Egress through intervening rooms is not acceptable
  - Single means of egress from the second level
  - Aisle accessway width is inadequate
  - Emergency lighting is not per code
  - Exit marking is not per code
  - Corridors and associated doors not properly rated
- **Detection, Alarm and Extinguishment:**
  - No fire detection system (smoke or heat)
  - No audible or visual alarms
  - No sprinkler system (may not be required)

4.0 Conclusions and Recommendations

Compared to a modern facility the fire safety condition of this building is poor. A significant number of egress deficiencies could result in panic and confusion during an emergency lowering the chances of escaping successfully. The lack of detection and extinguishment equipment further lowers these chances. Further code evaluation of each specific exit travel is recommended to determine if deficiencies can be corrected through proper signage, detection, and extinguishment systems or if reconfiguration of the floor plan is necessary.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo City Hall building located at 206 N Main Street in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing state of accessibility of the building based on current building code requirements for a public facility using information provided, general accessibility checklists, and visual observations of the accessible items throughout the building. For the sake of assessing accessibility, existing plans were not utilized due to the nature of the items in question to receive undocumented alterations.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to meet current code for accessibility of a public facility. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question sits at the bottom of a steep hillside with a retaining wall behind it. The main entrance to the public works department is up a flight of stairs, or a ramp is provided to a side entrance to the building. An at-grade entrance to the council chambers and public restrooms with a direct route to an ADA parking stall is provided. There is no elevator in this multi-story building. The main floor has separate single occupant restrooms for men and women, while the lower floor has separate multi-fixture restrooms.

3.0 Outline of Deficiencies

- **Parking:**
  - Parking stall appears to be sloped steeper than 2%
  - Only one of the provided parking stalls has a sign located above grade and visible when a vehicle is parked in the designated space
  - Parking stalls do not meet minimum width requirements
  - Parking stalls do not have adequate adjacent access aisle

  - No signage from parking stall not located adjacent to accessible entrance
  - Parking stall labeled "Van Accessible" does not meet requirements of "Van Accessible" space
- **Walks, Curbs and Ramps:**
  - Landings at ramps were not level for distance of 60 inches
  - Handrail at exterior ramp is not properly shaped (easy to grasp)
- **Entrances, Corridors and Stairs:**
  - The landing in front of the entrance is not level (cross slope)
  - Not enough space between doors in series
  - Handrails do not have proper extensions beyond top and bottom tread
  - Handrail at interior stairs is not properly shaped (easy to grasp) and not mounted correct distance from wall
- **Public Restrooms:**
  - Restrooms not appropriately identified
  - Maneuvering clearances and clear floor spaces are not adequate
  - Not all items mounted at accessible heights
  - Grab bars at toilets are not compliant
- **Public Telephones and Water Fountains:**
  - Location of spout and/or water height is inadequate
  - Clear space at water fountain is not adequate
  - Width of the water fountain is not adequate
- **Meeting Rooms:**
  - Tables do not have proper knee clearance
  - No ramp is provided to access raised platform at council table
- **Hazards and Emergency Procedures:**
  - Audible and visual alarms are not present inside the building

4.0 Conclusions and Recommendations

From the standpoint of the public nature of the building, its accessibility is in poor shape. ADA issues are typically a high priority because of the tendency for barriers to incur fines or lawsuits. A general approach to move towards ADA compliance is to start from

the parking lot and make your way into the building. Both marked ADA parking stalls would need to be modified as indicated above to be brought up to code. The accessible entrances would need to be properly labeled, with signage guiding individuals from the parking spaces to the proper entrance to suit their needs.

The next step would be ensuring accessibility of routes throughout the building. Doors would need to have proper opening forces and handles that don't require excessive grasping and twisting. Items attached to walls and ceiling would have to be kept from encroaching into the accessible route. In addition, an individual in a wheelchair must currently travel outside the building to get from public works department on the main floor to the council chambers or accessible public restrooms on the adjacent lower floor. Accessibility barriers in the individual rooms would need to be addressed; proper mounting heights of items in bathrooms, proper clearances and access ramps in public rooms for individuals in wheelchairs, and proper door clearances to access these rooms. The drinking fountain does not have the proper clearances, and would require replacement.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo City Hall building located at 206 N Main Street in Toledo, Oregon. The purpose of this section of the investigation is to verify basic compliance using information provided, evaluation criteria as outlined in ASCE 31-03 – Seismic Evaluation of Existing Buildings, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing basic compliance.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable seismic performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question consists of a two story, cast-in-place concrete bearing wall structure with a timber framed second floor and roof structure.

3.0 Outline of Deficiencies

The following Tier 1 checklist items were observed as non-compliant;

- **Load Path**
  - The second floor concrete shearwall system is not continuous through the first floor and into the foundation.
- **Weak Story / Soft Story / Geometry / Vertical Discontinuities**
  - Due to the vertical discontinuity in the lateral load path (mentioned above), a weak and soft story situation exists at the first story level. This situation also results in lateral system geometry compliance issues.
- **Redundancy**
  - The second floor level lacks the appropriate number of definitive shearwall lines.

4.0 Conclusions and Recommendations

Due to the codes in place and the construction techniques typical of the era of construction during which this structure was erected, this facility does not comply with current structural codes. The basic system is comprised of heavy concrete bearing walls that are supported laterally with light timber framed floor and roof systems that, due to an overall lack of lateral force system connection detailing, diaphragm establishment, and shearwall continuity, cannot be expected to perform to current code prescribed expectations in a seismic event. Should it be decided that this structure be brought into compliance, a significant seismic retrofit effort would have to be pursued that may prove economically impractical.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Police Station building located at 250 W U.S. 20 Business in Toledo, Oregon. The purpose of this section of the investigation is to verify the general structural condition of the building based on information provided and visual observations of the building. The existing plans, dated 1967 and the Police Station Remodel plans dated 1998, were utilized in conjunction with site observations for the sake of assessing the general structural condition.

Within this report we have attempted to outline obvious and known structural deficiencies. The intent of the assessment is to gain knowledge of the building's structural systems for determining and warranting structural rehabilitations. All information in this report is based on visual observations and review of the existing plans where available. Structural analysis of the building was not performed as part of this data gathering. A site specific geotechnical evaluation was not performed to evaluate the supporting soils and overall site slope stability during and after an earthquake. All recommendations and conclusions are based on our understanding of the facility's function and use, current building codes, current rehabilitation methods and professional engineering judgment. The following is a brief project description of the building observed.

2.0 Project Overview

The building was originally constructed as a bank in the late 1960's. In the late 1990's the facility was converted to its current configuration and use as a police station. The facility is a light wood framed structure with a light timbered plate trussed gable roof. As part of the original construction a large overhang was created along the front wall of the building to serve as a cover for the teller's window. A large vaulted area was also created in the front lobby area. During the police station remodel this vaulted area was in-filled with a new second floor area. This new floor consists of light timber wood floor framing supported by additional glulam beams. Additional posts were added to support the new floor. The original building and new additional posts are supported by the

original timber pile deep foundation elements and concrete perimeter grade beams and interior pile caps.

An addition to the south side of the building was included in the police station remodel. It also consists of a light timber plate truss roof structure supported by plywood shear walls and a deep foundation system similar to the original construction.

3.0 Outline of Deficiencies

The structural components and systems appear to be functioning and adequately performing as originally designed and intended. Due to the essential nature of the facility and construction techniques, certain seismic force resisting elements did not provide a defined load path to the foundation elements. These raised concern as they could hinder the facility's objective of maintaining functionality after an earthquake. The following outlines the observed deficiencies.

- **Overall building condition:**
  - The addition to the existing structure contains suspect connections for both in-plane shear transfer and gravity load resistance
  - Existing loft has suspect posts that eccentrically load the existing interior pile and cap
- **Structural components:**
  - The large overhang along the north side of building creates a high heel truss configuration. This high heel requires additional shear transfer mechanisms to properly transfer the shear to the shear walls below; These shear transfer devices are not installed
  - No uplift connections at large front overhang
- **Nonstructural components:**
  - Water heaters and fan unit in attic not seismically braced
  - Suspended ceiling and lights not seismically braced

4.0 Conclusions and Recommendations

The structural condition of the building appears to be in good standing. However, due to certain deficiencies in seismic connections the building does not meet the intent of an essential facility. The building may survive an earthquake; however, it may not remain functional and may need serious rehabilitation after the earthquake. It is recommended that the above known deficiencies be rehabilitated and a full structural investigation be implemented to further evaluate the structural systems of the original building and addition.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Police Station building located at 250 W U.S. 20 Business in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing fire, life and safety (FLS) aspects of the building using information provided, a checklist produced by the National Fire Protection Association, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing FLS components.

Within this report we have attempted to outline a Police Station facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable fire safety performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The Police Station facility in question is a two storey building with main level at grade. The trusses provide for a bonus room upstairs that houses the officer's desks and lockers, as well as storage space in the attic. The upper level is accessed by only one set of stairs leading to the hallway on the main level. The hallway on the main level is a definable path of egress for the main level office, dispatch, break room and second level offices. The hallway has several exits signs and the exit doors have adequate panic hardware. Fire extinguishers are places in strategic locations throughout the space. The facility is equipped with a fire alarm system with visual and audible alarms. A pull station is located at the fire panel.

3.0 Outline of Deficiencies

- **Occupant Load, Exits and Doors:**
  - Exits are not per code (only one exit from second level)
  - Exit enclosures are not free of storage
- **Egress and Protection:**
  - Exits not marked per code

- Doors in corridors are not properly rated

4.0 Conclusions and Recommendations

The fire safety condition of the main level is good, however the single exit from the second level is an significant increase of risk for occupants trapped on the second level during an emergency. A second emergency exit from the second level via an egress window with an area of rescue or stairs is recommended. The other deficiencies listed above are minor and easily corrected with proper signage and space management.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Police Station building located at 250 W U.S. 20 Business in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing state of accessibility of the building based on current building code requirements for a public facility using information provided, general accessibility checklists, and visual observations of the accessible items throughout the building. For the sake of assessing accessibility, existing plans were not utilized due to the nature of the items in question to receive undocumented alterations.

Within this report we have attempted to outline a building assessment based on the building status and clearly define upgrades required to meet current code for accessibility of a public facility. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The building in question sits down a gentle slope from the adjacent highway. The main entrance is at-grade and there is a direct route to the ADA parking stalls. Most of the activity of the police station is on the main floor, with cubicles and storage lockers for the officers upstairs in the bonus room. The main floor has one accessible unisex restroom facility.

3.0 Outline of Deficiencies

- **Parking**
  - ADA parking stalls are not on the shortest route to accessible entrance
  - There is no sign showing the international symbol of accessibility located above grade and visible when a vehicle is parked in the space
  - There is no "Van Accessible" parking space
- **Entrances, Corridors and Stairs:**
  - Handrail heights vary outside acceptable range
  - Handrails do not have proper extensions beyond top and bottom tread

  - Handrail at interior stairs is not properly shaped (easy to grasp)
- **Public Restrooms:**
  - Restroom not appropriately identified
  - Not all items mounted at accessible heights
  - Grab bars at toilets are not compliant
- **Public Telephones and Water Fountains:**
  - Braille and/or large print operation directions are not available
- **Meeting Rooms:**
  - Table does not have required knee height clearance
- **Hazards and Emergency Procedures:**
  - Exit doors are not equipped with tactile symbols to designate their location

4.0 Conclusions and Recommendations

From the standpoint of the public nature of the building, its accessibility is in decent shape. That said, ADA issues are typically a high priority because of the tendency for barriers to incur fines or lawsuits. A general approach to move towards ADA compliance is to start from the parking lot and make your way into the building. The locations of the marked ADA parking stalls could need to be moved closer to the walkway that leads to the main entrance.

The next step would be ensuring accessibility of routes throughout the building. Doors would need to have proper opening forces and handles that don't require excessive grasping and twisting. Items attached to walls and ceiling would have to be kept from encroaching into the accessible route. The handrail at the stairs should be replaced with a compliant handrail at the proper height. Accessibility barriers in the individual rooms would need to be addressed; proper mounting heights of items in bathrooms and proper clearances for individuals in wheelchairs.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Police Station building located at 250 W U.S. 20 Business in Toledo, Oregon. The purpose of this section of the investigation is to verify basic compliance using information provided, evaluation criteria as outlined in ASCE 31-03 – Seismic Evaluation of Existing Buildings, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing basic compliance.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable seismic performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question is a light wood framed structure with a trussed gable roof and a large overhang over the front entrance. It is roofed with metal panels and sided with wood lap siding. The trusses provide for a bonus room upstairs that houses the officer's desks and lockers, as well as storage space in the attic.

3.0 Outline of Deficiencies

The following Tier 1 checklist items were observed as non-compliant;

- **Wood structural panel shear wall fasteners:**
  - Appears to be over 15% inadequate fastening such as overdriven fasteners, omitted blocking, excessive fastening spacing, or inadequate edge distance
- **Narrow wood shear walls:**
  - Narrow wood shear walls with an aspect ratio greater 1.5:1 appear to be used to resist lateral forces developed in building in level of high seismicity

- **Openings:**
  - Walls with openings greater than 80% of the length appear to be braced with structural panel shear walls with aspect ratios greater than 1.5:1
- **Hold-down anchors:**
  - Shear walls do not appear to have hold-down anchors constructed per acceptable construction practices attached to the end studs
- **Unblocked diaphragms:**
  - Unblocked wood diaphragms appear to span longer than 30 feet, and may have aspect ratios greater than 3:1
- **Wood sill bolts:**
  - Sill bolts do not appear to be spaced 4 feet or less with proper edge and end distances provided

4.0 Conclusions and Recommendations

Based on the inherent lateral force redundancy this structure possesses associated with non-structural interior walls, a relatively light seismic mass, and it's small plan dimension aspect ratio, we do not consider the structure to be hazardous based on typical seismic performance expectations. However, since this facility is by definition essential in nature thus requiring a higher level of seismic performance, strengthening measures to mitigate the above non-compliance issues would have to be pursued if it decided that this structure be brought into compliance with current code prescribed seismic requirments.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Fire Station building located at 285 NE Burgess Road in Toledo, Oregon. The purpose of this section of the investigation is to verify the general structural condition of the building based on information provided and visual observations of the building. The existing plans, dated 2005, were utilized in conjunction with site observations for the sake of assessing the general structural condition.

Within this report we have attempted to outline obvious and known structural deficiencies. The intent of the assessment is to gain knowledge of the building's structural systems for determining and warranting structural rehabilitations. All information in this report is based on visual observations and review of the existing plans where available. Structural analysis of the building was not performed as part of this data gathering. A site specific geotechnical evaluation was not performed to evaluate the supporting soils and overall site slope stability during and after an earthquake. All recommendations and conclusions are based on our understanding of the facility's function and use, current building codes, current rehabilitation methods and professional engineering judgment. The following is a brief project description of the building observed.

2.0 Project Overview

The facility in question consists of three separate but connected light timbered wood framed structures with trussed gable roofs. The outer wings house administrative services and quarters for the fire department personnel. The center building houses the apparatus bay. The apparatus bay is taller than the adjoining wings, creating a vertical irregularity.

3.0 Outline of Deficiencies

After site observations of the building and review of the project structural drawings it has been determined that the building meets the intent of the current building code as-built.

4.0 Conclusions and Recommendations

If the City does not already have a maintenance plan in effect for this building, one is recommended. This maintenance plans shall include the maintenance of all exterior envelope features as well as the internal workings of the building. This maintenance plan will keep the building from falling into disrepair.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Fire Station building located at 285 NE Burgess Road in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing fire, life and safety (FLS) aspects of the building using information provided, a checklist produced by the National Fire Protection Association, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing FLS components.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable fire safety performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The new fire station facility in question consists of three separate but connected wood framed structures with trussed gable roofs. It is roofed with asphalt shingles and sided with wood panels and lap siding, and the floor is slab-on-grade.

3.0 Outline of Deficiencies

- **Compliant:** The building appears to be in compliance with the FLS checklist

4.0 Conclusions and Recommendations

This facility was constructed recently in compliance with current code requirements. We observed no fire safety risk at this facility.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Fire Station building located at 285 NE Burgess Road in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing state of accessibility of the building based on current building code requirements for a public facility using information provided, general accessibility checklists, and visual observations of the accessible items throughout the building. For the sake of assessing accessibility, existing plans were not utilized due to the nature of the items in question to receive undocumented alterations.

Within this report we have attempted to outline a building assessment based on the building status and clearly define upgrades required to meet current code for accessibility of a public facility. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question was built within the last five years on a fairly level lot with an expanse of pavement in front. The main entrance is at-grade with a direct route to the ADA parking stalls. The public portion of the fire station has a large meeting room and separate men's and women's multi-fixture restrooms.

3.0 Outline of Deficiencies

- **None noted**

4.0 Conclusions and Recommendations

This facility was constructed recently in compliance with current code requirements. We observed no accessibility barriers at this facility.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Fire Station building located at 285 NE Burgess Road in Toledo, Oregon. The purpose of this section of the investigation is to verify basic compliance using information provided, evaluation criteria as outlined in ASCE 31-03 – Seismic Evaluation of Existing Buildings, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing basic compliance.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable seismic performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question consists of three separate but connected wood framed structures with trussed gable roofs. It is roofed with asphalt shingles and sided with wood panels and lap siding, and the floor is slab-on-grade.

3.0 Outline of Deficiencies

This structure was designed and constructed within the last 5 years and complies with current building codes in regards to lateral force resistance.

4.0 Conclusions and Recommendations

No recommendations required.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Public Library building located at 173 NW 7th Street in Toledo, Oregon. The purpose of this section of the investigation is to verify the general structural condition of the building based on information provided and visual observations of the building. The existing library plans, dated 1960, and building addition plans, dated 1992, were utilized in conjunction with site observations for the sake of assessing the general structural condition.

Within this report we have attempted to outline obvious and known structural deficiencies. The intent of the assessment is to gain knowledge of the building's structural systems for determining and warranting structural rehabilitations. All information in this report is based on review of the existing plans where available and visual observations. Structural analysis of the building was not performed as part of this data gathering. A site specific geotechnical evaluation was not performed to evaluate the supporting soils and overall site slope stability during and after and earthquake. All recommendations and conclusions are based on our understanding of the building's function and use, current building codes, current rehabilitation methods, and professional engineering judgment. The following is a brief project description of the building observed.

2.0 Project Overview

The original building is a single-story light timbered wood-framed structure with a slab-on-grade. The roof structure consists of light-timbered wood trusses in a hip roof configuration. The perimeter exterior walls are plywood shear walls.

Due to sloping grade across the site the addition to the building on the west side is a two-story addition with a daylight basement. The addition consists of a light timbered structure with a low sloped roof. The roof structure consists of glulam beams evenly spaced with secondary 2x rafters evenly spaced between the beams. The slope is

created using 2x over framing. The floor framing is similar to the roof structure. Primary glulam beams support secondary 2x floor joists.

3.0 Outline of Deficiencies

The original building is a regular, well defined structure; however, during the building addition the entire west shear wall was removed to expand the library space. The removal of this shear wall and lack of shear transfer detailing reduces the seismic resisting capacity of the building. The following outlines the observed deficiencies.

- **Overall building condition:**
  - Addition (1992) removed shear wall in transverse direction
  - Suspect cracks in exposed beam ends at addition
  - At the marriage line between the addition and original building it appears that the retaining wall of the addition has moved; this is apparent in the separation in the carpet joints
  - Rot present in siding at downspout locations
- **Structural components:**
  - Due to conflicts with mechanical equipment and basic fit, trusses supporting the roof structure of the addition were modified; these modifications are not documented and may reduce the capacity of the trusses
  - Where the west shear wall of the existing building was removed a proper shear transfer detail was not implemented; this improper detail does not allow seismic forces to be transferred to exterior shear walls
- **Nonstructural components:**
  - Suspended ceilings are not seismically braced and have changes in elevation
  - All ducting within the attic space was not seismically braced.

4.0 Conclusions and Recommendations

The structural condition of the building appears to be in good standing for its age, and initial design life expectancy. However, due to certain deficiencies in seismic connections the building may not meet the intent of collapse prevention during an earthquake. The building may survive an earthquake, but, due to the unknown reliability of the existing connections and systems, major structural damage to main structural elements may render the building unsafe. It is recommended that the above known deficiencies be rehabilitated to achieve a collapse prevention rehabilitation objective.

New shear walls should be installed along the original west wall of the building and properly attached to the addition roof structure and the original construction. A wall monitoring program should be established to verify the retaining wall for the addition is not continuing to move. Proper seismic bracing of the suspended ceiling should be installed to minimize falling ceilings during a seismic event.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Public Library building located at 173 NW 7th Street in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing fire, life and safety (FLS) aspects of the building using information provided, a checklist produced by the National Fire Protection Association, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing FLS components.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable fire safety performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question is a wood-framed structure at grade with a two-story addition with a daylight basement on the downhill side. The majority of the main level is used as a library with book shelves and tables for reading. The staff offices are located behind the counter. The lower level is used as a meeting area on one side and a mechanical room on the other. Smoke detectors appear to be placed throughout the structure with fire alarm pull stations at the exits. The fire alarm panel has recently been replaced. Emergency lighting is present at the main assembly exit door only.

3.0 Outline of Deficiencies

- **Occupant Load, Exits and Doors:**
  - Front door locked on one side
- **Egress and Protection:**
  - Egress through intervening rooms is not acceptable
  - Emergency lighting not at all exits of assembly areas
  - Vertical exit openings not enclosed
- **Detection, Alarm and Extinguishment:**

- No audible or visual alarms (alarm outside)
- New panel with existing components to be tested

4.0 Conclusions and Recommendations

The fire safety condition of the building is good with the exception of the items list above. The exit through the offices behind the counter is of concern because the rout to the door is not clear and the door has a dead bolt. The exit down stairs is not clearly marked and is not enclosed with fire ratings. The exit in the northeast corner is not far enough from the main exit to be a safe second exit. A second exit at the south wall with emergency lighting is recommended. We also recommend testing the existing fire alarm system and research the need for installing interior audible and visual alarms.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Public Library building located at 173 NW 7th Street in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing state of accessibility of the building based on current building code requirements for a public facility using information provided, general accessibility checklists, and visual observations of the accessible items throughout the building. For the sake of assessing accessibility, existing plans were not utilized due to the nature of the items in question to receive undocumented alterations.

Within this report we have attempted to outline a building assessment based on the building status and clearly define upgrades required to meet current code for accessibility of a public facility. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The building in question sits on a hillside with a daylight basement on the downhill side. The main entrance is at-grade and there is a direct route to an ADA parking stall, while the basement entrance is below grade and accessed by means of a ramp or flight of stairs. The library is housed on the main floor, with a flight of stairs running down to a public meeting room and storage room in the basement. The main floor has separate single occupant restrooms for men and women, and the basement has a single occupant unisex restroom.

3.0 Outline of Deficiencies

- **Parking:**
  - Only one ADA parking stall provided (none "Van Accessible")
  - Parking stall appears to be sloped steeper than 2%
- **Walks, Curbs and Ramps:**
  - Landings at ramp to basement were inadequate

  - Handrail not present both sides of ramp, and not mounted correct distance from wall
- **Entrances, Corridors and Stairs:**
  - The landing in front of the main entrance is not level (cross slope)
  - Knobs on bathroom doors require tight grasping and twisting of the wrist
  - Handrails do not have proper extensions beyond top and bottom tread
  - Handrail at interior stairs is not properly shaped (easy to grasp)
- **Public Restrooms:**
  - Restrooms not appropriately identified
  - Maneuvering clearances and clear floor spaces are not adequate
  - Not all items mounted at accessible heights
  - Protective pipe covering under lavatory not present
  - Grab bars at toilets are not compliant
- **Public Telephones and Water Fountains:**
  - Clear space at water fountain is not adequate
  - Width of the water fountain is not adequate
- **Meeting Rooms:**
  - Meeting room floor surface is not non-slip
- **Hazards and Emergency Procedures:**
  - Audible and visual alarms are not present inside the building

4.0 Conclusions and Recommendations

From the standpoint of the public nature of the building, its accessibility is in decent shape. That said, ADA issues are typically a high priority because of the tendency for barriers to incur fines or lawsuits. A general approach to move towards ADA compliance is to start from the parking lot and make your way into the building. The slope of the marked ADA parking stall would need to be modified as indicated above to be brought up to code. The accessible entrances would need to be properly labeled, with signage guiding individuals from the parking space to the proper entrance to suit their needs. The exterior ramp to the meeting room in the basement would require a new handrail and adequate landings to be compliant.

The next step would be ensuring accessibility of routes throughout the building. Doors would need to have proper opening forces and handles that don't require excessive grasping and twisting. Items attached to walls and ceiling would have to be kept from encroaching into the accessible route. In addition, an individual in a wheelchair must currently travel outside the building to get from the library on the main floor to the meeting room in the basement. Accessibility barriers in the individual rooms would need to be addressed; proper mounting heights of items in bathrooms, proper clearances for individuals in wheelchairs, and proper door clearances to access these rooms. Neither of the bathrooms in the library is ADA compliant and would need significant renovation to reach code compliance. The drinking fountain does not have the proper clearances, and would require replacement.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Public Library building located at 173 NW 7th Street in Toledo, Oregon. The purpose of this section of the investigation is to verify basic compliance using information provided, evaluation criteria as outlined in ASCE 31-03 – Seismic Evaluation of Existing Buildings, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing basic compliance.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable seismic performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question is a wood-framed structure with an addition including a daylight basement on the downhill side. The original building was conventionally framed with a manufactured light timber roof truss package in a hip configuration. The west addition was framed with a shed roof configuration and utilizes the downward sloping site to incorporate a daylight basement.

3.0 Outline of Deficiencies

The original structure was properly designed with attention to lateral force system detailing and generally complies with the Tier 1 checklist. However the removal of the original west wall incidental to the west addition and a lack of detailing to create a reliable diaphragm "splice" renders the lateral system suspect. Furthermore, the removal of the shearwall system along the original west wall has introduced additional diaphragm reaction to the original shearwalls as a result of greater seismic mass and wind exposure length.

4.0 Conclusions and Recommendations

It is our opinion that re-establishment of a lateral bracing system along the marriage line between the original structure and the addition will bring this structure back into general compliance with the Tier 1 checklist.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Public Pool building located at 174 NW 7th Street in Toledo, Oregon. The purpose of this section of the investigation is to verify the general structural condition of the building based on information provided and visual observations of the building. The existing pool cover plans, dated 1960, and cover remodel plans, dated 1973, were utilized in conjunction with site observations for the sake of assessing the general structural condition.

Within this report we have attempted to outline obvious and known structural deficiencies. The intent of the assessment is to gain knowledge of the building's structural systems for determining and warranting structural rehabilitations. All information in this report is based on review of the existing plans where available and visual observations. Structural analysis of the building was not performed as part of this data gathering. A site specific geotechnical evaluation was not performed to evaluate the supporting soils and overall site slope stability during and after and earthquake. All recommendations and conclusions are based on our understanding of the building's function and use, current building codes, current rehabilitation methods, and professional engineering judgment. The following is a brief project description of the building observed.

2.0 Project Overview

The original in-ground concrete pool structure was built at an unknown date. The building originally contained an open-air pool with a bathhouse structure. Around 1960 a glulam roof structure supported by WF steel columns and partial CMU perimeter walls and wood infill walls was installed over the pool to partially enclose it. The south side of the pool structure was left unenclosed.

In 1973 the pool enclosure structure was remodeled. As part of this remodel the original bathhouse structure was replaced with the current building. The existing light timbered 2x rafter and purlin roof framing was removed and replaced with 4x purlins

spaced farther apart. The light timbered frame infill wall framing between the WF steel columns along the north side was also replaced with heavier CMU walls to the underside of the upper windows. The south side wall was also enclosed to match the north side. All of the framing surrounding and above the windows remained. The bathhouse was replaced with a CMU perimeter structure with a heavy timber roof structure.

At a later date, a random number of the upper windows were removed and replaced with painted plywood panels. The connection of these panels to the structure is unknown. The following outlines the observed deficiencies.

3.0 Outline of Deficiencies

The majority of the deficiencies found throughout the building are related to inconsistencies between the remodels and additions and the differing construction practices.

- **Overall building condition:**
  - Bottom of steel columns show signs of deterioration due to constant contact with chlorinated water
  - Earth in contact with wood potential for rot
  - A large crack in the pool bottom extends from one end to the other. This crack appears to be a pre-existing crack and no structural issues were evident
- **Structural components:**
  - Numerous cracks in CMU walls, especially around openings
  - Large crack in east wall around mechanical return louver; crack extends from corner of opening up to top of wall
  - No connection details between CMU infill panels and steel columns
  - The removal and replacement of the original wood walls with CMU walls has increased the demand on the columns during a seismic event
  - Large number of windows along longitudinal direction of the building
  - Minimal shear transfer from roof to CMU walls

- Unknown detailing for infill plywood panels minimizes acceptance of panels as shear walls
- Unknown out-of-plane transfer between top of CMU walls and steel columns and top of CMU walls and bathhouse roof structure
- Checking and twisting of main and secondary beams in locker rooms

- **Nonstructural components:**
  - No seismic bracing of HVAC units and ducting

4.0 Conclusions and Recommendations

The structural condition of the building appears to be in good standing for its age, initial design life expectancy and environment. However, due to certain deficiencies in seismic connections the building may not meet the intent of collapse prevention during an earthquake. The building may survive an earthquake, but, due to the unknown reliability of the existing connections and systems, major structural damage to main structural elements may render the building unsafe. It is recommended that the above known deficiencies be rehabilitated to achieve a collapse prevention rehabilitation objective. This objective would meet the intent of the code.

The large crack in the pool bottom should be evaluated from a performance related standard and should be repaired to minimize water infiltration into the sub-grade supporting the pool.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Public Pool building located at 174 NW 7th Street in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing fire, life and safety (FLS) aspects of the building using information provided, a checklist produced by the National Fire Protection Association, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing FLS components.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable fire safety performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question is an enclosed public pool with associated locker rooms and front desk area. The facility is located at grade with one main entry/exit and a second exit located at the front half of the structure. The exits from the locker rooms are signed with emergency lighting. I fire extinguisher can be found near the second exit.

3.0 Outline of Deficiencies

- **Occupant Load, Exits and Doors:**
  - No posted occupant load (300 max)
  - Emergency lighting at the second exit

4.0 Conclusions and Recommendations

The fire safety condition of this facility is good. The building is to be limited to 300 or a fire sprinkler system is required. We recommend posting the maximum occupant load of 300. We also recommend installing emergency lighting at the second exit as all exits for an assembly occupancy are required to have emergency lighting at all times.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Public Pool building located at 174 NW 7th Street in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing state of accessibility of the building based on current building code requirements for a public facility using information provided, general accessibility checklists, and visual observations of the accessible items throughout the building. For the sake of assessing accessibility, existing plans were not utilized due to the nature of the items in question to receive undocumented alterations.

Within this report we have attempted to outline a building assessment based on the building status and clearly define upgrades required to meet current code for accessibility of a public facility. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The building in question sits on a hillside facing the public library building. The main entrance is at-grade with a direct route to an ADA parking stall. The building has separate locker rooms for men and women with bathroom stalls and lavatories.

3.0 Outline of Deficiencies

- **Parking:**
  - The ADA parking stall does not meet the minimum width requirements
  - The access aisle does not meet the minimum width requirements
- **Walks, Curbs and Ramps:**
  - Ground and floor surfaces are not free of abrupt changes in surface elevation that exceed ¼" in height
  - Vertical elevation changes between ¼" – ½" are not beveled
- **Entrances, Corridors and Stairs:**
  - Some items protrude more than 4 inches into the path of travel

- **Public Restrooms:**
  - Restrooms are not appropriately identified
  - Not all items mounted at accessible heights
  - Toilet stall sizes are not compliant
  - Grab bars at toilets are not compliant
- **Public Telephones and Water Fountains:**
  - Width of the water fountain is not adequate
- **Hazards and Emergency Procedures:**
  - Standardized textured surfaces for tactile warnings not present at subsurface pool
  - Audible and visual alarms are not present inside the building

4.0 Conclusions and Recommendations

From the standpoint of the public nature of the building, its accessibility is in decent shape. That said, ADA issues are typically a high priority because of the tendency for barriers to incur fines or lawsuits. A general approach to move towards ADA compliance is to start from the parking lot and make your way into the building. The marked ADA parking stall would need to be modified as indicated above to be brought up to code. The accessible entrances would need to be properly labeled, and changes in elevation would have to be addressed.

The next step would be ensuring accessibility of routes throughout the building. Doors would need to have proper opening forces and items attached to walls and ceiling would have to be kept from encroaching into the accessible route. Accessibility barriers in the individual rooms would need to be addressed; proper mounting heights of items in bathrooms, compliant grab bars and accessible stall sizes. The pool does not have adequate tactile warnings around the edge.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Public Pool building located at 174 NW 7th Street in Toledo, Oregon. The purpose of this section of the investigation is to verify basic compliance using information provided, evaluation criteria as outlined in ASCE 31-03 – Seismic Evaluation of Existing Buildings, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing basic compliance.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable seismic performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question consists of concrete masonry unit perimeter shearwalls with a plywood sheathed glulam beam and purlin roof system. Steel columns provide bearings for the primary glulam beam reactions and appear to laterally support the CMU walls as the walls do not extend to the roof diaphragm.

3.0 Outline of Deficiencies

The does not fully comply with the Tier 1 checklist. However, the areas of concern are relatively manageable in our opinion. The item of most significance is the apparent lack of vertical continuity from the diaphragm perimeter to the CMU shearwalls below. At present the CMU walls terminate some 5 ft below the roof deck leaving a vertical shearwall gap that is infilled with glazing and light timber framing packages. Futhermore, cracks of a size greater than permitted by the Tier checklist were observed in the north wall adjacent to a large mechanical opening.

4.0 Conclusions and Recommendations

In order to achieve Tier 1 checklist general compliance, we recommend that a reliable diahphragm-to-shearwall system be established through the use of properly detailed infill shearwalls or x-bracing installed in the vertical space above the CMU walls and properly fastened to the roof diaphragm. The cracking observed could be addressed through injection repair of even partial wall removal and replacement at the damaged area.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Public Works Shop building located at 415 NW Industrial Way in Toledo, Oregon. The purpose of this section of the investigation is to verify the general structural condition of the building based on information provided and visual observations of the building. The main shop plans, dated 2000, and storage lean-to plans, dated 2001, were utilized in conjunction with site observations for the sake of assessing the general structural condition.

Within this report we have attempted to outline obvious and known structural deficiencies. The intent of the assessment is to gain knowledge of the building's structural systems for determining and warranting structural rehabilitations. All information in this report is based on review of the existing plans where available and visual observations. Structural analysis of the building was not performed as part of this data gathering. A site specific geotechnical evaluation was not performed to evaluate the supporting soils and overall site slope stability during and after an earthquake. All recommendations and conclusions are based on our understanding of the building's function and use, current building codes, current rehabilitation methods, and professional engineering judgment. The following is a brief project description of the facility observed.

2.0 Project Overview

The facility contains two separate buildings observed for this report. The first building is a lean-to storage facility constructed in 2001. The second is the main shop building constructed in 2000.

The lean-to building is a cantilever pole structure typical of similar use buildings. The cantilever poles consist of wood posts at evenly spaced bays. The poles support double light-timbered wood trusses at each pole line with 2x wood purlins evenly spaced. The floor is a graveled surface. According to the drawings the poles are

embedded into native backfill piers. The structure is partially enclosed and open on the east side.

The main shop building is a typical manufactured metal building with moment frames and cross braced bays. It is roofed and sided with metal panels and the floor is a slab-on-grade. A partially enclosed lean-to area on the east side is part of the original metal building system. The interior area of the building has been partitioned off into several different occupancy types, from automotive to staff break rooms to offices. There are storage mezzanines above office areas. These storage mezzanines are posted with a load rating of 125 pounds per square foot.

3.0 Outline of Deficiencies

The following deficiencies apply to the lean-to storage building:

- **Overall building condition:**
  - Exterior lean-to structure starting to show signs of weather deterioration in the wood columns
- **Structural components:**
  - None
- **Nonstructural components:**
  - Pipe storage racks attached to the structure lacking a seismic force resisting load path to foundation elements

The following deficiencies apply to the main shop building:

- **Overall building condition:**
  - Exterior lean-to structure starting to show signs of weather deterioration in the exposed steel columns and main beams.
- **Structural components:**
  - The engineered metal building plans were not available for review at the time of this report, so the following deficiency is based on our understanding of metal building construction: typically main frame beams

and columns are braced to secondary structure utilizing angle bracing on each side; it was observed that only one side of the beams and columns were braced

- **Nonstructural components:**
  - Storage racks on the elevated mezzanines were not attached to the structure to resist seismic induced loads
  - Mechanical equipment and heaters were not seismically braced to structure

4.0 Conclusions and Recommendations

The structural condition of the building appears to be in good standing for its age, and initial design life expectancy. The above noted non-structural components should be rehabilitated to properly insure the life and safety of the occupants within the building during a seismic event.

If the City does not already have a maintenance plan in effect for this building, one is recommended. This maintenance plan shall include the maintenance of all exterior envelope features as well as the internal workings of the building. This maintenance plan will keep the building from falling into disrepair.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Public Works Shop building located at 415 NW Industrial Way in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing fire, life and safety (FLS) aspects of the building using information provided, a checklist produced by the National Fire Protection Association, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing FLS components.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable fire safety performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question is a typical metal building shell with interior spaces partitioned off for different uses. The interior space consists of open bays for maintenance and equipment loading, and is also partitioned off into wood framed office spaces with storage mezzanines above. The finish floor of the building is located at grade with the exception of the mezzanines. The mezzanines are primarily used for storage with a couple of areas partitioned off for office space. The repair garage is separated by a fire wall. Flammable materials appeared to be properly stored in clearly marked fire rated cabinets. Fire extinguishers can be found throughout the facility. Exit doors are clearly marked.

3.0 Outline of Deficiencies

- **Egress and Protection:**
  - Equipment subject to rupture is under or adjacent to stairs
  - 3-hour door at auto shop does not have automatic closer

4.0 Conclusions and Recommendations

The fire safety condition of this facility is good. The building was constructed under recent code guidelines and appears to meet the intent of the code for fire safety. The items listed above can easily be corrected.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Public Works Shop building located at 415 NW Industrial Way in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing state of accessibility of the building based on current building code requirements for a public facility using information provided, general accessibility checklists, and visual observations of the accessible items throughout the building. For the sake of assessing accessibility, existing plans were not utilized due to the nature of the items in question to receive undocumented alterations.

Within this report we have attempted to outline a building assessment based on the building status and clearly define upgrades required to meet current code for accessibility of a public facility. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The building in question sits on a gravel lot with no paved parking. The main entrance is at-grade with a direct (gravel) route to a marked ADA parking stall. The shop area is a slab-on-grade with two mezzanines accessed by means of staircases. The building has a single occupant unisex restroom on the main floor.

3.0 Outline of Deficiencies

- **Parking:**
  - Sign showing international symbol of accessibility is not visible when vehicle is parked in space
  - Parking space marked ADA accessible is not code compliant
  - The site has no paved route to an accessible entrance
- **Walks, Curbs and Ramps:**
  - The site has no paved route to an accessible entrance
- **Entrances, Corridors and Stairs:**
  - There is no distinguishable primary accessible entrance

  - Handrails do not have proper extensions beyond top and bottom tread
- **Public Restrooms:**
  - Not all items mounted at accessible heights
  - Maneuvering clearances at door not compliant
- **Meeting Rooms:**
  - Table do not have adequate knee clearance
- **Hazards and Emergency Procedures:**
  - Audible and visual alarms are not present inside the building

4.0 Conclusions and Recommendations

From the standpoint of the non-public nature of the building, its accessibility is in decent shape. That said, ADA issues are typically a high priority because of the tendency for barriers to incur fines or lawsuits. A general approach to move towards ADA compliance is to start from the parking lot and make your way into the building. The gravel lot is a large ADA barrier for anyone attempting to enter the building. It is recommended that a paved ADA parking space and adjacent access aisle with a direct route to an accessible entrance be provided. This entrance would need to be properly labeled, have the necessary paved landing, and the required maneuvering clearances on both sides of the door.

The next step would be ensuring accessibility of routes throughout the building. Doors would need to have proper opening forces and handles that don't require excessive grasping and twisting. Items attached to walls and ceiling would have to be kept from encroaching into the accessible route. Then the individual rooms would need to be addressed; proper mounting heights of items in bathroom, proper clearances for individuals in wheelchairs, and proper door clearances to access these rooms.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Public Works Shop building located at 415 NW Industrial Way in Toledo, Oregon. The purpose of this section of the investigation is to verify basic compliance using information provided, evaluation criteria as outlined in ASCE 31-03 – Seismic Evaluation of Existing Buildings, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing basic compliance.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable seismic performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question is a typical metal building with moment frames and cross braced bays and, as such, is considered a flexible structure. It is roofed and sided with metal panels and the floor is a slab-on-grade. The interior has open bays and is also partitioned off into wood framed office spaces with storage mezzanines above.

3.0 Outline of Deficiencies

The building is in general compliance with the Tier 1 checklist. The structure is a relatively new engineered metal building package with definitive lateral force and gravity load paths. We observed no obvious signs of lateral system related damage or structural deficiencies.

4.0 Conclusions and Recommendations

Seismic retrofit or seismic hazard reduction measures are not recommended.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Water Treatment Plant building located at 1105 SE Fir Street in Toledo, Oregon. The purpose of this section of the investigation is to verify the general structural condition of the building based on information provided and visual observations of the building. The existing plans, dated 1974, were utilized in conjunction with site observations for the sake of assessing the general structural condition.

Within this report we have attempted to outline obvious and known structural deficiencies. The intent of the assessment is to gain knowledge of the building's structural systems for determining and warranting structural rehabilitations. All information in this report is based on visual observations and review of the existing plans where available. Structural analysis of the building was not performed as part of this data gathering. A site specific geotechnical evaluation was not performed to evaluate the supporting soils and overall site slope stability during and after an earthquake. All recommendations and conclusions are based on our understanding of the building's function and use, current building codes, current rehabilitation methods, and professional engineering judgment. The following is a brief project description of the building observed.

2.0 Project Overview

Two of the three structures were observed at this site. The finish reservoir, water filtration tank and filter backwash tank are not included in this assessment. Only the two-story control building and the chlorination storage building are included in this assessment.

The two-story control structure currently houses the control room for the entire facility on the second floor and the pumping and distribution equipment for the facility on the ground floor. The pump room and distribution system is partially below grade. The structural system consists of perimeter CMU and concrete shear walls on the first floor

and perimeter wood shear walls on the second floor. One of the first floor concrete shear walls is shared with the filtration tank and separates the filtration media and finalized water from the pumping gallery. The second floor structure consists of glulam beams with 3x T&G decking. The roof structure is similar in nature. According to the existing drawings the T&G decking is overlaid by plywood.

The chlorination building is a single-story partially buried building. The main retaining wall is a concrete wall, and the exposed walls are CMU. The roof structure consists of glulam beams supporting T&G decking similar to the control building. The filter backwash tank is separated from the storage portion by a concrete wall. The following are brief descriptions of the structural condition and found deficiencies for each building.

3.0 Outline of Deficiencies

The Control Building structural components and systems appear to be functioning and adequately performing as originally designed and intended. No major structural concerns were observed. The following outlines the observed deficiencies.

- **Overall building condition:**
  - Cracks around door openings in CMU walls
  - Exposed beam ends suspect for rot
- **Structural components:**
  - Un-braced CMU walls at stairs due to change to wood walls at floor
  - Suspect ties at beams to top of wall in- and out-of-plane
  - Sloshing from water in filtration basin has potential to damage pump galley
- **Nonstructural components:**
  - No visible seismic bracing for overhead piping
  - Un-braced staircase on exterior of building

The Chlorination Building structural components and systems appear to be functioning and adequately performing as originally designed and intended. No major structural concerns were observed. The following outlines the observed deficiencies.

- **Overall building condition:**
  - Exposed beam ends suspect for rot
  - Chemical damage under tanks on slab and door jambs
  - Chemical damage to interior face of CMU walls; face shell of some CMU units were observed to be powdery and spalling
- **Structural components:**
  - Suspect ties at beams to top of wall in- and out-of-plane
  - Sloshing from water in filter backwash tank has potential to damage building support wall
- **Nonstructural components:**
  - No visible seismic bracing at overhead piping
  - Raised platform construction suspect; recommend rebuild

4.0 Conclusions and Recommendations

The overall structural condition for the two buildings appears to be in good standing. No major structural deficiencies were observed. Continual maintenance of the buildings as currently observed will help alleviate further structural deterioration.

It is recommended that all of the ends of existing glulam beams be further inspected for deterioration due to weather or insects. If none is found, an observation plan shall be implemented to maintain the structural integrity of the beams. We recommend the existing storage platform in the chlorination building be demolished and re-built to meet prescribed code loading and construction practices.

As the buildings at this facility can be considered essential as defined by the 2010 Oregon Structural Specialty Code, further structural analysis is recommended. This evaluation will help identify unknown structural deficiencies and develop objectives to rehabilitate the buildings to meet or exceed current prescribed seismic load and detailing requirements for this essential facility.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Water Treatment Plant building located at 1105 SE Fir Street in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing fire, life and safety (FLS) aspects of the building using information provided, a checklist produced by the National Fire Protection Association, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing FLS components.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable fire safety performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question has a two-story structure adjoining a large concrete water tank, and a large CMU building that houses the chemical additives. The second level of the two-story structure is used as office space by the staff for monitoring the facility. The lower level of this structure is used for equipment. The second level office space has two exists via stairs leading to the ground level. The chemical storage building has one exit at grade. Fire extinguishers can be found throughout the facility.

3.0 Outline of Deficiencies

- **Egress and Protection:**
    - Exit marking is not per code

4.0 Conclusions and Recommendations

The fire safety condition of this facility is good with the exception of the one item listed above. We recommend an additional exit sign is posted at the second exit leading to the lower level.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Water Treatment Plant building located at 1105 SE Fir Street in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing state of accessibility of the building based on current building code requirements for a public facility using information provided, general accessibility checklists, and visual observations of the accessible items throughout the building. For the sake of assessing accessibility, existing plans were not utilized due to the nature of the items in question to receive undocumented alterations.

Within this report we have attempted to outline a building assessment based on the building status and clearly define upgrades required to meet current code for accessibility of a public facility. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question sits atop a hill with paved access around the perimeter of the main treatment facility. The main entrance is at-grade with a direct route to an ADA parking stall, but the second floor is accessible only by means of a staircase. The upper floor has a single occupant unisex restroom facility.

3.0 Outline of Deficiencies

- **N/A (not a public facility)**

4.0 Conclusions and Recommendations

It is understood that this facility is innately inaccessible, and generally not open to the public. The staff of the facility have familiarity with it that precludes the need for many of the code safety and accessibility features. Should the City wish to entertain accessibility compliance options for this facility, a very thorough investigation would have to be performed.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Water Treatment Plant building located at 1105 SE Fir Street in Toledo, Oregon. The purpose of this section of the investigation is to verify basic compliance using information provided, evaluation criteria as outlined in ASCE 31-03 – Seismic Evaluation of Existing Buildings, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing basic compliance.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable seismic performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question has a two-story structure adjoining a large concrete water treatment tank, and a large CMU building that houses the chemical additives. The two-story structure consists of a wood framed post-and-beam second story over a concrete masonry unit wall first story, all sided with wood siding, and roofed with a single ply membrane.

3.0 Outline of Deficiencies

The buildings are in general compliance with the Tier 1 checklist. The building structure was designed and constructed based on modern codes and construction techniques. We observed no obvious signs of lateral system related damage or structural deficiencies.

4.0 Conclusions and Recommendations

Seismic retrofit or seismic hazard reduction measures are not recommended.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Wastewater Treatment Plant building located at 1105 SE Fir Street in Toledo, Oregon. The purpose of this section of the investigation is to verify the general structural condition of the building based on information provided and visual observations of the building. The existing plans were not available for the review, however building upgrade plans, dated 2000, were utilized in conjunction with site observations for the sake of assessing the general structural condition.

Within this report we have attempted to outline obvious and known structural deficiencies. The intent of the assessment is to gain knowledge of the building's structural systems for determining and warranting structural rehabilitations. All information in this report is based on review of the existing plans where available and visual observations. Structural analysis of the building was not performed as part of this data gathering. A site specific geotechnical evaluation was not performed to evaluate the supporting soils and overall site slope stability during and after and earthquake. All recommendations and conclusions are based on our understanding of the building's function and use, current building codes, current rehabilitation methods, and professional engineering judgment. The following is a brief project description of the building observed.

2.0 Project Overview

The facility in question is a campus of numerous CMU buildings and concrete treatment tanks. The buildings observed at the site included the main plant control building, blower building and process building. The remaining concrete tanks and miscellaneous structures are not included in the report. However, while at the site we did observe the structural steel catwalk at your request.

All three buildings are similar in nature, consisting of single story structures with perimeter CMU walls with light timbered wood framed roofs. The control building consists of a single story structure with an adjacent taller structure. The taller building

area houses vehicle access and vehicle passage to the plant. The process building and blower building are partially buried.

The catwalk reviewed included the walkway between treatment unit 1 and treatment unit 2. The catwalk consists of structural steel channels supporting a metal walkway. The catwalk is free spanning between treatment unit 1 and the flow control structure. Splice connections in the channels were observed. All primary elements were galvanized.

3.0 Outline of Deficiencies

The deficiencies in the three buildings are listed below.

- **Overall building condition:**
  - The overall condition of the buildings was in good standing
- **Structural components:**
  - Out-of-plane force tie elements between the flexible roof structure and the perimeter CMU walls were not observed
  - Out-of-plane force tie elements between the upper and lower roof on the control building were not observed
  - It is unknown if the wall between the upper and lower roof structure of the control building was properly detailed to resist potential pounding effects due to the vertical irregularity
- **Nonstructural components:**
  - Storage racks and other non-structural piping not braced to structure

The catwalk deficiencies are listed below.

- **Overall building condition:**
  - Catwalks showing signs of wear and deterioration; spalling around anchor bolts, rusting bolts (non-galvanized)
- **Structural components:**
  - Structural anchorage to foundation elements are starting to spall, losing effective capacity

- Non-galvanized bolts and splices may have reduced capacity

- **Nonstructural components:**
  - Not applicable to the catwalk structure as no piping or other process related equipment was hung from the catwalk

4.0 Conclusions and Recommendations

The structural condition of the buildings appears to be in good standing for their age and initial design life expectancy. However, due to certain deficiencies in seismic connections, the buildings may not meet the intent of collapse prevention during an earthquake. The buildings may survive an earthquake, but, due to the unknown reliability of the existing connections and systems, major structural damage to main structural elements may render the buildings unsafe. It is recommended that the above known deficiencies be rehabilitated to achieve a collapse prevention rehabilitation objective.

Continual maintenance of the buildings as currently observed will help alleviate further structural deterioration. It is recommended that the attachment of the roof structures to the perimeter CMU walls be further evaluated to determine if a rehabilitation effort is required to properly attach the roof to the walls.

It is recommended that all non-galvanized bolts and elements of the catwalk referenced above be replaced with galvanized elements to further extend the life of the structure. Rehabilitation of the anchor bolts at the bearings is recommended to minimize loss of strength during an earthquake.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Wastewater Treatment Plant building located at 816 NE Reservoir Road in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing fire, life and safety (FLS) aspects of the building using information provided, a checklist produced by the National Fire Protection Association, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing FLS components.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable fire safety performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question is a campus of numerous CMU/wood buildings and concrete treatment tanks. The occupied building is located at grade and used for maintenance and monitoring activities. The adjacent buildings used to house the stationary equipment on the site.

3.0 Outline of Deficiencies

- **Compliant:** The building appears to be in compliance with the FLS checklist

4.0 Conclusions and Recommendations

We observed no fire safety risk for the staff at this facility.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Wastewater Treatment Plant building located at 816 NE Reservoir Road in Toledo, Oregon. The purpose of this section of the investigation is to verify the existing state of accessibility of the building based on current building code requirements for a public facility using information provided, general accessibility checklists, and visual observations of the accessible items throughout the building. For the sake of assessing accessibility, existing plans were not utilized due to the nature of the items in question to receive undocumented alterations.

Within this report we have attempted to outline a building assessment based on the building status and clearly define upgrades required to meet current code for accessibility of a public facility. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question sits on a level lot that slopes up at the rear with wastewater tanks on top. The main entrance is at-grade with a direct route to the parking area. The main portion of the facility is connected by concrete walkways, but some buildings have a single step up to the door, and many of the tanks are up flights of stairs. The office building has a single occupant unisex restroom facility.

3.0 Outline of Deficiencies

- **N/A (not a public facility)**

4.0 Conclusions and Recommendations

It is understood that this facility is innately inaccessible, and generally not open to the public. The staff of the facility have familiarity with it that precludes the need for many of the code safety and accessibility features. Should the City wish to entertain accessibility compliance options for this facility, a very thorough investigation would have to be performed.

1.0 Introduction

We have been directed by Civil West Engineering Services, Inc. to investigate the existing City of Toledo Wastewater Treatment Plant building located at 816 NE Reservoir Road in Toledo, Oregon. The purpose of this section of the investigation is to verify basic compliance using information provided, evaluation criteria as outlined in ASCE 31-03 – Seismic Evaluation of Existing Buildings, and visual observations of the critical items throughout the building. Where provided, existing plans were utilized in conjunction with site observations for the sake of assessing basic compliance.

Within this report we have attempted to outline a facility assessment based on the building status and clearly define upgrades required to bring the facility to a code acceptable seismic performance level. The following is a brief project description of the building as observed. Preliminary assessments have been included.

2.0 Project Overview

The facility in question is a campus of numerous small CMU bearing wall buildings utilized for processing, blower systems, and the housing of plant controls. Structural systems consist of plywood sheathed light timber truss roof packages over reinforced CMU bearing walls and slab on grade foundations.

3.0 Outline of Deficiencies

The building is in general compliance with the Tier 1 checklist. The building structure was designed and constructed based on modern codes and construction techniques. We observed no obvious signs of lateral system related damage or structural deficiencies.

4.0 Conclusions and Recommendations

Seismic retrofit or seismic hazard reduction measures are not recommended.