



Special City Council Meeting

Thursday, November 14, 2024, at 2:00 PM

City Council Chambers, City Hall (10 3rd Ave SW)

Any person needing special accommodation for the meeting is requested to notify the City Clerk's office at 857-4752.

1. ROLL CALL
2. PLEDGE OF ALLEGIANCE
3. ACTION ITEMS
 - 3.1. MINOT POLICE DEPARTMENT AND MUNICIPAL COURT SPACE NEEDS ANALYSIS STUDY

RECOMMENDED ACTION

This is informational only. City Council can direct staff to bring discussion to an upcoming Regular City Council meeting.

- 3.2. MI-4 SOUTH SIDE DISCUSSION WITH POTENTIAL IMPACTS TO THE MINOT PUBLIC LIBRARY

RECOMMENDED ACTION

This is informational only. City Council can direct staff to bring discussion to an upcoming Regular City Council meeting.

4. ADJOURNMENT



TO: Mayor Ross
Members of the City Council

FROM: Dale Plessas, Police Captain

DATE: November 14, 2024

**SUBJECT: MINOT POLICE DEPARTMENT AND MUNICIPAL COURT SPACE
NEEDS ANALYSIS STUDY**

I. RECOMMENDED ACTION

This is informational only. City Council can direct staff to bring discussion to an upcoming Regular City Council meeting.

II. DEPARTMENT CONTACT PERSONS

Dale Plessas, Police Captain, 701-857-9800

III. DESCRIPTION

A. Background

This item was first brought to City Council on October 2, 2023. With the relocation of City Hall, the space vacated in the old building is available for use by the Police Department. City Council approved the recommendation by staff to conduct a space needs and feasibility study of the current Police Department Headquarters, which also includes the needs of Municipal Court.

B. Proposed Project

The space needs and feasibility study considered the current location at 515 2nd Avenue SW in Minot, which currently houses the Police Department Headquarters. The analysis included the study of Municipal Court operation to include the ability to relocate it to the Police Department complex. The analysis worked to determine the key areas of focus for improving the Police Department operation. It also studied the space needs for the next 25 years, whether the current complex could be remodeled to meet the needs and compared estimated costs of a remodel to a new build if necessary.

C. Recommendation Detail

Interviews were conducted of the three firms who submitted proposals and EAPC Architects was selected for this study.

IV. IMPACT

A. Aspirations

Dynamic and Flourishing
Safe and Welcoming
Resilient and Prepared
Excellent and Connected

B. Service/Delivery Impact:

N/A

C. Fiscal Impact

To be determined and discussed.

Project Costs

Depends on discussion of new location or current location.

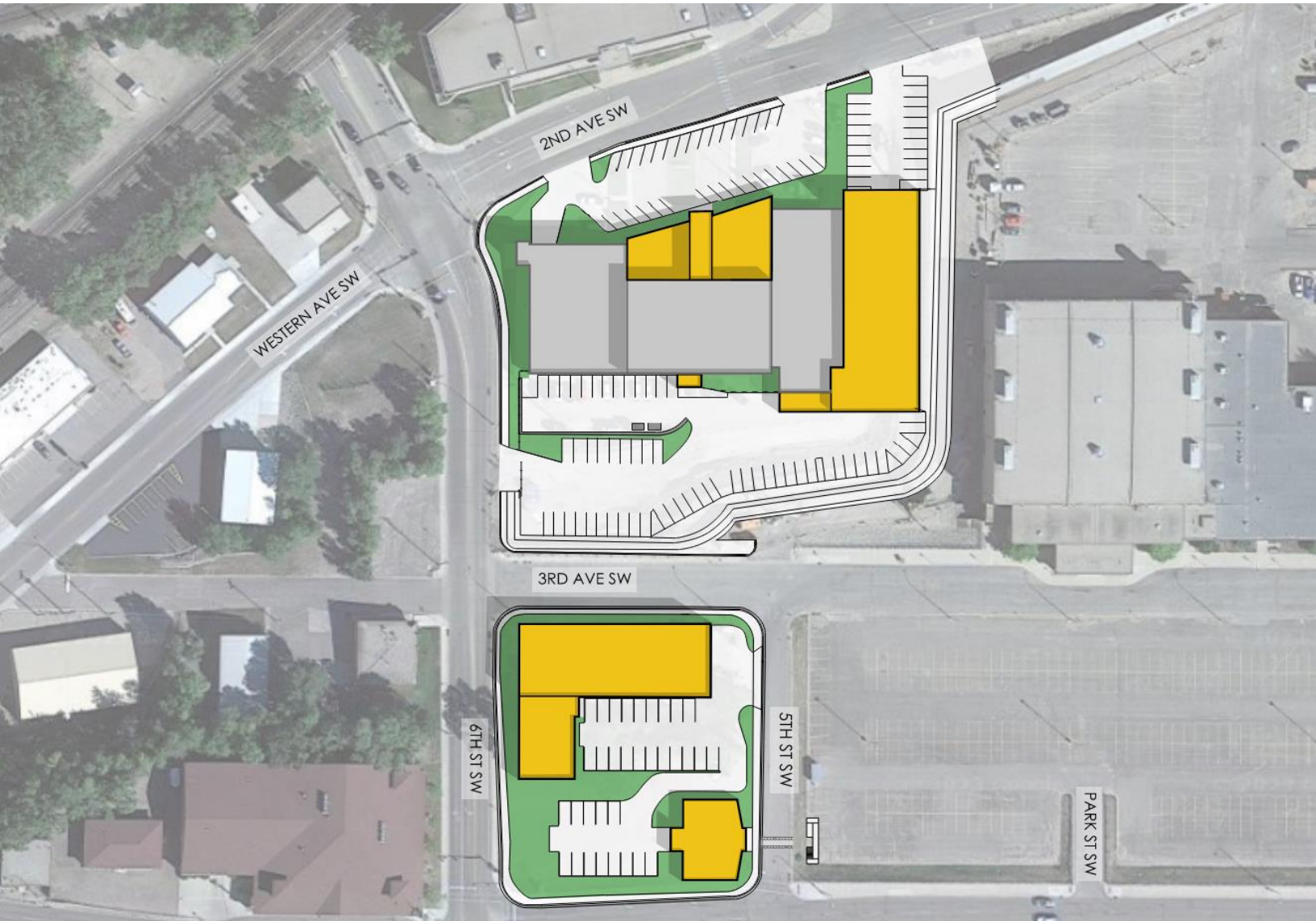
Project Funding

To be determined.

VI. ALTERNATIVES

N/A

Minot Police Department Space Needs And Feasibility Assessment



PREPARED FOR

John Klug,
Chief of Police
Minot Police Department





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1 INTRODUCTION

In 1956 the City of Minot constructed a government center building at the intersection of 2nd Avenue SW and 6th Street SW to house the Fire Department, Police Department and City Hall. Over the intervening years the Fire department and more recently the City Hall have moved to other facilities. With each of these moves the Police Department has moved into the vacated spaces with only minor remodeling. The following study serves to assess the space needs of the Minot Police Department over the next 25 years and determine the feasibility of the current facility in meeting those needs.

The study encompassed six tasks:

1. Task One - LEAN: A consensus building planning system that establishes a process and metric to measure success of the work.
2. Task Two - Facility Assessment: A comprehensive review of the physical infrastructure of the building including architectural, mechanical, and electrical systems.
3. Task Three - Growth Projections: Linear projections of future growth of the police department based on past staffing levels and projected future population growth.
4. Task Four - Existing Space Usage: An analysis of existing space usage within the facility used to determine appropriateness of current organizational structures.
5. Task Five - Space Need Projections: An analysis of the space required by the department to meet projected needs.
6. Task Six - Recommended Solutions: Solutions were developed along with cost estimates seeking the best solutions to the continued use of the facility as the Minot Police Station. As part of the work, estimates of probable cost were also developed for the construction of a new facility.

The work of this study could not have been completed without the efforts of the following individuals.

John Klug	Chief of Police
Lisa Olson	Council Member
Harold Stewart	City Manager
David Lakefield	Finance Director
Lance Meyer	City Engineer



Kevin Sickler	Property Maintenance Supervisor
Laurie Nishek	Municipal Court Clerk
Justin Sundheim	Minot Police Department
Jason Sundbakken	Minot Police Department
Dale Plessas	Minot Police Department
Trisha Guthrie	Minot Police Department
Jared Foley	Minot Police Department
Darren Dyke	Minot Police Department
Jake Eichstadt	Property Maintenance
Grant Heizelman	Property Maintenance
Alan Dostert	EAPC Architects Engineers
Michael Clark	EAPC Architects Engineers
Gloria Larsgaard	EAPC Architects Engineers
Kristen McReynolds	EAPC Architects Engineers

Questions related to this work can be directed to the following individuals.

EAPC ARCHTECTS AND ENGINEERS

Gloria Larsgaard,
Senior Project Manager

Michael Clark
Director Public Safety Design



2 EXECUTIVE SUMMARY

TASK NO. 1: LEAN

The LEAN process, as employed in this study, set forth to accomplish the following objectives as part of the overall facility feasibility study:

1. To ensure stakeholder inclusion
2. To establish agreed goals and expectations from all stakeholders prior to assessment
3. To align improvement options for efficient future decision making
4. To create concise and consistent messages for the City Council and the Minot Community to smooth the decision-making process
5. To develop an Action Plan with clear owners to assure action comes from the assessment findings

The team of stakeholders included representatives from all pertinent aspects of City Government including the City Council, Administration, Finance, Engineering, Property Maintenance, Municipal Court, and the Police Department. Through various listening sessions, these representatives determined the critical aspects of the work necessary for the study including the goals and priorities used to guide the assessment work.

The following excerpt from the “Opportunity Statement” developed during the first stakeholder meeting established the expectations and primary purpose in studying the feasibility of renovating the government building to become a standalone police station for the City of Minot.

“The overall goals of this study are to create a design plan that can meet Minot’s needs for the next 25 years while addressing the following key areas:

1. To bring safety and liability issues into full compliance and in line with contemporary best practices
2. To improve privacy and process efficiency for both personnel and citizens
3. To ensure the long-term value of this investment
4. To create a welcoming environment that promotes professionalism and wellness, inspiring pride in personnel and citizens
5. To proactively plan for potential growth of adaptation in the planned space as needs change over the next 25 years.”

The important work comprising this LEAN element of the study is best seen in the totality of the report as well as the processes and public presentations provided to the City Council and the Minot Community. Some of the more tangible aspects of



these LEAN sessions, however, are reproduced here. See Chapter 3 of the report for a more detailed accounting of the LEAN process, its goals and outcomes.

The LEAN sessions also identified the following specific items as critical to the success of the project in whatever form it is to move forward. See the described requirements in the below table.

MUST HAVE	
<i>Item</i>	<i>Message</i>
1. Safety, accessibility, security, code violations	It's our job to protect our people – employees & citizens; We have liability concerns that must be addressed
2. Efficiency, functionality, workflow	Improving the facility allows for better effectiveness and efficiency of processes resulting in cost savings due to reduced time/labor expense and improved funding utilization
3. Privacy for personnel and citizens	It's our job to protect our people – employees & citizens; We have liability concerns that must be addressed
4. Value, cost, quality and durability	To be good stewards of public funds, we need to ensure this investment considers the long-term needs of the community
SHOULD HAVE	
<i>Item</i>	<i>Message</i>
5. Welcoming environment	This should be an inviting space for the community and staff; enough privacy to honor the needs of both groups while promoting an easy flow through the spaces
6. Encourage wellness	This space should contribute to an atmosphere of calm, order and pride of place for employees and citizens encouraging wellness and even healing in certain circumstances.
7. Promotes professionalism	A contemporary space would consider the technical and technological needs of the current work and should be a source of civic pride, showing how this work is valued by the community
8. Room to expand and adapt	Our due diligence in designing a space that can serve us for the next 20 years requires us to build with growth projects in mind; a short-term solution allowing for the longer-term plan.



TASK NO. 2: FACILITY ASSESSMENT

Architects and engineers with EAPC visited the facility on multiple occasions to assess the physical infrastructure. City of Minot Property Maintenance personnel were also consulted regarding any known facility concerns or major planned maintenance work. Some general conclusions are listed here with detailed assessment reports included in Section 4 of the report.

1. The general condition of the building superstructure is good for its age. On-going maintenance is replacing major sections of the roof and previous efforts have repaired water penetration issues on the buildings east side. There appears to be no reason for the building superstructure not to remain useful for the next 25 years and beyond.
2. Interior finishes are aging and dated. Consideration should be given to replacing and updating finishes.
3. Mechanically, many of the systems are reaching the end of life. Of particular interest, the chiller is already scheduled for replacement. Also, 35 of the facility's 51 heat pumps need replacement and should be factored into any planned work. Other notable mechanical needs include:
 - a. Vehicle parking bays are required to have a CO/NO₂ exhaust system.
 - b. There is no fire protection system, and one will likely be required with major renovation work.
 - c. Installation of a new digital controls system will improve the reliability and efficiency of the system.
4. Inconsistent electrical upgrades completed over the years have led to a complex variety of age-related equipment issues. Following are the major replacement recommendations:
 - a. The entire electrical distribution system, including the emergency generator.
 - b. The fire alarm control panel is obsolete.
 - c. The public address and CCTV system need to be upgraded and revised to meet current needs.

These items and others identified in Section 4 of the report are included in Estimates of Probable work recommended by this report.

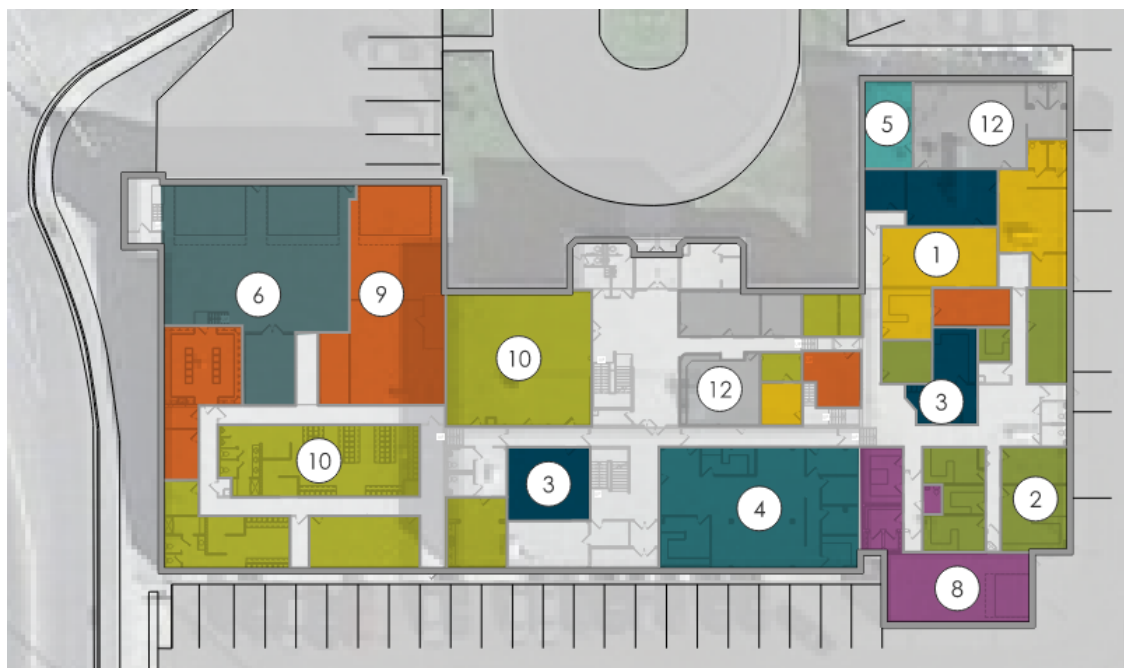
TASK THREE: EXISTING SPACE USAGE ANALYSIS

The Minot Police Department has been in this facility since construction in 1956 and has expanded into new or vacated spaces since that time. Department needs have changed substantially since the original facility design requiring adoption of new technologies and updates to policies/procedures.



This portion of the study analyzes current space usage to understand where workflow and adjacencies may no longer be appropriate and to inform future decision making to improve workflow or better accommodate current policies and procedures.

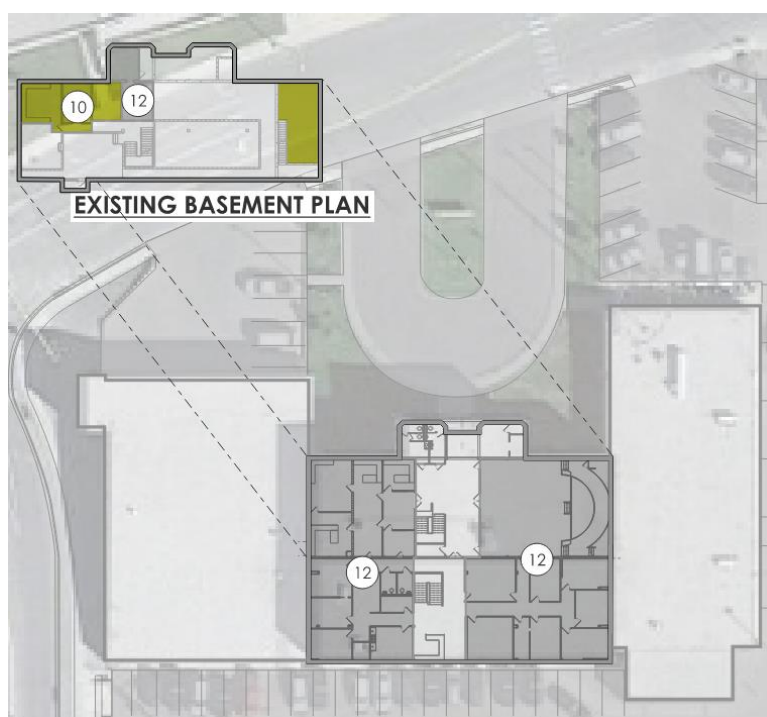
The following diagrams are color coded to show current space usage by departments or work elements within the overall police department. In essence, tightly grouped colors represent departments with all its work elements within proximity to each other and within the reach of supervisory personnel. Less obvious in the diagrams, but also indicated, is whether appropriate elements are adjacent to those with which they share work efforts indicative of work efficiency.



FIRST FLOOR PLAN

PLAN LEGEND:

1	RECEPTION - RECORDS
2	OFFICE OF THE CHIEF
3	PATROL
4	INVESTIGATIONS
5	MISC. DEPARTMENTS
6	SPECIAL OPERATIONS
7	MUNICIPAL COURTS
8	BOOKING HOLDING
9	EVIDENCE AND PROPERTY
10	STAFF SUPPORT
11	GARAGE
12	VACANT - AVAILABLE SPACE



SECOND & BASEMENT
FLOOR PLANS

PLAN LEGEND:

1	RECEPTION - RECORDS
2	OFFICE OF THE CHIEF
3	PATROL
4	INVESTIGATIONS
5	MISC. DEPARTMENTS
6	SPECIAL OPERATIONS
7	MUNICIPAL COURTS
8	BOOKING HOLDING
9	EVIDENCE AND PROPERTY
10	STAFF SUPPORT
11	GARAGE
12	VACANT - AVAILABLE SPACE

Some conclusions to draw from these Usage Diagrams include:

1. Many departments have fractured over time. For instance, it is difficult to understand the workflow of a typical patrol officer; they appear to enter and exit the building from several locations. There is very little space within the building from which they can work when at the station, and their supervisors do not appear to have any direct supervisory contact with them when they are in the building.
2. Another fractured department is Evidence and Evidence Processing. Evidence enters the building from multiple points, is held and processed in several different locations throughout the building, some on



opposite ends of the facility. It then exits the building for additional testing or returns in other places. Evidence storage is in a converted fire truck bay that, while separate and secure shares space with a police vehicles and other non-compatible uses. These challenges are indicative of a department making best use of available space versus concentrating on efficient workflow.

3. Expanding Police Department functions into the vacated City Hall spaces creates security challenges. Future planned development will need to address the following issues:
 - a. City Hall was visually and functionally the front door to the building. How should/will this be addressed in the future?
 - b. Building security is designed around code required exiting from these city spaces. What changes should be made when this exiting is no longer a security issue?
 - c. The City Hall lobby is not a secure environment. How does this affect the future deployment of Police Department staff as these spaces become occupied for police functions?

These are only a few of the important insights gleaned from this task. Other conclusions to be drawn from this task can be found in Chapter 5 of this report.

TASK 4: GROWTH PROJECTIONS

There is a direct connection between the population of a community and staffing requirements of the police department. A reasonably accurate accounting of department growth can be established by analyzing past staffing to population ratios and applying those results to projected community growth.

For this study the police department provided past staffing levels and past city population data. Future population growth was extracted from the City of Minot 2040 Comprehensive Plan.

This task generated the following data to inform the Space Needs Analysis Task:

Current Total Staff (sworn officers + unsworn) in 2022 = 95

Maximum Allowable staffing in 2022 = 116

Projected staffing in 2048 = 151 total staff

The complete analysis of this task can be found in Chapter 6 of this report.



TASK 5: SPACE NEEDS ANALYSIS

The goal of this task is to create a space program quantifying spaces needed for the department to provide service for the next 25 years. The process used to develop this program disregards the existing facility and any limitations it places on space needs or existing infrastructure. Essentially, this illustrates departmental space need if constructed new on a greenfield site. Later phases will work to fit the ideal, new condition into the existing structure to determine the pros and cons of continuing to use the existing facility.

AREA TOTALS			
OPERATIONAL ELEMENT	EXISTING	Proposed SF	REMARKS
1 RECEPTION - RECORDS	1,600	3,372	
2 OFFICE OF THE CHIEF	1,525	2,597	
3 PATROL/OPERATIONS	2,026	4,865	
4 INVESTIGATIONS	1,430	4,190	
5 MISCELLANEOUS DEPARTMENTS	2,400	1,714	Community Outreach, Animal Control, Fleet Man.. Parking, Back up dispatch
6 SPECIAL OPERATIONS	0	5,922	SWAT, Bomb Squad, CRSU, Riot Cont, etc.
7 MUNICIPAL COURT	1,432	3,000	
8 BOOKING AND HOLDING	1,155	1,688	
9 EVIDENCE AND PROPERTY	2,854	6,088	
10 STAFF SUPPORT	4,787	9,372	
11 GARAGE	0	13,520	See also Special Ops for added req's.
12 VACANT OR VACATED SPACE	9,670	0	
	27,447	53,327	SUB TOTAL
66%	13,703	13,332	Efficiency Ratio of 25% (MEP/Circulation)
EXISTING AREA	41,150	TOTALS	
TOTAL AREA REQ'D - 20 YRS		70,409	LEC TOTAL (Ft ²)
GROWTH SPACE FOR ADDNL' 5 YRS		4,800	16 ADDITIONAL STAFF @300 SF EA.
TOTAL AREA REQ'D FOR 25 YRS		75,209	
MUNICIPAL COURT STAND-ALONE		3,900	
PD WITHOUT MUNICIPAL COURT		71,309	
NATIONAL STANDARD COMPARISON		73,353	Sim. Facilities @ 300SF/staff = 40,500
ADDITN'L SPACE REQ'D FOR 25 YRS		34,059	Size of Additions Required



Some additional information generated in this task include:

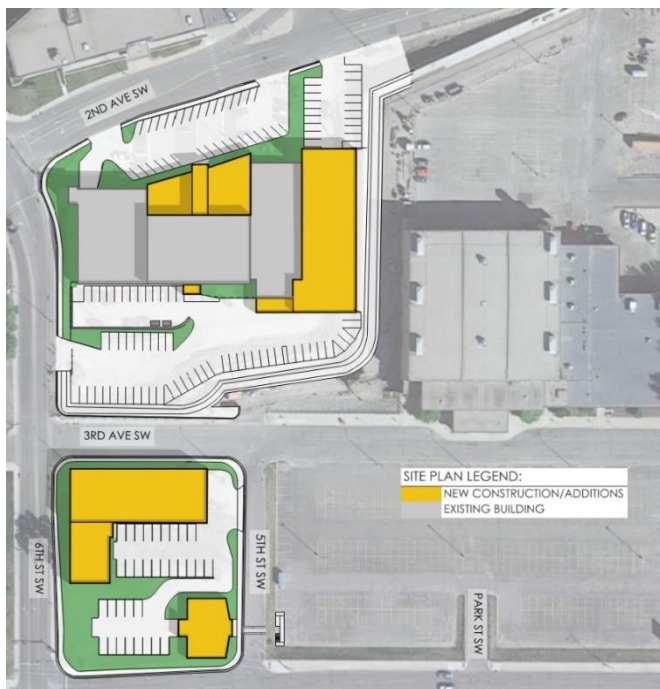
- | | |
|---|------------|
| 1. Municipal Court as a stand-alone facility: | 3,900 GSF |
| 2. Police Department without Municipal Court: | 71,309 GSF |
| 3. Size of additions required to existing building: | 34,059 GSF |

A nationally recognized factor of 300 square foot per staff position (workspace only) with added space for required equipment and garage spaces equals 73,353 gross square feet. This number is roughly equivalent to the space program developed in this task indicating the recommended facility is similar in size to those being constructed in similar sized communities nationally.

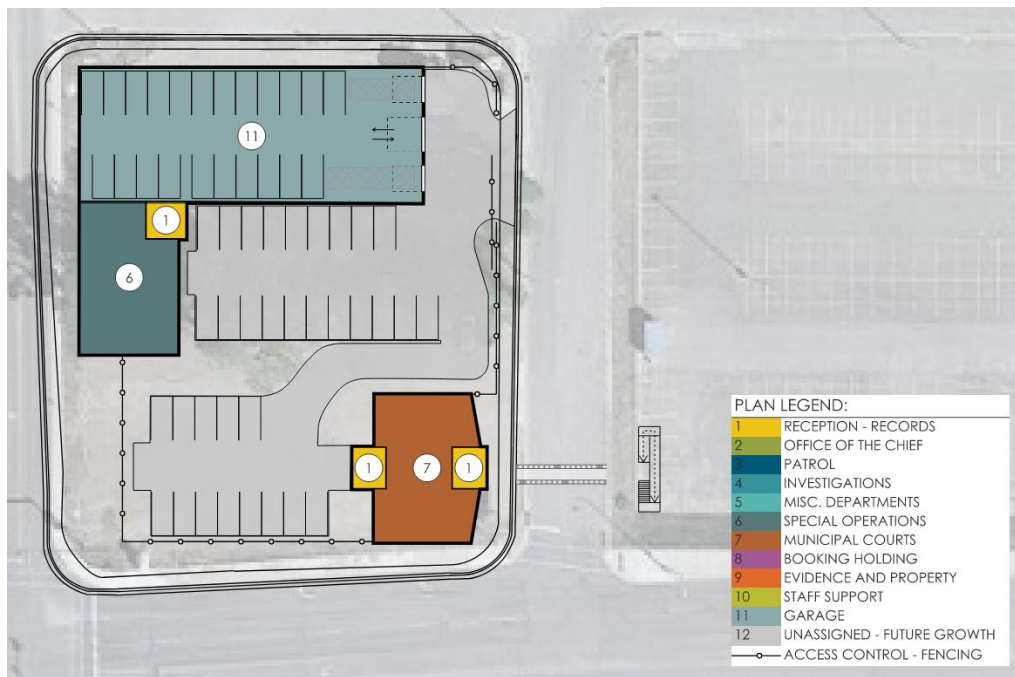
The detailed space program is included in Chapter 7 of this report.

TASK 6: RECOMMENDED SOLUTIONS

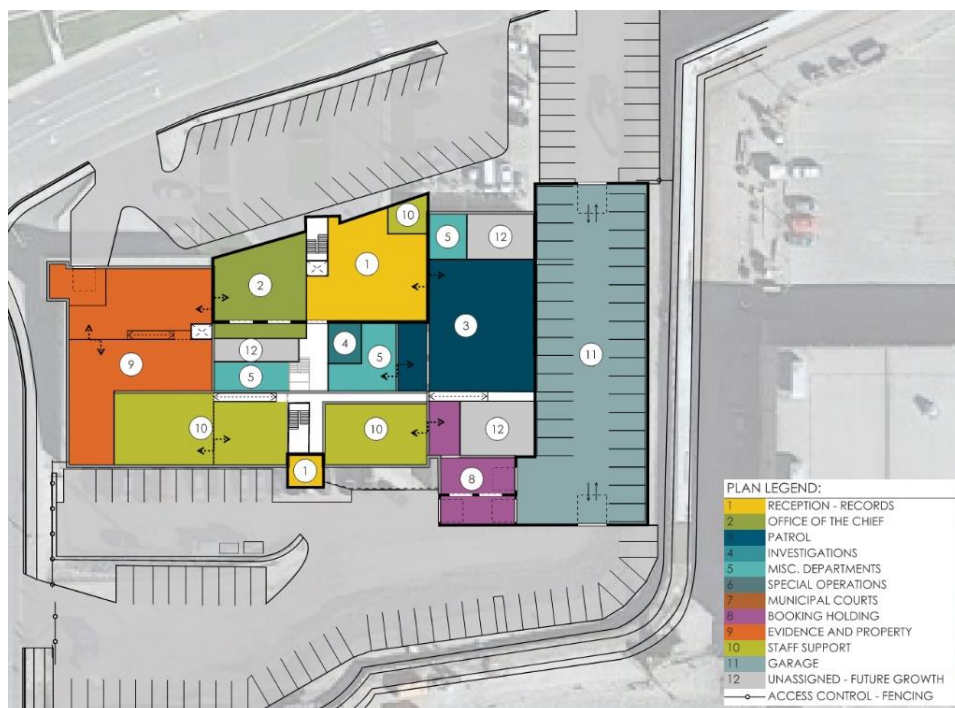
The goal of the study is to investigate the feasibility of the police department remaining on this site for the next 25 years. The work of this task investigated several different options that had varied success at achieving this goal. The options included on the following pages illustrate the single option that comes closest to achieving this goal.



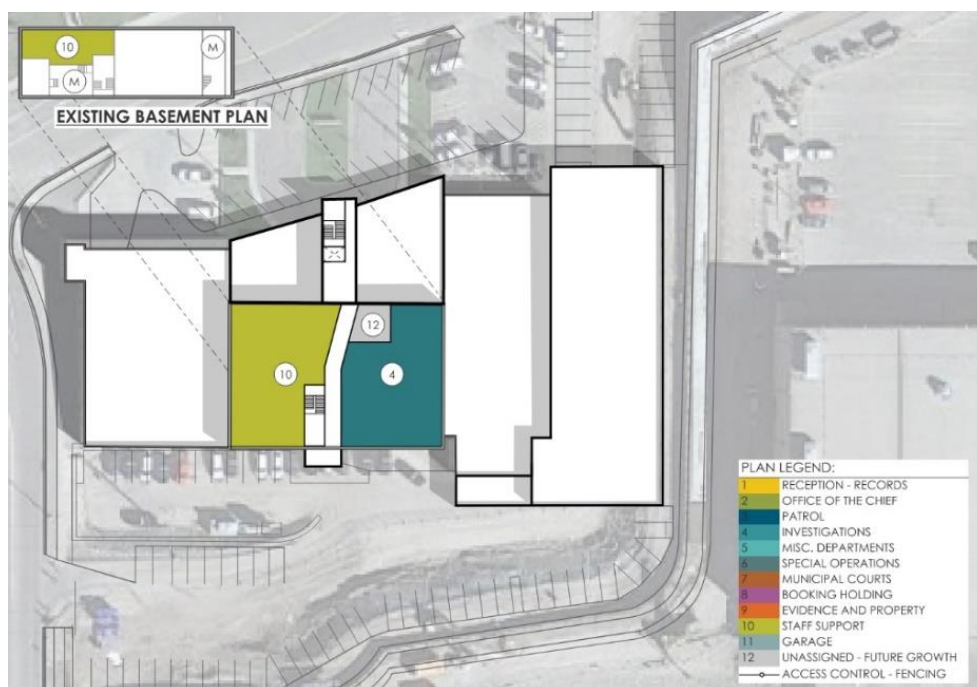
SITE PLAN



SPECIAL OPS AND MUNI-COURT SITE PLAN ENLARGED



FIRST FLOOR PLAN



SECOND & BASEMENT FLOOR PLANS



The proposed solution addresses the following goals and objectives:

1. It was determined early in the process that the entire program would not fit on the current site while still achieving the goals of improving safety, security, and work efficiency in the facility. To resolve this issue, the team is recommending expansion of the Police Department site to include the next block south at the corner of West Burdick Expressway and 6th Street SW.

Splitting the department's operations onto separate sites is not ideal. However, the team felt that certain elements of the operations, identified as Special Operations elements (SWAT, Bomb Squad, CRSU, Riot Control) could be a standalone element because officers are generally reporting here from other duty (or off duty) locations as required and not coming to these spaces from within the police station itself. The presented option would locate Special Operations storage, training, and specialized parking needs on the adjoining site along with Municipal Court.

2. Municipal Court is a challenging aspect of the project. Typically court functions are considered separate from the law enforcement aspects of our justice system. To locate the Municipal Court within the same facility as the policing functions violates this separation of powers visually, if not functionally. The presented solution resolves this issue by locating the Municipal Court on an adjacent property as a standalone facility.

It should be noted that this is still not an ideal solution. This location is challenged by the adjacency to policing functions and is NOT located in conjunction with other circuit court functions operated by the County. The presented solution solves the problem best for law enforcement uses. There may be better ways to accommodate the Municipal Court on the indicated site, but the team felt it best to resolve the final location of Municipal Court within the City before investing significant effort to explore compromise options on the indicated site.

3. Most of the existing facility is renovated in this option. This recommendation is in keeping with the goals of the study to solve the Police Department's needs for 25 years and to improve safety and workflow efficiency. It is also in keeping with the Facility Assessment tasks which indicate the need to refresh interior finishes and the Space Usage Analysis which shows existing workflow inefficiencies that need to be resolved.
4. It is unlikely this site will support additional expansion beyond the 25-year time frame. Future expansion of the Police Department will likely require construction of a new facility.



This reconfiguration accomplishes all the specific goals identified in the LEAN sessions. The specifics for achieving these goals can be seen in Chapter 8 of the report.

PROS AND CONS

The team would like the following Pros and Cons to be included in the decision-making process:

Pros

1. The new plan resolves space needs issues for 25 years assuming linear growth projections (spikes in growth such as during the oil boom could affect actual future growth).
2. Continues to use a building that still has some years of use remaining.
3. Improves efficiency throughout the police department by renovating and improving all areas in the building.
4. Security will be improved for the public, staff, and detained persons.
5. The construction of a new squad garage will provide tempered vehicle storage.
6. This project capitalizes on current and on-going investment in this area of the city.

Cons

1. The new plan will utilize all available space on this site challenging future expansion.
2. The site is located in or adjacent to hazards such as flood plains and railroad tracks, both of which have caused issues in the past.
3. The Municipal Court is not adequately resolved.
4. The new Special Operations building invests in a new long-term building at this site that will likely outlast the renovated police station.
5. There will still be numerous level changes throughout the building.
6. Construction operations will disrupt police department services for an extended period of time.

ESTIMATES OF PROBABLE COST

The following Estimates of Probable Cost represent EAPC's best professional judgement of the costs to be expected to construct the recommended solutions. These estimates represent the anticipated costs of the project for a construction start of spring 2025.



The figures are represented as a range of costs due to the early phase of the design process.

Construction Costs are inclusive of the 'hard' costs for the construction including site and civil, general construction, mechanical and electrical trades. The new construction figure includes site acquisition costs.

Additional Costs are inclusive of the 'soft' costs that can be expected of a project of this nature including Fixture Furniture and Equipment, Technology, Contingencies and Inflation, Fees and other project related costs not associated with the actual construction work.

RENOVATION AND ADDITIONS

	Low	High
Construction Cost	\$34,693,940	\$38,857,213
<u>Additional Costs</u>	<u>\$11,350,225</u>	<u>13,161,677</u>
Total	\$46,044,225	\$52,018,890

A cost was developed for new construction in order to create a value-based conversation about the feasibility of the project.

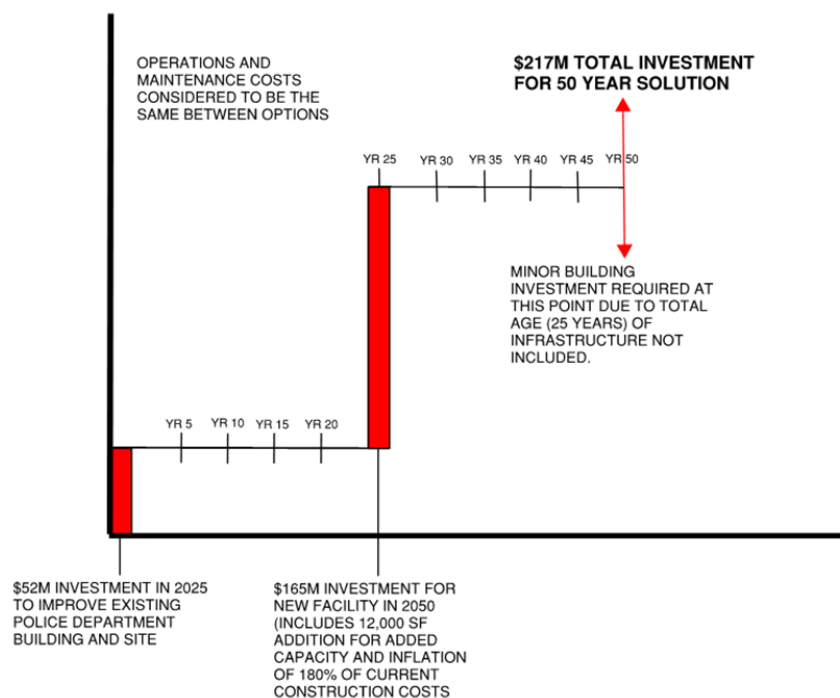
NEW CONSTRUCTION

	Low	High
Construction Cost	\$47,005,061	\$52,896,187
<u>Additional Costs</u>	<u>\$15,387,522</u>	<u>\$17,822,713</u>
Total	\$62,392,582	\$70,822,713

A Life Cycle Cost Analysis has been completed to develop a compatible time frame between the two investment strategies. The following graphic considers the total costs associated with the project over a 50-year time frame.

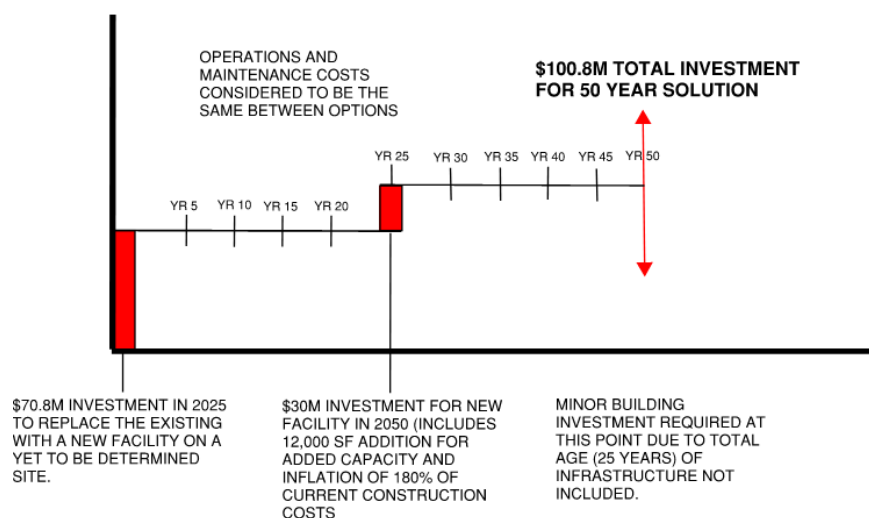


RENOVATION AND ADDITIONS – Total Investment \$217M



LIFE CYCLE COST OPTION NO. 1: RENOVATIONS AND ADDITIONS IN YEAR 1 WITH NEW BUILDING IN YEAR 25

NEW CONSTRUCTION – Total Investment \$100.8M



LIFE CYCLE COST OPTION NO. 2: NEW CONSTRUCTION IN 2025 WITH ADDITION IN 2050 FOR 25 YEARS OF GROWTH



3 LEAN

The LEAN approach used by EAPC in this feasibility study was a combination of Lean and Six Sigma principles proven to increase efficiency, reduce costs, minimize waste, and improve customer satisfaction. This methodology places an emphasis on aligning improvement efforts with customer needs and objectives. LEAN aims to improve customer satisfaction and organizational performance simultaneously by dividing work into 5 phases. All stakeholders are involved in helping the team to work through these phases to achieve group goals.

lean six sigma **PROCESS**



The DEFINE Phase is crucial for setting the foundation and ensuring a clear understanding of the project at hand before proceeding with the more detailed analysis and improvement activities. This project required all stakeholders to consider the goals and expectations for this study after identifying the needs and concerns of each stakeholder group and the citizens of Minot. Following survey responses from each team member and a detailed discussion of the findings, the group developed the following opportunity statement to represent the purpose and objectives of this feasibility study. This statement represents the collective group's agreed priorities and provides a message to share should anyone wish to know "WHY" this assessment is taking place.



OPPORTUNITY STATEMENT:

The Minot Police Department Space Needs and Facility Feasibility Study allows us to objectively consider the needs of the City of Minot for the next 25 years and how the community needs affect both the Minot Police Department and Minot Municipal Court. The scope of this work includes everyone currently served in the existing facility, access to the building, and parking for staff or visitors.

While known safety and liability concerns require immediate attention in the current facility, staff and private citizens have also raised concerns about privacy and adequate space to accomplish this sometimes-sensitive work. The current flow within the building creates confusion for those visiting the facility, congestion in primary traffic pathways, and difficulties for staff in efficiently executing their work. Recent health and wellness concerns have heightened the need to address congestion in high-traffic areas and tight office spaces. These visible challenges do not help when pursuing new police recruits in a competitive labor market.

The overall goals of this study are to create a design plan that can meet Minot's needs for the next 25 years while addressing the following key areas:

1. To bring safety and liability issues into full compliance and in line with contemporary best practices
2. To improve privacy and process efficiency for both personnel and citizens
3. To ensure the long-term value of this investment.
4. To create a welcoming environment that promotes professionalism and wellness, inspiring pride in personnel and citizens.
5. To proactively plan for potential growth or adaptation in the planned space as needs change over the next 25 years.

The DEFINE Phase also included a priority list of expectations the stakeholders wished to see the feasibility study address with a newly renovated space. The expectations fell into priorities based on "Must Have," "Should Have," and "Would like to Have" requirements. The EAPC study team focused on addressing the first two categories and addressed each requirement individually with their design options. See the table below for these two category requirements:



MUST HAVE	
Item	Message
1. Safety, accessibility, security, code violations	It's our job to protect our people – employees & citizens; We have liability concerns that must be addressed
2. Efficiency, functionality, workflow	Improving the facility allows for better effectiveness and efficiency of processes resulting in cost savings due to reduced time/labor expense and improved funding utilization
3. Privacy for personnel and citizens	It's our job to protect our people – employees & citizens; We have liability concerns that must be addressed
4. Value, cost, quality and durability	To be good stewards of public funds, we need to ensure this investment considers the long-term needs of the community
SHOULD HAVE	
Item	Message
5. Welcoming environment	This should be an inviting space for the community and staff; enough privacy to honor the needs of both groups while promoting an easy flow through the spaces
6. Encourage wellness	This space should contribute to an atmosphere of calm, order and pride of place for employees and citizens encouraging wellness and even healing in certain circumstances.
7. Promotes professionalism	A contemporary space would consider the technical and technological needs of the current work and should be a source of civic pride, showing how this work is valued by the community
8. Room to expand and adapt	Our due diligence in designing a space that can serve us for the next 20 years requires us to build with growth projects in mind; a short-term solution allowing for the longer-term plan.

The IMPROVE Phase uses the learnings from measurement and analysis to design options for addressing stakeholder needs and requirements. Later chapters of this report further detail these three phases.

The LEAN approach brings all stakeholders back together for the CONTROL Phase. This last phase ensures we all agree to the IMPROVE Phase outcomes and are prepared to support the next steps as we execute the improvements outlined in the study. To best equip the City Council and Minot citizens in making a facility decision that supports the Minot Police Department and Municipal Court, the stakeholder group developed a Communication Plan. This structured communication strategy provides messages and ownership to ensure that



information is effectively, efficiently, and consistently conveyed to the right people at the right time. See the below plan as developed by the team.

Communication Planning Worksheet

Stakeholder Meeting #2 – 7/31/23

WHO is concerned?	WHAT do they need to know or hear?	HOW will we share the information?	WHO should share this information?	WHERE should the information be shared?	WHEN should this be shared?
Minot Citizens	*Intentionally considering next steps for old City Hall with site assessment *Safety & Liability Concerns for current site *Current cost vs. future cost *Options & alternatives *Funding options *Their feedback/opinions are needed to move forward	Public Forum/Town Hall Meeting	EAPC staff, Council Rep, PD Staff, PIO, Finance Rep	Location TBD, Social Media, News Media	Early October (Thursday & Tuesday following Council presentation)
City Council	*Intentionally considering next steps for old City Hall with site assessment *Safety & Liability Concerns for current site *Current cost vs. future cost *Options & alternatives *Plan for collecting feedback from citizens *Timeline for feedback and decisions	Council Meeting	EAPC Staff, Special Stakeholder Reps, PD Staff	Council chambers	Late September following budget completion
PD/Municipal Court Staff	*Intentionally considering next steps for old City Hall with site assessment *What is being considered *What work has been done? *Why does this need to happen now? *Who is supporting this needed change? *We need their positive support in the community for this project; encourage attendance at the public forum	Message from leadership that includes the Opportunity Statement and Priorities	Chief Klug (PD), Laurie Nishek (MuniCourt) and Lisa Olson (Council)	TBD	Prior to September Council Meeting

Communication Planning Worksheet

City Department Heads	*Intentionally considering next steps for old City Hall with site assessment *What is being considered *What work has been done? *Why does this need to happen now? *Who is supporting this needed change? *We need their positive support in the community for this project; encourage attendance at the public forum	Part of regular Dept Heads meeting	Chief Klug	Part of regular Dept Heads meeting	Prior to September Council Meeting
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The MEASURE and ANALYZE Phases included listening sessions, research, site visits, and other data gathering conducted by EAPC staff. The final piece of the CONTROL Plan was a detailed Action Plan assigning actions and owners to prepare and deliver the needed messages and presentations in preparation for a City Council decision. The stakeholder group determined the timing of the City

COMMUNICATION ACTION PLAN

Updated 8/3/2023 9:45:00 AM

Project Name: Minot PD/Municipal Court Site Assessment Communication Plan				Project Lead(s): Chief Klug, Harold Stewart	
Project Definition and Objectives: The overall goals of this study are to create a design plan that can meet Minot’s needs for the next 25 years while addressing the following key areas: 1. To bring safety and liability issues into full compliance and in line with contemporary best practices 2. To improve privacy and process efficiency for both personnel and citizens 3. To ensure the long-term value of this investment. 4. To create a welcoming environment that promotes professionalism and wellness, inspiring pride in personnel and citizens. 5. To proactively plan for potential growth or adaptation in the planned space as needs change over the next 25 years.				Project Team Members: Mike Clark (EAPC), Gloria Larsgaard (EAPC), Alan Dostert (EAPC), Kristen McReynolds (EAPC), Justin Sundheim, Jason Sundbakken, Dale Plessas, Lance Meyer, Lisa Olson, David Lakefield, Laurie Nishek, Trisha Guthrie, Jared Foley, Darren Dyke, Kevin Sickler, Jake Eichstadt, Grant Heizelman	
Status Definitions	Not Started	On Target	In Trouble	At Risk	Complete
Action Item			Owner	Expected Completion	Status
Schedule presentation to City Council (following close of 2024 budget planning – late Sept/early Oct) and communicate to Stakeholder group (including EAPC and PD Staff)			Harold Stewart	8/15/23	
Schedule Public Forums/Townhall Meetings (Thursday and Tuesday following City Council presentation) and communicate to Stakeholder group (including EAPC and PD Staff)			Harold Stewart	8/15/23	
Arrange for social media postings to announce and to follow Public Forums			Harold Stewart	9/1/23	
Develop internal message for PD/Municipal Court Staff (Kristen/EAPC can assist with this if desired); ask them to spread the message for support needs throughout the community			Chief Klug, Laurie	9/1/23	
Present Site Assessment goals and objectives (Opportunity Statement and Lean Goals) to Minot Dept Heads at regular meeting (prior to City Council presentation); ask them to spread the message for support needs throughout the community			Chief Klug	9/15/23	
Develop cost analysis for both renovation and new construction options include time value of money calculations for 2025 + 25yrs			David Lakefield and Mike Clark	9/1/23	
Update Assessment cost expectations to represent 2025 construction costs			Mike Clark	8/15/23	
Include site acquisition cost in New Construction estimates (assume \$50,000/acre per Lance for 3-5 acre site)			Mike Clark	8/15/23	
Prepare to address funding options and cost of borrowing with City Council for both options			David Lakefield	9/15/23	
Develop alternative site usage plans if PD exits site in 2025 or 2050			Lance Meyer, Harold Stewart	9/15/23	



Council presentation and the Community Forums to support the best possible engagement and attendance from both groups. The stakeholder group intentionally chose the actions and timing based on their understanding of the Minot Community's needs. See the below Action Plan.

The CONTROL Phase is the 5th and final phase of the EAPC LEAN approach and is critical for ensuring actions and decisions occur according to the feasibility study findings. It involves planning for successful communication and prepares the group for implementing next steps by assigning deadlines and owners.



4 FACILITY ASSESSMENT

Architects and engineers with EAPC visited the facility on multiple occasions to assess the physical infrastructure. City of Minot Property Maintenance personnel were also consulted regarding any known facility concerns or major planned maintenance work.

The Building Assessment is based on visual inspection of readily available equipment and materials only. Additional work may be found to be necessary as work progresses into the design and construction phases. Appropriate contingencies should be maintained in all estimates and during construction.

Please see the following pages for a complete copy of the Minot Police Department Facility Assessment Report.

March 13, 2023

Police Department
515 2nd Ave SW
Minot, ND 58701

BUILDING ASSESSMENT

Introduction

EAPC has been tasked by the City of Minot Police Department to prepare an assessment report of the Police Department Building, located at 515 2nd Ave SW, Minot, ND.

The report is to be used to evaluate the compliance with current building and accessibility codes and standard of care for the building to continue to be used in his current public functions as Police Department.

The EAPC team conducted a walk-thru of the building with representatives of the Police Department on February 21, 2023.

The following team members performed the onsite portion of the assessment:

Name	Discipline
Gloria Larsgaard, AIA, Architect	General Building and Team Leader
Tyler Coulombe, PE, Mechanical Engineer	HVAC/Plumbing Systems
Jerick Hedge, PE, Mechanical Engineer	HVAC/Plumbing Systems
Red Schaff, PE, Electrical Engineer	Electrical Systems
Rami Douri, Electrical Designer	Electrical Systems

Observations of the physical environment, as well as staff discussions and concerns are incorporated in this report.

Original drawings of the facility were retrieved by EAPC and were reviewed and taken into consideration in this report.



The drawings reviewed were as follows:

Brunnel, Hoeffel, Bohrer dated 05-11-56

Hoeffel, Torno, Nester dated 07-25-85

Hoeffel, Torno, Nester dated 05-08-89

Hoeffel, Torno, Nester dated 10-23-92

Anderson, Wade, Witty & Anderson dated 09-18-02

Prairie Engineering dated 08-2007.

An asbestos report was not provided for review.

GENERAL INFORMATION

The property, owned by the City of Minot, is located in a P zone (Public).

The building was constructed in 1956 to provide a “Civic Center” facility that included a two- story city hall in the center, flanked by a Police Station to the East and a Fire Station to the west. The three building blocks were connected by corridors that included steps to deal with the site grading elevations.

In 1989, two small additions were added to fill the space between the three original structures and a new north vestibule entrance that included an elevator, was added to the north. In 2002, the building gained another 10,000 SF addition to the south and it was extensively renovated.

The building, as it stands today consists of approximately 41,150 SF, and is occupied by City Hall (9,670 SF) and the Police Department (31,480 SF)

The building currently sits in a FEMA X Zone: This zone is considered at minimal risk for floods; Zone X is the area determined to be outside of the 500-year floodplain or protected by levees from 100-year floods. The City does not have any additional building regulations related to the 500-year floodplain. In a conversation with the City Engineer, EAPC learned that the floodplains are in the process of being remapped. In late 2024 or 2025 the 100-yr floodplain will get much closer to the site. The information is not finalized by FEMA.



CODE ANALYSIS

The building and its additions were permitted and built under the model codes of the day.

The current applicable codes are:

- 1) 2021 International Existing Building Code
- 2) 2021 International Energy Conservation Code
- 3) 2021 International Mechanical Code
- 4) 2020 NFPA 70 National Electrical Code.

Accessibility guidelines are governed by ANSI/ICC A117.1 (2017) “Standard for Accessible and Useable Buildings and Facilities”.

Construction Type: II B – Construction is made of noncombustible materials (clay tile/ brick veneer and metal studs), interior walls are of noncombustible construction per existing plans.

The building is not sprinklered; by code this occupancy is not required to be sprinkled, but all corridor walls serving an occupant load greater than 30 need a one-hour rating, which needs further investigation for compliance.

Building Occupancy Type and Building Occupancy Load (OL):

The current exiting pattern looks adequate for the existing occupant load. Additional exiting paths or doors are not required, but some door hardware and/or door swings were observed to need correction.

Energy Code

This facility and its additions were constructed either prior to the existence of any energy conservation code, or prior of any local enforcement of any energy conservation code. The original construction had no exterior insulation; the addition of the EIFS cladding had added some insulation to the building. Future additions have insulation in walls and roof but might not be compliant with the newest codes.



Accessibility

This facility was originally permitted and constructed prior to the Americans with Disabilities Act (ADA); future additions have addressed some accessibility issues especially in areas open to the public, however; most of the police department circulation pattern deals with level changes in the building with stairs only.

The following are the basic concerns:

Parking:

- Currently the east Police Department entrance does not have a designated accessible parking stall nearby, however; plans from the adjacent retaining wall project currently underway show that 4 accessible stalls will be added to the east side of the east entrance and one to the south.

Building Access/Entry:

- All entries seem to have an accessible route leading to the building; north entrance has a door opener.

Building Circulation:

- The building layout responded to the site elevation differentials (both north to south and east to west) with stairs. It appears that an effort was made to get the main entrances to match the exterior elevations, but internally the different floor levels are connected by stairs. An elevator was added in 1989 in the City Hall new entrance vestibule, but it only connects the two stories of city hall and does not address the south side of the building – mainly in the police department. Of particular note is the ramp leading to the west garage, where a short ramp bridges a considerable height difference, making it very steep.
- Most of the renovated areas have accessible sized doors and lever hardware, but where the old doors remain, so does the uncompliant knob hardware, new doors and hardware are required in any altered areas and are strongly recommended in the remaining areas of the facility.

Restroom accommodations:

- All restroom facilities, except for the ones located in the locker rooms, even though they are equipped with grab bars, do not comply with current accessibility dimensioning and/or clearance requirement.



EXISTING BUILDING GENERAL CONSTRUCTION

Existing Site

The site is undergoing some renovations as a result of the adjacent City Hall Retaining Wall project. The site water main is being updated and concrete and asphalt pavements will be replaced. As a result of this project, there will be 131 stalls of which 4 are accessible and 1 van accessible on site.

Parking at this point is not designated and staff, visitors and squad cars are all mixed in the lot. Overflow parking is directed to the library parking lot across the street, north of this building.

Staff pointed out some old drainage issues on the south side of the building, it is expected that the work being done with the Retaining Wall project will take care of the past problems.

Access to the building

Building is accessed from the north, east and south side.

- North side:
 - Main entrance for City Hall: shoe horse drive drop-off with one accessible stall and landscaped area framing the entrance.
 - Apparatus bay vehicular access
- East side:
 - Main entrance for the Police Station
 - Secondary/staff entrance for the Police Station
- South side:
 - Vestibule entrance to the building: can serve both police department and City Hall
 - Secondary access to the police station.

All entrances are paved and at street level.



Building Envelope

The building envelope construction varies through the different constructions.

Building construction

The 1956 building has concrete footings and foundation walls with structural clay tile walls and masonry veneer. The exterior walls do not appear to have any insulation from the original 1956 set of plans; however, the brick veneer was eventually covered by EIFS, so some insulation was added. The first floor is a concrete slab on grade and the second-floor structure is made of steel joists and concrete topping. Roof framing is steel joist and deck.

The 1989 addition was built with concrete foundation walls and footings, structural steel insulated metal studs and an EIFS finish. The first floor is a concrete slab on grade and the second-floor structure is made of steel joists and concrete topping. Where the basement is present the first floor is framed with steel joist and concrete as well. Roof framing is steel joist and deck.

The 2002 addition was built with concrete foundation walls and footings, steel insulated metal studs and an EIFS finish. The first floor is a concrete slab on grade and the second-floor structure is made of a combination of steel joists and steel and post and beams framing with a concrete slab topping. Roof framing is a combination of steel joists and beams and metal deck.

Building Exterior

The building exterior is covered by EIFS. The City of Minot has done maintenance during the years to address some water infiltration at the windows and at the parapets. Generally, the lower part of the walls is either discolored, dirty or somewhat damaged. The upper part of the wall shows dirt at the detailing.

Openings

Aluminum windows and storefront look weathered and discolored and are probably nearing the end of their life; additionally, modern energy code have more stringent requirement for glass and framing that would benefit the overall energy performance of the building.



Roof

We were informed by the maintenance department that roofs have been on a maintenance schedule and have been replaced in the near past. Some drainage issues at the parapet have been addressed with the progression of the work. The police department roof is the last one to be replaced in the spring of 2023.

A drainage system with scuppers and downspouts is visible around the building, the downspouts are either dented, discolored or with evident rust spots and. Few downspouts discharge in covered trenches, and others on the east side discharge right across the pavement creating wet/ice conditions on a very steep sidewalk. The fascia appears in fair conditions.

Building Signage

There is a monument sign to mark the main entrance of City Hall, while the Police department has signage on the NW corner of the building. For a first-time visitor it can be easy to miss the police department entrance.

Building Interiors

The interior surface of the original building was constructed using cement plaster, consequent remodels of the building employed metal wall framing and have either a painted drywall surface or wallcovering.

Basement

The basement is located on the north side of the building under City Hall.

The existing floor seems in fair condition for its usage, the concrete stairs leading to the mechanical room are however worn out and concrete spalled in few areas and should be repaired.

Upper Floors

Overall, most of the building finishes are outdated.

The existing flooring, a combination of rubber tile, carpet and vinyl composition tile has different levels of wear. In the areas of most traffic, the floor is either coming off or shows considerable wear and tear.

The vinyl composition tile in the bathrooms show a lot of staining around the toilets.

Some smaller areas have been renovated recently and have luxury vinyl tile, which is in good condition.

A lot of the walls have vinyl coverings, which is discolored or stained.



The heavy texture of the suspended ceiling tile (combined to poor lighting) contributes to an unhealthy environment for the employees.

While City Hall has a different color scheme for finishes, the fit and finish of the police department is generally not inviting for the public or for their staff.

EXISTING MECHANICAL CONDITIONS

Building Summary

The building consists of offices spaces, conference rooms, bathrooms, three mechanical rooms, and 3-door vehicle bay. Generally, it is an office building, but does have a holding area and sally port on the southeast side of the building. For the purposes of this report, I will refer to the building in three sections: Police Department (PD) side – easternmost section, City Hall – center section, and the Fire Department (FD) side - westernmost section. All HVAC equipment tags, brands, model numbers, and sizes will be listed in an attached file so will not be specifically called out in this report.

Most of the building is heated and cooled using water-sourced heat pumps located above drop-in ceilings. Primary HVAC equipment is located in one of three mechanical rooms, on the roof, or directly outside the building.

Mechanical Room 108 is a 370 ft² space located in the basement of the PD side of the building. It houses 2 heat pumps, a condensing unit for an A/C mini-split, an exhaust fan and an ejector pump. There is also some abandoned equipment. This space is also used as storage and could be utilized to house additional mechanical equipment if needed.

Mechanical Room 105/106 is a 670 ft² space located in the basement of City Hall. It houses the 3 boilers, 6 pumps, a heat exchanger, a water heater, a few compressors, and a hydronic storage tank. This space would be considered the main mechanical room for the building. It is close to maximum capacity for equipment space.

Mechanical Room 329 is a 300 ft² space located on the main level of City Hall. It houses 1 heat recovery ventilator (HRV) and 1 energy recovery ventilator (ERV). It is close to maximum capacity for equipment space.

On the roof, there 2 exhaust fans, 2 ERVs, 1 HRV, an air handling unit (AHU), and a condensing unit for the AHU. A cooling tower is located on the ground outside on the south edge of the property.



Heating, Ventilation, and Air Conditioning (HVAC)

There are 51 water-sourced heat pumps of varying sizes and brands throughout the building. 35 of the 51 heat pumps, or 68%, have reached their end of service life, according to the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). Every heat pump has its own thermostat and most of them serve individual offices or spaces, but there are a few larger rooms that have multiple heat pumps with separate thermostats supply the same space. This can cause “battling” thermostats. The controls for the heat pumps in these spaces should be reconfigured so there is only one thermostat per room. Feedback from staff located on the 2nd floor informed us that it is usually hot in the winter and summer cooling keeps up but seems like it’s on the edge. The building facility manager asked to look at HP zoning for remodel for better user comfort.

Three natural gas-fired; non-condensing boilers provide hydronic heating to the heat pumps throughout the building. There are combustion air fans on each boiler and a combined chimney that has an exhaust fan at the termination to keep air flows balanced boiler combustion. An exact installation date of the boilers couldn’t be located, but the serial numbers indicate a manufacture date of 1987 so we can estimate the boilers to be around 36 years old. The life expectancy of boilers of this type is 25 years, according to ASHRAE. Since all other components in the boiler loop have a shorter life expectancy, it is recommended that all hydronic heating components (boilers, pumps, expansion tank, etc.) be replaced. The fluid used in the hydronic heating piping is treated water. A closed-circuit cooling tower is used to provide hydronic chilled water to the heat pumps throughout the building. An exact installation date of the cooling tower couldn’t be located, but the design drawings for the cooling tower are from 2002 so we can estimate the cooling tower to be around 21 years old. The life expectancy of a cooling tower of this type is 20 years, according to ASHRAE. Around 2018, a heat exchanger and pump were added to provide 50% polyethylene glycol solution to the cooling tower. On the other side of the heat exchanger, the fluid used in the hydronic chilled piping supplied to the heat pumps is water. The heat exchanger and pump still seem to be in good condition.

Ventilation air is provided to the building using 2 HRVs and 3 ERVs. The HRV/ERVs pull exhaust air from bathrooms and locker rooms throughout the building and exchanged heat/energy with outside air to supply ventilation into plenum spaces where the heat pumps pull their return air. Similar to the cooling tower, the design drawings for the HRV/ERVs are from 2002 so we can estimate they are around 21 years old. The life expectancy of HRV/ERVs is 20 years, according to ASHRAE.

A separate AHU with direct expansion (DX) cooling and hydronic heating is used as a redundant heating/cooling system for the dispatch area on the PD side of the building. A heat exchanger connected to the central boiler loop is used to supply hydronic heating to the AHU. The fluid used in this hydronic heating loop is 50% ethylene glycol. This system was installed in 2007 and seems to be in good working condition.



Four ultraviolet lights were installed in the duct work as a part of this project. They are in good working condition, but the facility manager would like to remove these because they are expensive to maintain.

Hydronic cabinet unit heaters are used to water most building vestibules. The all seemed to be in good working condition. Most exterior offices have radiant ceiling panels over the windows, but no design plans were found and we did not confirm if they were hydronic or electric. The all seemed to be in good working condition. In the vehicle bay on the FD side, there is a natural gas fired, infrared heating system. It appeared to be in good working condition. In the sally port, there is a natural gas fired, unit heater. It appeared to be in good working condition as well. A mini-split A/C unit is used as redundant cooling for a sever room on the main level of the PD side. It also appeared to be in good working condition.

Plumbing

There is a natural gas fired, 75-gallon, tank type residential water heater that supplies domestic hot water to the entire building. The water heater was made in 2020 and seems to be in good working condition. Even though the water heater is centrally located, there are staff complaints that certain parts of the building aren't getting hot water fast enough or sometimes at all. This could be remedied by adding an additional water heater in another part of the building or adding a hot water recirculation line to keep water flowing through the building.

The water service enters the building in the mechanical room on the southside of the City Hall section. All domestic water pipes in the building are copper, as far as I could see. There were staff complaints of the public toilets on the PD side backing up, but it seems as if that might be due to improper use by the public. All other toilets, sinks, and other plumbing fixtures seemed to be in good working condition.

Fire Protection

There is no fire protection in the building.

Conclusion

During the assessment of the existing mechanical systems in the building, the following pieces of primary equipment were identified as being past their service life: 35 of the 51 heat pumps, all 3 gas-fired boilers, the cooling tower and all 5 HRV/ERVs. This means most of the mechanical equipment needs replacement. This equipment could all be replaced in a like-for-like manner; however, it should be considered that the entire HVAC system could be redesigned and replaced with a new, more efficient system for a cost that is similar to a like-for-like replacement. Existing plumbing systems within the building all seem to be functioning okay. If a remodel was considered, there are a few improvements that could be made, such as adding an additional water heater in another part of the building or adding a hot water recirculation line to improve hot water availability or reconfiguring the sanitary system piping in certain areas to reduce clogging issues and maintenance costs.



If a major remodel was required, there are a few things that would need to be done to bring the building up to code. There is no CO/NO2 system or any type of exhaust detection system in the vehicle bay. There is also no ventilation or exhaust air in this area. To meet current codes, a CO/NO2 detection system, exhaust fan and makeup air should be added to the vehicle bay. The sally port should also have a CO/NO2 detection system. Also, there is no fire protection in the building. If there is a full remodel of this building, a fire protection system would need to be installed to meet current code requirements. In addition, there are other improvements that could be made to increase comfort and/or reduce maintenance in the building. These include installing a new, updated digital controls system that could integrate with both mechanical and electrical systems to increase efficiency, remove existing, maintenance intensive UV lights and add bipolar ionization units to air handling systems to get clean air at a lower cost, or redesign zoning and thermostat locations to get better controllability and comfort for occupants.

EXISTING ELECTRICAL CONDITIONS

Lighting

Much of the lighting was replaced in 2002 with new T-8 fluorescent fixtures, however there are many remaining that have T-12 lamps as lamp/fixtures have burned out, they have been replaced with LED lamps or fixtures. Emergency Lighting is provided through the generator. All lighting is connected to the emergency generator there is no separate life safety system nor is there a separate life safety transfer switch. There are no battery pack. Most of the exterior lights is LED controlled by photo switches. There were a few dimmers and no occupancy sensors.

Power

The electrical service 120/208 volt, 3 phase 4 wire, 800 amp & comes in from the south. The service entrance switch is located at the generator on the south side along with the automatic transfer switch. Power enters the basement and is distributed from an 800-amp distribution panel. Many of the electrical panels were replaced in 2002 with the rest having been replaced in earlier projects. The entire building is backed up by a 250 kw, onan generator. The main switch, motor and ATS are all mounted on the generator enclosure. There is a ups system in the basement that provides uninterruptable power to the data network, part of the communications system may also be on usps



Fire Alarm

The building complex is equipped with a simplex 4010. There are audio/visual, visual only, smoke detectors, heat detectors, and duct smoke detectors throughout. Larger air handling units are provided with fan shut down.

Data and CCTV

The building has closed circuit TV CCTV that is furnished and maintained by the City of Minot IT Department. The building has data receptacles throughout and wireless access points.

Telephone

The telephone service is provided by SRT. They also furnished the telephone equipment.

Door Access

There is door control mostly through push button codes and fobs. The system is supplied by The Computer Store

Conclusion

The existing lighting system should be replaced with new energy efficient LED fixtures. Lighting controls, consisting of dimmers, motion sensors and relay should be added.

The entire electrical distribution system, including the emergency generator, should be replaced. Most of the equipment is approaching 25 years old and is spread throughout the complex due to remodeling and additions throughout the year. A dedicated electrical room needs to be established to house service entrance equipment and automatic transfer switch. Automatic transfer switches for the main service and life safety branch should be provided.

The existing fire alarm system control panel is obsolete and parts are no longer available. This panel should be replaced, and all devices cleaned and/or replaced.

The public address system and CCTV system need to be upgraded and revised to meet current needs with devices added as needed.

The door access and data system are currently under control of the City of Minot IT department. These systems will need to be revised and updated.



5 EXISTING SPACE USAGE ANALYSIS

The Minot Police Department has been in this facility since it was constructed in 1956 and has on several occasions expanded into new or vacant spaces. They have also grown substantially from the department for which the facility was originally designed. Many of the department's policies and procedures have changed over time to address evolution within their industry or the adoption of new technologies.

This portion of the study analyzes current space usage to understand where workflow and adjacencies may no longer be appropriate and to inform future decision regarding efficiency improvements.

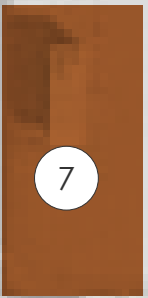
The Usage diagrams are color coded to show current space usage by departments or work elements within the police department. Tightly grouped colors are indicative of departments with all work elements within working distance of each other and within reach of supervisory personnel. The diagrams also indicated where elements share adjacency to those with which they share work efforts.

The following is a summary of the major findings of this effort:

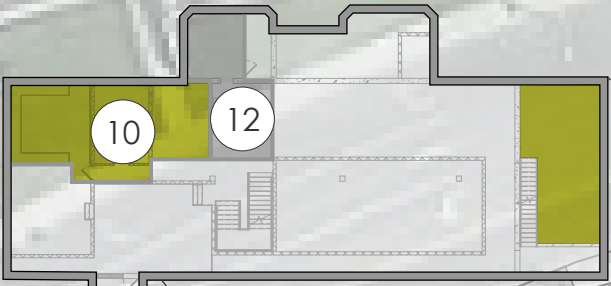
1. Administration and Records: The space is mostly cohesive, but is not well located, organized, or sized for current operations. A change of building entry location will have a major impact on this department.
2. Office of the Chief: The space is mostly cohesive and well located for both supervision and public interaction requirements of the command staff. Some spaces are too small and planned growth is likely to hinder this department.
3. Patrol: This department is centrally located as it should be. However, support spaces are too small and scattered throughout the building. Supervisory staff are not located in the general vicinity of Patrol workspaces.
4. Investigations: This department is well located and cohesive in its organization at its current size. Existing infrastructure will hamper expansion if they remain in this location.
5. Evidence and Property is non-cohesive as a department with various functions happening in different locations throughout the building. Evidence storage is particularly concerning in its location within a larger garage space that creates opportunity for contamination of evidence.
6. Garage: The garage space is only large enough to house the Department's specialized vehicles (Bomb Squad, Armored Vehicle, Command Van). Squad cars containing expensive and weather sensitive equipment are kept outside year round.
7. Space to be vacated by City Hall will alleviate only some of the space concerns. Much of the available space is near the primary building entrance. It can be assumed that major reorganization of the facility will be necessary to appropriately utilize this space while providing proper organization and workflow for the Department.

MINOT POLICE DEPARTMENT SPACE NEEDS & FEASIBILITY ASSESSMENT

PLAN LEGEND:	
1	RECEPTION - RECORDS
2	OFFICE OF THE CHIEF
3	PATROL
4	INVESTIGATIONS
5	MISC. DEPARTMENTS
6	SPECIAL OPERATIONS
7	MUNICIPAL COURTS
8	BOOKING HOLDING
9	EVIDENCE AND PROPERTY
10	STAFF SUPPORT
11	GARAGE
12	VACANT - AVAILABLE SPACE
—○—	ACCESS CONTROL - FENCING

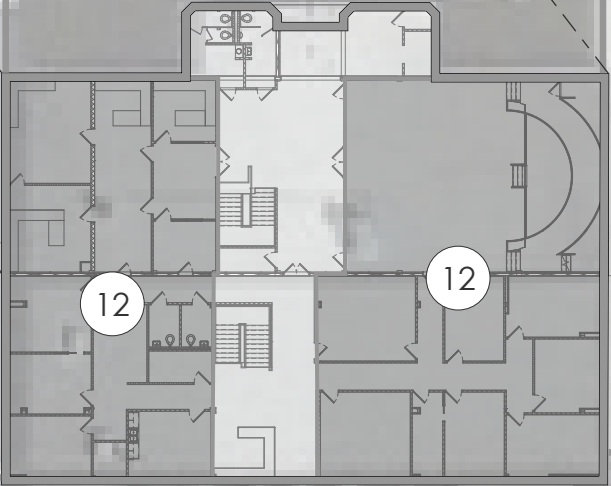


MINOT POLICE DEPARTMENT SPACE NEEDS & FEASIBILITY ASSESSMENT



EXISTING BASEMENT PLAN

PLAN LEGEND:	
1	RECEPTION - RECORDS
2	OFFICE OF THE CHIEF
3	PATROL
4	INVESTIGATIONS
5	MISC. DEPARTMENTS
6	SPECIAL OPERATIONS
7	MUNICIPAL COURTS
8	BOOKING HOLDING
9	EVIDENCE AND PROPERTY
10	STAFF SUPPORT
11	GARAGE
12	VACANT - AVAILABLE SPACE
—○—	ACCESS CONTROL - FENCING





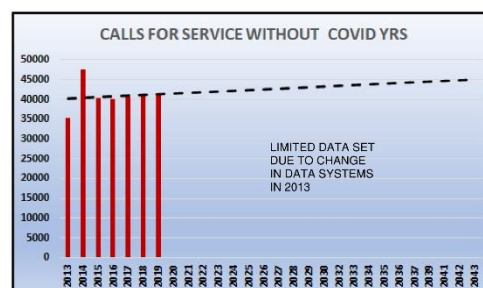
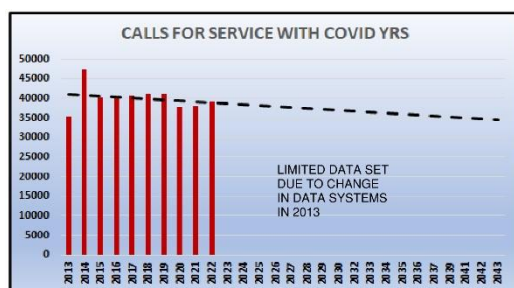
6 GROWTH PROJECTIONS

There is a direct connection between the population of a community and staffing requirements of the police department. Projections of police department growth can be established by analyzing past staffing to population ratios and applying those results to projected community population levels.

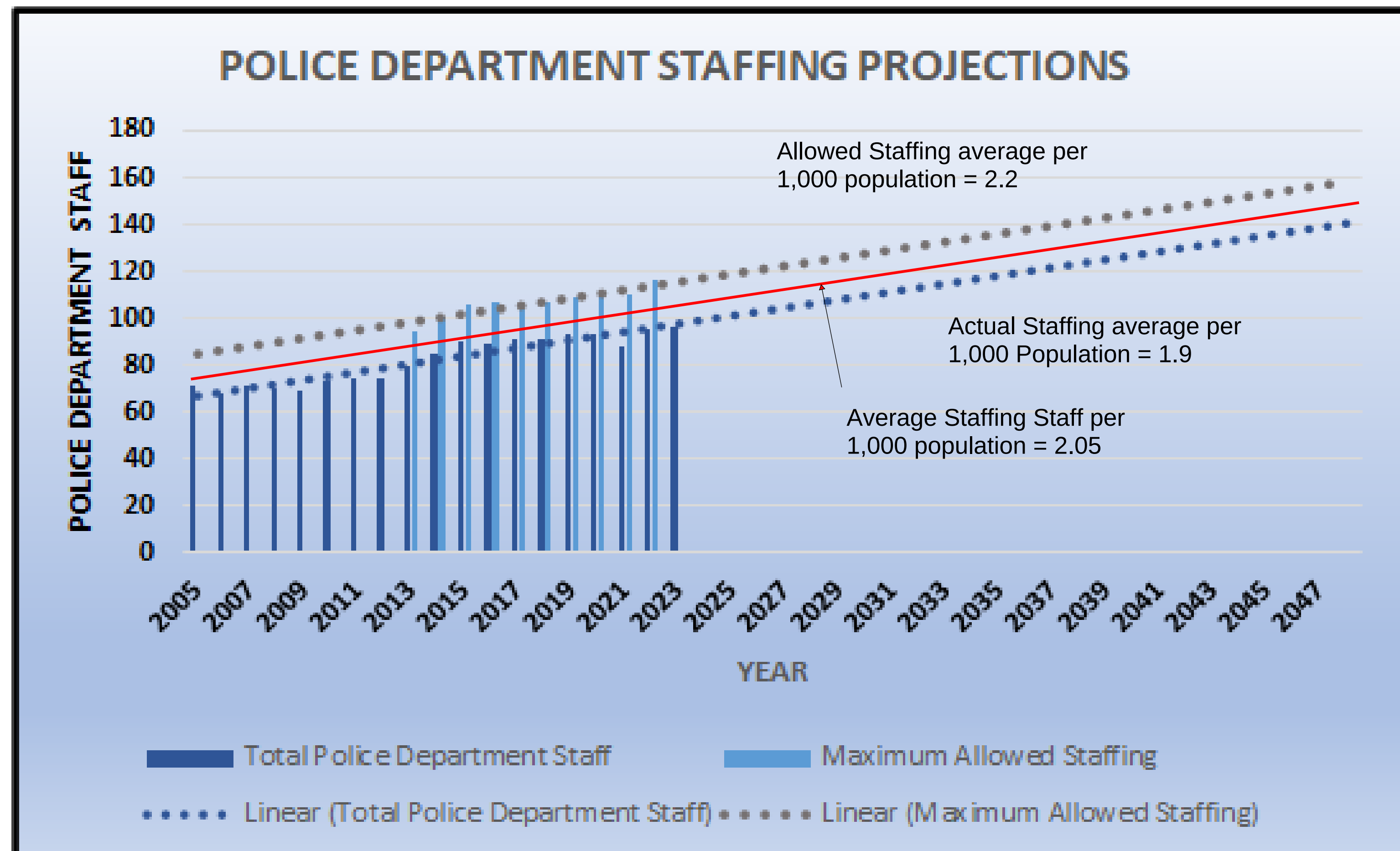
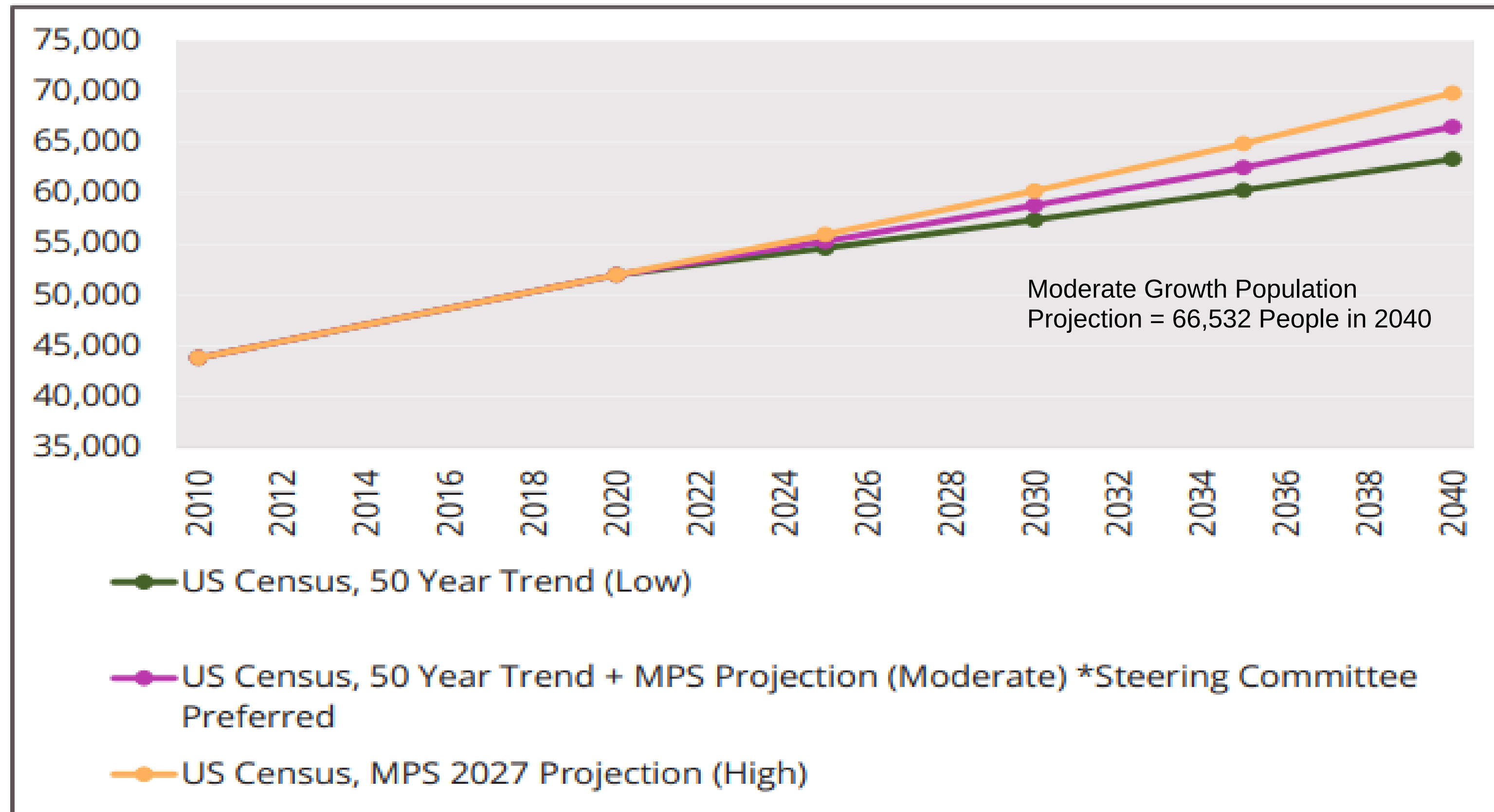
For the purpose of this study the police department provided past staffing levels and past city population data. Future population growth was extracted from the City of Minot 2040 Comprehensive Plan.

One item of note in the analysis is the difference between actual and approved staff levels in the police department. It is unlikely that the department will suddenly overcome this discrepancy but may address the issue over time. Therefore, the study assumes a midpoint between these numbers as an appropriate representation of historic staffing levels.

Another data set that is often used to corroborate the expected staffing levels for a police department is Calls for Service. Discrepancies between Calls for Service, Population Growth and Departmental Staffing Levels can indicate a larger issue in the community that might want to be addressed before embarking on a building project. In Minot's case however, and as a national trend, the recent global pandemic is skewing the data. When the pandemic years Calls for Service data is included, the results show a declining crime rate, when excluded the crime rate is increasing. This issue is further exacerbated by a major change in the data systems that occurred in 2013. The data derived from this work is considered by the team to be unreliable for its intended use and is included below for information only.



The following pages contain a summary of the growth projections used to determine future staffing levels for the department. The underlying data used to create the charts is available upon request.



MINOT CITY POPULATION
EXTENDED TO 25 YEAR TIME
FRAME OF 2048 IS
ANTICIPATED TO BE
73,822

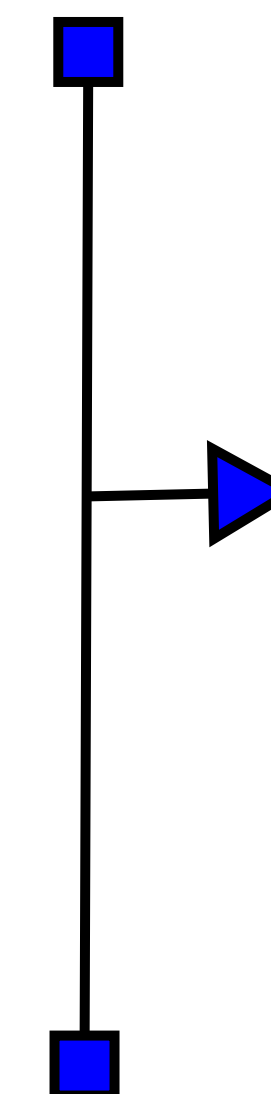
PROJECTED POPULATION LEVELS

HIGH POPULATION ESTIMATE = 69,863

MODERATE POPULATION ESTIMATE = 66,532

LOW POPULATION ESTIMATE = 63,351

AVERAGE POPULATION ESTIMATE = 63,351



STAFFING PROJECTION BASED ON AVERAGE PROJECTED POPULATION AT
AVERAGE HISTORICAL STAFFING LEVELS

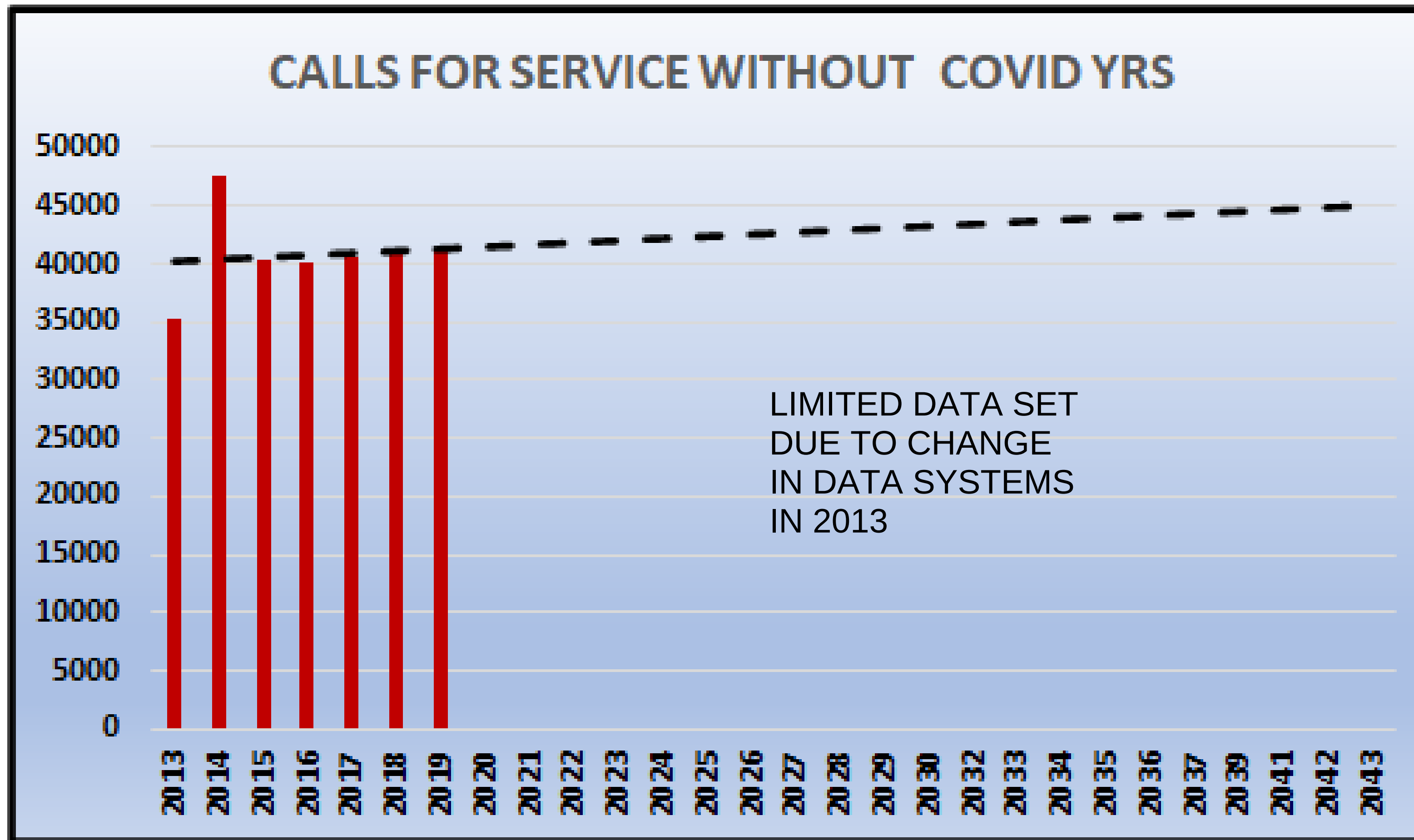
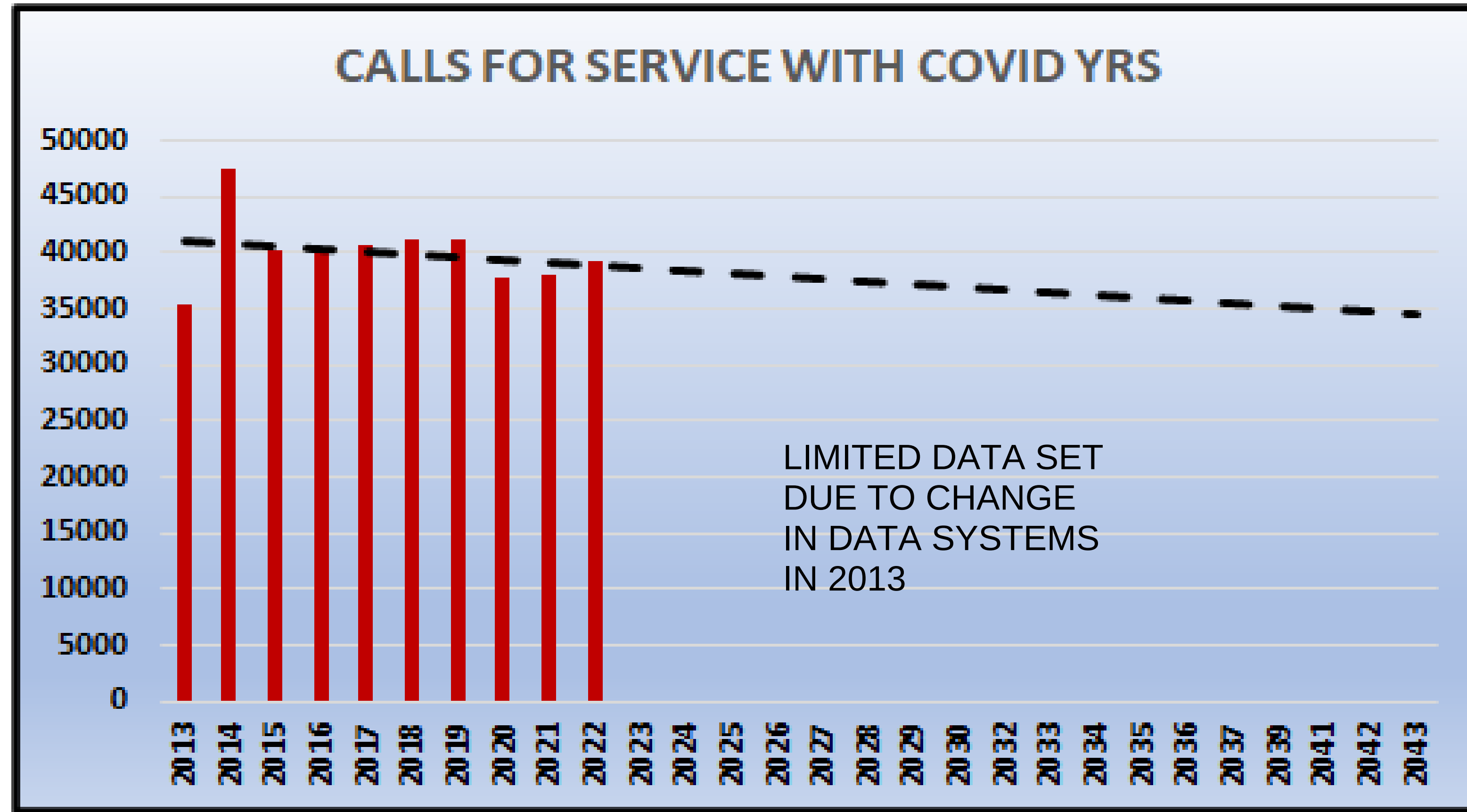
73822 PEOPLE x 2.05 OFFICERS/1,000 POPULATION = 151 TOTAL STAFF

STAFFING PROJECTION BASED ON HISTORICAL STAFFING LEVELS

PROJECTED ALLOWED STAFFING IN 2048 = 162

PROJECTED AVERAGE STAFFING IN 2048 = 140

* National Average officer per 1,000 population = 2.2



Calls for service data is inconclusive but included here for completeness. Some data challenges include:

- Major change in data recording and report systems in 2013.
- Some data challenges do to oil boom.
- Some data challenges do to Covid.



7 SPACE NEEDS ANALYSIS

The following pages contain details from the space programming effort. This information is developed using a variety of national and regional sources such as recommendations by the National Association of Chief's of Police and well as the experience of our firm designing similar facilities in the upper Midwest region of the country. Reasonable and industry recognized growth factors are used to account for required circulation with each department as well as for mechanical and electrical spaces in the overall numbers to create gross square foot requirement.

The process used for this portion of the work is to divide the department into individual work elements within the overall department. These work elements are then broken down to the individual spaces required for each staff position or activity within that department. As each activity or position is discussed, it is assigned a space size in both width and length to create a square foot space standard. Each space is then adjusted for the quantity needed for the department as envisioned in the future. Existing space standards are recorded to create a comparison to future need. And finally, each department has an inflationary factor added for circulation wall thickness within each department.

The individual department needs are totaled with another growth factor added to account for exterior walls and mechanical and electrical spaces. In the case of Minot Police Department, several additional sub-totals were created to explore different potential solutions, such as inclusive of the Municipal Court or Municipal Court as a standalone solution. Also, created are numbers for required additions and area requirements based on a facility meeting national averages.

See the executive summary for additional information regarding the results of this task and the impact on the overall study.

GENERAL INFORMATION

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1 RECEPTION - RECORDS

2 OFFICE OF THE CHIEF

3 PATROL

4 INVESTIGATIONS

5 MISCELANEOUS DEPARTMENTS

6 BOOKING AND HOLDING

7 EVIDENCE AND PROPERTY

8 STAFF SUPPORT

9 GARAGE

"Start with the assumption that the best way to do something is not the way it's being done right now." Aaron Levie

SPACE NEEDS PROJECTION

ADMINISTRATION/RECORDS										
NO.	OPERATIONAL ELEMENT	EXISTING	LENGTH	x	WIDTH	=	NET SF	QUANTITY	TOTAL (NET SF)	Notes
1 PUBLIC SPACES										
	Vestibule	102	10	x	15	=	150	1	150	
	Waiting Area	533	6	x	6	=	36	25	900	bigger, more inviting than current.
	Dept. of Corrections Off.		12	x	14	=	168	0	0	
	Public Toilets	88	8	x	8	=	64	2	128	
	Interview Spaces		8	x	10	=	80	3	240	One soft
	Evidence Return		8	x	10	=	80	1	80	Potentially part of Lobby
	Fingerprint		8	x	10	=	80	0	0	No public printing
	Sex Offender registry alcove		6	x	6	=	36	1	36	Connection to Admin
	Historic Display		2	x	10	=	20	1	20	

2 Administration/Records		Trish: Records Manager								
	Administrative Commander									See Office of the Chief
	Administrative Lt.	135	12	x	13	=	156	0	0	Quarter Master-Adj. Records and Outreach
	Records Manager		12	x	13	=	156	1	156	
	Payroll Clerk		12	x	10	=	120	1	120	
	Records Sgt.	202	12	x	13	=	156	0	0	See Evidence and Property
	Admin Clerk, Sr.		10	x	10	=	100	0	0	Community Outreach?
	Admin Clerks	540	8	x	8	=	64	10	640	6 current FTE + 1 PTE
	Reception Desk		6	x	10	=	60	1	60	
	Records		8	x	10	=	80	1	80	Mircro fiche stor. And viewer
	Forms & Supplies		3	x	6	=	18	1	18	
	Secure Storage		8	x	10	=	80	1	80	
	Break/Fax/ Copy		8	x	10	=	80	1	80	
	General Storage		10	x	10	=	100	0	0	
	Mail		2	x	11	=	22	1	22	

ADMINISTRATION/RECORDS										
		EXISTING							TOTAL (NET SF)	REMARKS
	Sub Total Area	1600							2810	
	Efficiency Factor (20%)	0							562	Interior Circulation and Walls
	Aministration Total Area	1600							3372	

SPACE NEEDS PROJECTION

OFFICE OF THE CHIEF

NO.	OPERATIONAL ELEMENT	EXISTING	LENGTH	x	WIDTH	=	NET SF	QUANTITY	TOTAL (NET SF)	Notes
1 OFFICES										
	Police Chief	348	12	x	21	=	252	1	252	
	Chief's Toilet/Shower		10	x	10	=	100	0	0	
	Operations Commander	191	12	x	16	=	192	1	192	See also Patrol
	Investigations Commander	163	12	x	16	=	192	1	192	
	Administrative Commander		12	x	16	=	192	1	192	
	Administrative Lt./Capt.	173	12	x	16	=	192	0	0	
	Community Outreach	301	10	x	12	=	120	0	0	See Community Outreach (Misc. Depart)
	Storage	88	4	x	2	=	8	0	0	
	Emergency Man. Supervisor		12	x	16	=	192	0	0	
	Office of Professional Standard	164	12	x	16	=	192	1	192	
	Future Office		13	x	16	=	208	2	416	Public Information Officer, Deputy Chief
	Mental Health Professional		12	x	16	=	192	0	0	

2 SUPPORT

	Administrative Assistant		12	x	14	=	168	1	168	
	Secure Files		6	x	10	=	60	0	0	
	Break/Fax/ Copy		8	x	6	=	48	1	48	
	Command Staff Conf. Room		12	x	30	=	360	1	360	10-12 person
	Staff Toilet		8	x	8	=	64	1	64	
	Changing area		8	x	8	=	64	1	64	Changing area w/shwr
	Reference Library		4	x	12	=	48	0	0	
	Janitors Closet		4	x	6	=	24	1	24	
	General Storage	97	8	x	10	=	80	0	0	

OFFICE OF THE CHIEF

	EXISTING							TOTAL (NET SF)	REMARKS
Sub Total Area	1525							2164	
Efficiency Factor (20%)	0							433	Interior Circulation and Walls
Office of the Chief Total Area	1525							2597	

SPACE NEEDS PROJECTION

PATROL/OPERATIONS

NO.	OPERATIONAL ELEMENT	EXISTING	LENGTH	x	WIDTH	=	NET SF	QUANTITY	TOTAL (NET SF)	Notes
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1 OFFICER SPACES

current = 50 patrol officers - potential of 70 future

Patrol Lt.	133	12	x	13	=	156	2	312	current = 2
Patrol Supervisors (SGT.)	400	15	x	30	=	450	1	450	current = 9 - 3/shift + focussed team sgt.
Focused Sgt.		10	x	12	=	120	1	120	
Watch Commander Office		10	x	10	=	100	0	0	
Patrol Officers		6	x	8	=	48	16	768	Report writing (3x16 =
70 personal storage units		3	x	5	=	15	16	0	Rolling Storage Unit for/at each officer station
K9 Officer		6	x	8	=	48	0	0	Included as Patrol Officer
Park Patrol		6	x	8	=	48	0	0	
School Resource Officer		8	x	8	=	64	0	0	See Outreach
Community Service Officer		10	x	12	=	120	0	0	See Outreach
Animal, Parking & Fleet Sgt.		12	x	20	=	240	1	240	Shared office with 3 work stations.
Small Meeting Room		10	x	10	=	100	3	300	FTO meeting spaces/dictation

2 SUPPORT

Shift Briefing	467	12	x	26	=	312	0	600	16 people at tables and chairs
Report Writing Room	836	8	x	6	=	48	0	0	See above
Patrol Equipment Storage	190	12	x	35	=	420	1	420	Eq. Charging and Storage
Patrol Bag/ Personal Storage		2	x	5	=	10	25	300	85 squad bags
Reserves/Auxiliaries Stor.		8	x	10	=	80	0	0	
Reference Library		4	x	12	=	48	0	0	
Janitors Closet		4	x	6	=	24	1	24	
General Storage		8	x	10	=	80	1	80	

3 MISCELANEOUS

K9 Unit		3	x	4	=	12	5	60	3 K-9's kept at desks when of duty
Training Equip. Storage		8	x	10	=	80	1	80	
Kennels		10	x	10	=	100	3	300	indoor/outdoor access
Exterior Run		10	x	150	=	1500	0	0	See Site

EXISTING								TOTAL (NET SF)	REMARKS
Sub Total Area	2026							4054	

SPACE NEEDS PROJECTION

INVESTIGATIONS										
NO.	OPERATIONAL ELEMENT	EXISTING	LENGTH	x	WIDTH	=	NET SF	QUANTITY	TOTAL (NET SF)	Notes
1 OFFICER SPACES										
	Investigations Commander	202	12	x	16	=	192	0	0	See Office of the Chief
	Investigations Lt.	426	11	x	14	=	154	1	154	
	Detectives Sgt.		10	x	12	=	120	2	240	
	Detectives	428	10	x	12	=	120	12	1440	
	Juvenile Detective		10	x	12	=	120	0	0	
	Juvenile Record Storage		8	x	10	=	80	0	0	
	Detectives Admin.		10	x	10	=	100	1	100	Future
	Break/Copy/Fax		6	x	8	=	48	1	48	
	Digital Forensic Analyst		12	x	36	=	432	1	432	3 work stations plus equip. plus storage
	Intel Analyst		20	x	12	=	240	1	240	1 current + 1 future, 2 person office

2 SUPPORT										
	Major Case Room		30	x	13	=	390	1	390	
	Temporary Evidence		6	x	8	=	48	0	0	
	Soft Interview	260	10	x	12	=	120	2	240	
	Victim-Witness	114	8	x	10	=	80	2	160	
	Files and Records		8	x	10	=	80	0	0	
	Equipment Storage		4	x	6	=	24	1	24	
	Polygraph Examination Room		8	x	8	=	64	0	0	
	Computer Forensics		16	x	12	=	192	0	0	See above
	Faraday Room		6	x	8	=	48	0	0	
	Evidence Storage		16	x	12	=	192	0	0	
	Janitorial		4	x	6	=	24	1	24	

INVESTIGATIONS										
		EXISTING							TOTAL (NET SF)	REMARKS
Sub Total Area		1430							3492	
Efficiency Factor (20%)		0							698	Interior Circulation and Walls
Investigations Total Area		1430							4190	

SPACE NEEDS PROJECTION

MISCELLANEOUS DEPARTMENTS (1)

NO.	OPERATIONAL ELEMENT	EXISTING	LENGTH	x	WIDTH	=	NET SF	QUANTITY	TOTAL (NET SF)	Notes
1	Community Outreach									
			Adjacent to Admin Function							
	Outreach Sgt.		12	x	16	=	192	1	192	
	Intelligence Analyst		10	x	12	=	120	0	0	See Investigations
	Community Outreach Officer		10	x	10	=	100	1	100	
	SRO		8	x	8	=	64	2	128	Potential future office
	Storage		8	x	8	=	64	1	64	
	Cadet Program Storage		8	x	8	=	64	1	64	Uniform lockers
	Future office		10	x	12	=	120	1	120	

668

2	Back-up Dispatch									
			Infrastructure exists...so use it? Current back up at Ward Co. not ideal							
	Dispatch Stations		10	x	10	=	100	3	300	
	Office		10	x	10	=	100	1	100	
	Equipment Room		12	x	10	=	120	1	120	

520

3	Misc. Functions									
			Part of Operations							
	Animal, Parking & Fleet Sgt.		12	x	20	=	240	1	240	Shared office with 3 work stations.

MISCELLANEOUS DEPARTMENTS

	EXISTING								TOTAL (NET SF)	REMARKS
Sub Total Area	0								1428	
Efficiency Factor (20%)	0								285.6	Interior Circulation and Walls
Misc. Dept. Total Area	0								1713.6	

SPACE NEEDS PROJECTION

SPECIAL OPERATIONS										
NO.	OPERATIONAL ELEMENT	EXISTING	LENGTH	x	WIDTH	=	NET SF	QUANTITY	TOTAL (NET SF)	Notes

Special Ops Equipment										
	Riot Control		8	x	4	=	32	3	96	3 pallet racks
	UAS		5	x	4	=	20	1	20	Drone - 24 x 48" locker
	Bike Patrol		10	x	20	=	200	1	200	10 bikes + work bench+ 12X12 lockers
	UTV/Snow Mobile		10	x	20	=	200	2	400	Future

3 Bomb Squad		Part of Investigations								
	Garage		10	x	40	=	400	2	800	2 garage stalls
	Storage		20	x	20	=	400	1	400	
	Office/Gear Room		12	x	16	=	192	1	192	
	Locker space		3	x	5	=	15	7	105	LEC locker for 6 tech
	Currently off site		10	x	20	=	200	2	400	trailer, burn trailer

1897

4 CSRU		Part of Investigations								
	Storage									

5 SWAT		Part of Operations								
	Operational Briefing Room		25	x	30	=	750	1	750	Co-locate with Defensive Tactics Training
	Tactical Storage		20	x	20	=	400	1	400	Locker room
	Negotiations/TEMS/Sniper		6	x	4	=	24	3	72	(3) 2'x4'
	Command Vehicle		10	x	40	=	400	1	400	
	Armored Vehicle		10	x	30	=	300	1	300	
	Support Vehicle		10	x	20	=	200	1	200	Off Site
	Misc. Storage		10	x	20	=	200	1	200	

2322

MISCELLANEOUS DEPARTMENTS										
		EXISTING							TOTAL (NET SF)	REMARKS
Sub Total Area		0							4935	
Efficiency Factor (20%)		0							987	Interior Circulation and Walls
Misc. Dept. Total Area		2400							5922	

SPACE NEEDS PROJECTION

MINOT POLICE DEPARTMENT
MINOT , NORTH DAKOTA
PROJECT NO.: 20226560
8/18/2023

MUNICIPAL COURT										
NO.	OPERATIONAL ELEMENT	EXISTING	LENGTH	x	WIDTH	=	NET SF	QUANTITY	TOTAL (NET SF)	Notes
1	MUNICIPAL COURT									
	Court Room	815	25	x	35	=	875	1	875	3 chairs at ea. defense & prosecution
	Judges Chambers	61	11	x	13	=	143	1	143	Exit to Clerk Space
	Waiting/Check-in	240	20	x	20	=	400	1	400	15 chairs and access to 5 pay/check-in windows
	Clerk of Courts		11	x	13	=	143	1	143	
	Reception/Clerical	260	8	x	8	=	64	4	256	2 Current, 2 Future
	Prosecutor	56	10	x	12	=	120	0	0	Accounted for in Court room
	Records		8	x	10	=	80	1	80	
	Copy/work		10	x	6	=	60	1	60	
	Contact Windows		5	x	6	=	30	5	150	2 exiting, 3 check-in
	Staff Toilet Room		7	x	9	=	63	1	63	
	Public Toilet Rooms		10	x	12	=	120	2	240	
	Sm.Conference (attny, SS)		8	x	10	=	80	1	80	
	Secure Holding								0	
	Group Holding		10	x	6		60	0	0	
	Wet Cells		10	x	6		60	0	0	
	Officer Station		8	x	10		80	0	0	
							0	0	0	

SECURITY CONSIDERATIONS										
	Security Station		8	x	8	=	64	1	64	Courtroom type security
	Metal Dector		3	x	5	=	15	1	15	
	Package X-ray		5	x	8	=	40	1	40	

SITE CONSIDERATIONS										
	Public Parking									20 public
	Staff Parking									12 staff

MISCELLANEOUS DEPARTMENTS										
	EXISTING							TOTAL (NET SF)	REMARKS	
Sub Total Area	1432							2609		
Efficiency Factor (20%)	0							391.35	Interior Circulation and Walls	
	1432							3000.35		

SPACE NEEDS PROJECTION

MINOT POLICE DEPARTMENT
MINOT, NORTH DAKOTA
PROJECT NO.: 20226560
8/18/2023

BOOKING & HOLDING

NO.	OPERATIONAL ELEMENT	EXISTING	LENGTH	x	WIDTH	=	NET SF	QUANTITY	TOTAL (NET SF)	Notes
1	INTAKE / BOOKING									
	Sally port	820	30	x	12	=	360	2	720	Drive thru if possible
	Booking Station	174	8	x	15	=	120	1	120	Sobriety testing
	Finger Printing		6	x	5	=	30	1	30	
	Booking Photo		10	x	5	=	50	1	50	
	Intoxilyzer		6	x	5	=	30	1	30	
	Toilet/Shower		10	x	8	=	80	1	80	

2	SECURE HOLDING									
	Wet Cells	50	7	x	10	=	70	0	0	
	Group Holding	72	7	x	10	=	70	0	0	
	Holding Toilet	39	9	x	7	=	63	0	0	
	Holding /Juvenile Holding		7	x	10	=	70	0	0	

3	INTERVIEW									
	Holding / Hard Interview Room		8	x	10	=	80	2	160	
	Juvenile Interview		8	x	10	=	80	2	160	Unsecured space with free exit. Sight/Sound separation
	Soft Interview		10	x	12	=	120	0	0	See Investigations

4	SUPPORT SPACES									
	Video Recording Equipment		8	x	10	=	80	0	0	
	Public Release/Vestibule		10	x	8	=	80	0	0	
	Personal Property Storage		4	x	2	=	8	0	0	

BOOKING & HOLDING

	EXISTING								TOTAL (NET SF)	REMARKS
Sub Total Area	1155								1350	
Efficiency Factor (25%)	0								338	Interior Circulation and Walls
Booking & HoldingTotal Area	1155								1688	

SPACE NEEDS PROJECTION

MINOT POLICE DEPARTMENT
MINOT, NORTH DAKOTA
PROJECT NO.: 20226560
8/18/2023

EVIDENCE & PROPERTY										
NO.	OPERATIONAL ELEMENT	EXISTING	LENGTH	x	WIDTH	=	NET SF	QUANTITY	TOTAL (NET SF)	Notes

1	EVIDENCE INTAKE									
	Evidence Intake	224	10	x	20	=	200	1	200	
	Pass-thru Lockers		3	x	5	=	15	5	75	Number of 3' wide banks
	Evidence Drying Cabinets		4	x	6	=	24	0	0	
	CSI Equipment Storage		4	x	10	=	40	1	40	Full height cabintry or closet

2	EVIDENCE PROCESSING	Evidence Processing & Storage is separate from Evidence Lab due to staffing								
	Evidence Supervisor Office		12	x	16	=	192	1	192	Records Sgt.
	Evidence Officer		10	x	10	=	100	1	100	office for video review etc.
	Evidence Tech Work Station	224	10	x	10	=	100	1	100	office for video review etc.
	Processing Station		8	x	10	=	80	1	80	

2	EVIDENCE LAB	Evidence Processing & Storage is separate from Evidence Lab due to staffing								
	Lab manager/work station		10	x	10	=	100	1	100	
	Lab Space	484	6	x	10	=	60	0	600	
	Photography		1	x	6	=	6	1	6	
	Fume Hood		1	x	5	=	5	1	5	
	Evidence Drying Cabinets		1	x	6	=	6	1	6	
	eyewash/em shower		1	x	6	=	6	1	6	
	Equipment Storage		1	x	6	=	6	1	6	

3	EVIDENCE STORAGE	current is high bay storage in garage space								
	General Storage	1722	40	x	50	=	2000	1	2000	High Density Storge
	Guns		6	x	8	=	48	1	48	
	Drugs		6	x	8	=	48	1	48	
	Money		6	x	3	=	18	1	18	
	Biologicals	200	4	x	5	=	20	0	0	Sex assault ev. Included above

4	SUPPORT SPACES									
	Evidence-large items		10	x	20	=	200	1	200	Off Squad Garage or Sally Port
	Vehicle/Large Evid. Process		30	x	24	=	720	2	1440	1 per 2 months.
	Evidence Return		8	x	10	=	80	0	0	See Administration
	Janitors Closet		4	x	6	=	24	1	24	

EVIDENCE & PROPERTY										
		EXISTING							TOTAL (NET SF)	REMARKS
Sub Total Area		2854							5294	
Efficiency Factor (15%)		0							794	Interior Circulation and Walls
Administration Total Area		2854							6088	

SPACE NEEDS PROJECTION

STAFF SUPPORT										
NO.	OPERATIONAL ELEMENT	EXISTING	LENGTH	x	WIDTH	=	NET SF	QUANTITY	TOTAL (NET SF)	Notes
1 TRAINING										
	Training Room	1533	30	x	80	=	2400	1	2400	75 to Host regional training, community events
	Defensive Tactics Training		20	x	20	=	400	1	400	As part of Fitness, Briefing, or SWAT Operations Briefing?
	A/V Equipment		6	x	10	=	60	1	60	
	Chair and Table Storage		10	x	12	=	120	1	120	
	Mats/Equipment Storage		10	x	12	=	120	0	0	
	General Storage		10	x	12	=	120	1	120	
	Back up EOC Storage		6	x	10	=	60	0	0	
	Media / Conference Rm		15	x	20	=	300	1	300	
	Toilet Rooms		10	x	12	=	120	2	240	

3640

2 STAFF SUPPORT										
110 sworn staff in 2043- 85% male & 40% female for future ratio adjustment										
	Men's Locker Room	1080	2	x	6	=	12	95	1140	
	Women's Locker Room	508	2	x	6	=	12	45	540	
	Men's Toilet w/Shower		10	x	24	=	240	1	240	3 shwrs
	Women's Toilet w/Shower		10	x	24	=	240	1	240	3 shwrs
	Fitness	457	30	x	30	=	900	1	900	
	Break Room	324	20	x	20	=	400	1	400	Exterior Patio with grill
	Quartermaster	341	20	x	30	=	600	1	600	Fit Testing masks, high density storage

3 ARMORY										
	Firing Range		15	x	10	=	150	0	0	
	Gun Cleaning Room	93	8	x	10	=	80	1	80	2 cleaning stations
	Ammunition/Target Storage		2	x	6	=	12	0	0	
	Gun/amo Storage		22	x	15	=	330	1	330	2 armorers, 4 gun lockers, 4 amo lockers
	SRT/SWAT/ERU		10	x	20	=	200	0	0	See Misc. Departments

4 MISCELANEOUS										
	IT Space	200	10	x	15	=	150	1	150	
	It work space		10	x	10	=	100	1	100	
	Work bench/shop space		8	x	10	=	80	1	80	Maintenance work space
	Janitorial	251	8	x	10	=	80	1	80	Bulk janitorial

STAFF SUPPORT										
		EXISTING							TOTAL (NET SF)	REMARKS
Sub Total Area		4787							8520	
Efficiency Factor (10%)		0							852	Interior Circulation and Walls
Administration Total Area		4787							9372	

SPACE NEEDS PROJECTION

GARAGE										
NO.	OPERATIONAL ELEMENT	EXISTING	LENGTH	x	WIDTH	=	NET SF	QUANTITY	TOTAL (NET SF)	Notes
1 SQUAD PARKING										
	Squads		20	x	10	=	200	30	6000	current =21 marked, 30 future,
	Unmarked		20	x	10	=	200	10	2000	current = 20,
	Transport Van		20	x	10	=	200	1	200	
	CSRU Transport Vehicle		20	x	10	=	200	1	200	
	Incident Command		15	x	35	=	525	0	0	See Misc. Dept.
	Armored Vehicle		15	x	20	=	300	0	0	See Misc. Dept.
	Vehicle Evidence Processing		20	x	20	=	400	0	0	See Evidence
	Motor Cycles		12	x	15	=	180	0	0	
	Future Negotiations Van		20	x	10	=	200	1	200	

2 SUPPORT SPACES										
	Bicycle Unit		10	x	20	=	200	0	0	See Misc. Dept.
	Bicycle Storage (Found Prop.)		10	x	20	=	200	1	200	
	Mounted Patrol		0	x	0	=	0	0	0	=
	Animal Control		10	x	20	=	200	1	200	
	Storage		10	x	20	=	200	1	200	
	Exterior kennels		4	x	6	=	24	0	0	
	Parking Control		10	x	20	=	200	1	200	
	General Storage		20	x	20	=	400	1	400	squad seating, light bars, fluids, tires
	Wash Bay		10	x	20	=	200	1	200	
	Yard Maintenance		20	x	20	=	400	1	400	

			0	x	0	=	0	0	0	
			0	x	0	=	0	0	0	
			0	x	0	=	0	0	0	
			0	x	0	=	0	0	0	
			0	x	0	=	0	0	0	

			0	x	0	=	0	0	0	
			0	x	0	=	0	0	0	
			0	x	0	=	0	0	0	

GARAGE										
		EXISTING							TOTAL (NET SF)	REMARKS
	Sub Total Area	0							10400	
	Efficiency Factor (30%)	0							3120	Interior Circulation and Walls
	Administration Total Area	0							13520	

SPACE NEEDS PROJECTION

SITE					
NO.	OPERATIONAL ELEMENT	EXISTING		NO. REQUIRED	NOTES
1 SQUAD PARKING					
	Staff Parking			60	Secured
	Public Parking			25	
	Squad/Department vehicle Parking			20	Secured - See also squad garage
	Curb Side			7	short term on duty officer parking
	Oversized Vehicles			0	
	Motorcycle Parking			0	
	Municipal Court			32	20 public + 12 staff

2 SECURITY MEASURES					
	50' Stand-off Zone			X	Department of Defense and IACP Recommendation for new building
	Separate Staff/Public Parking			X	IACP Recommendation for new building
	Secured Parking			X	
	Impound Area			X	Current off site location is subject to vandalism

2 MISCELLANEOUS SITE					
	K9 Exterior Run/Kennel			X	
	Trash Enclosure			X	
	Emergency Generator			X	
	Impound Lot			X	
	Storm Water Management			X	
	Radio Towers			X	TBD but repeaters probable into the future

SITE					
		EXISTING		NO. REQUIRED	REMARKS
	Sub Total Area	0		144	See also Misc. Operations & Squad Garage for additional parking req.

SPACE NEEDS PROJECTION

AREA TOTALS			
OPERATIONAL ELEMENT	EXISTING	Proposed SF	REMARKS
1 RECEPTION - RECORDS	1,600	3,372	
2 OFFICE OF THE CHIEF	1,525	2,597	
3 PATROL/OPERATIONS	2,026	4,865	
4 INVESTIGATIONS	1,430	4,190	
5 MISCELLANEOUS DEPARTMENTS	2,400	1,714	Community Outreach, Animal Control, Fleet Man., Parking, Back up dispatch
6 SPECIAL OPERATIONS	0	5,922	SWAT, Bomb Squad, CRSU, Riot Cont, etc.
7 MUNICIPAL COURT	1,432	3,000	
8 BOOKING AND HOLDING	1,155	1,688	
9 EVIDENCE AND PROPERTY	2,854	6,088	
10 STAFF SUPPORT	4,787	9,372	
11 GARAGE	0	13,520	See also Special Ops for added req's.
12 VACANT OR VACATED SPACE	9,670	0	

	27,447	53,327	SUB TOTAL
66%	13,703	13,332	Efficiency Ratio of 25% (MEP/Circulation)
EXISTING AREA	41,150	TOTALS	
TOTAL AREA REQ'D - 20 YRS		70,409	LEC TOTAL (Ft ²)
GROWTH SPACE FOR ADDNL' 5 YRS		4,800	16 ADDITIONAL STAFF @300 SF EA.
TOTAL AREA REQ'D FOR 25 YRS		75,209	
MUNICIPAL COURT STAND-ALONE		3,900	
PD WITHOUT MUNICIPAL COURT		71,309	
NATIONAL STANDARD COMPARISON		73,353	Sim. Facilities @ 300SF/staff = 40,500
ADDITN'L SPACE REQ'D FOR 25 YRS		34,059	Size of Additions Required



8 RECOMMENDED SOLUTIONS

The team used the data presented in earlier chapters of this report to develop several different solutions for the project. The solution illustrated in the following pages represents the solution that best meets the goals of the project, some of which are reiterated here:

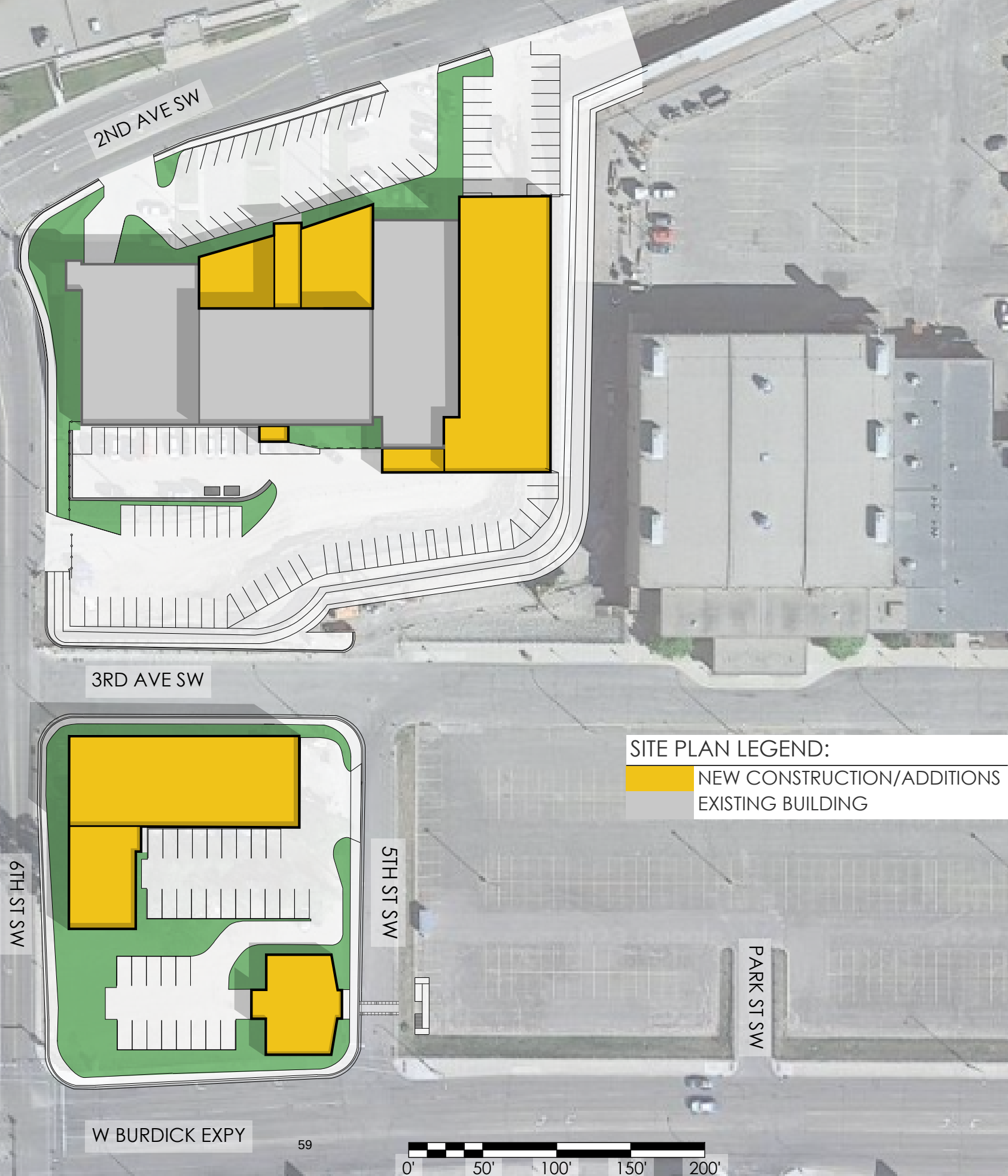
“The overall goals of this study are to create a design plan that can meet Minot’s needs for the next 25 years while addressing the following key areas:

1. To bring safety and liability issues into full compliance and in line with contemporary best practices
2. To improve privacy and process efficiency for both personnel and citizens
3. To ensure the long-term value of this investment
4. To create a welcoming environment that promotes professionalism and wellness, inspiring pride in personnel and citizens
5. To proactively plan for potential growth of adaptation in the planned space as needs change over the next 25 years.”

A second set of the proposed solution is included with notes illustrating how the specific goals established through the LEAN Process can be applied as many of those goals are still aspirational and will be developed in detail in future phases.

See the executive summary for additional commentary.

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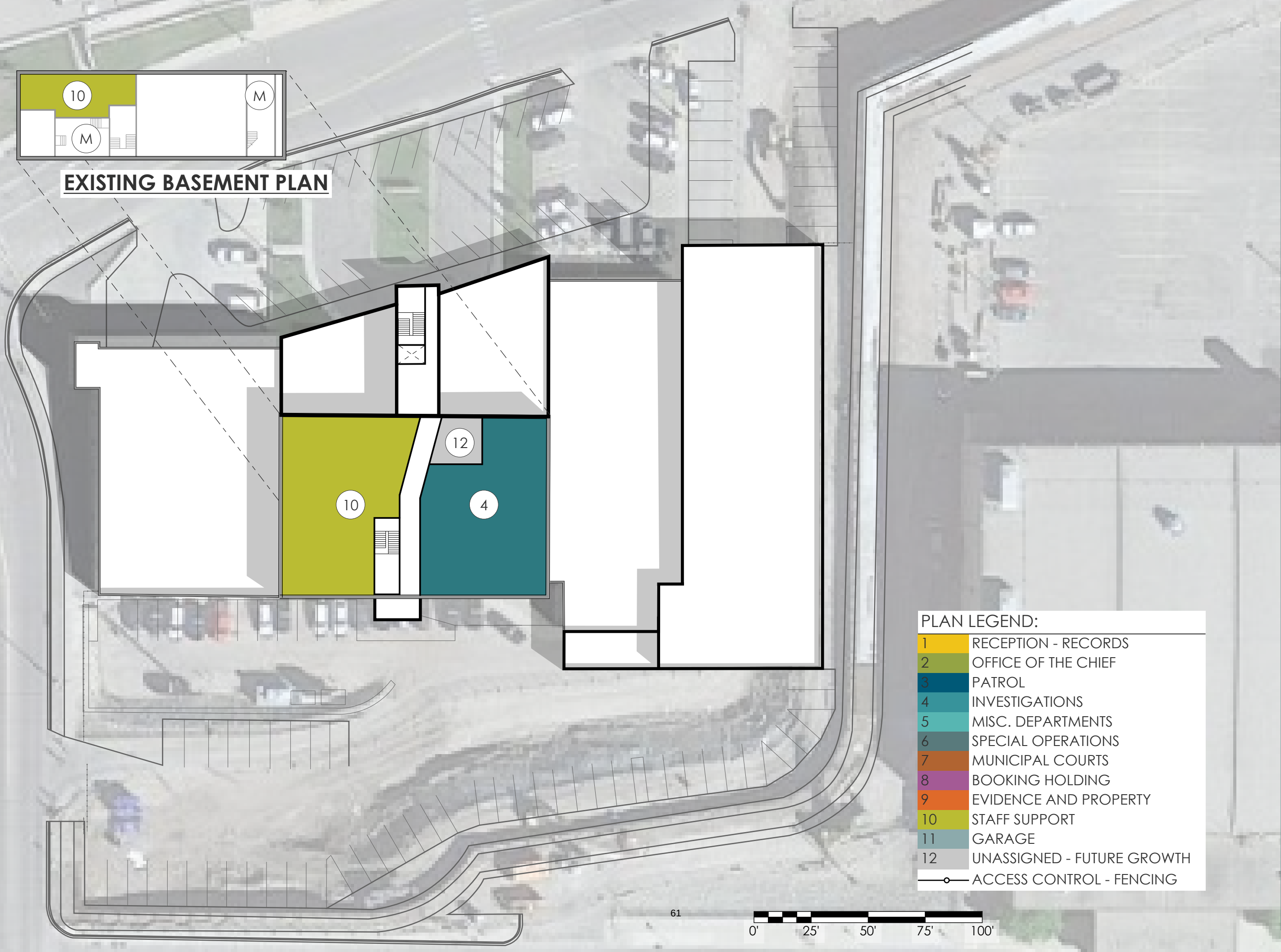
MINOT POLICE DEPARTMENT SPACE NEEDS & FEASIBILITY ASSESSMENT



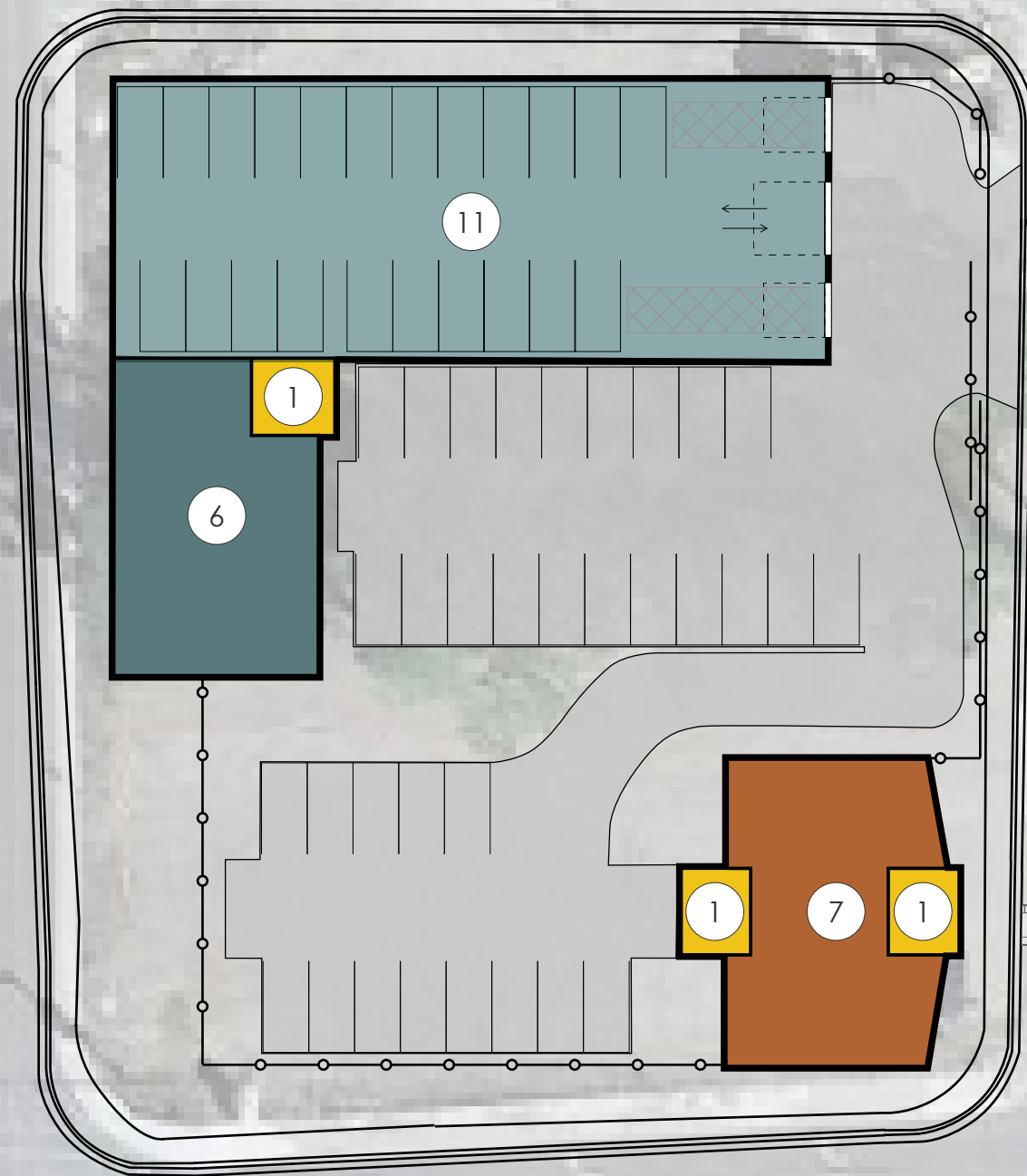
PLAN LEGEND:

1	RECEPTION - RECORDS
2	OFFICE OF THE CHIEF
3	PATROL
4	INVESTIGATIONS
5	MISC. DEPARTMENTS
6	SPECIAL OPERATIONS
7	MUNICIPAL COURTS
8	BOOKING HOLDING
9	EVIDENCE AND PROPERTY
10	STAFF SUPPORT
11	GARAGE
12	UNASSIGNED - FUTURE GROWTH
○	ACCESS CONTROL - FENCING

MINOT POLICE DEPARTMENT SPACE NEEDS & FEASIBILITY ASSESSMENT



MINOT POLICE DEPARTMENT SPACE NEEDS & FEASIBILITY ASSESSMENT



PLAN LEGEND:

1	RECEPTION - RECORDS
2	OFFICE OF THE CHIEF
3	PATROL
4	INVESTIGATIONS
5	MISC. DEPARTMENTS
6	SPECIAL OPERATIONS
7	MUNICIPAL COURTS
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10	STAFF SUPPORT
11	GARAGE
12	UNASSIGNED - FUTURE GROWTH
—○—	ACCESS CONTROL - FENCING

RENOVATION: PROS AND CONS

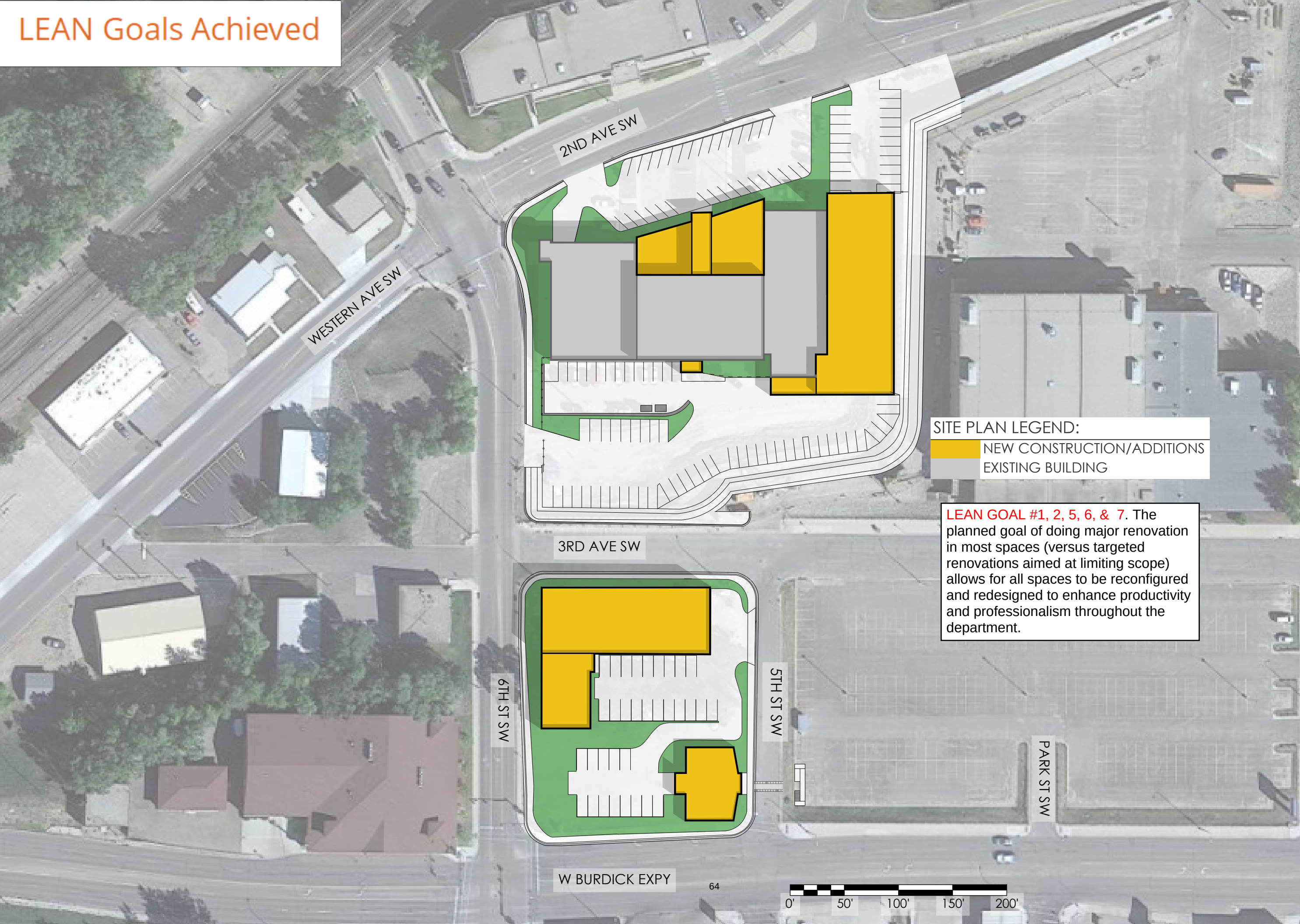
PROS

- The new plan resolves space needs issues for 25 years.
- Continues to use a building that still has some years of use remaining.
- Improves efficiency throughout PD by renovating and improving most areas in the building.
- Security/Confidentiality will be improved for the public, staff, and detained persons.
- The construction of a new squad garage will provide tempered vehicle storage.
- Facility is centrally located but department's resources are mobile.

CONS

- The new plan will utilize all available space on this site challenging future expansion.
- There are still numerous level changes throughout the building.
- Special Operations will be located on an adjacent site.
- The Municipal Court is not adequately resolved.
- Special Operations building invests in new long-term building at this site.
- Renovations will cause disruptions to operations.
- Continues ongoing investment in location near tracks and flood plain.

MINOT POLICE DEPARTMENT SPACE
NEEDS & FEASIBILITY ASSESSMENT



SITE PLAN LEGEND:

NEW CONSTRUCTION/ADDITIONS
EXISTING BUILDING

LEAN GOAL #1, 2, 5, 6, & 7. The planned goal of doing major renovation in most spaces (versus targeted renovations aimed at limiting scope) allows for all spaces to be reconfigured and redesigned to enhance productivity and professionalism throughout the department.

LEAN GOAL #2. Establishing clear circulation paths and reducing the impact of security barriers and level changes improves efficiency, functionality, and work flow.

LEAN GOAL #1 & 3. A new public entrance will create a more accessible, secure, and confidential interaction with Minot Police Department.

LEAN GOAL #8. Strategically placed unassigned space allows space for unprogrammed needs in the short-term and necessary expansion space in the future.

LEAN GOAL #1 & 3. Reconstruction of holding cells, interview spaces and sally ports will reduce transportation of detained individuals through public and staff corridors enhancing security and confidentiality of public, staff and the detained.

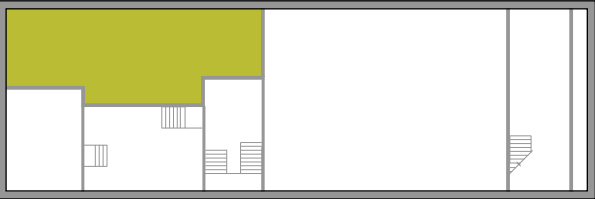
LEAN GOAL #1 & 5. Creation of a primary staff entrance from a secured staff parking lot enhances security for the building while improving creating a more welcoming environment for employees.

LEAN GOAL #6. Placement of 'WELLNESS' related spaces adjacent to primary circulation corridors and near the main building entrance encourages positive work-life balance in a potentially stressful work environment.

PLAN LEGEND:

1	RECEPTION - RECORDS
2	OFFICE OF THE CHIEF
3	PATROL
4	INVESTIGATIONS
5	MISC. DEPARTMENTS
6	SPECIAL OPERATIONS
7	MUNICIPAL COURTS
8	BOOKING HOLDING
9	EVIDENCE AND PROPERTY
10	STAFF SUPPORT
11	GARAGE
12	UNASSIGNED - FUTURE GROWTH
—○—	ACCESS CONTROL - FENCING

LEAN Goals Achieved



EXISTING BASEMENT PLAN

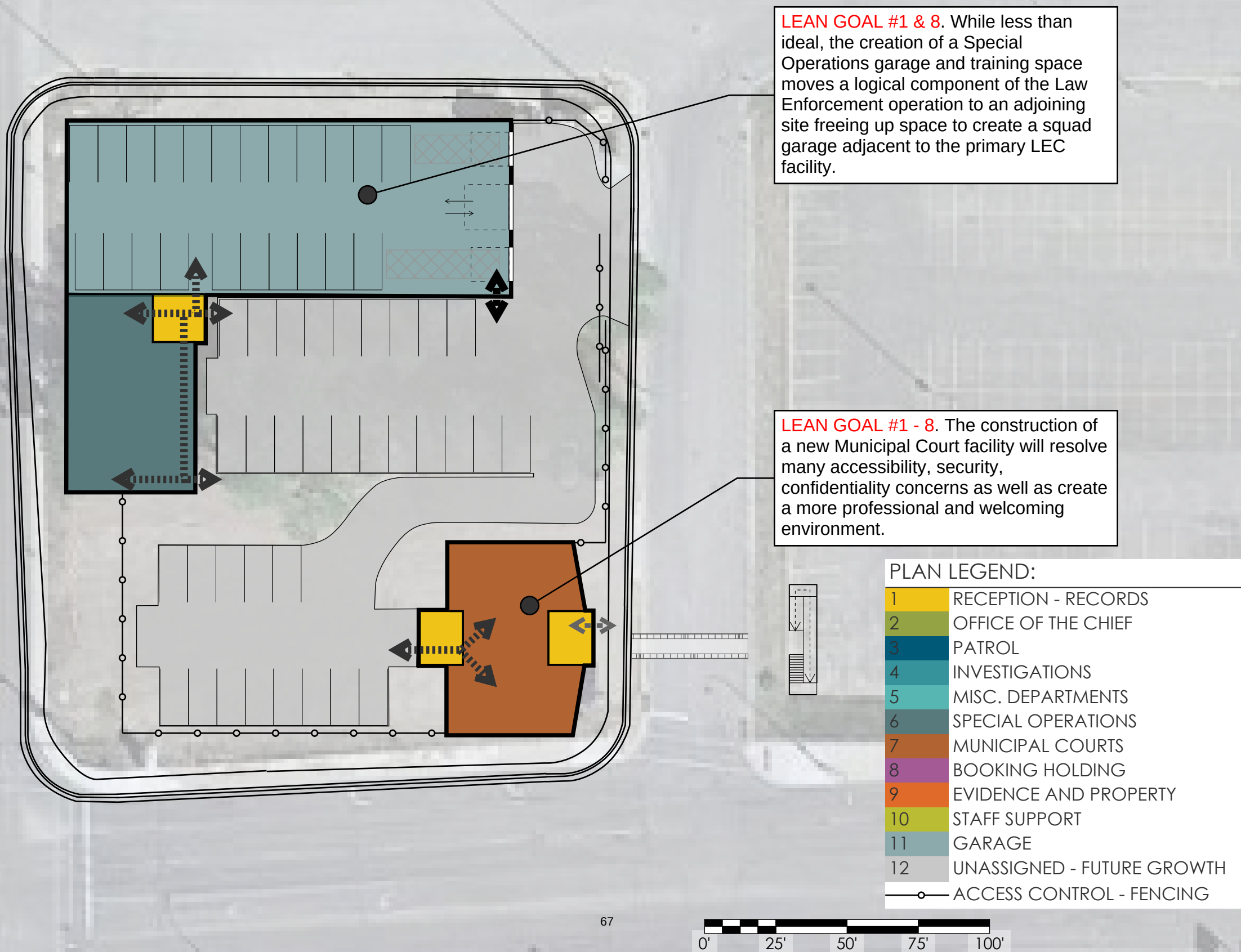
LEAN GOAL #1, 2, 3, & 5. The new lower level entrance provides for access, both secure and unsecured, to the upper level to allow for confidential access to investigations as well as LEC related training events.

LEAN GOAL #1, 3, & 4. Investigations is connected to the public entrance as well as a secure connection to the staff entrance to allow for public contacts that are of a more sensitive nature as well as access to more secure portions of the building when appropriate.

LEAN GOAL #1, 3, 7 & 8. Investigations is connected to the public entrance as well as a secure connection to the primary lower-level circulation to allow for public contacts that are of a more sensitive nature as well as access to more secure portions of the building when appropriate.

PLAN LEGEND:	
1	RECEPTION - RECORDS
2	OFFICE OF THE CHIEF
3	PATROL
4	INVESTIGATIONS
5	MISC. DEPARTMENTS
6	SPECIAL OPERATIONS
7	MUNICIPAL COURTS
8	BOOKING HOLDING
9	EVIDENCE AND PROPERTY
10	STAFF SUPPORT
11	GARAGE
12	UNASSIGNED - FUTURE GROWTH
—○— ACCESS CONTROL - FENCING	







9 ESTIMATES OF PROBABLE COSTS

Estimates of Probable Costs have been prepared for the option presented in Chapter 8 of the report. These costs have been prepared with input from several sources:

- Primary input comes from CDI, Inc., EAPC's sister company that specializes in Construction Management and represents knowledge of construction costs specific to the Minot region.
- Professional experience from the construction of similar facilities in recent years.
- Consultation with local contractors.
- Nationally published construction cost data.
- Reported costs from similar projects in our region.

Estimates are also provided for a hypothetical new facility. This estimate includes the cost of a hypothetical site acquisition.

The estimated costs for each option are broken into two categories, Construction Costs and Other Costs. Construction costs include those costs typically referred to as 'hard costs' and include expected costs for construction related activities. In the case of the New Construction Option, the cost of site acquisition is included in this category. Other Costs include typical 'soft costs' such as furniture, fixtures, and equipment, technology, contingencies, and fees.

The costs presented assume a construction start date of spring 2025. Any delay beyond that date should include additional funds to cover added inflation.

The costs are presented in a Low and High range to reflect the early phase of this work. It should be assumed that the project can be constructed within these ranges assuming future development remains consistent with the direction established in this study.

RENOVATIONS AND ADDITIONS ESTIMATE OF PROBABLE COSTS

MINOT POLICE DEPARTMENT
MINOT NORTH DAKOTA
PROJECT NO.: 20226560
8/3/2023

CONSTRUCTION (HARD) COSTS

COST CATEGORY			LOW	HIGH	REMARKS
I SITE ACQUISITION					
	Preferred Site		NA	\$0	Site Acquisition costs to be determined
	Other Sites		NA	\$0	Site Acquisition costs to be determined
		Sub-Total	\$0	\$0	
II SITE DEVELOPMENT					
	Site Improvements		Included w bldg. \$	Included w bldg. \$	Required above basic site costs
	Utility Extensions		Included w bldg. \$	Included w bldg. \$	Required above basic site costs
	Unsuitable Soils/Rock Removal		\$0	\$0	Required above basic site costs
	Addn'l Storm Water Management		\$0	\$0	Required above basic site costs
		Sub-Total	\$0	\$0	
III BLDG. CONSTRUCTION					
		SQFT	COST		
	High	74,750	\$519.83		Increases for inflationary forces beyond expectation
	Low	74,750	\$464.13	\$34,693,940	Includes basic site
			\$0	\$0	
		Sub-Total	\$34,693,940	\$38,857,213	
IV OTHER CONSTRUCTION					
	50 Year Building Construction			INCLUDED	
	LEED Silver Design Standard			INCLUDED	
		Sub-Total			
CONSTRUCTION COSTS SUB TOTAL			\$34,693,940	\$38,857,213	

OTHER (SOFT) COSTS

COST CATEGORY			LOW	HIGH	REMARKS
V	FURNITURE, FIXTURES, EQUIP.				
	F F & E		1,734,697	1,942,861	5% Construction Cost
		Sub-Totals	1,734,697	1,942,861	
VI	COMMUCATIONS AND TECHNOLOGY				
	Technology (headend for phone, security, etc.)		1,040,818	1,165,716	3% Construction Cost
	Dispatch Equipment		No work	Not included	
	Radio & Antennas		No work	Not included	
		Sub-Totals	1,040,818	1,165,716	
VII	CONTINGENCIES AND INFLATION				
	Construction Contingency (5%)		1,734,697	1,942,861	Owners Construction Contingency
	Inflation to Mid-Point of Construction (10.31)		3,859,354	4,322,476	Assumes spring 2025 Construction Start
		Sub-Totals	5,594,051	6,265,337	
VIII	PROFESSIONAL FEES AND LEGAL				
	Architectural & Engineering		2,618,719	3,384,191	
	3rd Party Commissioning		346,939	388,572	
	Surveys and Geotechnical Studies		15,000	15,000	
	Additional Permitting				
	Cost of Borrowing				
		Sub-Totals	2,980,659	3,787,763	
OTHER COSTS SUB TOTAL			\$11,350,225	\$13,161,677	32.72% Soft Cost

PROJECT TOTALS

LOW HIGH
\$46,044,165 \$52,018,890

NEW CONSTRUCTION ESTIMATE OF PROBABLE COSTS

MINOT POLICE DEPARTMENT
MINOT, NORTH DAKOTA
PROJECT NO.: 20226560
8/3/2023

CONSTRUCTION (HARD) COSTS

COST CATEGORY			LOW	HIGH	REMARKS
I SITE ACQUISITION					
Preferred Site			\$300,000	\$400,000	6-8 acres required
Other Sites			\$0	\$0	Site Acquisition costs to be determined
Sub-Total			\$300,000	\$400,000	
II SITE DEVELOPMENT					
Site Improvements			\$0	\$0	Required above basic site costs
Utility Extensions			\$0	\$0	Required above basic site costs
Unsuitable Soils/Rock Removal			\$0	\$0	Required above basic site costs
Addn'l Storm Water Management			\$0	\$0	Required above basic site costs
Sub-Total			\$0	\$0	
III BLDG. CONSTRUCTION					
	SQFT	COST			
High	75,209	\$698.00		\$52,496,187	Police Department & Muni-Court with 25-Year Growth
Low	75,209	\$621.00	\$46,705,061		Police Department & Muni-Court with 25-Year Growth
			\$0	\$0	
Sub-Total			\$46,705,061	\$52,496,187	
IV OTHER CONSTRUCTION					
50 Year Building Construction			Included	Included	
LEED Silver Design Standard			Included	Included	
Sub-Total					
CONSTRUCTION COSTS SUB TOTAL			\$47,005,061	\$52,896,187	

OTHER (SOFT) COSTS

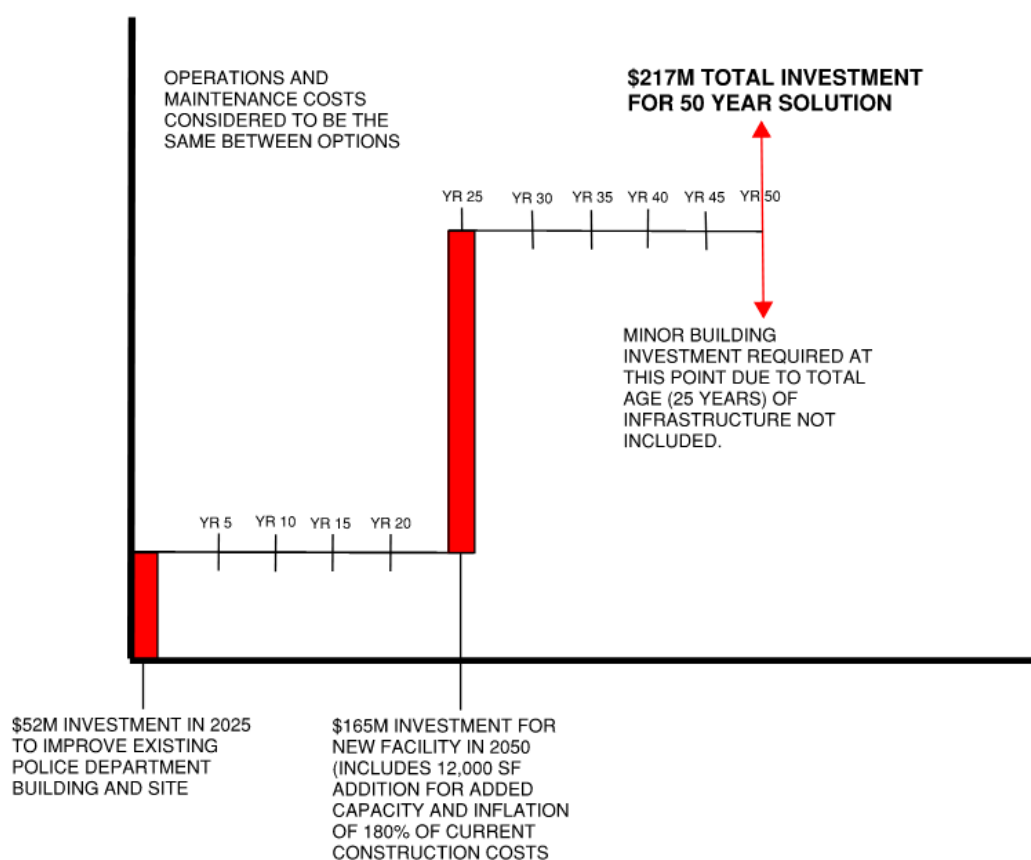
COST CATEGORY			LOW	HIGH	REMARKS
V FURNITURE, FIXTURES, EQUIP.					
F F & E			2,350,253	2,644,809	5% Construction Cost
Sub-Totals			2,350,253	2,644,809	
VI COMMUNICATIONS AND TECHNOLOGY					
Technology (headend for phone, security, etc.)			1,410,152	1,586,886	3% Construction Cost
Dispatch Equipment			No work	Not included	
Radio & Antennas			No work	Not included	
Sub-Totals			1,410,152	1,586,886	
VII CONTINGENCIES AND INFLATION					
Construction Contingency (5%)			2,350,253	2,644,809	Owners Construction Contingency
Inflation to Mid-Point of Construction			5,228,843	5,884,172	Assumes spring 2025 Construction Start
Sub-Totals			7,579,096	8,528,981	
VIII PROFESSIONAL FEES AND LEGAL					
Architectural & Engineering			3,547,970	4,606,888	
3rd Party Commissioning			470,051	528,962	
Surveys and Geotechnical Studies			30,000	30,000	
Additional Permitting					
Cost of Borrowing					
Sub-Totals			4,048,021	5,165,850	
OTHER COSTS SUB TOTAL			\$15,387,522	\$17,926,526	32.74% Soft Cost

PROJECT TOTALS
LOW HIGH
\$62,392,582 \$70,822,713

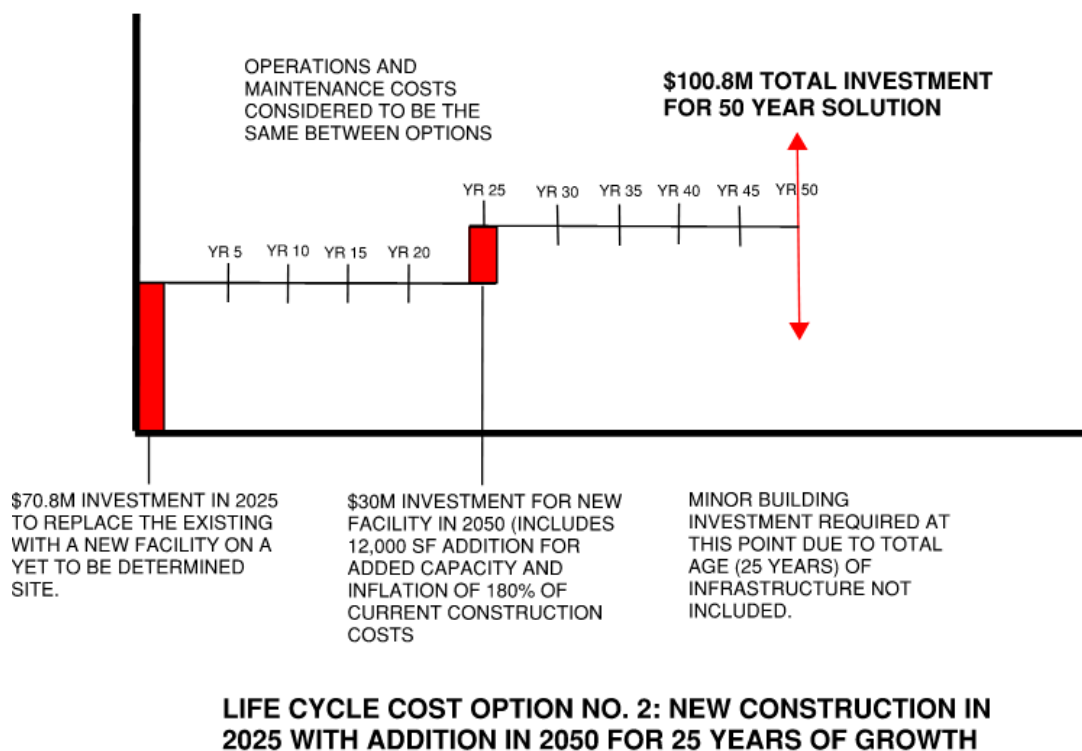


The following data presents the two costs as a Life-Cycle Cost. Option no. 1 assumes a 25-year renovation and addition solution followed by construction of a new facility in 25 years. The new facility constructed in 25 years is inflated in size to reflect growth of the city, and thus the department. Costs are also inflated to reflect construction cost inflation similar to the past 25 years.

Option no. 2 assumes a new facility is constructed in 2025 based on the same 25-year department growth scenario as Option no. 1. This option includes expansion in 25 years to make it viable for the next 25 years.



LIFE CYCLE COST OPTION NO. 1: RENOVATIONS AND ADDITIONS IN YEAR 1 WITH NEW BUILDING IN YEAR 25



Operations and maintenance costs are assumed to be the same for both options.



MINOT POLICE DEPARTMENT & LIBRARY STUDIES: COUNCIL UPDATE



November 14, 2024

City of Minot

EAPC Team



Alan Dostert, AIA
EAPC President

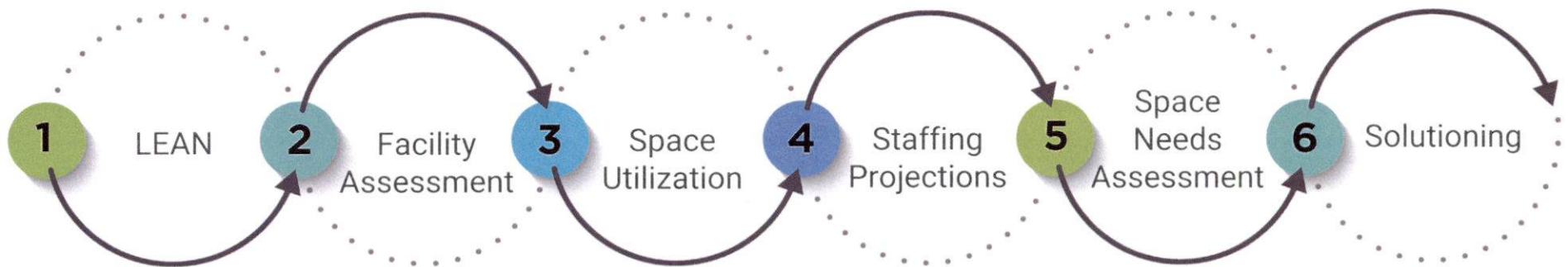


Gloria Larsgaard, AIA
PM & Office Manager



project **PROCESS**

steps to create a solution that is cost effective



Task no. 1:

LEAN

consensus building toward a shared vision of success

The Team

John Klug	Chief of Police
Lisa Olson	Council Member
Harold Stewart	City Manager
David Lakefield	Finance Director
Lance Meyer	City Engineer
Laurie Nishek	Municipal Court Clerk
Justin Sundheim	Minot Police Department
Jason Sundbakken	Minot Police Department
Dale Plessas	Minot Police Department
Trisha Guthrie	Minot Police Department
Jared Foley	Minot Police Department
Darren Dyke	Minot Police Department
Kevin Sickler	Property Maintenance Supervisor
Jake Eichstadt	Property Maintenance
Grant Heizelman	Property Maintenance

Representing

POLICE DEPARTMENT
ADMINISTRATION AND STAFF

MUNICIPAL COURT

CITY COUNCIL

CITY ADMINISTRATION

FINANCE DEPARTMENT

CITY ENGINEERING

FACILITY MAINTENANCE



Task no. 1:

LEAN

MUST HAVE	
Item	Message
1. Safety, accessibility, security, code violations	It's our job to protect our people – employees & citizens; We have liability concerns that must be addressed
2. Efficiency, functionality, workflow	Improving the facility allows for better effectiveness and efficiency of processes resulting in cost savings due to reduced time/labor expense and improved funding utilization
3. Privacy for personnel and citizens	It's our job to protect our people – employees & citizens; We have liability concerns that must be addressed
4. Value, cost, <u>quality</u> and durability	To be good stewards of public funds, we need to ensure this investment considers the long-term needs of the community
SHOULD HAVE	
Item	Message
5. Welcoming environment	This should be an inviting space for the community and staff; enough privacy to honor the needs of both groups while promoting an easy flow through the spaces
6. Encourage wellness	This space should contribute to an atmosphere of calm, <u>order</u> and pride of place for employees and citizens encouraging wellness and even healing in certain circumstances.
7. Promotes professionalism	A contemporary space would consider the technical and technological needs of the current work and should be a source of civic pride, showing how this work is valued by the community
8. Room to expand and adapt	Our due diligence in designing a space that can serve us for the next 20 years requires us to build with growth projects in mind; a short-term solution allowing for the longer-term plan.

Task no. 2:

FACILITY ASSESSEMENT

— good bones, but even a 'do nothing' solution will cost money

- The building structure and exterior envelope are in good condition.
- Interior finishes are aging and dated
- Many mechanical systems are reaching the end of expected life.
- Electrical systems are of inconsistent age and compatibility.

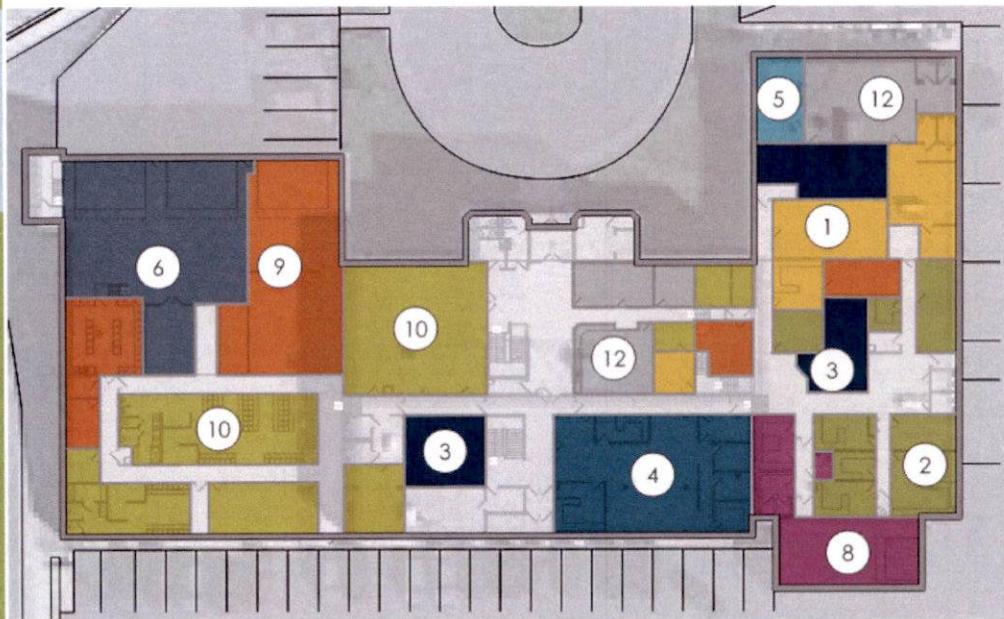
Task no. 3:

SPACE USAGE ANALYSIS

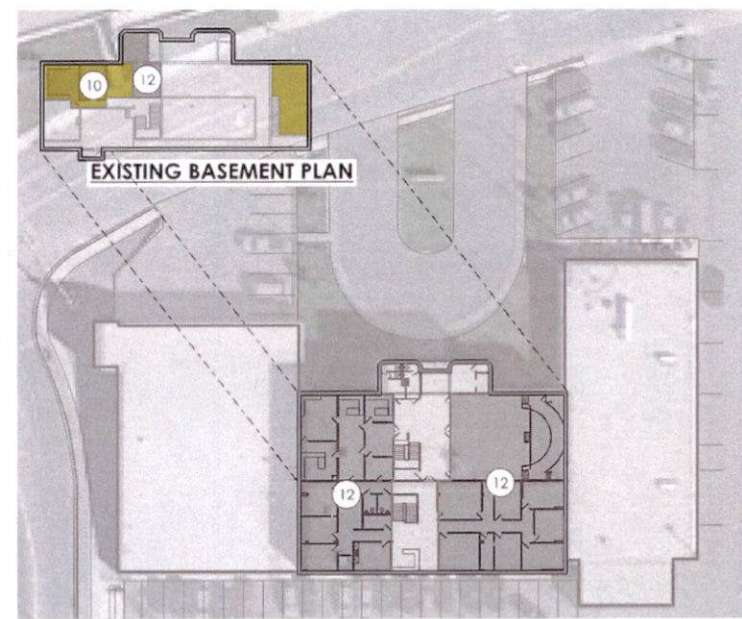
a mix of well organized and disjointed work elements

PLAN LEGEND:

- 1 RECEPTION - RECORDS
- 2 OFFICE OF THE CHIEF
- 3 PATROL
- 4 INVESTIGATIONS
- 5 MISC. DEPARTMENTS
- 6 SPECIAL OPERATIONS
- 7 MUNICIPAL COURTS
- 8 BOOKING HOLDING
- 9 EVIDENCE AND PROPERTY
- 10 STAFF SUPPORT
- 11 GARAGE
- 12 VACANT - AVAILABLE SPACE
- ACCESS CONTROL - FENCING



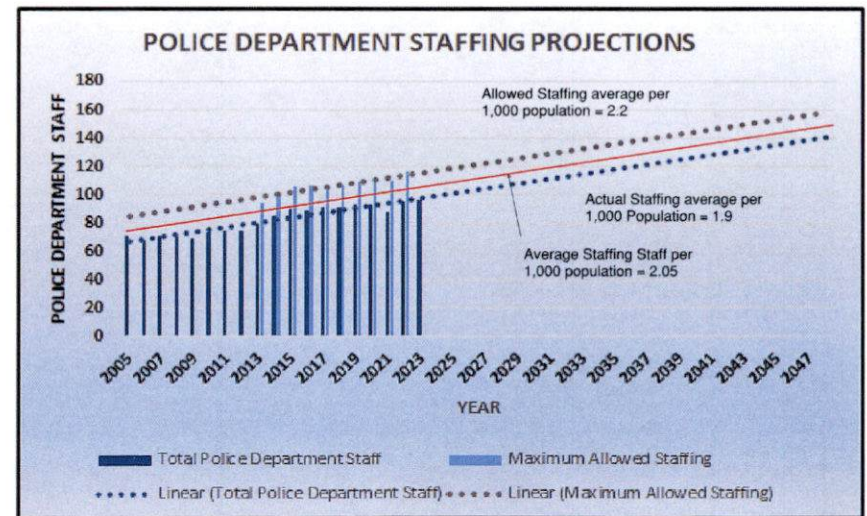
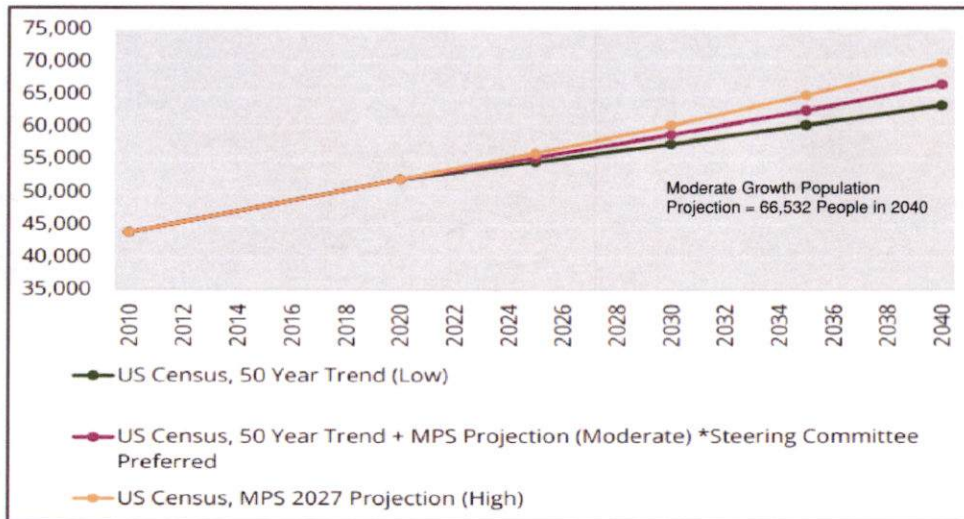
FIRST FLOOR PLAN



SECOND FLOOR & BASEMENT PLAN

Task no. 4: GROWTH PROJECTIONS

connecting community growth to departmental growth



$$73,822 \text{ PEOPLE} \times 2.05 \text{ OFFICERS/1000 POPULATION} = 151 \text{ TOTAL STAFF}$$

Task no. 5: SPACE NEEDS ANALYSIS

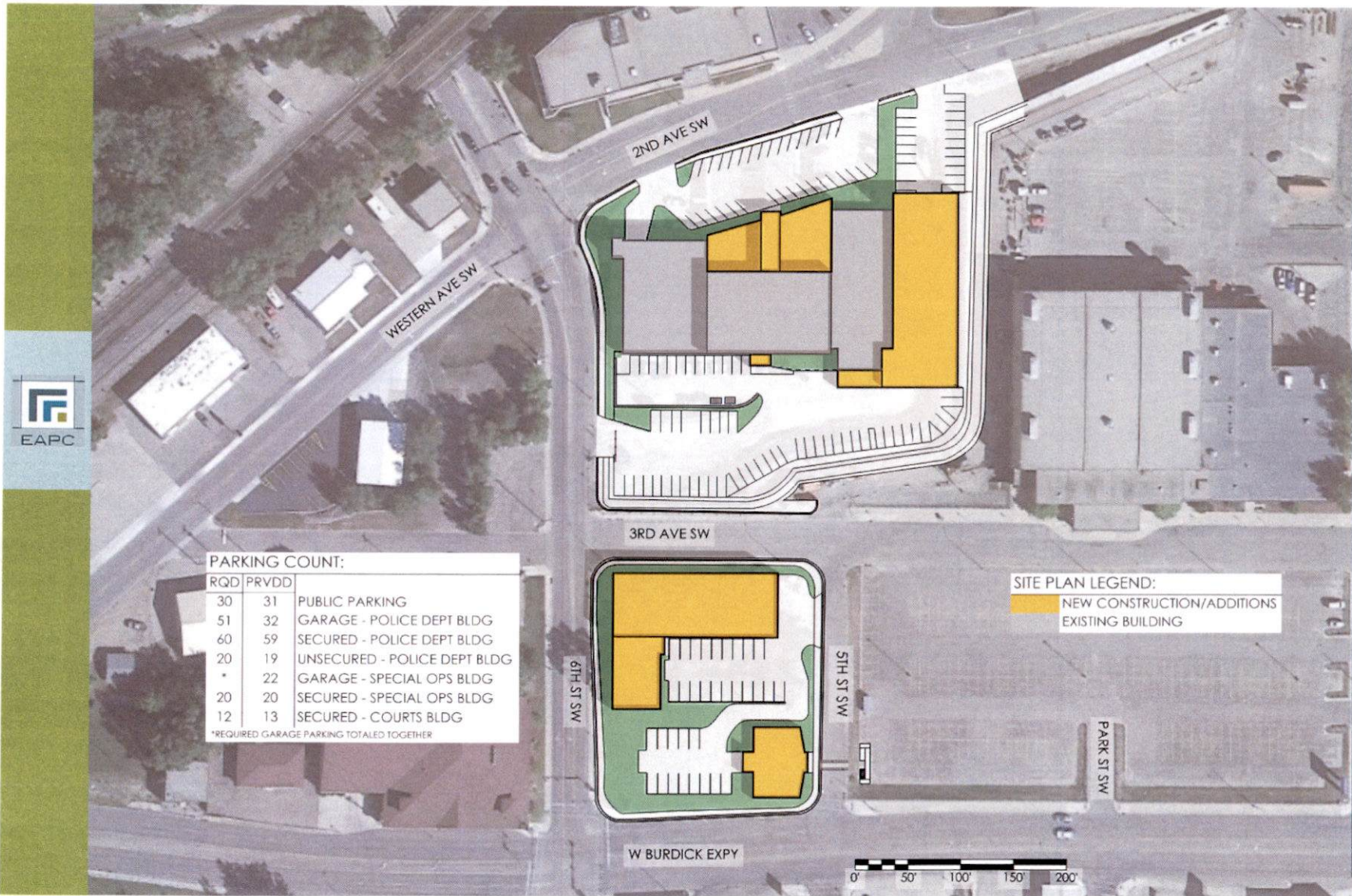
the need by the numbers



AREA TOTALS			
OPERATIONAL ELEMENT	EXISTING	Proposed SF	REMARKS
1 RECEPTION - RECORDS	1,600	3,372	
2 OFFICE OF THE CHIEF	1,525	2,597	
3 PATROL/OPERATIONS	2,026	4,865	
4 INVESTIGATIONS	1,430	4,190	
5 MISCELLANEOUS DEPARTMENTS	2,400	1,714	Community Outreach, Animal Control, Fleet Man., Parking, Back up dispatch
6 SPECIAL OPERATIONS	0	5,922	SWAT, Bomb Squad, CRSU, Riot Cont, etc.
7 MUNICIPAL COURT	1,432	3,000	
8 BOOKING AND HOLDING	1,155	1,688	

9 EVIDENCE AND PROPERTY	2,854	6,088	
10 STAFF SUPPORT	4,787	9,372	
11 GARAGE	0	13,520	See also Special Ops for added req's.
12 VACANT OR VACATED SPACE	9,670	0	

27,447	53,327	SUB TOTAL
66% 13,703	13,332	Efficiency Ratio of 25% (MEP/Circulation)
TOTALS		
41,150	70,409	LEC TOTAL (Ft ²)
	4,800	16 ADDITIONAL STAFF @300 SF EA.
EXISTING AREA		
TOTAL AREA REQ'D - 20 YRS		
GROWTH SPACE FOR ADDNL' 5 YRS		
TOTAL AREA REQ'D FOR 25 YRS	75,209	
MUNICIPAL COURT STAND-ALONE	3,900	
PD WITHOUT MUNICIPAL COURT	71,309	
NATIONAL STANDARD COMPARISON	73,353	
ADDITN'L SPACE REQ'D FOR 25 YRS	34,059	Size of Additions Required

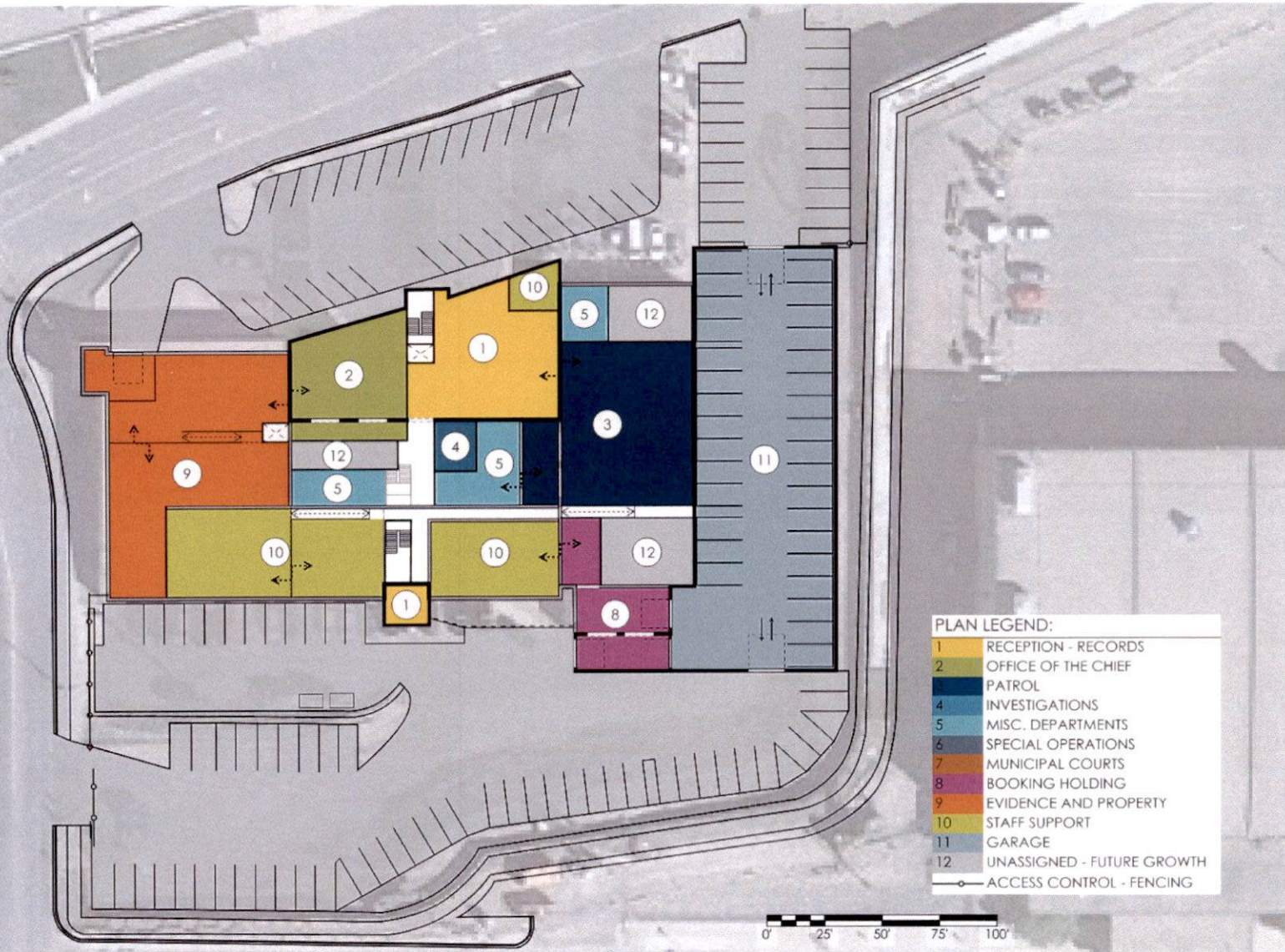


MINOT POLICE DEPARTMENT SPACE NEEDS & FEASIBILITY ASSESSMENT

Sheet | POLICE DEPT
Date | SITE PLAN
July 31, 2023
EAPC Project # 20226560

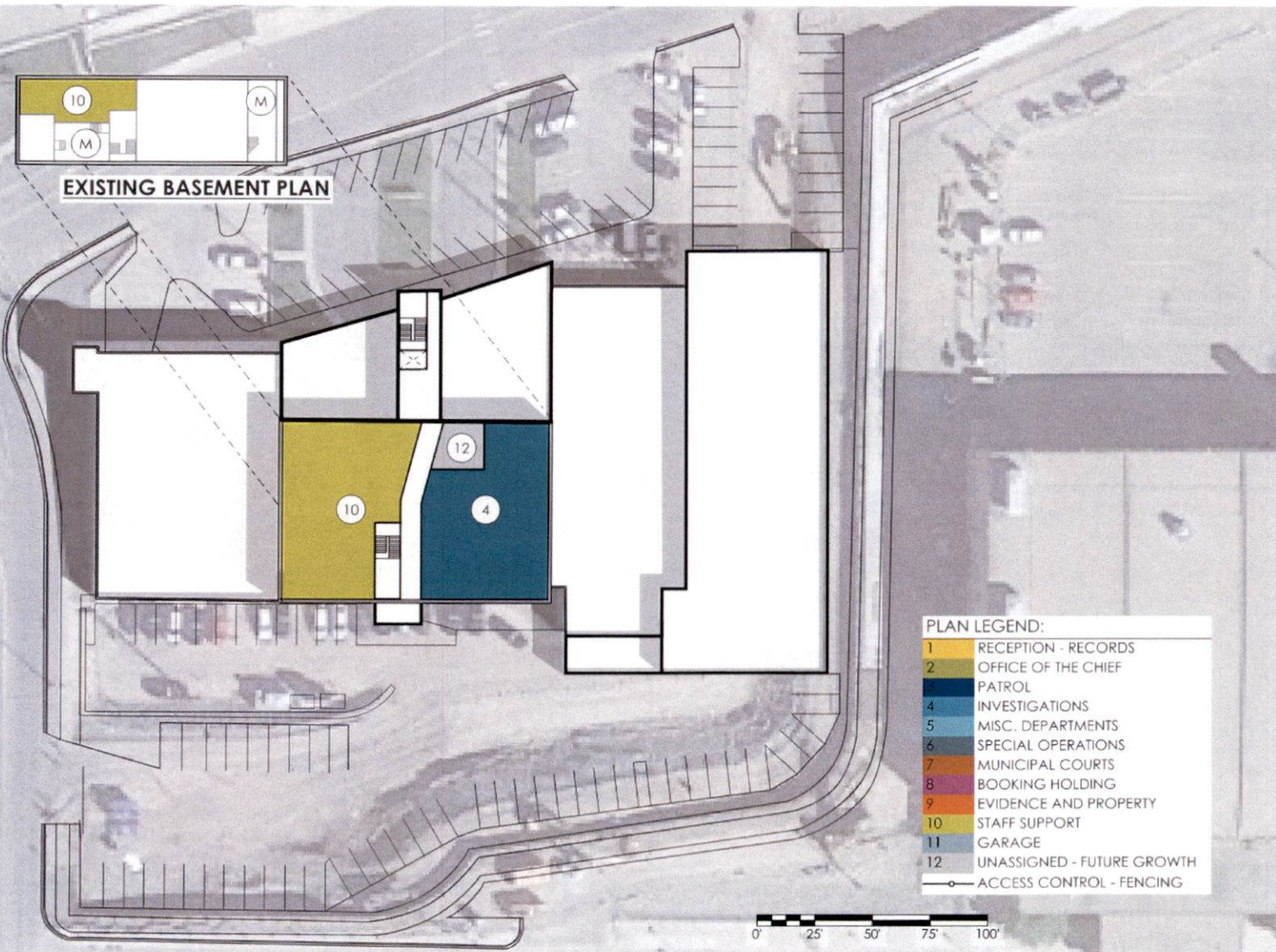
MINOT POLICE DEPARTMENT SPACE NEEDS & FEASIBILITY ASSESSMENT

Sheet | POLICE DEPT.
1ST FLR PLAN
Date | July 31, 2023
EAPC Project # | 20226560

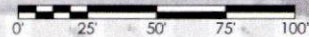




EXISTING BASEMENT PLAN



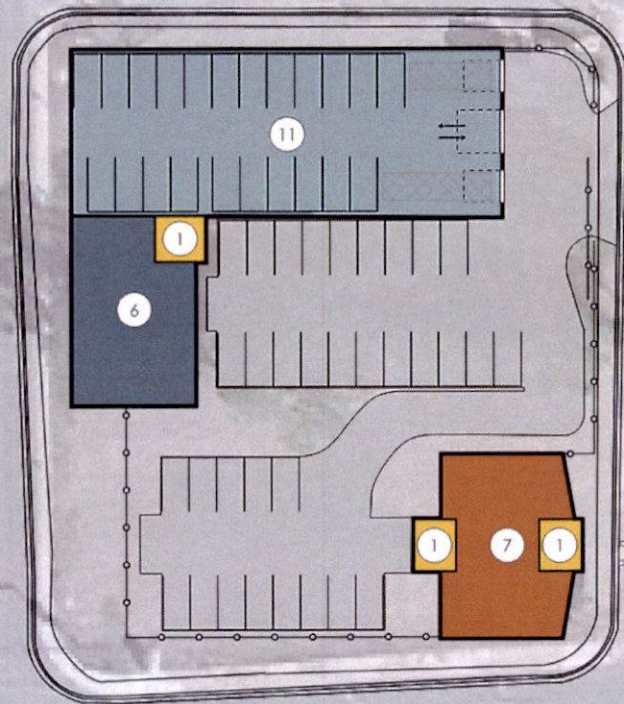
PLAN LEGEND:	
1	RECEPTION - RECORDS
2	OFFICE OF THE CHIEF
3	PATROL
4	INVESTIGATIONS
5	MISC. DEPARTMENTS
6	SPECIAL OPERATIONS
7	MUNICIPAL COURTS
8	BOOKING HOLDING
9	EVIDENCE AND PROPERTY
10	STAFF SUPPORT
11	GARAGE
12	UNASSIGNED - FUTURE GROWTH
○	ACCESS CONTROL - FENCING



MINOT POLICE DEPARTMENT SPACE NEEDS & FEASIBILITY ASSESSMENT

POLICE DEPT.
 SHEET | 2ND FLR PLAN
 DATE | JULY 31, 2023
 EAPC PROJECT # | 20226560

MINOT POLICE DEPARTMENT SPACE NEEDS & FEASIBILITY ASSESSMENT



PLAN LEGEND:	
1	RECEPTION - RECORDS
2	OFFICE OF THE CHIEF
3	PATROL
4	INVESTIGATIONS
5	MISC. DEPARTMENTS
6	SPECIAL OPERATIONS
7	MUNICIPAL COURTS
8	BOOKING HOLDING
9	EVIDENCE AND PROPERTY
10	STAFF SUPPORT
11	GARAGE
12	UNASSIGNED - FUTURE GROWTH
—○—	ACCESS CONTROL - FENCING

Sheet | SPECIAL OPS
1ST FLR PLAN
Date | July 31, 2023
EAPC Project # | 20226560

RENOVATION: PROS AND CONS

PROS

- The new plan resolves space needs issues for 25 years.
- Continues to use a building that still has some years of use remaining.
- Improves efficiency throughout PD by renovating and improving most areas in the building.
- Security/Confidentiality will be improved for the public, staff, and detained persons.
- The construction of a new squad garage will provide tempered vehicle storage.
- Facility is centrally located but department's resources are mobile.

CONS

- The new plan will utilize all available space on this site challenging future expansion.
- There are still numerous level changes throughout the building.
- Special Operations will be located on an adjacent site.
- The Municipal Court is not adequately resolved.
- Special Operations building invests in new long-term building at this site.
- Renovations will cause disruptions to operations.
- Continues ongoing investment in location near tracks and flood plain.

COST ANALYSIS

Initial investment



RENOVATION AND ADDITIONS

(Presented Solution)

Construction Cost	\$34.7M - \$38.9M
Additional Costs	<u>\$11.3M - \$13.2M</u>
Total	\$46.0M - \$52.1M

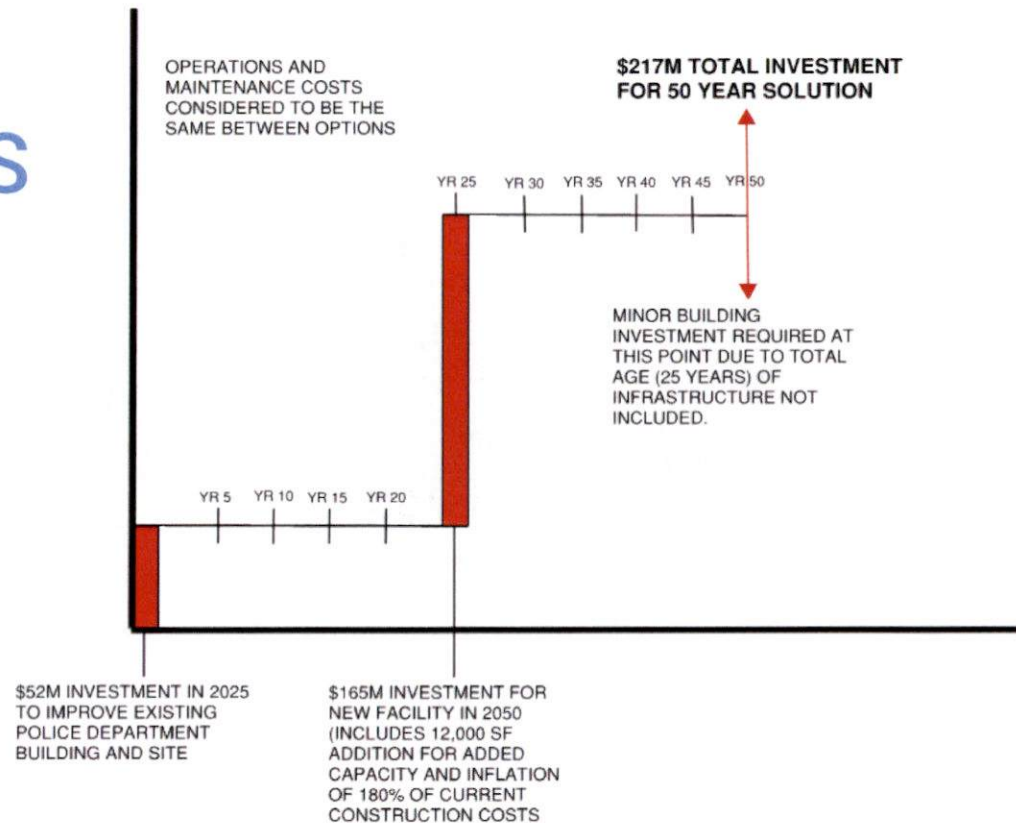
NEW CONSTRUCTION

Construction Cost	\$47.0M - \$52.9M
Additional Costs	<u>\$15.4M - \$17.8M</u>
Total	\$62.4M - \$70.7M

COST ANALYSIS

Investment over 50 years

Renovations and Additions
in YR-1 with New
Construction in 25 YRS =
\$217M Total Investment
For 50 YR Solution

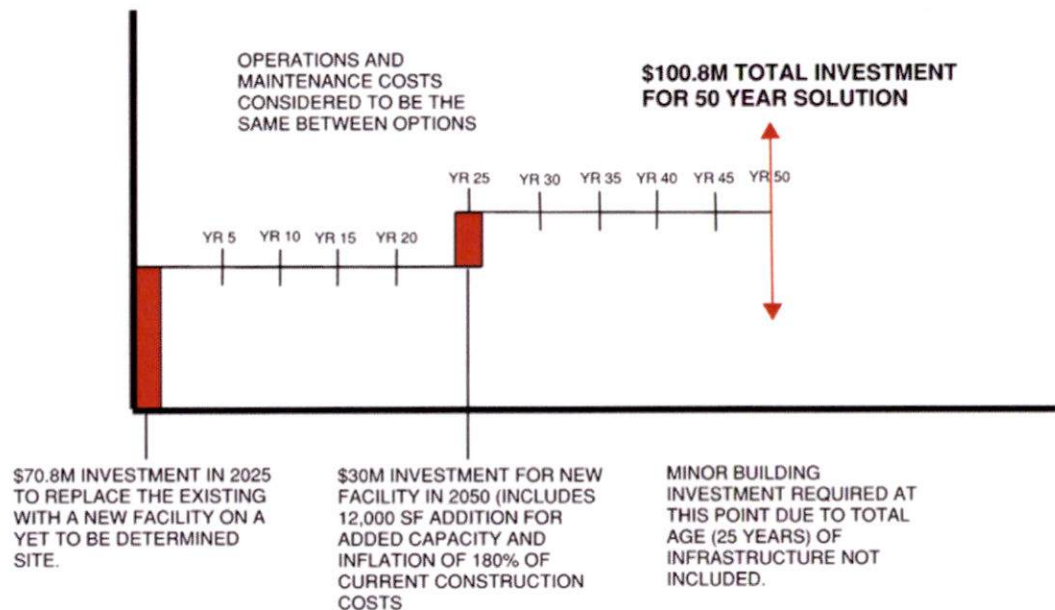


LIFE CYCLE COST OPTION NO. 1: RENOVATIONS AND ADDITIONS IN YEAR 1 WITH NEW BUILDING IN YEAR 25

COST ANALYSIS

Investment over 50 years

New Construction in YR-1
with Addition in 25 YRS =
\$100.8M Total Investment
For 50 YR Solution

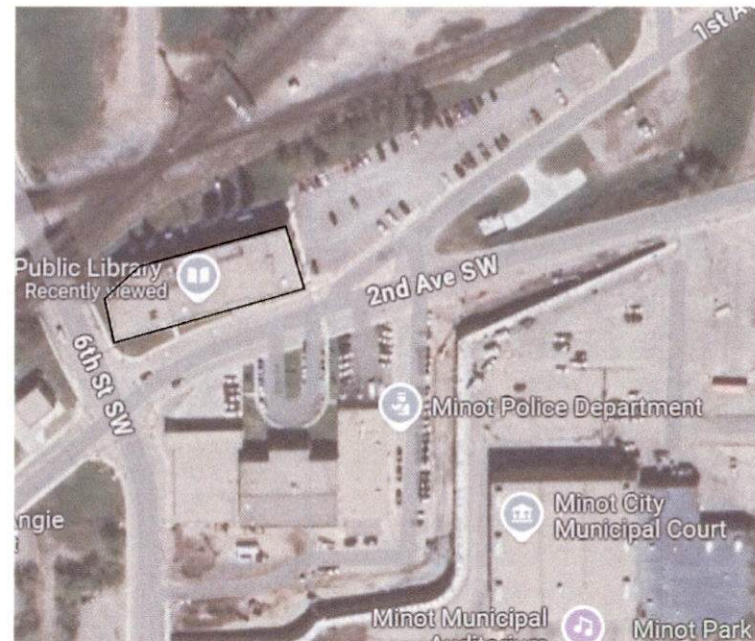


LIFE CYCLE COST OPTION NO. 2: NEW CONSTRUCTION IN 2025 WITH ADDITION IN 2050 FOR 25 YEARS OF GROWTH

LIBRARY

Scope of Services

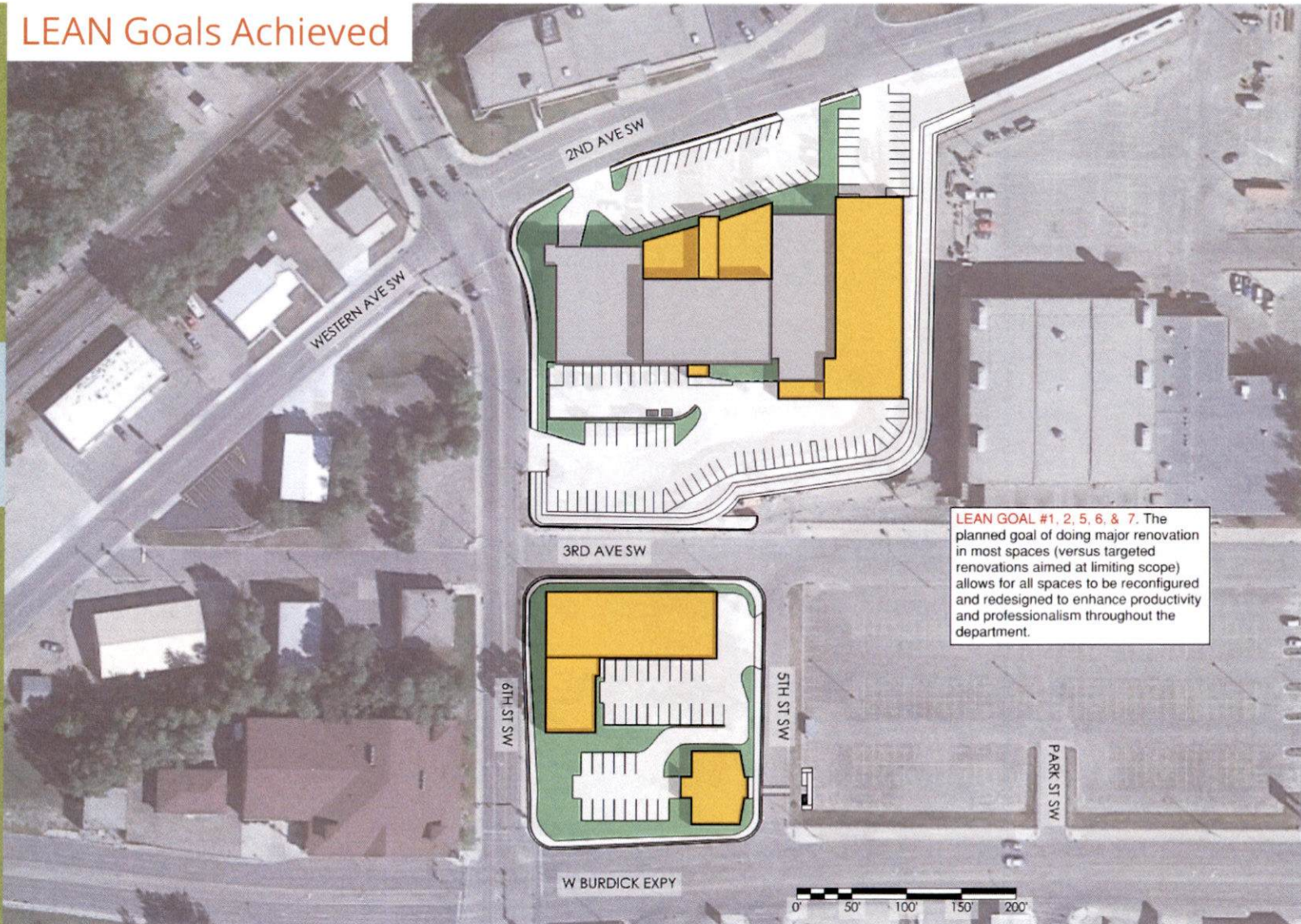
- 1 LEAN
- 2 FACILITY ASSESSMENT
- 3 SPACE USAGE/NEEDS ANALYSIS
- 4 PLANNING AND DESIGN/SOLUTIONING





ANY QUESTIONS?

LEAN Goals Achieved



LEAN GOAL #1, 2, 5, 6, & 7. The planned goal of doing major renovation in most spaces (versus targeted renovations aimed at limiting scope) allows for all spaces to be reconfigured and redesigned to enhance productivity and professionalism throughout the department.



MINOT POLICE DEPARTMENT SPACE NEEDS & FEASIBILITY ASSESSMENT

Sheet | POLICE DEPT.
SITE PLAN
Date | July 31, 2023
EAPC Project # | 20226560

LEAN Goals Achieved



LEAN GOAL #2. Establishing clear circulation paths and reducing the impact of security barriers and level changes improves efficiency, functionality, and work flow.

LEAN GOAL #1 & 3. A new public entrance will create a more accessible, secure, and confidential interaction with Minot Police Department.

LEAN GOAL #8. Strategically placed unassigned space allows space for unprogrammed needs in the short-term and necessary expansion space in the future.

LEAN GOAL #1 & 3. Reconstruction of holding cells, interview spaces and sally ports will reduce transportation of detained individuals through public and staff corridors enhancing security and confidentiality of public, staff and the detained.

LEAN GOAL #1 & 5. Creation of a primary staff entrance from a secured staff parking lot enhances security for the building while improving creating a more welcoming environment for employees.

LEAN GOAL #6. Placement of "WELLNESS" related spaces adjacent to primary circulation corridors and near the main building entrance encourages positive work-life balance in a potentially stressful work environment.

0' 25' 50' 75' 100'



MINOT POLICE DEPARTMENT SPACE NEEDS & FEASIBILITY ASSESSMENT

POLICE DEPT.
LEAN GOALS
Sheet |
Date | July 31, 2023
EAPC Project # | 20226560

LEAN Goals Achieved



EXISTING BASEMENT PLAN

LEAN GOAL #1, 2, 3, & 5. The new lower level entrance provides for access, both secure and unsecured, to the upper level to allow for confidential access to investigations as well as LEC related training events.

LEAN GOAL #1, 3, & 4. Investigations is connected to the public entrance as well as a secure connection to the staff entrance to allow for public contacts that are of a more sensitive nature as well as access to more secure portions of the building when appropriate.

LEAN GOAL #1, 3, 7 & 8. Investigations is connected to the public entrance as well as a secure connection to the primary lower-level circulation to allow for public contacts that are of a more sensitive nature as well as access to more secure portions of the building when appropriate.

0' 25' 50' 75' 100'



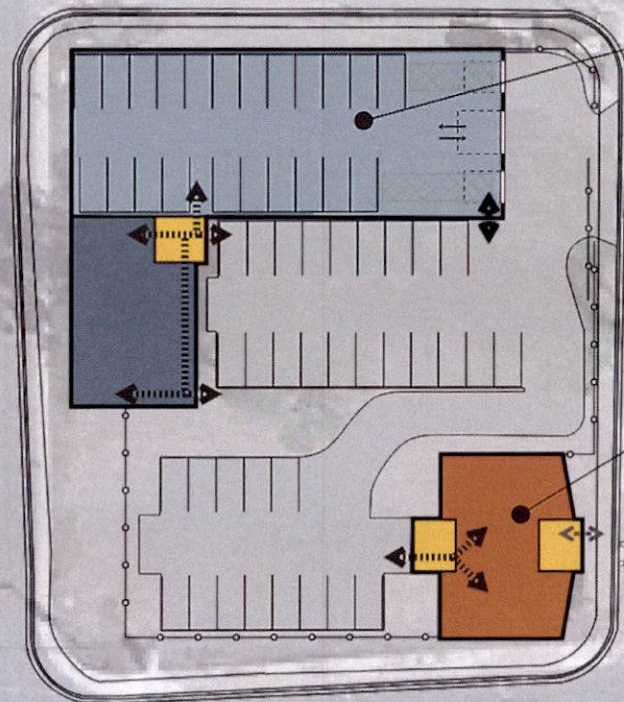
MINOT POLICE DEPARTMENT SPACE NEEDS & FEASIBILITY ASSESSMENT

Sheet | POLICE DEPT.
Date | LEAN GOALS
July 31, 2023
EAPC Project # | 20220560

LEAN Goals Achieved

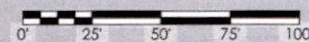


MINOT POLICE DEPARTMENT SPACE NEEDS & FEASIBILITY ASSESSMENT



LEAN GOAL #1 & 8. While less than ideal, the creation of a Special Operations garage and training space moves a logical component of the Law Enforcement operation to an adjoining site freeing up space to create a squad garage adjacent to the primary LEC facility.

LEAN GOAL #1 - 8. The construction of a new Municipal Court facility will resolve many accessibility, security, confidentiality concerns as well as create a more professional and welcoming environment.



Sheet | SPECIAL OPS
 Date | LEAN GOALS
 EAPC Project # | 20226560

Technical Memorandum

To: Souris River Joint Board
From: Jason Westbrook
Subject: MI-4 South Side/Library
Date: September 23, 2024
Project: 34511010.23 MREFPP Update

1 Summary

The Mouse River Enhanced Flood Protection Plan (MREFPP) presented in the Preliminary Engineering Report (PER) (reference [1]) included a road closure at 6th Street SW and a right bank levee alignment that is not included in the current design for Phase MI-4. The absence of a closure and levee alignment places properties in the vicinity of 6th Street SW and 2nd Ave SW in the floodplain including the Minot Police Station, Minot Public Library, and the 6th Street Pump Station. Barr Engineering Co. reviewed alternatives for providing flood risk management (FRM) for this area.

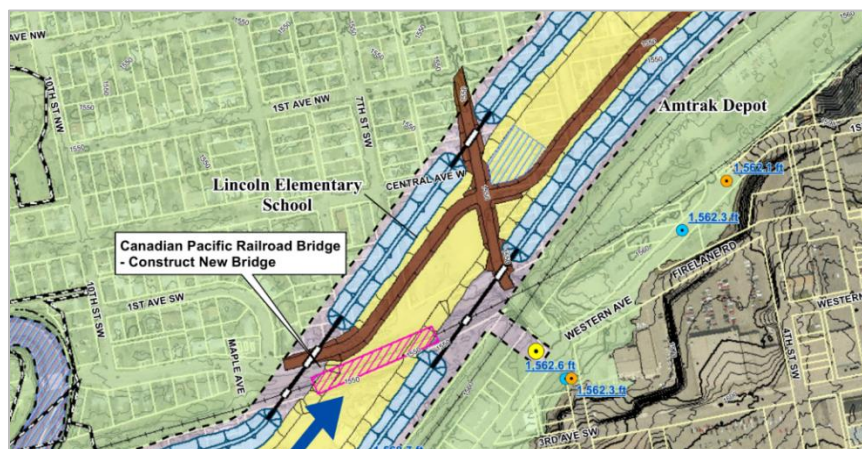
The Barr team recommends Alternative 3, which will provide FRM for critical infrastructure, including Minot Police Station and the 6th Street Pump Station.

2 Purpose

This memorandum documents the evaluation of FRM alternatives to protect critical infrastructure at risk of flooding in the 6th Street SW and 2nd Ave SW intersection area. The critical infrastructure at risk includes the Minot Police Station, Minot Public Library, and the 6th Street pump station.

3 Background

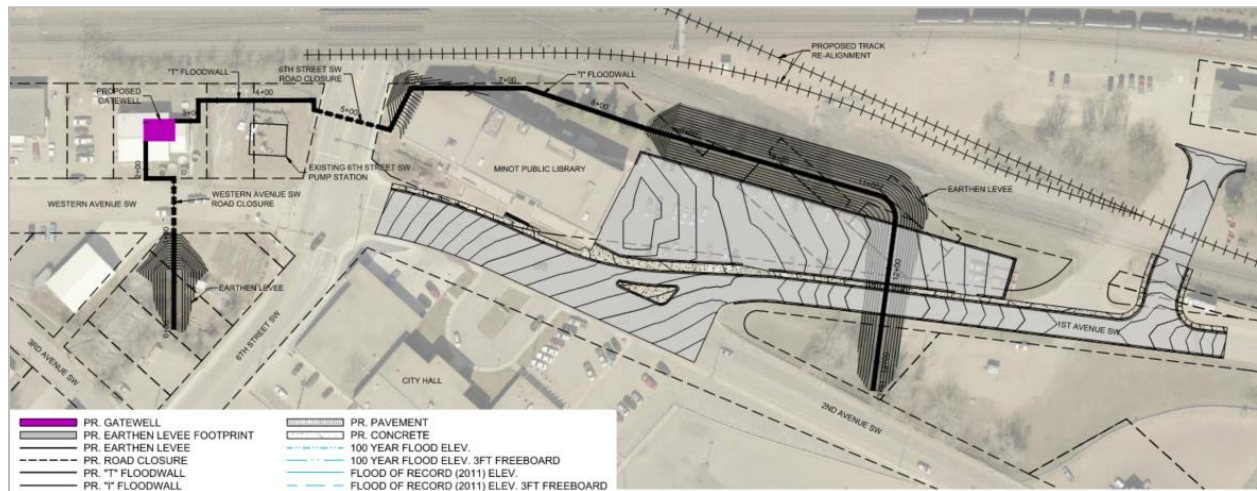
The PER identified a plan that included a road closure at 6th Street SW and levee alignment on the south side of the Maple Division (Figure 1). The closure and levee system was removed from the plan as part of the Phase MI-4 design and left properties at risk of flooding.



Source: reference [1]

Figure 1 South Side/Library and Maple Division

A preliminary evaluation of flood risk reduction options to protect critical infrastructure including the Minot Police Department, Minot Public Library, and the 6th Street Pump Station was conducted by Ackerman-Estvold in 2019. This resulted in the memorandum titled South Side Flood Risk Reduction – Levee and Floodwall Alternatives (Attachment A) detailing the comparative analysis of alternatives. The memorandum evaluated two alignments west of 6th Street SW and three alignments east of 6th Street SW. The technical memorandum recommended the following alternative, shown in Figure 2, to advance to design and funding.



Source: Attachment A

Figure 2 Previous Memorandum Recommended Alternative

4 Analysis

4.1 Previous Memorandum Review Summary

As part of this exercise, Barr reviewed the South Side Flood Risk Reduction – Levee and Floodwall Alternatives memo based on changes since the initial memo development. The memo recommended alternative (Figure 2) utilizes a levee, floodwalls, gate well structure, two closures, and rail track re-alignment to provide FRM to the flood of record (27,400 cfs) plus 3 feet of freeboard. Before this alternative could be advanced for design and funding; (1) coordination was required with the railroads (CP Railway and BNSF), (2) further analysis was needed to address the proximity of the BNSF rail line to the proposed floodwall, (3) additional design review was needed for of the feasibility of constructing the required floodwalls/6th Street SW closure to a maximum height of 21.5 feet, and (4) completion of supporting geotechnical investigation to define soil stratigraphy and inform seepage mitigation requirements. Additional analysis is summarized as follows.

- The FRM features will need to accommodate the existing rail lines with very limited disruption to operations. Based on previous experience and input from the two railroads, realigning the tracks is no longer an option for this phase of the project.
- As a result of the limited space between the floodwall-library and floodwall-rail lines, an I-wall was originally proposed. Further evaluation of the use of an I-wall in this location was conducted. Since the failure of I-walls in New Orleans resulting from the storm surge of Hurricane Katrina, the US Army Corps of Engineers has released design guidance in the form of an Engineer Technical

Letter (Evaluation of I-Walls) (reference [2]) which was incorporated into the Engineer Manual No. 1110-2-2502, Floodwalls and Other Hydraulic Retaining Walls (reference [3]). These guidance documents illustrate that deformation of the I-wall will limit the height to less than 15 feet and, depending on the soil strength, potentially to less than 8 feet. The required height of the floodwall to protect the library ranges from 6 feet up to 20 feet. Consideration was given to changing the grades around the west and north side of the library and 6th St. SW and 2nd Ave SW intersection to reduce the height of the floodwall and closure structure across 6th St. SW. The grade change would be limited by the required clearance under the rail bridge and not change the applicability determination of the I-wall. Further evaluation was given to utilizing a T-wall section north of the library and south of BNSF rail line. From data previously obtained from soil borings nearby, the width of the foundation of the T-wall was determined to be greater than 30 feet and, therefore, would not be constructible between the library and rail line without moving the rail line or modifying the library building. A discrete cantilever pile wall, which is typically used to prevent lateral movement of soils, was evaluated and recommended for this application and discussed further in Section 4.2.3.

- Road closure structures in the PER were designed in height categories of 5 feet of head, 10 feet of head, and 15 feet of head above the sill (base) of the closure opening. The height of the 6th Street SW closure structure will be required to withstand 21.5 feet of head. This closure structure will be a bulkhead structure. Closure structures will be designed to a Hydrostatic Load to the top of the structure on the unprotected side and no Hydrostatic Load on the protected side. The opening is larger than 40-feet and will require intermediate supports consisting of removeable steel posts that will be secured to the sill (base) and be braced to an offset footing. A detail design will need to be completed to determine final spacing and size of the intermediate supports which will determine the required effort to install the supports and stoplogs.
- A preliminary geotechnical analysis was performed using existing data for design considerations of the Full Protection FRM alternative and is summarized in Section 4.2.6.

4.2 Alternative 1 – Full Protection FRM

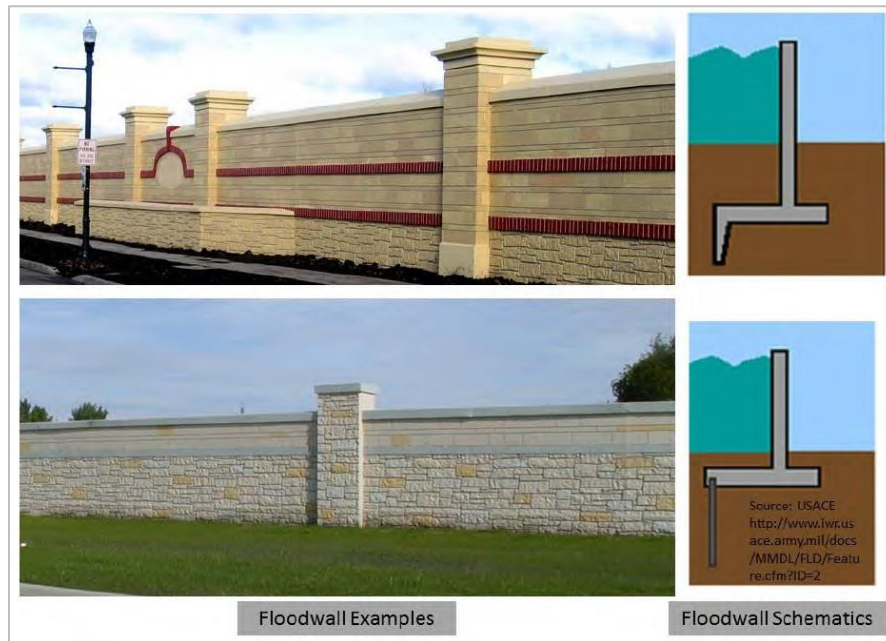
Flood protection for the MI-4 South Side/Library alignment incorporates levees, T-walls, discrete cantilever pile walls, two (2) road closures, and one gatewell. The Full Protection FRM alternative is presented in Figure 3.

4.2.1 Levee Section

An earthen levee section will tie into high ground on both ends of the flood protection feature. The downstream levee will cross the east end of the library parking lot, cross 1st Avenue SW, and tie into high ground, avoiding the sanitary sewer pump station. 1st Avenue SW and 2nd Ave SW will be re-graded to allow for traffic to proceed over the levee section negating the need for a road closure on 1st Ave SW. The library parking lot will be re-graded to drain storm water east towards the stormwater collection system leading into the pump station. The library parking can be reconfigured to maintain or increase the number of parking spaces by reconfiguring the layout as shown in Figure 3.

4.2.2 T-wall Section

A standard reinforced-concrete cantilever T-wall will be utilized upstream of the 6th Street road closure and east of the library building. Seepage control will be placed under the bottom of the wall foundation in the form of a seepage collection trench on the east end of the project and a sheet pile cutoff wall upstream of the 6th St. SW closure. A typical T-wall section is shown in Figure 4.



Source: reference [1]

Figure 4 T-Wall Section

4.2.3 Discrete Cantilever Pile Wall Section

A discrete cantilever pile wall, which is typically used to prevent lateral movement of soils, was evaluated for this application. They are constructed by drilling open shafts, placing steel beams in the holes, filling the holes to a certain elevation with concrete, and then placing lagging between the beams up to the ground elevation or in this case the high-water surface elevation plus 3 feet. The spacing between the beams is approximately 6' to 10' and the lagging walls would be faced with reinforced concrete for durability and water tightness. There are advantages to this type of construction when done near existing structures as the beams would not be driven into the ground but drilled thus minimizing vibration to adjacent structures. A typical discrete cantilever wall section is shown in Figure 5.

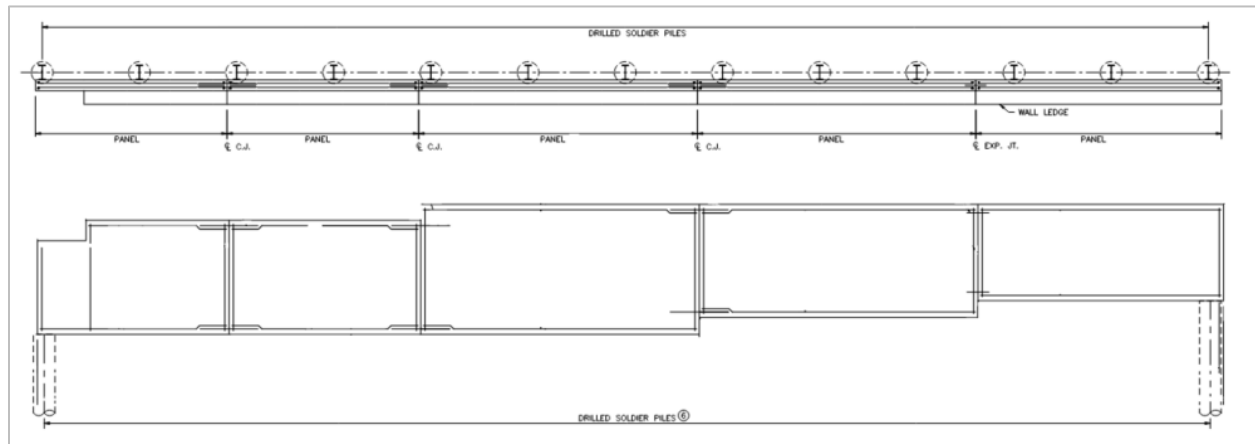


Figure 5 Discrete Cantilever Wall Section

4.2.4 Road Closures

The alignment utilizes two roadway closures. These closures will consist of bulkheads and will tie into floodwalls on both sides. The closure on the upstream end will cross Western Ave SW and be 15.5 feet in height, and the closure across 6th Ave SW will be 21.5 feet in height. A rolling gate closure structure will not work in this location due to the constraints of the topography and proximity to existing structures. The openings are larger than 40 feet and will require intermediate supports consisting of removable steel posts that will be secured to the sill (base) and braced to an offset footing.

4.2.5 Pump Station/Gatewell

The existing 6th Street Pump Station will be utilized for interior drainage. Storm sewer modifications will be required in the library parking lot, landward side of the 6th Street road closure, and on the riverward side of the Western Ave road closure. A gatewell structure is required for drainage of the Maple Diversion ponding area to the pump station during a gates open (non-flood) scenario and discharge of the force main when the Maple Diversion is activated (gates closed scenario). Further details of the gatewell and its operation can be found in the South Side Flood Risk Reduction – Levee and Floodwall Alternatives (Attachment A) memo.

4.2.6 Geotechnical Analysis Summary

The MI-4 South Side/Library is set near the edge of alluvium deposition in the Mouse River Valley. The alluvial deposits are fluvial channel and overbank sand, gravel, silt, and clay deposits. While no soil borings have been specifically completed for the MI-4 South Side/Library alignment, several borings have been completed in the area for the MI-4 project. The nearest borings are SB-07-18 (north), SB-24-19 (east), SB-118-24 (west), Boring #5 (south). Boring log information indicates a high variability of soil types between soil boring locations with respect to elevation. As well as some soil borings indicating significant sand and clay interbedding.

Based on the nominal elevation of the landside ground surface (approximately elevation 1550 to 1560 feet) relative to the anticipated flood event approximate elevation 1569.5 feet, seepage mitigation will be required. In the MI-4 South Side/Library area, the depth of the Maple Diversion channel is approximately elevation 1537 feet.

A seepage collection system is appropriate along the along the eastern levee alignment to the east of the library similar to other previously completed phases of the MREFPP. The depth of the collection trench is anticipated to be 15 to 20 feet to intersect high permeability material seams potentially connected to the Maple Diversion channel.

Alternatively, a seepage cutoff could be utilized under the levee to reduce seepage gradients. A seepage cutoff will be required below T-walls and discrete cantilever pile walls. A toe drain will also be required near the landside base of T-walls and discrete cantilever pile walls to collect upward seepage which passes through or around the cutoff. Based on a review of boring logs in the area, the cutoff is recommended to extend to an elevation of 1517 feet. A steel sheet pile cutoff is the anticipated seepage cutoff below the discrete cantilever wall. A steel sheet pile will facilitate a robust connection between the cutoff and the wall. Analysis of other cutoff types, which can be completed during the final design, may produce alternative solutions to reduce seepage gradients. The designers will need to determine proper overlap lengths between the different types of flood protection (levees and walls) and seepage mitigation options (collection systems and cutoffs), if different types of flood protection and seepage mitigation are utilized.

4.2.7 H&H Modeling Summary

The water surface elevation for riverine hydraulics is assumed to remain unchanged due to changes reflected in the alternatives. This includes no changes upstream, downstream, or within the study area boundaries.

The OPC of this alternative is estimated to be **\$42.1M** shown in Attachment B.

4.3 Alternative 2 – No Proposed FRM

An additional alternative was developed that would not provide flood risk mitigation south of the Maple Diversion (Figure 6).

The properties at risk of flooding would be bought out and relocated, including (1) private parcel buyouts - 620 Western Ave and 625 Western Ave and (2) public infrastructure relocations - Minot Public Library and Minot Police Station.

The existing 6th St. SW pump station would be modified to withstand the flood of record by making modifications that minimize damage and downtime following the flood event. The floodproofing of the pump station consists of relocating the emergency generator, utility transformer, pump variable frequency drives, and existing control panel to higher ground. The electrical equipment would be in a new precast building on a vacant parcel of land owned by the City of Minot and then connected back to the existing pump station through underground conduits. The remaining electrical components at the pump station would be modified to minimize the effects from the flood of record (27,400 cfs). Without the construction of the floodwalls and closures, the pump station is not required to manage interior drainage in the event of a flood event. The pump station operation will remain consistent with its current primary purpose of pumping water from the 6th St. SW underpass and the future Maple Diversion ponding area during non-flood rain/snowmelt events. Once the Maple Diversion is activated, the pump station would de-activated until water receded, and the Maple Diversion closures were opened.

Alternative 2 is estimated to be **\$63.8M** as shown in Attachment B.

Barr Footer: ArcGIS Pro 3.1.1, 2024-09-23 13:19 File: I:\Client\Mouse River\Work Orders\MREFPP Plan Update 2024\Mapa\Reports\Tech Memo\M4 South Side Library Tech Memo Figures\M4 Library Area Alternative 2 User: MRO



Proposed Concrete Pad

Proposed Underground Electric Utility

Proposed Building

Proposed Generator

Proposed Transformer

Parcel Boundary

Land Ownership

City of Minot

Land Acquisition

Full

Current Floodplains

X (500 yr)

N

0

50

100

Feet

Imagery Source: NearMap (June 2023)

MI-4 Library Area

Alternative 2

MREFPP

Minot, ND

FIGURE 6

BARR

ACKERMAN

ESTVOLD

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4.4 Alternative 3 – Minot Police Station and Pump Station FRM

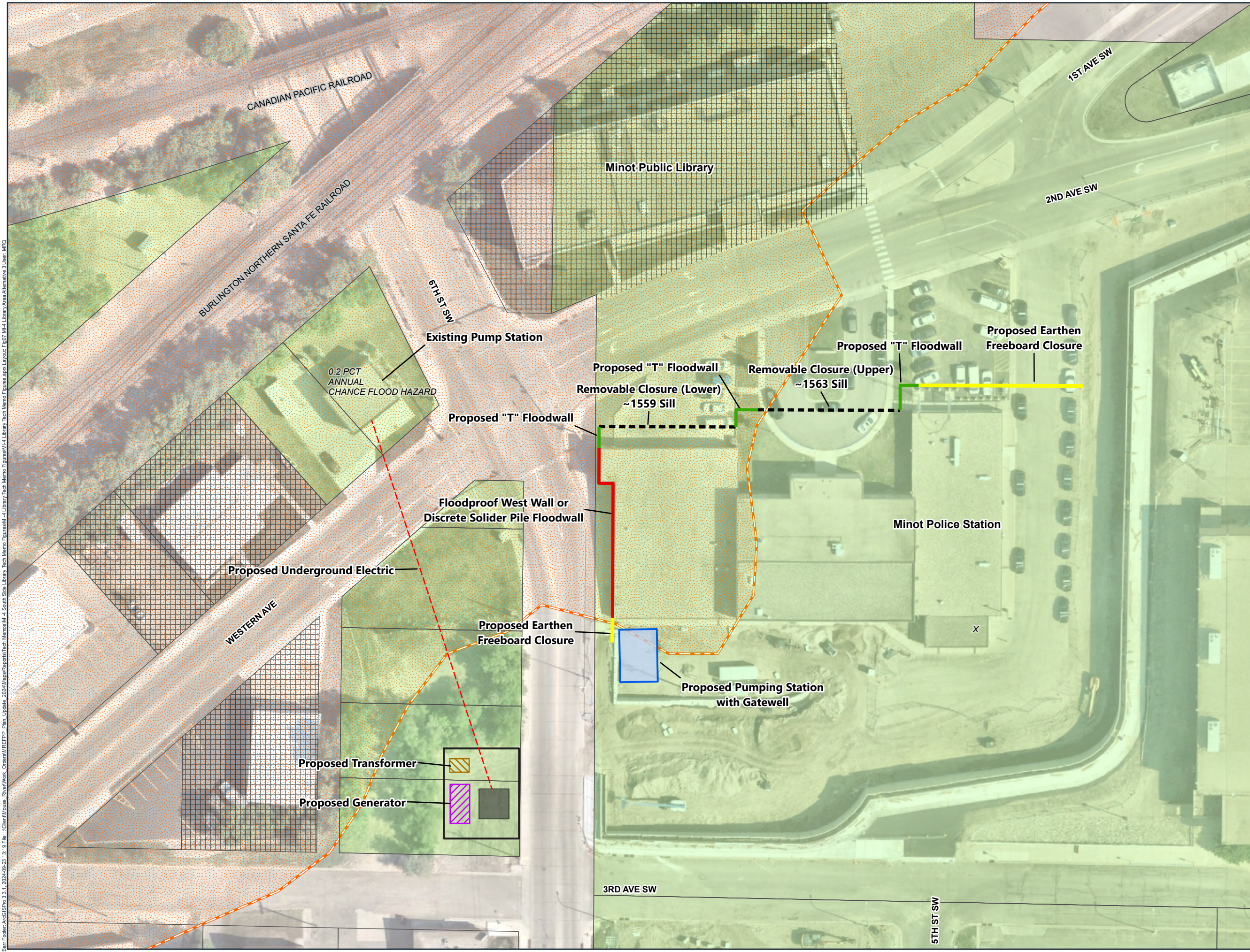
This alternative would protect the police station and 6th St. SW pump station from the flood of record while relocating the library outside the flood zone. The properties at risk of flooding would be bought out and relocated, including (1) private parcel buyouts - 620 Western Ave., 625 Western Ave., 626 Western Ave., and the Minot Public Library. This alternative is presented in Figure 7.

The 6th St. SW pump station would be modified as described in Section 4.2 - Full Protection FRM alternative by relocating critical electrical components to higher ground and modifying the pump station to withstand or minimize damage during a flooding event. A preliminary analysis of the interior drainage area behind the proposed floodwall resulted in a 6,000-gpm pumping station.

The Minot Police Station flood protection incorporates T-wall, discrete cantilever pile wall, two (2) closure structures, a temporary earthen closure, and a small pump station with gatewell.

Alternative 3 is estimated to be **\$38.4M** as shown in Attachment B.

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Proposed Concrete Pad

Proposed Underground Electric Utility

Proposed Earthen Freeboard Closure

Proposed Floodproof West Wall or Discrete Soldier Pile Floodwall

Proposed Removable Closure

Proposed "T" Floodwall

Proposed Pumping Station with Gatewell

Proposed Building

Proposed Generator

Proposed Transformer

Parcel Boundary

Land Ownership

City of Minot

Land Acquisition

Full

Current Floodplains

X (500 yr)

N

0

50

100

Feet

Imagery Source: NearMap (June 2023)

MI-4 Library Area
Alternative 3

MREFPP
Minot, ND

FIGURE 7

BARR

ACKERMAN
ESTVOLD

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5 Opinion of Probable Cost

An Opinion of Probable Cost (OPC) was developed for the three alternatives and shown in Attachment B.

- Alternative 1 - The Full Protection FRM alternative OPC was derived from the costs presented in South Side Flood Risk Reduction – Levee and Floodwall Alternatives Memorandum Table 3 (Attachment A). The OPC reflects the additional costs of the discrete cantilever wall, force main relocation, 18" water main relocation, and the seepage cutoff wall and collection trench.
- Alternative 2 - The No Proposed FRM alternative includes cost estimates to relocate the library and police station with new construction at locations outside the flood zone. The cost to build a new police station and library includes the cost to acquire property, construction of the buildings, furnishings, and demolition of the existing buildings. The police station and library construction costs were estimated based on an average cost per square foot of building and land acquisition. The police station's square footage was determined by the space required to accommodate the predicted number of sworn police officers to be on the force in the year 2050. The population of Minot has grown 3.5% from 2020 to 2025 to 47,753 and then projected, at the same 5-year growth rate, to be 58,773 by 2050. The national average of sworn officers per 1000 residents of 2.3 was taken from the National Sources of Law Enforcement Employment Data published by the U.S. Department of Justice, 2016, (reference [4]). Based on these factors, Minot's police force was estimated to be 135 sworn officers in the year 2050. It was then assumed that the size of the police station would be 40,500 square feet based on 300 square feet per officer. The construction cost is based on 0% design and can be expected to range from -10% to +50%. The total estimated cost of a new police station is \$36.8 million (\$33.1M-\$55.2M). Relocation of the library to a newly constructed building of approximately the same size as the existing library is estimated to cost \$21.2 million (\$19.1M-\$31.8M)
- Alternative 3 – The Police Station FRM alternative includes cost estimates to relocate the library including demolition of the existing building, protect the pump station as presented in Alternative 2, acquire three properties, and protect the police station. The protection of the police station including interior drainage and seepage mitigation is estimated to cost \$14.0 million of the total cost.

These estimates are conceptual and meant for alternative selection. Both alternatives considered carry the risk of price escalation of construction costs. A brief review of national construction costs and escalation between 2019 and 2024 indicates that construction costs have increased by approximately 30%.

Table 1 provides a summary of the alternatives including meeting project purpose (pass/fail), engineering considerations, impacts, and updated cost comparison. Itemized cost spreadsheets for each alternative are provided for reference in Attachment B.

Table 1 Alternatives Summary

Alternative #	MREFPP Purpose	Engineering Considerations (Constructability)	Impacts			Cost (Million)
			Property (#)	River Channel	Wetland	
Alternative 1	Pass	Complex	2	-	-	\$42.1
Alternative 2	Fail	Low	4	-	-	\$63.8
Alternative 3	Pass	Moderate	4	-	-	\$38.4

6 Recommendation

The recommendation to the SRJB is to design and construct Alternative 3 – Minot Police Station and Pump Station FRM. The following sections summarize the economics, social/municipal impacts, and environmental considerations for the alternative that protects the Minot Police Station, and 6th St. SW Pump Station from the flood of record:

6.1 Economics

Alternative 3 provides the greatest benefit for the least cost relative to Alternative 1 - Full Protection FRM or Alternative 2 - No Proposed FRM.

6.2 Social/Municipal Impacts

Alternative 3 impacts to the police station will be temporary resulting from construction of the FRM. The impacts include limited access to the northwest garage/storage building and the public access parking and entry on the north side of the building. The construction will impact traffic flow along 6th St. SW and the intersection of 2nd Ave SW. Once completed there will be no long-term impacts to the functionality of the police station. The impact resulting from the relocation of the library is hard to measure at this time and would likely be associated with the accessibility of the new location which has not yet been determined.

The existing police station utilizes the former Minot City Hall building. The functionality of the existing station was not evaluated as part of this analysis, but it could be concluded that a new police station facility would provide efficiencies and functionality that are not being realized at the current location.

6.3 Environmental

There is not expected to be environmental impacts associated with Alternative 3. Construction of the FRM alternative, including floodwalls, closure structures, and utility work, will take place within developed areas. There will be no impacts to the river or wildlife habitat.

7 References

- [1] Barr Engineering Co.; Ackerman-Estvold Engineering; Moore Engineering and CPS, Ltd, *Mouse River Enhanced Flood Protection Plan – Preliminary Engineering Report*, 2012.
- [2] U.S. Army Corps of Engineers, *Evaluation of I-Walls*, 2011.

To: Souris River Joint Board
From: Jason Westbrook
Subject: MI-4 South Side/Library
Date: September 23, 2024
Page: 13

[3] U.S. Army Corps of Engineers, *Floodwalls and Other Hydraulic Retaining Walls Engineering Manual 1110-2-2502*, 2022.

[4] U.S. Department of Justice, *National Sources of Law Enforcement Employment Data*, 2016.

Attachments

Attachment A South Side Flood Risk Reduction – Levee and Floodwall Alternatives Memo
Attachment B Opinion of Probable Cost

Attachments

Attachment A

South Side Flood Risk Reduction – Levee and Floodwall Alternatives Memo



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TECHNICAL MEMORANDUM

To: Souris River Joint Board

From: Ackerman-Estvold

Date: January 16, 2019

Re: Subtask 2.6: South Side Flood Risk Reduction - Levee and Floodwall Alternatives

Introduction

A preliminary evaluation of flood risk reduction options for the south side of the Maple Diversion portion of the MREFPP in the vicinity of the 6th Street underpass was conducted. The purpose of the evaluation of flood risk reduction features is to provide protection for critical infrastructure including Minot City Hall, the Minot Public Library, and the 6th Street Pump Station. This memorandum documents the evaluation of levee and floodwall alternatives.

Alternate Floodwall and Levee Alignments

The levee and floodwall alignment alternatives considered flood risk reduction levels to the flood of record (27,400 cfs). The proposed flood risk reduction features (levee and floodwall) are set to elevation 1569.5 to be consistent with the design of the north levee of the Maple Diversion. This elevation includes 3-feet of freeboard above the flood of record and accounts for settlement.

The alternatives considered two alignments west of 6th Street SW and two alignments east of 6th Street SW. Combinations of these alignments were used to produce four alternatives discussed below. Elements common to all alternatives are:

1. Location of the 6th Street Road Closure. This is located 30-feet from railroad property to accommodate the needed footing and not be located south of the library.
2. Floodwall north of the library. Due to the narrow area between the library and the railroad property, an earthen levee embankment is not practical. The floodwall from the 6th Street SW closure structure would consist of T-wall parallel to 6th Street SW and I-wall between the north

library wall and the railroad property. Some fill will be required near the north west corner of the library.

3. Location of large gatewell. Early in the layout process it became apparent that a large gatewell will be needed for the operation of the interior drainage system. The large gatewell will likely require the acquisition of the property to the west of the 6th Street Pump Station (620 Western Avenue) and due to the required depth of this structure, the gatewell will need to be located near the center of the property. The location of this gatewell will have some bearing on the western alignments

Western Alignments:

Two alignments extending west from the 6th Street SW road closure were developed.

- **Western Alignment 1:** Western alignment 1 will include extending the flood risk reduction features along the southerly railroad right-of-way boundary from 6th Street SW to high ground near the 720 Office building. Western Alignment 1 will not require a road closure at Western Avenue SW. This alignment may not be constructible given the proximity of the railroad to the adjacent buildings.
- **Western Alignment 2:** Western Alignment 2 will include routing the line of protection south across Western Avenue SW and tying into high ground near the intersection of 3rd Avenue SW and 6th Street SW. Western Alignment 2 will require a road closure at Western Avenue SW.

Eastern Alignments:

Three alignments extending east from the 6th Street SW road closure were developed.

- **Eastern Alignment 1:** Eastern Alignment 1 will extend the I-wall easterly between the existing library parking lot and railroad property to the eastern extents of the parking lot. The I-wall will turn south and tie into high ground south of 1st Avenue SW. This alignment will require a road closure structure on 1st Avenue SW.
- **Eastern Alignment 2:** Eastern Alignment 2 will extend the I-wall easterly between the existing library parking lot and railroad property. The I-wall ties into a levee section that crosses 1st Avenue SW and ties into high ground. 1st Avenue SW, 2nd Avenue SW, and the library parking lot will be re-graded to allow traffic to proceed over the levee section negating the need of a road closure on 1st Avenue SW.
- **Eastern Alignment 3:** Eastern Alignment 3 will extend the I-wall easterly to a levee section between the existing library parking lot and future railroad alignment. The levee section will cross bend south, cross the parking lot, cross 1st Avenue SW and tie into high ground. 1st Avenue SW, 2nd Avenue SW, and the library parking lot will be re-graded to allow traffic to proceed over the levee section negating the need of a road closure on 1st Avenue SW.

Table 1: Alignment Summary

Alignment	Advantages	Disadvantages
Western Alignment 1	• Protect four additional properties from flooding during a 2011 equivalent event • Interior drainage will collect at 6th Street • Cost savings resulting from no road closure on Western Avenue	• Increased cost due to additional length of floodwall • Constructability. Distance between building and railroad property is likely too narrow for construction • Requires purchase or easement of railroad property
Western Alignment 2	• Use property owned by City of Minot • Construction possible using ordinary construction methods • Cost savings resulting from shorter floodwall length	• Increased cost due to need for road closure structure • Drainage on Western Avenue SW blocked during gates closed scenario. May result in street flooding and additional flood risk to existing buildings. • During gates closed operation, access to critical facilities on 6th Street SW will be blocked on Western Avenue SW.
Eastern Alignment 1	• No re-grading of 1st Avenue SW, 2nd Avenue SW, and library parking lot needed.	• Increased cost due to additional length of floodwall • Increased cost due to road closure structure. • 1st Avenue SW closed during flood events. Drainage will pond east of road closure.
Eastern Alignment 2	• Cost savings due to elimination of a road closure and reduced floodwall length. • 1st Avenue SW remain open during minor flood events.	• Major regrading of 1st Avenue SW, 2nd Avenue SW, and library parking lot required.
Eastern Alignment 3	• Cost savings due to elimination of a road closure. • Additional levee section will reduce floodwall length. • 1st Avenue SW remain open during minor flood events.	• Major regrading of 1st Avenue SW, 2nd Avenue SW, and library parking lot required. • Requires purchase of railroad property

Figures 1 through 6 show the six alignment alternatives in plan and profile. These alternatives are summarized below in Table 2. The lengths of flood risk reduction features are shown for comparison. In addition, preliminary cost estimates are included for comparison.

Table 2: Alternatives Summary

Alternative	Western Align- ment	Eastern Align- ment	Total Length (feet)	Length of I- Wall (feet)	Length of T- Wall (feet)	Length of Levee (feet)	Number of Road Closures	Most Probable Total Cost (million)
1	1	1	1820	1160	410	140	2	\$24.8
2	1	2	1670	930	410	260	1	\$22.5
3	2	1	1480	760	360	150	3	\$22.8
4	2	2	1320	530	360	270	2	\$20.5
5	3	1	1700	690	410	500	1	\$21.0
6	3	2	1340	290	360	510	2	\$19.0

Chosen Alternative Floodwall and Levee Alignment

Alternative 6 was chosen for advancement of a preliminary design. This option uses the features of Western Alignment 2 and Eastern Alignment 2. The primary reasons for this choice are the constructability of the Western Alignment 2 and the cost savings of Eastern Alignment 2. Features of this alignment include:

1. Protects Minot City Hall, 6th Street Pump Station, and Minot Public Library
2. Protection to 27,400 cfs with 3-feet of freeboard
3. 510 LF of earthen embankment
4. 360 LF of T-Wall
5. 290 LF of I-Wall
6. Requires purchase of railroad property
7. Up and over ramp for 1st Avenue SW
8. Road Closures on 6th Street SW and Western Avenue SW west of 6th Street SW
9. Gatewell structure at 620 Western Avenue SW
10. Utilizes 6th Street pump station for interior drainage
11. Grading of library parking lot, 1st Avenue SW, and 2nd Avenue SW
12. Relocation of storm sewer utilities within 1st Avenue SW, 2nd Avenue SW, and 6th Street SW

Issues that need to be resolved include

1. Relocation of 18-inch water trunk line
2. Relocation of 10-inch sanitary sewer trunk line
3. Drainage ponding in Western Avenue west of the road closure during gates closed conditions
This may increase the flood risk to properties on Western Avenue, particularly 625 Western Avenue.
4. Force main route within the Maple Diversion to the Mouse River

Storm Sewer Modifications

Storm sewer modifications will be required for interior drainage to function. The concept of the current 6th Street design is to use pressure from gravity to drive storm water captured south (uphill) of 3rd Avenue SW through the force main to the Mouse River discharge point. Stormwater collected north (downhill) of 3rd Avenue SW is collected in a separate storm sewer system and routed to the 6th Street Pump Station. The 6th Street Pump Station then discharges into the force main.

Storm sewer modifications will include:

1. Removal of storm sewer under the road closure.
2. New catch basins located at the 6th Street sag north (riverward) of the 6th Street road closure. New storm sewer is required to discharge this storm sewer directly to the Maple Diversion ponding area west of 6th Street.
3. Placement of catch basins south (landward) of the 6th Street road closure. These catch basins will be connected to the existing storm sewer system and storm water captured by these catch basins will be routed to the 6th Street Pump Station.
4. New catch basins will be placed in the Library parking lot and along the northern curb of 2nd Avenue SW. These catch basins will be connected to the existing system at 6th Street SW with a new storm sewer.
5. New catch basins will be placed west (riverward) of the Western Avenue Road closure. These catch basins will discharge through a new storm sewer to the Maple Diversion ponding area.
6. Large diameter storm sewer from the Maple Diversion ponding area to the 6th Street Pump Station. This storm sewer will be routed through the gatewell structure.
7. Force main will be rerouted from the 6th Street / Western Avenue intersection, through the gatewell and under the railroad embankments to the Maple Diversion. The force main will then need to be routed to outlet at the Mouse River. It is recommended it be routed to the east as not to cross a line of protection.

Storm sewer features are shown on Figure 5 and Figure 6.

Gatewell Structure

A gatewell structure will be required for the drainage of the Maple Diversion ponding area to the 6th Street Pump Station when the Maple Diversion is not activated (gates open scenario) and discharge of the force main to the Maple Diversion when the Maple Diversion is activated (gates closed scenario). The gatewell will consist of a large (30.9-ft by 21.1-ft) concrete structure, including pipes, valving and gates. Figures 9-12 are drawings of this structure including pipes, valves and gates.

During the gates open conditions, runoff collected in the Maple Diversion will be routed to the Maple Diversion ponding area west of 6th Street. The runoff will be collected in a storm sewer and routed to

the 6th Street Pump Station through the gatewell. The gates are open. The force main valves are also open which allows the force main to discharge to the Mouse River. The force main stand pipe valve is closed.

The activation of the Maple Diversion will result in the erection of the 6th Street SW and Western Avenue Road closures and the closing of the gates in the gatewell. The gravity storm sewer gate separating the gatewell from the pump station will be closed. The force main valve on the riverward side will be closed, and the stand pipe valve will be opened. This valving configuration will allow for the force main to discharge over the interior wall in the gatewell and discharge to the Maple Diversion ponding area.

Interior Drainage

The 6th Street Pump Station and contributing area was studied as part of the MREFPP Phases MI-2 and MI-3. This work was modified to incorporate proposed changes for both gates open (Maple Diversion not activated) and gates closed (Maple Diversion activated) scenarios. The interior drainage shows that the system will operate much as originally designed for the gates open conditions. The Maple Diversion ponding area will attenuate runoff from the Maple Diversion and will act as a surge pond if runoff from the urban areas exceeds the pump station capacity. Some additional grading (slope to drain) of the Maple Diversion channel will be required to concentrate runoff at the storm sewer inlet and to route runoff from east of 6th Street to the Maple Diversion ponding area. Seepage inflow to the Maple Diversion ponding area was not considered and should be determined as part of future study. Figure 13 shows the street inundation due to ponding that will occur during the 1-percent annual chance rainfall event during a gates open scenario. Street inundation due to flowing water is not shown.

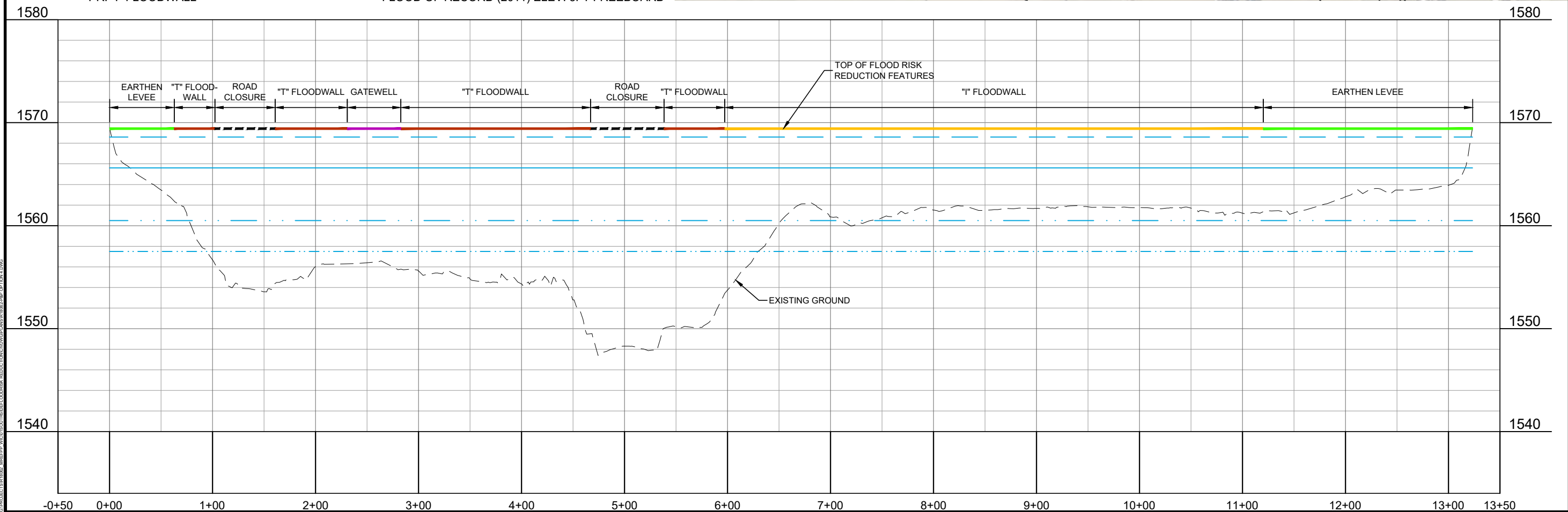
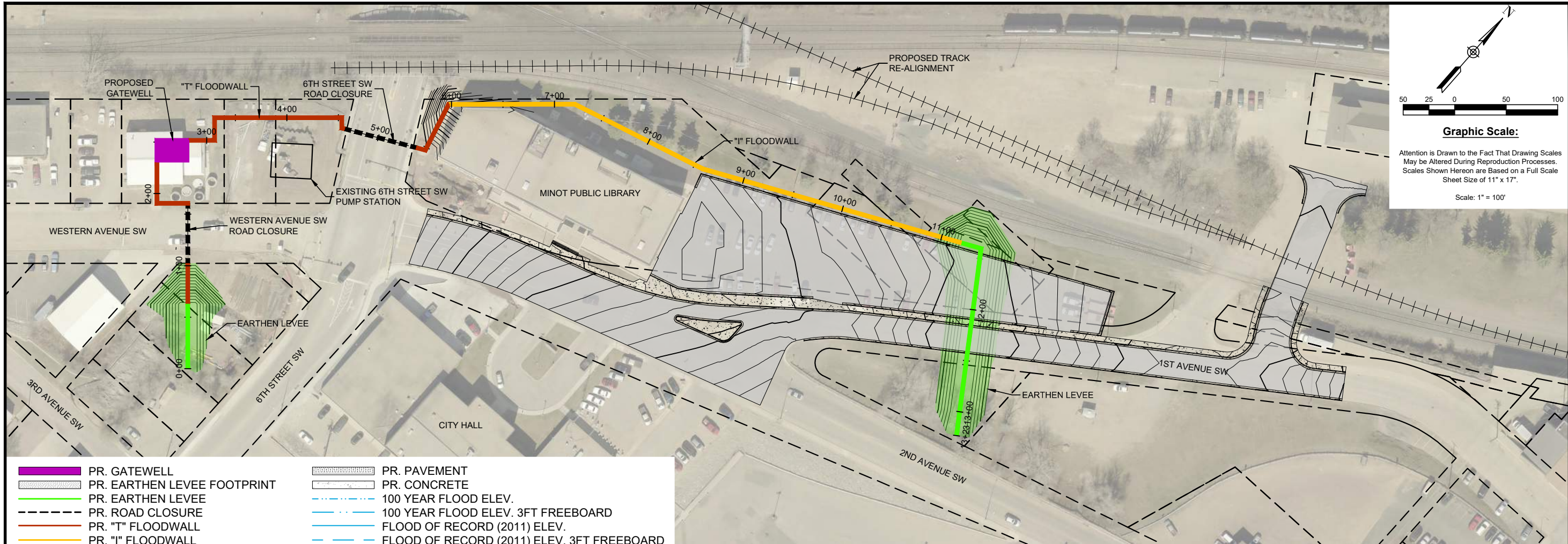
Gates closed scenario was run for 1-percent annual chance rainfall events with three Maple Diversion discharge conditions. The Maple Diversion flow conditions control the tailwater on the system. These include the flood of record, 1-percent annual chance flood event, and 1.3-percent annual chance flood event. These flood conditions are shown on Figures 14 through 16. For all tailwater conditions the interior drainage operates identically. The modeling exercise shows that the property at 625 Western Avenue will not be subject to flooding during a 1-percent annual rainfall chance event coincident with a when the Maple Diversion discharge at the 1.3-percent annual chance (75-year) river flow event. Properties are affected during the 100-year river flow event, as water will flow through the 6th Street underpass and flow around the floodwall.

Conclusions and Recommendations

It is recommended that this alternative be advanced for design and funding. Items necessary for additional study needed as part of this design include:

1. Structural design of gatewell structure and floodwalls.
2. Subsurface soil exploration
3. Evaluation of seepage into the Maple Diversion ponding area.
4. Utility relocation including relocation of the 18-inch water trunk line.

It is further recommended that HEI layout the force main alignment from the location provided to the Mouse River east of the Maple Diversion outlet. In addition, low flow grading of the Maple Diversion needs to be developed.



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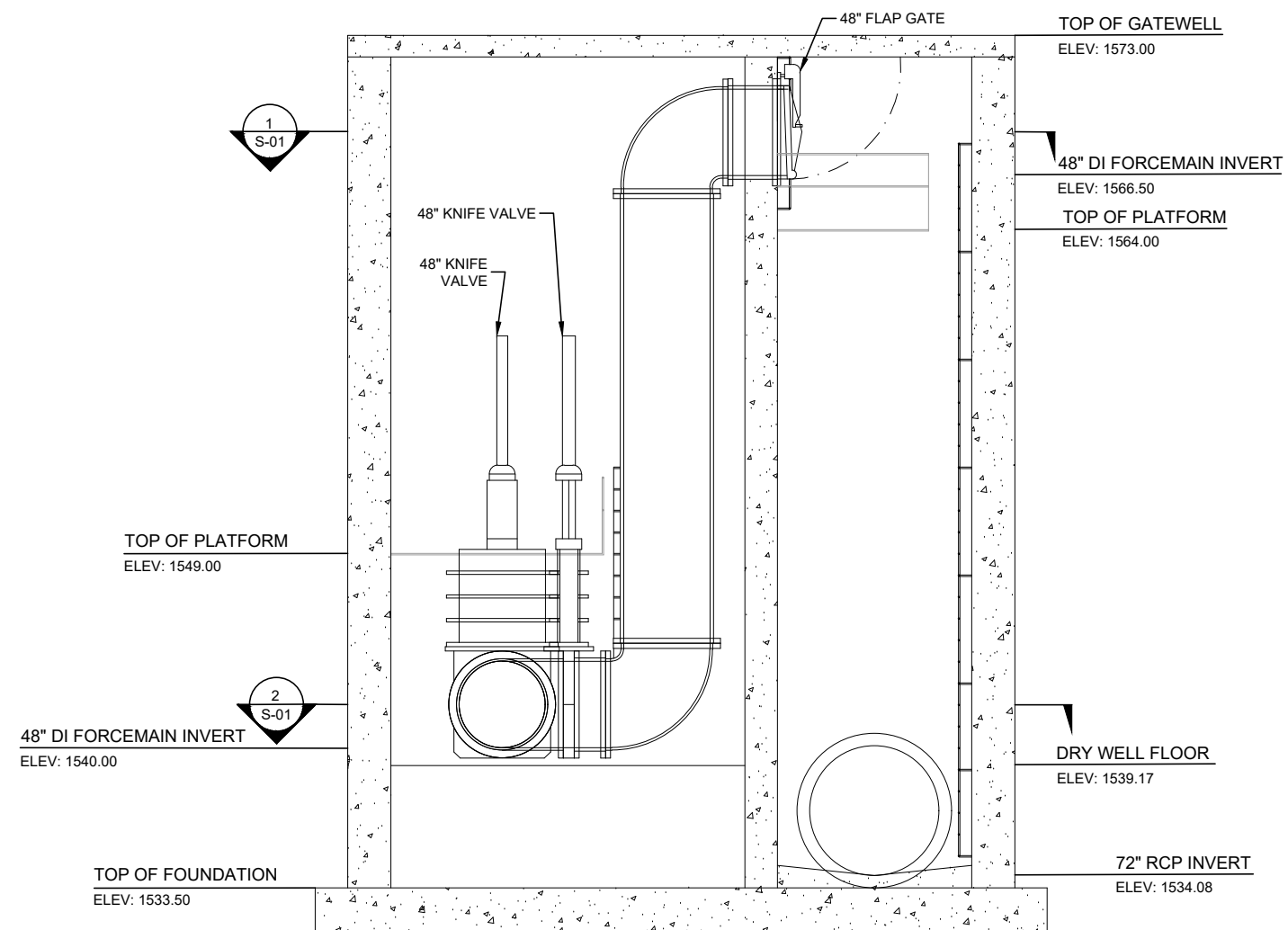
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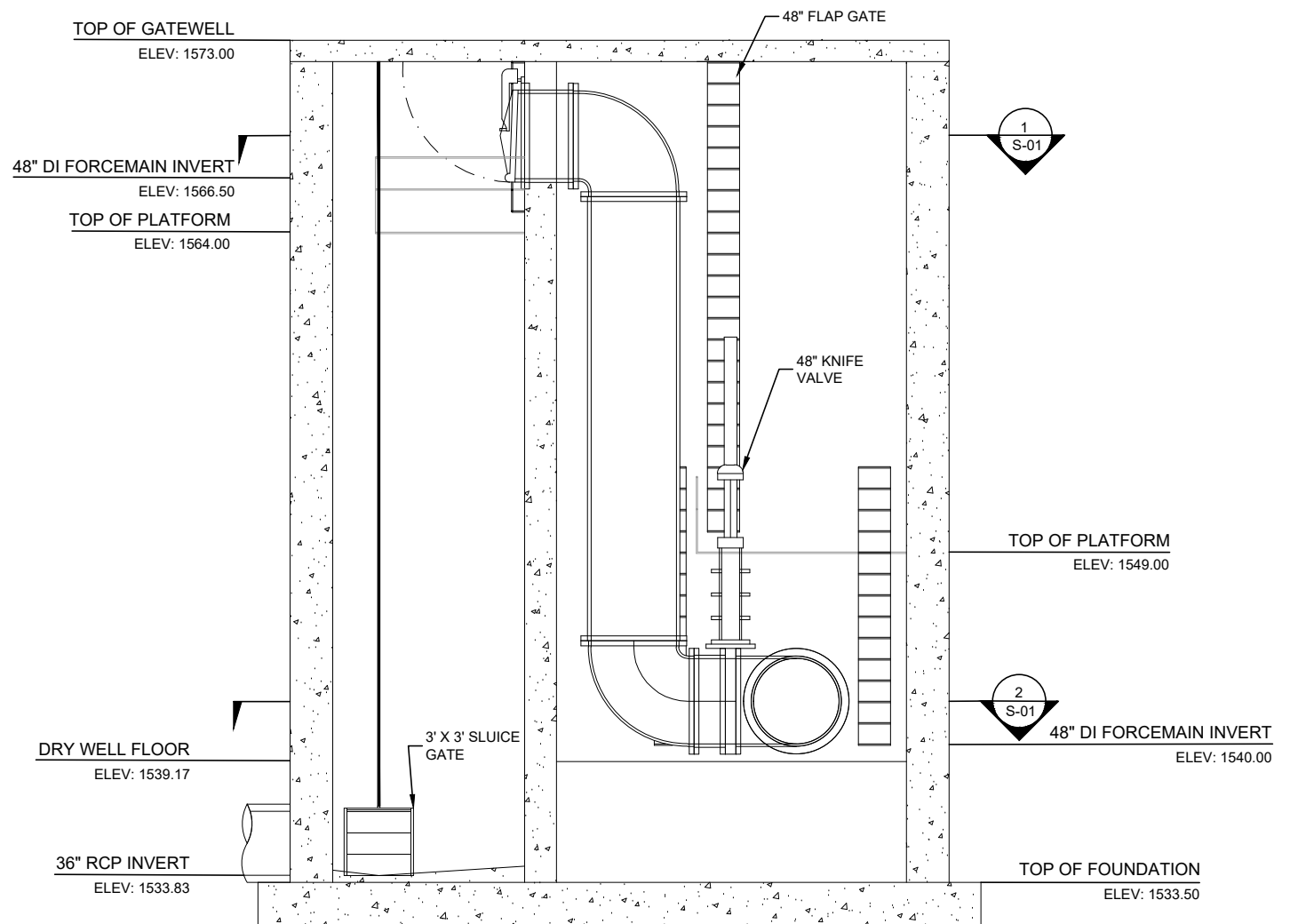
MREPPP WIC
 South Side Flood Risk Reduction
 Minot, ND
 Levee & Floodwall Layout Alternative 4 - Figure 4

Project NO.
R18062
 Drawing Name
Alternative 4 P&P
 C-04 OF C-08

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1 SECTION: SOUTH SIDE GATEWELL
S-02 SCALE: 1 1/2" = 1'-0"



2 SECTION: SOUTH SIDE GATEWELL
S-02 SCALE: 1 1/2" = 1'-0"

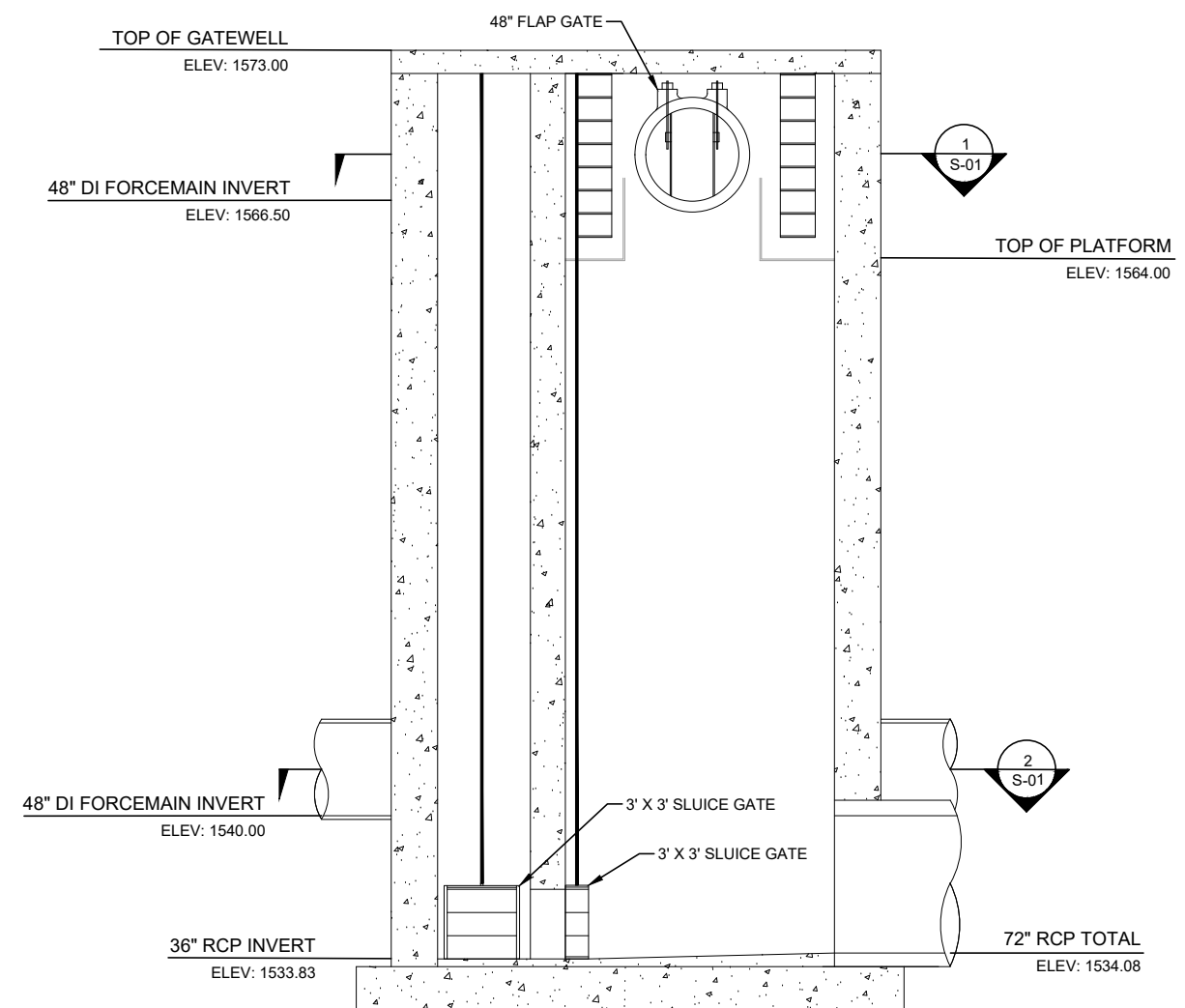
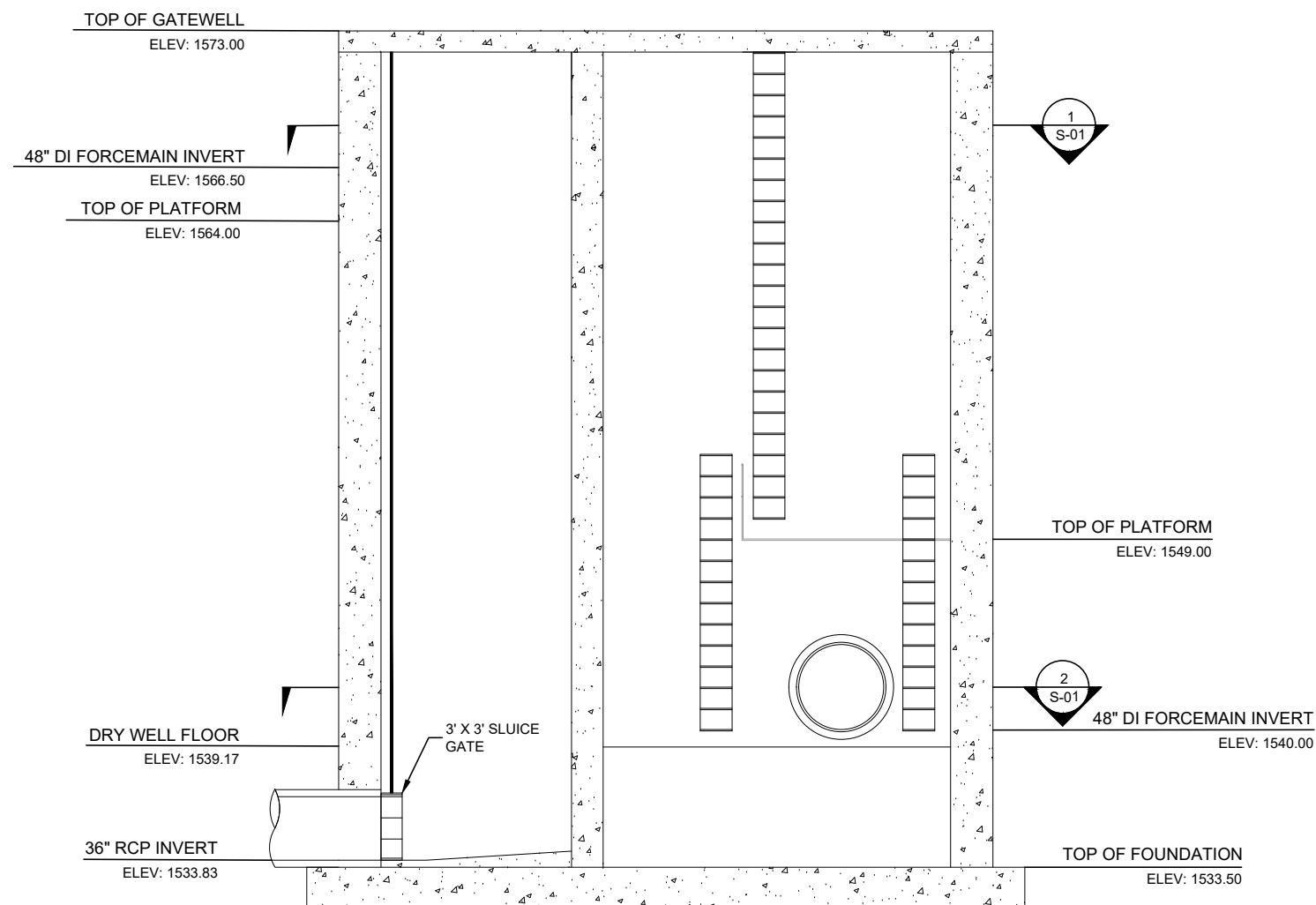
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MREFPP WIC
South Side Flood Risk Reduction
Minot, North Dakota
Gateway Details Figure 10

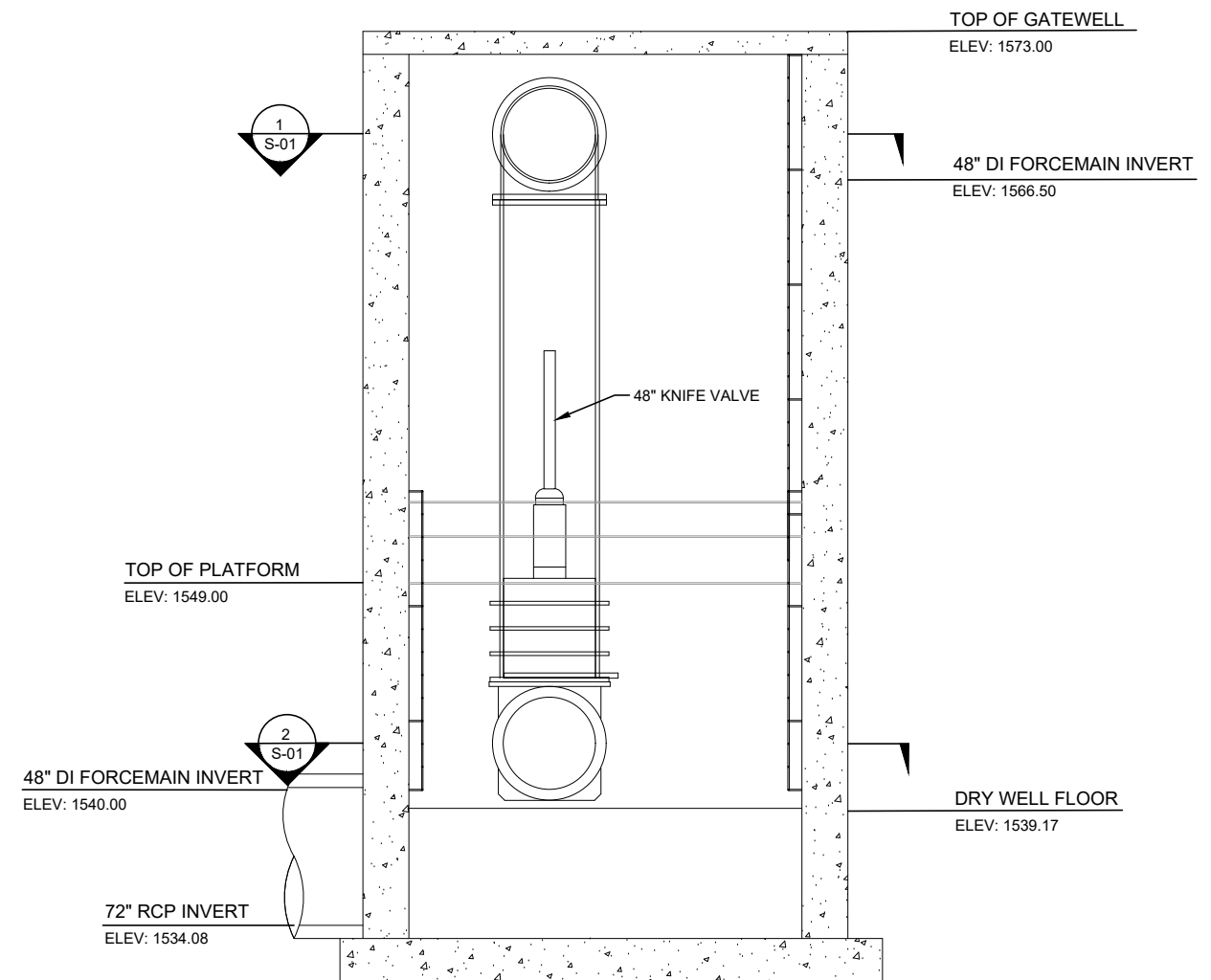
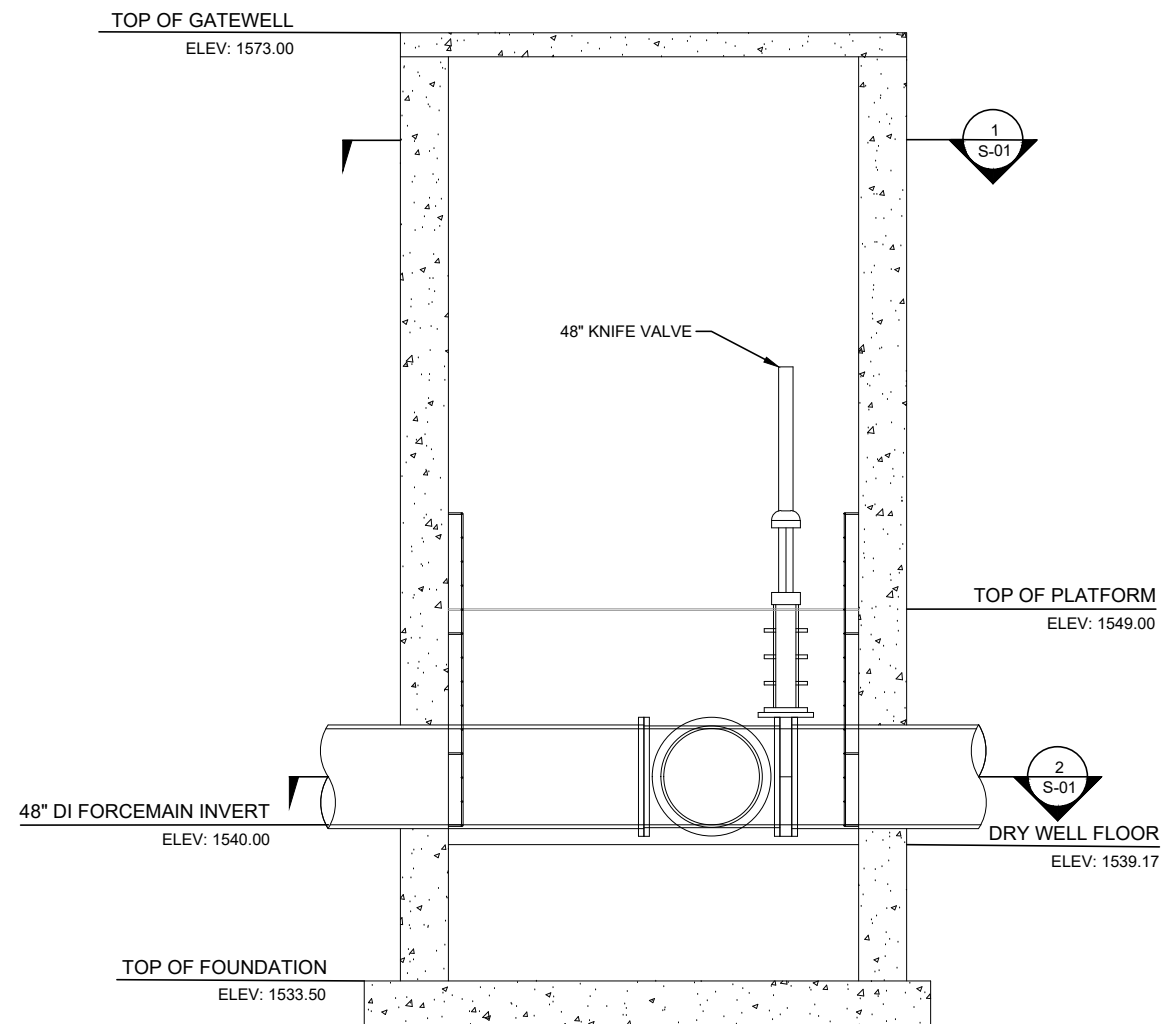
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S-02 OF S-04

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MREFPP WIC
South Side Flood Risk Reduction
Minot, North Dakota
Gateway Details Figure 11

Project NO. R18062
Drawing Name Gatewell Details
S-03 OF S-04

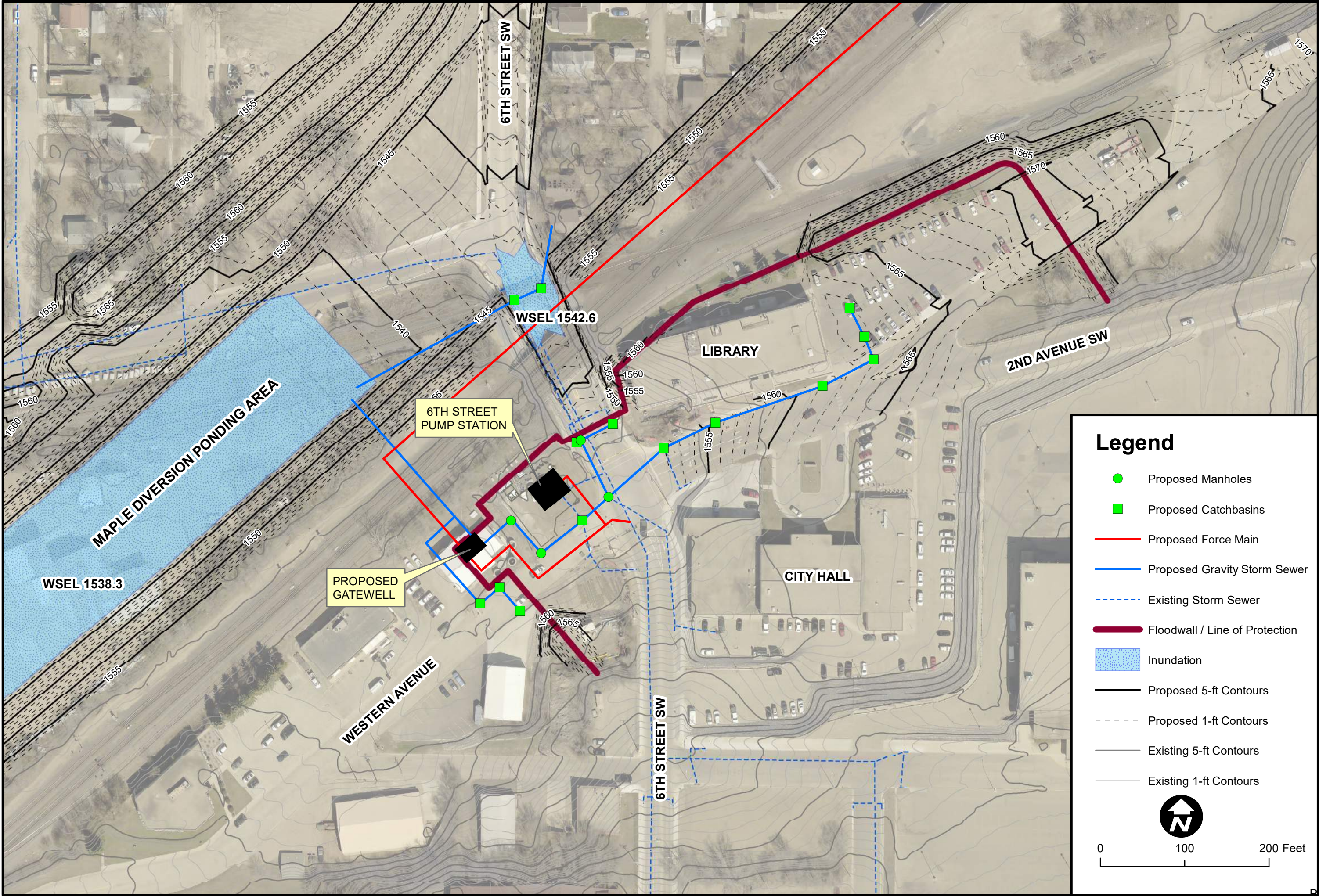
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MREFPP WIC
South Side Flood Risk Reduction
Minot, North Dakota
Gateway Details Figure 12

Project NO. R18062
Drawing Name Gatewell Details
S-04 OF S-04

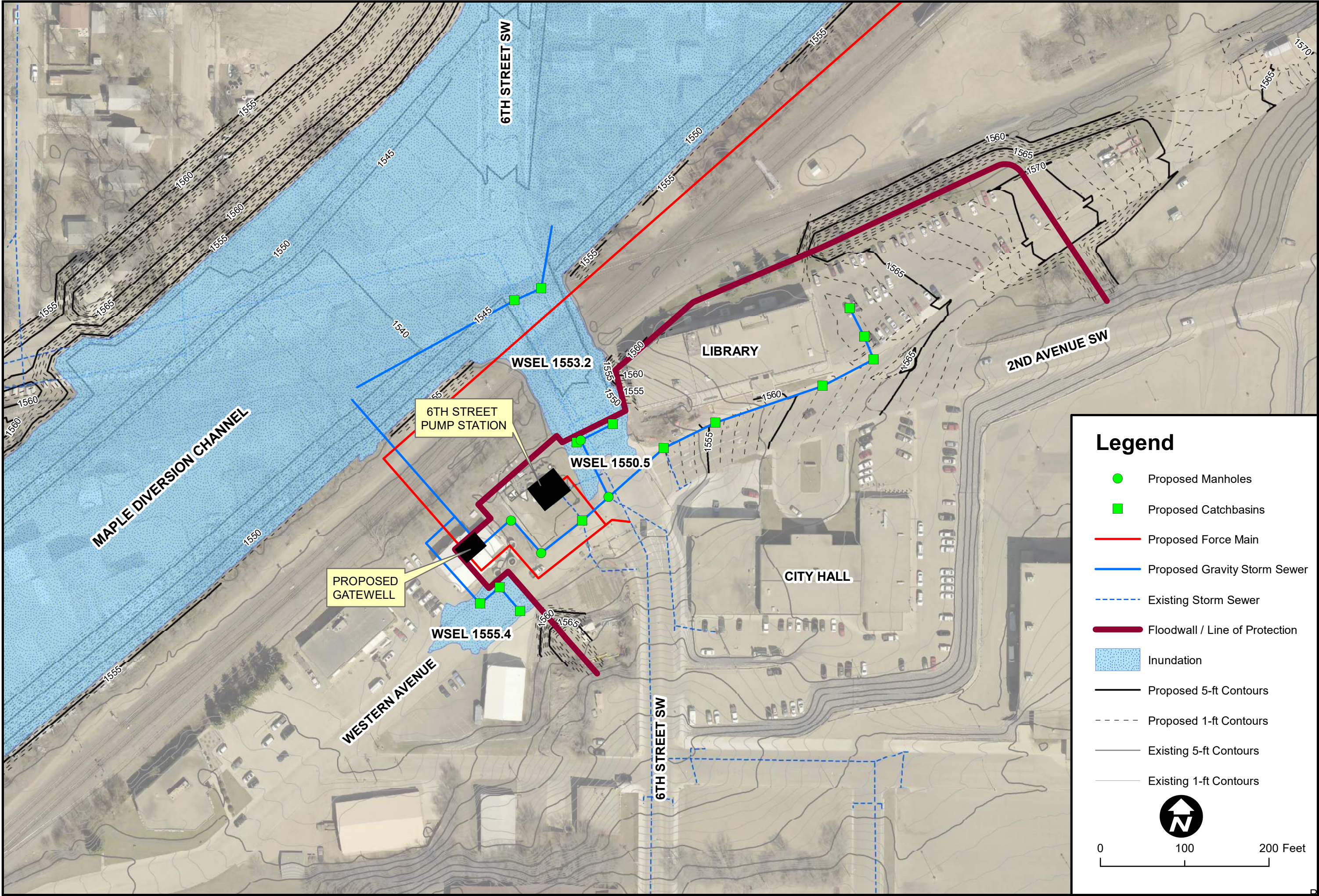


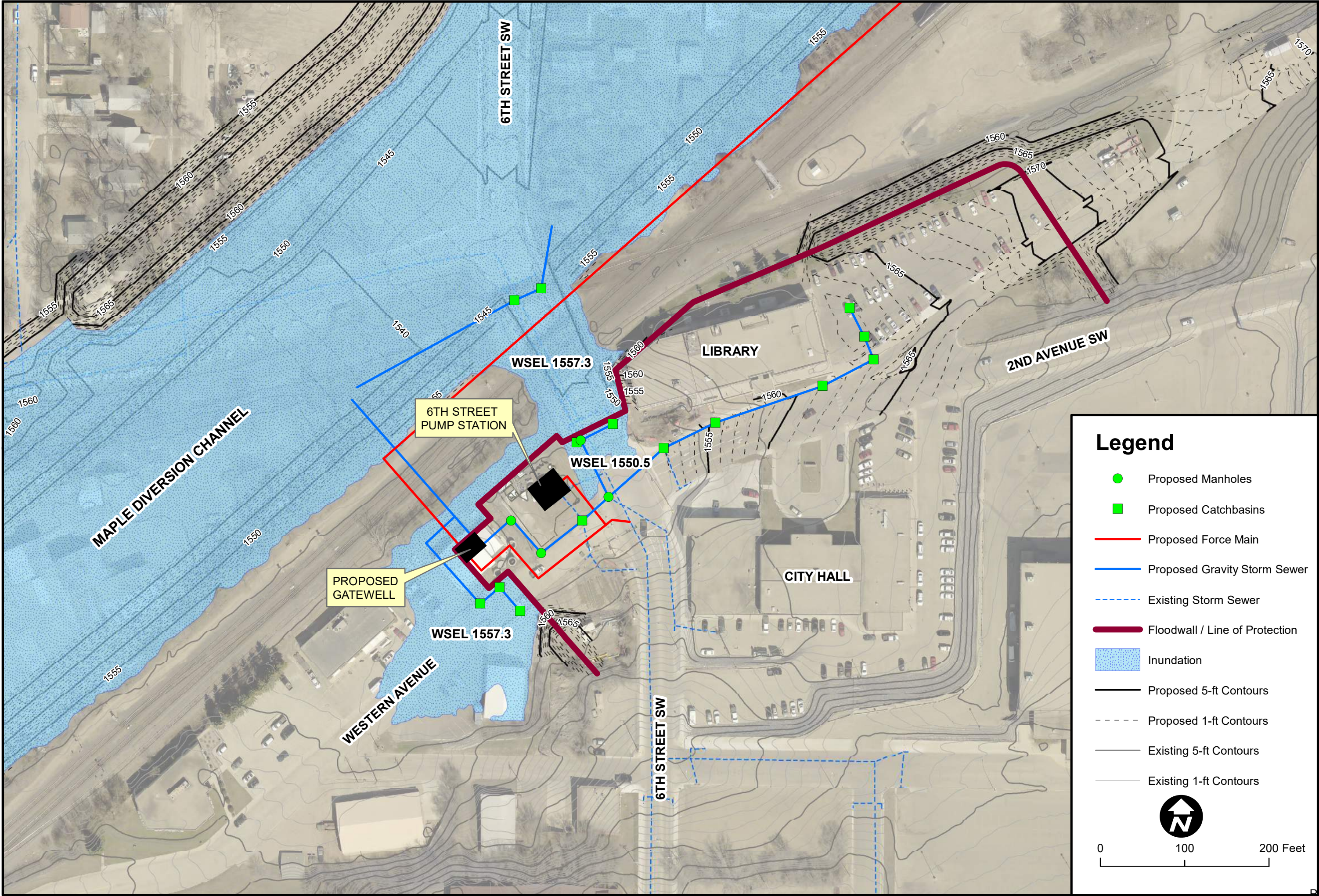
Legend

- Proposed Manholes
- Proposed Catchbasins
- Proposed Force Main
- Proposed Gravity Storm Sewer
- Existing Storm Sewer
- Floodwall / Line of Protection
- Inundation
- Proposed 5-ft Contours
- Proposed 1-ft Contours
- Existing 5-ft Contours
- Existing 1-ft Contours



0 100 200 Feet



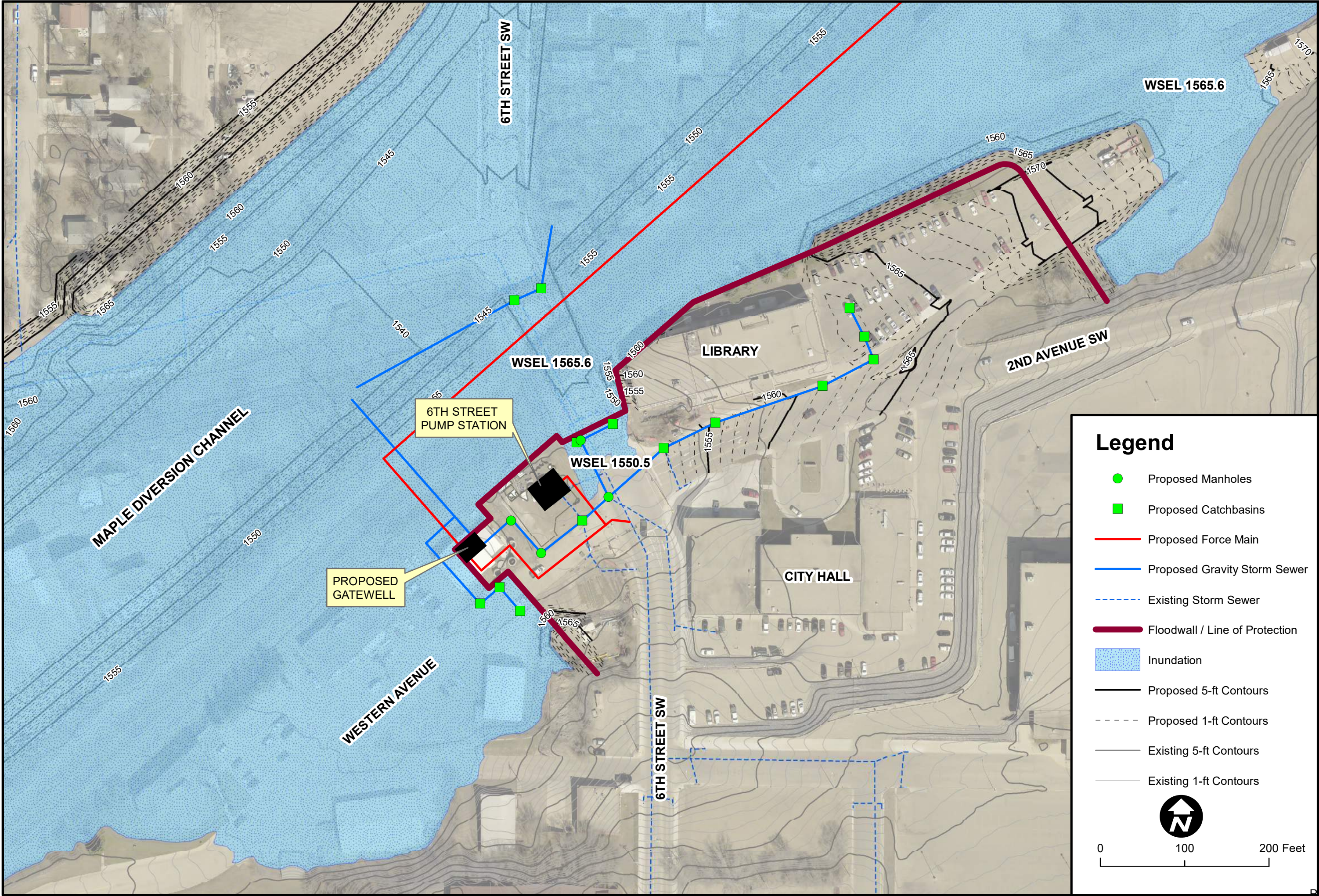


Legend

- Proposed Manholes
- Proposed Catchbasins
- Proposed Force Main
- Proposed Gravity Storm Sewer
- Existing Storm Sewer
- Floodwall / Line of Protection
- Inundation
- Proposed 5-ft Contours
- Proposed 1-ft Contours
- Existing 5-ft Contours
- Existing 1-ft Contours



0 100 200 Feet



Attachment B

Opinion of Probable Cost

Attachment B MI-4 South Side/Library - Opinion of Probable Project Cost - Summary

North Dakota State Water Commission - Mouse River Enhanced Flood Protection (Preliminary Engineering Report)

Cat. No.	COST BREAKDOWN/ELEMENT	Full Protect	Buyout	Police FRM	NOTES
		Opt 1	Opt 2	Opt 3	
1	MOBILIZATION/DEMOBILIZATION	\$5,320,000.00	\$1,760,000.00	\$1,760,000.00	1,2,3,4,5,6
2	INFRASTRUCTURE MODIFICATIONS	\$3,530,000.00	\$2,340,000.00	\$340,000.00	1,2,3,4,5,6
3	ECOLOGICAL MITIGATION	\$0.00	\$0.00	\$0.00	1,2,3,4,5,6
4	ROADS, ROAD RAISES, RAILROADS & BRIDGES	\$1,360,000.00	\$0.00	\$310,000.00	1,2,3,4,5,6
5	CHANNEL IMPROVEMENTS & HYDRAULIC STRUCTURES	\$1,710,000.00	\$0.00	\$0.00	1,2,3,4,5,6
6	LEVEES, FLOODWALLS & CLOSURES	\$22,510,000.00	\$0.00	\$10,770,000.00	1,2,3,4,5,6
7	INTERIOR FLOOD DAMAGE REDUCTION SYSTEMS (PUMPING STATIONS)	\$0.00	\$0.00	\$0.00	1,2,3,4,5,6
8	RECREATION/MUNICIPAL FACILITIES	-	\$57,990,000.00	\$21,200,000.00	1,2,3,4
9	CULTURAL RESOURCE INVESTIGATIONS & MITIGATION	-	-	-	1,2,3,4,5,6
10	HAZARDOUS, TOXIC & RADIOACTIVE WASTE (HTRW)	-	-	-	1,2,3,4,5,6
	ESTIMATED CONSTRUCTION COST	\$34,430,000.00	\$62,090,000.00	\$34,380,000.00	1,2,3,4,5,6
11	LANDS & EASEMENTS	\$250,000.00	\$720,000.00	\$720,000.00	1,2,3,5
12	PLANNING, ENGINEERING & DESIGN (PED)	\$3,970,000.00	\$620,000.00	\$1,980,000.00	1,6
13	PERMITTING & REGULATORY APPROVALS	-	-	-	1,6
14	CONSTRUCTION MANAGEMENT (CM)	\$3,440,000.00	\$410,000.00	\$1,320,000.00	1,5,6
	ESTIMATED TOTAL PROJECT COST	\$42,090,000.00	\$63,840,000.00	\$38,400,000.00	1,2,3,4,

Notes

(1) Includes 30% contingency.

(2) This feasibility-level (Class 4 5% design completion per ASTM E 2516-11 cost estimate is based on feasibility-level design alternatives, alignments, quantities and unit prices. Costs will change with further design. Time value-of-money escalation costs are not included. The estimated accuracy range for the total project cost, as the project is defined, is -30% to +50%. The accuracy range is based on professional judgment considering the level of design completed, the complexity of the project, and the uncertainties in the project as scoped. This accuracy range is not intended to include costs for future scope changes that are not part of the project as currently scoped or for risk contingency.

(3) Does not include temporal escalation costs, O&M costs, relocations, or betterments.

(4) Numbers rounded to the nearest \$0.01 million.

(5) Does not include Planning, Engineering, Design, Construction Management.

(6) Does not include acquisition of Lands and Easements.

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