



ACKNOWLEDGEMENTS

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The comprehensive nature of this Report and effort involved to produce these results would not have been possible without the assistance of many County employees. Their commitment, support, and input were critical in the preparation of this Report. On behalf of the entire K2M Team – Thank you for your assistance and support during this process.

Planning Study Team K2M Design, Inc.

Distributions to: County Commissioners
 Sheriff's Office

Date: July 17, 2019 - *Draft Issuance*
 August 25, 2019 – Final Issuance



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EXECUTIVE SUMMARY

In March 2019, Lake County hired IAP and K2M Design to develop a Jail Needs Assessment for a remodeled and/or expanded adult jail. The effort consisted of a facility assessment, trends and projections analysis, assessment of the physical environment, assessment of operations and layout, and opportunity analysis. The project kicked off in March 2019, with key stakeholders of the criminal justice system, a walkthrough of the jail, and individual interviews of County Administration, Sheriff Administration, Buildings and Grounds, and Telecommunication personnel.

Collectively, the Board of County Commissioners requested this study be completed to help understand the challenges with the current facilities, the capacities needed / trends projected, site consideration, capital construction costs for remodeled and/or expanded facilities, and operational costs.

The goals of the project included:

- Make recommendations for additional housing to accommodate all levels of classification
- Address the space deficiencies in the current jail
- Provide recommendations for building upgrades
- Create a facility that is flexible and can adapt to change
- Develop additional program areas so the Sheriff's Office can focus on restorative justice
- Develop a comprehensive capital outlay plan to implement proposed changes

The Report was developed through a series of tasks and activities, as described below.

- Document Review and Data Collection: The team requested information from the key stakeholders to assist in data collection and review of the Lake County Jail.
- Projection Models: Jail population projections were used to develop future operational needs developed from data provided by the Sheriff's Office.
- On-Site Observations and Interviews: The Needs Assessment Team conducted walk-throughs of the Jail. Site visits consisted of visual inspections and observations of the building as well as interviews with the Sheriff's Office.
- Recommendations and Findings: Recommendations for improvements and upgrades to the building were developed based on current and future space requirements and building conditions.
- Distribution of Findings: All reports, analysis, trends, projections, objectives, and documentation of findings were distributed for review and comment throughout the course of this assessment.
- Presentations: On-site presentations and telephone conferences were conducted with key stakeholders throughout the project.

Facility Condition Assessment



Chapter 1 examines the current conditions of the building. The Lake County Jail is a multi-story building constructed in 1991 and occupied in 1993, located in Painesville, Ohio. The primary functions of the facility are the medium security Jail and the Sheriff's Office administration. The building structure is composed of concrete frame and decks except for small areas where metal decking is used at the roof surface. The exterior

wall system is a traditional masonry backup wall with surface applied insulation and brick veneers. The door and windows are largely hollow metal with some aluminum windows on the Sheriff's Office side. The roof consists of a tapered insulation system and EPDM (single ply) roofing membrane. The Lake County Jail is primarily a five-story masonry structure with multi-level inmate housing. Approximately 170,528 gross square feet of conditioned space includes inmate housing, program, recreation, administrative offices, intake, food service, laundry, circulation, staff support and building support areas.

Trends Analysis

Chapter 2 examines how the physical environment of the facility supports the operational needs. Recommendations for improvements and upgrades to the building are identified based on a review of applicable state standards, request of staff, "best practices," and assessment of current and future space requirements.

The Needs Assessment included:

1. Gather Jail data including arrests and bookings, average daily population, and average length of stay, and demographics.
2. Analyze historical trends and develop projections database for 5, 10, 15 and 20 year needs to serve as a basis for the programming work in Chapter 3.
3. Prepare baseline population projections.
4. Identify trends and opportunities that may impact the population.
5. Identify/add factors to develop bed space needs.

Programming

In Chapter 3, the jail has been programmed to safely house and provide appropriate services and programs for inmates pursuant to the Ohio Minimum Jail Standards and County guidance. The Sheriff's Office space is largely maintained as is except for two modifications. Evidence record storage should be moved to the existing jail area where a programmatic change has occurred (intake for instance). This is primarily due to space restriction in the non-secured area of the existing building. The overall goal of the Program is to identify the spaces required to adequately house the jail population and support the staff working in the facility. The program summary is as follows:



Program Summary - Lake County Sheriff's Office and Jail		
No.	Name	Square Feet
1.0	Entry	2654
2.0	Sheriff's Administration	1565
3.0	Sheriff's Operations	3765
4.0	Road Patrol	3578
5.0	Detectives	1080
6.0	Evidence	2400
7.0	Jail Administration	3685
8.0	Food Service / Laundry	5825
9.0	Intake / Receiving	9200
10.0	Psychiatric Clinic / Jail Treatment Program	1359
11.0	Visitation	1320
12.0	Work Release Program	3300
13.0	Medical	3285
14.0	Housing	50420
15.0	Jail Programming	24364
16.0	Staff Support	4892
17.0	Building Support	8003
18.0	Probation	3215
	Net Grossing Factor Increase (25%)	33385
	Department Grossing Factor Increase (20%)	33385
	Building Grossing Factor Increase (5%)	10016
	Total	210696

Table 1: Program Summary

Blocking and Stacking Diagrams

The conceptual drawings “blocking and stacking diagrams” included in Chapter 4 are a “test” solution to verify how the program from the previous chapter can be implemented within a renovated and expanded facility. Additionally, they are used to establish a base for capital and operational costs presented in Chapter Five.

The conceptual layout is based on two main types of planning factors. First, the design is derived from a response to “internal” forces: secure separation and management of inmates, staff efficient design and layout, clear lines of sight, stacked housing unit design, indirect supervision, program spaces, aging infrastructure, and cost-conscious construction techniques. Second, is that the design responds to “external” forces: separation of circulation for those approaching the building (public, staff, and prisoner), building codes, jail standards, and site constraints.

Three “Opportunities” were created to test various scenarios.

Cost Options

In Chapter 5, the planning team analyses the cost of construction and operations associated with the blocking & stacking diagrams presented in Chapter 4.

Estimated Capital Cost of Facilities

Opinions of probable cost were prepared for the remodeled / expanded jail, an update to the previous new construction option, and for the facility condition assessment work required. It is important to note that the cost of jail construction is greatly increasing. We are carrying a 3% escalation factor for two



years given the market activity. The planning team estimates the total capital project cost of construction in year 2021, considering escalation, would be approximately:

Lake County Jail and Sheriff's Office Project Costing (Renovation / Expansion)				
Function Name	Cost	Measure	Unit	Total
Facility Condition Assessment	\$ 30,544,155.00	LS	1	\$ 30,544,155.00
Sheriff's Administration Renovation	\$ 10.00	SF	21843	\$ 218,430.00
Jail Renovation (20%)	\$ 75.00	SF	29752.6	\$ 2,231,445.00
Jail Expansion	\$ 376.00	SF	60484	\$ 22,741,984.00
Soft Costs (less FCA)	\$ 25,191,859.00	PERCENT	0.24	\$ 6,046,046.16
Contingency (less FCA)	\$ 25,191,859.00	PERCENT	0.1	\$ 2,519,185.90
Escalation (2 Years @ 3% each yr)	\$ 33,757,091.06	PERCENT	0.06	\$ 2,025,425.46
Total				\$ 66,326,671.52
Cost Per Square Foot				\$ 386.37

Table 2: Project Costing (Renovation / Expansion)

Lake County Jail and Sheriff's Office Project Costing (New Construction)				
Function Name	Cost	Measure	Unit	Total
Sheriff's Administration	\$ 250.00	SF	20000	\$ 5,000,000.00
Jail (320sf / inmate)	\$ 376.00	SF	155520	\$ 58,475,520.00
Soft Costs	\$ 63,475,520.00	PERCENT	0.24	\$ 15,234,124.80
Contingency	\$ 63,475,520.00	PERCENT	0.1	\$ 6,347,552.00
Escalation (2 Years @ 3% each yr)	\$ 85,057,196.80	PERCENT	0.06	\$ 5,103,431.81
Total				\$ 90,160,628.61
Cost Per Square Foot				\$ 525.21

Table 3: Project Costing (New Construction)

**Neither the cost of money nor real estate is factored into this evaluation.*

Estimated Jail Operational Costs

A synopsis of the forecasted estimated operational costs associated with the full implementation of the scope of work in year 2019 dollars only is provided below. It is important to recognize the Operation and Revenue values are currently in place with the County at present day numbers. We provide the previous report figures for new construction as well as the renovated / expanded figures so the County can see the long-term operating cost picture. The biggest factor surrounding this change is expanding the jail will require the addition of 16 corrections officers while a new jail can be operated with the same number of staff using an indirect supervision model.

Recommendations and Next Steps

In Chapter 6, we create a series of recommendations designed to improve the efficiency and effectiveness of the Lake County Jail.

- The existing jail must be expanded either through renovation / expansion or new construction to meet current correctional standards, programming needs, mental health treatment, and provide an operationally efficient design.
- Given the population forecasting, we recommend the expansion be created to house females and the existing building used to house males. Portions of the existing housing units can be

converted from double occupancy cells to single occupancy cells to allow for a more diverse housing / classification system for males.

- In order to maintain operation in the existing facility while construction occurs, the expansion will need to house the intake, kitchen, and laundry programmatic functions. Each area will be expanded to account for the increased population. Once operational, the existing areas can be repurposed for work release, programming, evidence storage, and medical space.
- The renovated / expanded facility must be flexible to allow for gender, age, classification separation, and mental health requirements.
- The facility should be designed to increase programming to inmates.
- The layout and configuration of the addition should allow a mass supervision from the central control station supported by “roaming” staff located directly with the inmates.
- Accessibility upgrades must be made throughout the existing building to bring it in to full compliance.
- Energy efficient building systems should be designed into the new building to mitigate long term operating costs.
- The building envelop issues must be addressed first prior to any renovation.
- Early in the design phase a study should be done to determine the feasibility of creating a new building shell and rear utility chase in lieu of utilizing the current configuration.
- The total cost of ownership must be factored into the decision-making process as the new construction option will be far less costly than the renovation / expansion option.

The next step for the County is to review the options and strategies provided and to confirm the preferred direction for the project. Thereafter, the County can arrange financing, community support, determine project delivery method, solicit for the design professional services, and implement the project.



Chapter 1
Facility Condition Assessment

CHAPTER ONE – FACILITY CONDITION ASSESSMENT

METHODOLOGY AND ASSESSMENT PROCESS

This Section contains an overview of the process and methodology used for the Lake County Jail facility condition assessment project. At the start of the project and with County consultation, the assessment leadership team tailored the scope of the assessment to the needs of the County. The refined scope aligned with the objectives expressed and provided specific direction to ensure long term value in the findings provided in the final Report.

A Facility Condition Assessment is the overall process for gathering and evaluating legacy data in combination with our visual inspection by the assessment team. A team of independent facility assessment specialists, all trained in the art of conditions assessments, performed the tasks.

Data Collection

Data Collection and Analysis included a project initiation process, a request for all record drawings, review of 2012 assessment, a review of the exterior assessment provided by Technical Assurance and understanding current areas of concern at the Jail facility.

Site Inspection

The Assessment Team performed an onsite observation of the site, architectural, and building service systems on April 8th and 9th 2019. The basis for inspections was conducted under the following guidelines:

- Standards: The assessment team used appropriate standards to review the Lake County Jail. The standards used included best practice elements to provide reliable information about the condition assessment as outlined in ASTM Standard E2018-08. Other industry standards included but were not limited to: International Building Codes, NFPA 101: Life Safety Code, National Electrical Code, International Plumbing Code, ANSI 117.1, Universal Design Standards, and Fire Prevention Codes.
- Building Inspections: Each real property system (sub-element) within each asset was visually inspected using non-destructive survey techniques. Architectural, electrical, and mechanical systems within each building were reviewed for type materials, current condition, year installed, Building Owner and Managers Associate (BOMA) system life expectancy, remaining life of system, operability, size, and quantity. Facility condition assessment findings and staff interview data was documented on-site using text notes, digital photography, measurement tools, and other means necessary.
- Life Safety: Any issues that impacted life safety were immediately Reported to the designated facility point of contact.

The assessment included a review of the jail's plant operations, physical condition, maintenance practices, and recommendations for the facility to enable the County to make informed decisions related to its current condition and future effectiveness to serve in its intended capacity. The assessment considered the current building condition and its physical deficiencies, the remaining useful life of its systems and components, and its ability to conduct operations. Physical components included but were not limited to:



- Exterior Envelope: walls, doors and windows. (performed by Technical Assurance and “Exhibit A” to this Report)
- Interior Construction: walls, doors, flooring, ceilings, and finishes.
- HVAC Systems and Components.
- Plumbing Systems and Components.
- Electrical Systems and Components.
- Emergency Generators and Associated Components.
- Data and Communications Systems and Components.
- Fire Alarms and Fire Protection Systems.

The condition rating and definitions provided in the following table reflect the assessor’s opinion of condition relative to the urgency recommended to remediate.

Condition Rating	Definition
Poor	Conditions in this category, if not corrected expeditiously, may soon become nonoperational. Often items in this category have exceeded their useful life expectancy based on national averages and will soon need replacement.
Average	Conditions in this category require appropriate attention to preclude predictable deterioration or potential downtime and the associated damage or higher costs if deferred further. Generally, these systems have a predictable remaining useful life expectancy.
Good	Conditions in this category include items that are operating and appear in a condition allowing for continued use with minor repairs and routine maintenance.

Table 4: Definitions of Assessor Condition Ratings

Priority	Definition
<u>Priority 1:</u> Year 0-2	Conditions in this category, if not corrected expeditiously, will become critical within one year.
<u>Priority 2:</u> Year 3-5	Conditions in this category require appropriate attention to preclude predictable deterioration or potential downtime and the associated damage or higher costs if deferred further.
<u>Priority 3:</u> Year 6-10	Conditions in this category include items that represent a sensible improvement to existing conditions. Components that are moderately energy efficient will generally be categorized here.

Table 5: Definitions of Priorities

DATA ANALYSIS

During the Data Analysis phase, the results of the site-inspections, staff interviews, and County provided resources were compiled, analyzed, and presented as recommendations for the Jail. Typically, the resulting data included sub-element data updates; building sub-elements inventoried and input into the Report. Deficiencies were identified at the sub-element level with a complete description of inspection findings for each recommended resolution. Key areas included:

- Assets: Validated and recorded current asset-related information, including County provided drawings (for validation and updating overall building square footages). Asset information included name, number, location, year constructed, and replacement rough order of magnitude value based on RSMeans™ regional data.
- Systems (Sub-Elements): Validated all respective system information for each asset including systems type, Uniformat II classification, current replacement value, quantity, estimated year installed date, description, basis of lifecycle, and estimated remaining service life. This included valuing each system indexed to calculate the Condition Index (CI) for each. Building systems were based on ASTM UNIFORMAT II Elemental Classification for Building Specifications, an industry standard for classifying building elements developed by the U.S. Department of Commerce.
- Deficiencies: Identified, recorded, prioritized, and cost estimated all deferred maintenance, deficiencies, system renewals, and life safety violations. Described associated root causes, such as physical damage, lack of maintenance, improper materials, energy inefficiency, age/excessive wear, life safety, end of useful life, etc.
- Resolutions: For each issue identified, a corrective resolution (repair, remediate, replace) was developed using RSMeans™ standard costs, non-standard costs, and the location factor index. Resolutions included name, system, recommended priority, description of work and cost estimate.



Definitions: The following definitions were used to describe the items captured, developed, or calculated by the Assessment Team.

Term	Description
Uniformat II Code	National standard for classifying building components
Components	Compilation of common building systems
Life	Estimated component or system life expectancy based on national averages
Install	Estimated year component or majority of components were installed
Quantity	Number of items measured
Units	Units of measure used for quantity calculation
ROM Value	Rough Order of Magnitude value of components
ROM Estimate	Rough Order of Magnitude cost estimate to resolve deficiency
BOMA	Building Owners and Managers Association
Rating	Condition rating based on 1-3 scale
Deficiency	Definition of component or system problem
Contributing Factor	Likely reason for deficiency
Resolution	Corrective measure recommended to resolve deficiency
Code	Reference to established local, regional or national building regulations
Life Safety	Reference to deficiencies related to occupant's personal safety
CI	Condition Index: ROM cost estimate divided by ROM value.
Urgency	Recommended priority for resolving deficiency

Table 6: Definition of Terms Used

DATA QUALITY CONTROL

Quality control was a critical part of our Assessment Team methodology to ensure accurate and consistent results. A rigorous in-house Quality Control/Quality Assurance (QC/QA) program was maintained that included standardized processes and procedures, training, ongoing “over-the-shoulder” quality control checks, and technical and editorial reviews of the Reporting.

LAKE COUNTY JAIL REPORT



The Lake County Jail is a multi-story building constructed in 1991 and occupied in 1993, located in Painesville, Ohio. The primary functions of the facility are the medium security Jail and the Sheriff's Office administration. The building structure is composed of concrete frame and decks except for small areas where metal decking is used at the roof surface. The exterior wall system is a traditional masonry backup wall with surface applied

insulation and brick veneers. The door and windows are largely hollow metal with some aluminum windows on the Sheriff's Office side. The roof consists of a tapered insulation system and EPDM (single ply) roofing membrane.

The Lake County Jail is primarily a five-story masonry structure with multi-level inmate housing. Approximately 170,528 gross square feet of conditioned space includes inmate housing, program, recreation, administrative offices, intake, food service, laundry, circulation, staff support and building support areas.

Although the County has performed routine maintenance over the years, many of the overall physical building system components have reached the end of their useful life cycle. This is based on national, predictable construction material life cycles with expected escalation for the demanding 24/7/365 heavy use of these type facilities.

The high-level analysis of the resulting data represented in Table 4 below reflects the overall compiled Lake County Jail Condition Indexes (CI). In this Table, primary facility systems for the building have been wrapped into major facility components. The CI is used in facilities management best practices to provide a benchmark for comparing the relative condition of building at various intervals. In addition, the CI is used to help the facilities management team establish capital decision making policies.

$$CI = \frac{\text{Cost of Corrective Work and/or Component Renewals}}{\text{Overall Value of Facility or Component}}$$

As further explained in the facility condition assessment methodology, cost estimates to repair or replace building components were established based on urgency and in correlation with the needs identified in the supporting documentation. Table 4 provides multiple periods of priority (urgency) and the overall cost estimate for each major component in each of these time periods. Based on the facilities ROM value of approximately \$56.9 million and recommended capital expenditures estimated at approximately \$30 million over the next 10 years, the CI for the facility is .54.



Interpreting the CI is only one of many means used to determine future capital planning. In this high-level data review the CI can be interpreted as a snapshot percentage of the component’s needs over the duration of the capital plan. The monetary interpretation has many layers to consider, including, the estimated 54% capital expenditure of current value over the next 10 years required to sustain the facility compared to the buildings original intended design with like-kind materials. There are also considerations to upgrade components for reducing annual operating costs and/or weighing material types and layout to ensure the facility fulfills future programming needs of the County. This facility has an additional concern related to high annual maintenance costs due to dilapidated systems requiring regular repair.

Lake County Jail	ROM VALUE	Year 0-2	Year 3-5	Year 6-10	CI
A- Substructure	\$1,339,326.64	\$0	\$0	\$0	0.00
B- Shell	\$15,203,776.75	\$7,902,450	\$101,745	\$0	0.53
C- Interiors	\$15,128,473.08	\$45,900	\$1,690,650	\$6,693,750	0.56
D- Services	\$24,622,280.55	\$12,032,685	\$1,109,250	\$784,125	0.57
G- Site	\$579,777.45	\$0	\$122,400	\$61,200	0.32
Sub-Total	\$56,873,634	\$19,981,035	\$3,024,045	\$7,539,075	0.54

Table 7: Lake County Condition Overview

DATA RECEIVED

Our team requested available facility data be provided prior to the site inspection to ensure legacy data was understood by the team at the onset of their work and to assure relevant data is incorporated into this Report. The information provided by the County included the following documents:

1. Original scanned architectural and MEP drawings
2. Previous 2012 Conditions Assessment and Master Plan and 2018 Shell Assessment Reports
3. Maintenance records showing current deficiencies and service requirements

G10 – Site

Site improvements at the Lake County Jail include standard and handicap accessible paved parking spaces, asphalt road pavement, concrete pedestrian sidewalks, generator pads, parking lot lighting w/ electrical distribution, flag pole and landscaping beds.

Condition: Good

Deficiencies: Overall, the grounds of the facility are in good condition. The landscape, grass, plantings, and mulch beds all appear to be maintained on a regular basis. There are two issues present at the facility – ADA compliance and the height of the landscape beds.

Resolutions: Rebuild the landscape beds to be below the weeps. This may involve relocating small plantings at lower elevations, but primarily this involves the removal of top soil and mulch. It is recommended that a complete accessibility compliance study be performed on the overall building. From this study, specific recommendations can be made for each component of the building. Overall, new curb ramps, installation of detectable warnings, striping for the accessible path, signage installation and replacement of sections of sidewalk where the cross-slope is greater than 2% are required for accessibility compliance. Suggest removing all outdoor yard pavers, replacing the membrane due to its age, confirming drainage, and reinstalling pavers



A10 – Foundations

Foundations consists of poured concrete slab with strip footings on piles, spread footings and grade beams supporting columns and load bearing masonry walls.

Condition: Good

Deficiencies: There are no structural issues identified with the Sheriff's Office side of the building. There are a couple of minor stress cracks in the stair tower walls which are likely caused by expansion/contraction of the masonry/stability of the concrete (where two different materials meet) and the settlement at the foundation however no issue was observed requiring additional work at this time.

Resolution: N/A

B10 – Superstructure

The building structure is composed of bearing masonry, concrete beams, columns and decks with the exception of small areas where steel structure and metal decking is used at the roof surface.

Condition: Good

Deficiencies: The cracked waffle slab has telescoped all the way thru the dayroom and likely the cells as well. This is allowing water to infiltrate through the slab. There are insufficient floor drains staff can utilize to disipate water when on the floor.

Resolution: Install additional floor drains to each dayroom. Three (3) for each area is recommended. There is no simple remedy to repair the structural waffle ceiling issue less continue to watch the width of the crack. If it gets larger than ¼-inch a structural investigation is warranted by a licensed professional engineer.



B20 – Vertical Shell

The shell of the building includes a primarily brick façade over a masonry and/or poured concrete structural superstructure. Additionally the shell includes security frade windows, overhead doors at the intake and services entrances, storefront and curtain walls at the main entrance and other entrances, aluminum louvers, painted metal soffit, aluminum flashing, single swing service doors with and flush steel doors without glazing.

Condition: Poor

Deficiencies: The County contracted a 3rd party firm who performed a detailed building shell assessment. The results of this assessment report are included as part of this report for overall facility condition clarification. The building shell report is included in “Exhibit A” of this Report.

Resolution: Refer to “Exhibit A” in this Report.

C10 – Service Rooms

Service rooms within the building include a full service kitchen, custodial closets, restrooms with shower facilities in the inmate areas, and laundry rooms.

Condition: Average

Deficiencies: The service room fixtures and general finishes were observed to have reached their useful life cycle expectation.

Resolution: Renovate the kitchen and restroom finishes including equipment, ventilation, and finishes. At the time of renovation or replacement the entire kitchen will need to be redesigned to accommodate the additional housing and code requirements.



C1010 – Interior Partitions

Primarily consist of painted CMU bearing walls, frame with drywall or plaster finish. Security glazing exists at various locations throughout the building such as in the control rooms.

Condition: Average

Deficiencies: Interior partitions were observed in relatively stable condition, however, water infiltration throughout the building have caused deterioration of the finish and efflorescence build-up. Security glazing was observed to be damaged and beyond their useful life cycle in some areas.

Resolution: Replace damaged control room glazing. After water infiltration has been resolved conduct paint removal, cleaning and filling of porous block, and repaint all interior partition surfaces.



C1020 – Interior Doors

Interior doors include flush wood, hollow metal doors, and secure hollow metal doors in hollow metal frames. Door panels vary from flush to fully glazed and include locksets with lever handles, hinges, door closers, and security electronics.

Condition: Average

Deficiencies: General interior doors are reaching the end of their useful life cycle of 35 years. Doors in 160D (delivery area) are rusted at the base. Stairway doors and jams are rusting.

Resolution: Replace interior doors and security door lock systems. Door locks are past their useful life and require replacement on an annual basis.

C1035 – Misc. Interior Systems

Misc. interior systems include signage with room information. Interior stairs throughout the building are comprised of metal stair pans with poured concrete treads and painted metal hand rails. The facility includes 279 jail cells with fixtures and secure hollow doors and frames. The facility has extensive metal railings.

Condition: Average

Deficiencies: Interior jail cell fixtures have reached the end of their useful life expectation and will require system renewals. Interior signage has reached the end of its useful life cycle.

Resolution: Remove and replace Jail cell doors, signage, and equipment as they fail.

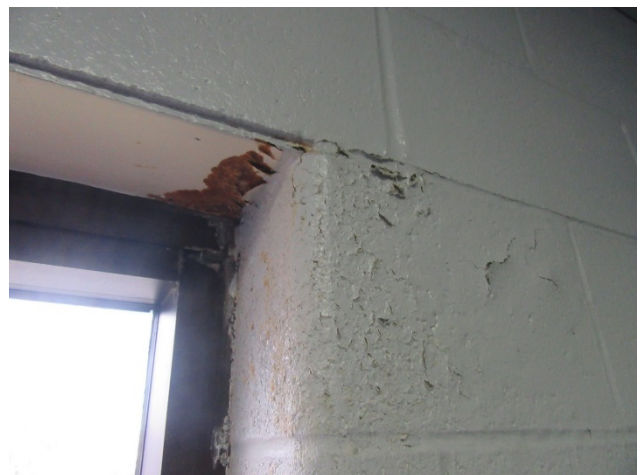
C3010 – Wall Finishes

The primary wall finishes throughout the interior of the building consist of painted drywall, painted block and ceramic tile.

Condition: Average

Deficiencies: Painted drywall finishes throughout the facility are nearing the end of their expected life cycle. Exterior water infiltration within the shell has accelerated their degradation.

Resolution: Install new interior wall finishes upon solving the water infiltration issues.



C3020 – Floor Finishes

Interior floor finishes primarily include concrete slab, carpet and VCT.

Condition: Poor

Deficiencies: Floor finishes were observed in poor condition and at the end of their useful life expectation.

Resolution: After addressing water infiltration issues throughout the building replace all carpet and VCT floor covering. Remove and replace all carpet and VCT throughout the facility. Clean and seal all concrete floors.



C3030 – Ceiling Finishes

Ceiling finishes include drywall, ACT and unfinished exposed superstructure.

Condition: Poor

Deficiencies: There is visible water damage on the ceiling tile in several locations on the 2nd and 3rd floors of the Sheriff's Administration. There are two factors that are contributing to the water damage on the ceiling tiles. The first are small leaks in the fire sprinkler piping. This will continue to be a challenge given the ongoing piping degradation. The second is the water infiltration through the exterior wall. Ceiling finishes were observed are at the end of their useful life.

Resolution: Upon renewal of other finishes the Drywall and ACT ceiling system should be replaced. The concrete ceilings should be painted upon resolution of any building envelope and vapor transmission issues.



D10 – Conveyance

The building includes 2 multi-story elevators servicing 5 floors and one unit servicing 3 floors.

Condition: Average

Deficiencies: Brushes on elevators are replaced every two months. Elevator #2 generator and motor were replaced in 2018. Elevators have a fairly high maintenance record due to age and heavy use. There is a need for an auxiliary generator to maintain the elevators during emergency situations.

Resolution: Modernize the elevators including equipment, track, cable, motors, doors, interior cabs, and controls.

D20 – Plumbing Distribution

The plumbing systems include sanitary and storm drainage systems and domestic hot and cold water systems. There is a pressure booster pump/system to increase the water pressure to provide required pressure to serve the upper floors. The building is fully sprinkled and has a fire pump to provide required flow/pressures when activated. The building has natural gas service and distribution for heating, domestic hot water generation, kitchen and laundry areas. The domestic and laundry boilers were replaced in 2018.



Condition: Poor

Deficiencies: The largest complaint with the plumbing systems was the lack of floor drains in the dayrooms of the housing ranges. Whenever there are water discharge problems from a cell there are too few floor drains to dissipate the water in the dayroom. When one of these events occurs, the water makes its way down through the building to the mechanical floor (3rd Floor) and the maintenance staff sweeps the water into the floor drains located there. Alternatively they direct the water to the plumbing chase where the one floor drain is located in most ranges. The water and sanitary piping has considerable corrosion and leaks. There are very limited shut-offs installed on the various plumbing lines. When the sprinkler head goes off it is challenging to locate a valve to locally stop the water flow. The domestic water booster system pumps were repaired and motors replaced recently due to hard starts on the systems causes excessive wear and tear on the equipment itself. The domestic hot and cold water piping, sanitary sewer piping, and fire suppression piping at the concrete floor penetrations must be addressed. The surface contact with concrete has caused severe corrosion issues and has affected the life span of the metal piping. The domestic water pumps have exceeded their life expectancy. The Rinnai and Lochinvar water heaters are approaching their end of service life.

Resolution: The County needs to complete a major upgrade and redesign to the plumbing systems throughout the facility. In addition, upgrades for the equipment, pumps, controls, and fixtures needs to be implemented. At the time of redesign the County should consider creating a new pipe chase system, install adequate floor drainage, and consider a maintenance friendly design approach.



D30 – Heat & AC Systems

The building mechanical systems consist of two (2) water cooled chillers, cooling tower, two (2) natural gas fired hot water heating boilers in which Boiler 2 was re-tubed in 2015, six (6) main circulating pumps supplying heating and chiller water to five (5) air handling units, and four (4) multi-zone air handlers. Additional supplemental heat is provided at various locations via hot water fin tube radiation, unit and cabinet heaters. There are thirty-eight (38) exhaust fans, five (5) return fans and one (1) supply fan providing ventilation and exhaust airflow. There is a dedicated computer room air conditioning system. The temperature



control system for the facility is mainly pneumatic with minimal electronic digital controls. The mechanical equipment and distribution systems are mostly original to the facility. Central core areas of the ranges have had fans and supplemental air conditioning added for the correction officer's comfort and electronic equipment cooling needs. In general the equipment appears to be functionally supporting the building requirements on the Sheriff's Office administration area, and with the exception of the chiller serving the jail, systems work for the remainder of the building. The facilities staff regularly maintains the equipment and systems which are nearing the end of their useful life.

Condition: Average

Deficiencies: The building chillers are Trane, 175 ton capacity each, and have two reciprocating compressors for each chiller. Facility staff reported that each chiller has had major compressor failure within the past 9 years. The two (2) heating boilers are each Bryan flex tube 4000 Mbh input natural gas fired, forced-draft boilers. They appear to be in good condition and no major complaints were noted for maintenance or repairs. The boilers likely have 2-3 years remaining of their useful life. The system pumps are the original equipment and are nearing the end of their useful life. The piping system shows some signs of corrosion, the building maintenance staff noted that there have been several leaks and repairs made. The Air Handling and Multi-Zone Units, except for AHU3, are all original equipment from 1991 and nearing the end of their useful life. Rust was noted on many units, mainly near the cooling coils which has caused damage to the coils and unit casings. Several units were noted to have condensate



drainage leaks and damaged ductwork and insulation. AHU3 has been replaced at a cost of \$150,000.00. Additionally, the cooling compressor was replaced in 2014 at a cost of \$10,750.00, and the cooling coils have been replaced for both the administrative and detention side at a cost of \$34,000.00.

These chillers are reaching the end of their useful life. This is evidenced by the compressor replacements, maintenance, and high costs to repair. These chillers are also considerably less energy efficient than models currently available. The cooling tower is a dual-cell Evapco unit, matched with one cell dedicated to serving a particular chiller. The tower is nearing the end of its anticipated service life and has considerable rust evident in both the tower casing and the support structure.

Resolution: Building mechanical systems need to be systematically replaced with new, more energy efficient equipment. Additionally, the temperature control system should be replaced with a modern, open-protocol electronic building management system. Further assessment of the piping and duct system should be done during design of equipment improvements to determine how much of these systems could be maintained and re-used in conjunction with the new heating, cooling and ventilating equipment.

D3010 – Facility Fuel Systems

Fuel systems within the building include natural gas system and distribution piping.

Condition: Good

Deficiencies: None observed

Resolution: N/A

D3060 – Ventilation

The jail and building exhaust systems are a typical roof mounted exhaust fan system. The jail exhaust system consists of vertical thru floor stacked duct that's run in a vertical chase with inlets to individual inmate cells. The administration side building exhaust system consists of multiple roof mounted exhaust fans with standard exhaust duct configuration.

Condition: Average

Deficiencies: The entire exhaust system has reached its useful life expectancy. All inmate cell exhaust duct and duct insulation are in poor to average condition and have multiple missing duct connections. Floor penetrations of duct are rusted and/or corroded beyond repair.



Resolution: Replace the exhaust systems throughout the facility.

D40 – Sprinkler System

A wet sprinkler system is serviced by a 6" line and covers the entire facility. The system includes pumps, pipe distribution, sprinkler heads and flow switches.

Condition: Poor

Deficiencies: The sprinkler piping is original to the building, is rusting, and has many failing seals/joints. The piping that was used appears to be minimally galvanized. With the constant presence of water and humidity in the facility it is now corroding and according to maintenance staff replacements are being made frequently. Piping was only able to be verified in open ceiling areas. The fire pump was rebuilt in 2018 at a cost of \$36,300.00. The fire suppression piping is in poor condition and appears to have reached its useful life expectancy. It was also noted that the piping has had a number of maintenance/repair issues. Both of these systems are original to the 1991 construction.



Resolution: Replace fire suppression system.

D5010 – Electrical Service & Distribution

The electrical systems include the incoming service and switchgear, distribution equipment including panelboards and motor control centers, lighting and lighting control systems, general convenience outlets, door control system, security and video surveillance, a fire alarm system and a standby emergency power system - including a generator, automatic transfer switches and emergency distribution system.

Condition: Good

Deficiencies: In general, the electrical equipment and systems have been well maintained and are in good working order. The systems and equipment are original to construction 1991, except for the lighting and fire alarm system. Light fixture lamps are in the process of being changed over to LED and the original fire alarm system was upgraded in 2008. The original electrical distribution equipment is by Westinghouse, including the switchgear, panelboards, transformers, motor control centers and disconnect switches. Replacement parts have been discontinued and have become increasingly difficult and expensive to find. The generator was completely rebuilt in 2009, new batteries and a new turbo was installed in 2018. A new emergency shut off was also installed for the generator in 2018. Fuel storage for the generator is currently an underground storage tank (UST) that is past its useful life. The fire alarm system and generator are maintained and tested according to required schedules and best practices. The access control system continues to be reliable and functions well. Facility staff requested maintaining a similar system for any future projects given its simplicity for use, repair, modification, and reliability.



Resolution: Remove Underground storage tank (UST) for generator fuel storage. Test soils and remediate as required. Install a new above ground fuel storage tank. Due to age and lack of replacement parts, replace Main Electric Service Switchgear, Motor Control Centers, and Panelboards in the building within the next 8-10 years.

D5080 – Misc. Electrical Systems

The building includes exit signage and emergency lighting.

Condition: Average

Deficiencies: None Observed however systems will reach the end of their useful life expectancy in the assessment term.

Resolution: Replace the exit signage with code compliant signs. Additional signage may be required to comply with current codes.

D60 – Communication & Security

The lighting and door control systems are in the process of being replaced. The original PLC and relay based systems with hardwired push-button consoles are on all but the 5th floor. The electrical components are in good working order and have been well maintained. The component parts are obsolete and no longer supported. This includes the control consoles, PLC's, sliding door circuit boards and intercom. The intercom system is original to the 1991 construction and needs to be upgraded to be meet current state regulations. . The card reader system has been replaced throughout the building. The fire alarm system was replaced in 2008. The security camera systems have been budgeted to be replaced in 2019.



Condition: Average

Deficiencies: Overall the systems are operational and many components have been replaced in recent years. Most of the deficient items will be replaced within the 2019-2020 timeframe, however the intercom system needs to be replaced in order to comply with state regulations. Cost of the intercom system Replacement in the existing facility may exceed \$800,000.

Resolution: Replace intercom system and associated wiring to comply with state regulations. Replace Fire Alarm System and associated wiring when a major renovation occurs.



Summary

The below tables represent the overall projected building needs over the next 10 years, individual projects with ROM cost expectations and the deficiencies and system renewals based their prioritized needs. The existing condition of the facility represents the end of useful life expectancy for many systems based on national averages for heavily used facilities of this type and conditions as observed.

We are currently carrying a 20% contingency as a factor of safety. As the project moves to actual implementation the A/E firm preparing this work will determine the actual scope of work and phasing in conjunction with the County in alignment with budget availability. There will likely be an ongoing dialog between the entire project team. This communication will ensure that the County receives a proper balance of quality and value in the final construction to ensure the building will function as originally intended.

PREFIX	COMPONENTS	ROM VALUE		Year 0-2	Year 3-5	Year 6-10		Total	CI	
A10	Foundations	\$875,377		\$0	\$0	\$0		\$0	0.00	
B10	Superstructure Systems	\$4,505,391		\$0	\$66,500	\$0		\$66,500	0.01	
B20	Vertical Shell Construction	\$4,189,097		\$3,800,000	\$0	\$0		\$3,800,000	0.91	
B30	Roofing	\$1,242,622		\$1,365,000	\$0	\$0		\$1,365,000	1.10	
C10	Kitchen, Restrooms & Utility	\$588,023		\$0	\$80,000	\$500,000		\$580,000	0.99	
C1010	Interior Partitions	\$2,618,450		\$30,000	\$200,000	\$0		\$230,000	0.09	
C1020	Interior Doors	\$463,100		\$0	\$0	\$325,000		\$325,000	0.70	
C1035	Misc. Interior Systems	\$4,974,248		\$0	\$75,000	\$2,500,000		\$2,575,000	0.52	
C3010	Wall Finishes	\$535,000		\$0	\$0	\$500,000		\$500,000	0.93	
C3020	Floor Finishes	\$296,520		\$0	\$0	\$550,000		\$550,000	1.85	
C3030	Ceiling Finishes	\$412,550		\$0	\$750,000	\$0		\$750,000	1.82	
D10	Elevators & Lifts	\$928,200		\$0	\$0	\$500,000		\$500,000	0.54	
D20	Plumbing Distribution	\$3,076,368		\$2,485,000	\$0	\$0		\$2,485,000	0.81	
D30	Heat & AC Systems	\$3,744,572		\$2,267,500	\$0	\$0		\$2,267,500	0.61	
D3010	Facility Fuel Systems	\$270,492		\$0	\$0	\$0		\$0	0.00	
D3060	Ventilation	\$455,001		\$425,000	\$0	\$0		\$425,000	0.93	
D40	Sprinkler System	\$1,286,828		\$1,740,000	\$0	\$0		\$1,740,000	1.35	
D5010	Electrical Service & Distribution	\$3,940,992		\$97,000	\$225,000	\$0		\$322,000	0.08	
D5080	Misc. Electrical Systems	\$182,602		\$0	\$0	\$12,500		\$12,500	0.07	
D60	Communications and Security	\$2,207,940		\$850,000	\$500,000	\$0		\$1,350,000	0.61	
G10	Site	\$378,940		\$0	\$80,000	\$40,000		\$120,000	0.32	
				Year 0-2	Year 3-5	Year 6-10		Total	FCI	
	Hard Cost Subtotal	\$37,172,310		\$13,059,500	\$1,976,500	\$4,927,500		\$19,963,500	0.54	
	Contractor GC/OP	\$9,293,078	25%	Contractor GC/OP Markup						
	Arch Design	\$2,973,785	8%	Arch Design Markup						
	Contingencies	\$7,434,462	20%	Contingencies Markup						
	Soft Costs Subtotal	\$19,701,324		\$6,921,535	\$1,047,545	\$2,611,575		\$10,580,655		
	Total ROM value	\$56,873,634		\$19,981,035	\$3,024,045	\$7,539,075		\$30,544,155		

Table 8: Lake County Jail Capital Priorities, Budgets and Condition Indexes by Component

Hard & Soft Cost Resolutions	UoM	Units	Unit Cost	Estimate	Priority	Category
- B10-1: Add Floor Drains	LS	1	\$91,800.00	\$91,800	P3	Program Adequacy
- B10-2: Structural Waffle Ceiling Repairs	LS	1	\$9,945.00	\$9,945	P3	Building Integrity
- B20-1: Stone Coping Caps	LS	1	\$229,500.00	\$229,500	P2	Building Integrity
- B20-2: Replace Windows	LS	1	\$1,071,000.00	\$1,071,000	P1	Building Integrity
- B20-3: Replace Doors	LS	1	\$76,500.00	\$76,500	P1	Building Integrity
- B20-4: Replace Brick Façade	LS	1	\$4,437,000.00	\$4,437,000	P1	Building Integrity
- B30-1: Replace Roof	LS	1	\$1,989,000.00	\$1,989,000	P1	Building Integrity
- B30-2: Parapet Wall Flashing	LS	1	\$99,450.00	\$99,450	P2	Building Integrity
Structure & Exterior Envelope Sub-Total	-			\$8,004,195		
- C10-1: Renew Kitchen Finishes	LS	1	\$122,400.00	\$122,400	P3	Program Adequacy
- C10-2: Renew Restrooms and Showers	LS	1	\$765,000.00	\$765,000	P3	Program Adequacy
- C1010-1: Control Room Glazing	LS	1	\$45,900.00	\$45,900	P2	Program Adequacy
- C1010-2: Survey and Repair Walls	LS	1	\$306,000.00	\$306,000	P3	Building Integrity
- C1020-2: Replace Interior Doors	EA	220	\$1,738.64	\$382,500	P3	Program Adequacy
- C1020-3: Replace Door Locks	EA	220	\$521.59	\$114,750	P3	Program Adequacy
- C1035-1: Replace Interior signage	EA	170000	\$0.68	\$114,750	P3	Program Adequacy
- C1035-2: Renovate Jail Cell Finishes	EA	279	\$13,709.68	\$3,825,000	P3	Program Adequacy
- C3010-1: Repaint Interior	SF	500000	\$1.53	\$765,000	P3	Appearance
- C3020-1: Replace floor Finishes	SF	65000	\$9.42	\$612,000	P3	Appearance
- C3020-2: Clean and Seal Concrete	SF	45000	\$5.10	\$229,500	P3	Program Adequacy
- C3030-1: Replace Ceiling Finishes	SF	170000	\$6.75	\$1,147,500	P3	Program Adequacy
Interior Finishes Sub-Total:	-			\$8,430,300		
- D10-1: Elevator Modernization	LS	1	\$765,000.00	\$765,000	P3	Program Adequacy
- D20-1: Major Plumbing Upgrade	LS	1	\$2,524,500.00	\$2,524,500	P1	Building Integrity
- D20-2: Major Pipe Floor Penetrations	LS	1	\$1,224,000.00	\$1,224,000	P1	Building Integrity
- D20-3: Domestic Water Pump Replacement	LS	1	\$53,550.00	\$53,550	P2	Program Adequacy
- D30-1: Replace Mechanical Systems	LS	1	\$3,469,275.00	\$3,469,275	P2	Building Integrity
- D3060-1: Replace Exhaust Systems	SF	170000	\$3.83	\$650,250	P2	Program Adequacy
- D40-1: Replace Fire Suppression System	SF	170000	\$15.66	\$2,662,200	P2	Health & Safety
- D5010-1: Remove UST for Generator	LS	1	\$99,450.00	\$99,450	P2	Environmental
- D5010-2: Install Above Ground Storage Tank	LS	1	\$48,960.00	\$48,960	P2	Environmental
- D5010-3: Replace Switchgear	SF	170000	\$2.03	\$344,250	P3	Building Integrity
- D5080-1: Replace Exit Signage	SF	170000	\$0.11	\$19,125	P3	Code Compliance
- D60-1: Replace Intercom System	LS	1	\$1,300,500.00	\$1,300,500	P2	Code Compliance
- D60-2: Replace Fire Alarm System	SF	170000	\$4.50	\$765,000	P3	Health & Safety
Interior Services Sub-Total:	-			\$13,926,060		
- G10-1: Landscaping Remediation	LS	1	\$15,300.00	\$15,300	P3	Appearance
- G10-2: Accessibility Compliance	LS	1	\$45,900.00	\$45,900	P3	Program Adequacy
- G10-3: Outdoor Yard	LS	1	\$122,400.00	\$122,400	P3	Program Adequacy
Site Services Sub-Total:	-			\$183,600		
	-			\$30,544,155		

Table 9: Lake County Jail Resolution list by Unifmat



Chapter 2
Trends Analysis

CHAPTER TWO – TRENDS ANALYSIS

POPULATION TRENDS

The goal of this Chapter is to identify the current characteristics to the criminal justice system in Lake County, Ohio for its adult population. It is essential to understand the workings of the existing system to use it as a benchmark to help determine future trends.

This Section includes crime rate trends, an extensive survey of the type of offenders in jail, existing jail utilization, and condition / overall jail bed projections. This data, combined with the requirements set forth in the Ohio Minimum Jail Standards, will help establish the size of jail that will be described in the following Sections.

Lake County is cautioned to not correlate the population of the County with the population of the criminal justice system as the two do not relate.

EXISTING LAKE COUNTY JAIL

Lake County currently operates one facility located in Painesville, Ohio. The facility was built in 1993 with a capacity of 383 beds which translates into an operational capacity of 360 beds. The detention areas of the facility consist largely of double occupancy cells with three minimum security housing units. Facilities are provided for both men and women.

The jail operates over its rated capacity for various classifications which impacts the overall effectiveness of its operation given capacity limitations. For instance:

- Female inmates have no classification separation.
- Minimal accounting for medical classification / separation.
- Older juveniles (18+ years old) have limited to no ability to be housed in the facility away from adults.
- The lack of programming space is a deficiency that has become more significant with the increase in population.
- The ability to manage the mental health issues which constitute a large portion of the jail population.

The current jail facility remains an integral part of the County's Criminal Justice system. It must be used to detain offenders and house sentenced offenders. Operationally, the facility is meeting the demands of incarceration and no longer able to rent beds to other agencies. The current staffing levels for correctional officers and staff are understood to be optimal given the indirect supervision model employed by the Sheriff. All staff remain committed to the Sheriff's mission to return inmates back to society better than when they first arrived at the facility.

The Sheriff and Jail Administration should be commended for keeping the facility in legal compliance and showcases their proper management of the jail. The challenge remains in how to maintain the operations of the facility given the significant degradation of the physical infrastructure, non-compliance with ADA and other governing regulations.

Inmate Processing Trends

Inmate processing counts have been tracked for the past 26 years and ranged from 5305 to a maximum of 6768 annually. The term jail processing includes all persons "booked" to jail regardless of whether they are released. Most jail admissions result from immediate arrests. Most persons booked into the jail are released within 72 hours. Those not released remain until such time their case is heard, plea negotiated, sentence rendered, or sentence served.

The total inmates processed over the past 10 years averaged 5469 persons, and for virtually the last 10 years has been in a declining trend. Alternative sentencing practices, bonding ability, court processing, and other practical population management techniques are all being used to manage the jail population. Nationally the trends are consistent with those found at the Lake County Jail as more and more counties around the country are managing their populations based on number of available beds.

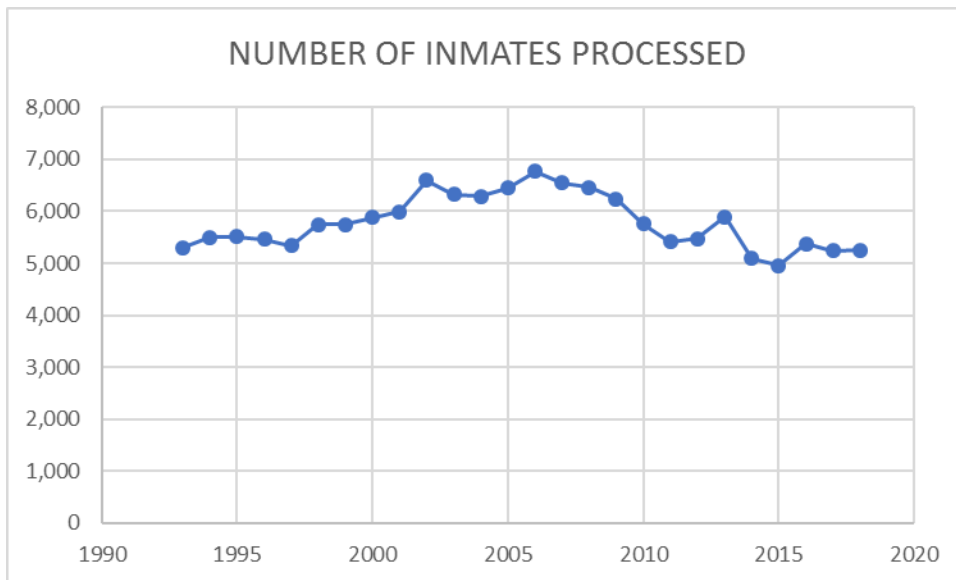


Table 10: Number of Inmates Processed

Inmate Profile

The Lake County Sheriff's Office has kept excellent records since the opening of the current Lake County Jail. All classifications of prisoners are housed in the facility with minimal space and separation. Traditionally the Jail is used to house non-violent offenders. Of the total population less than 25% are considered violent. The classification system used at the facility, according to staff, reduces the tendency for violence at the facility. The following series of charts demonstrates the wide range of inmate classifications that should be considered separate for secure jail operations.

Inmate Profile – Pretrial / Sentenced (Misdemeanant)

The pretrial / sentenced information was developed from data snapshots that were provided by the Lake County Sheriff's Office. The data shows that there are 5:1 as many sentenced inmates to pretrial inmates in the jail for both men and women. The caseload management practices between the courts and the Sheriff's office has been consistent for many years.

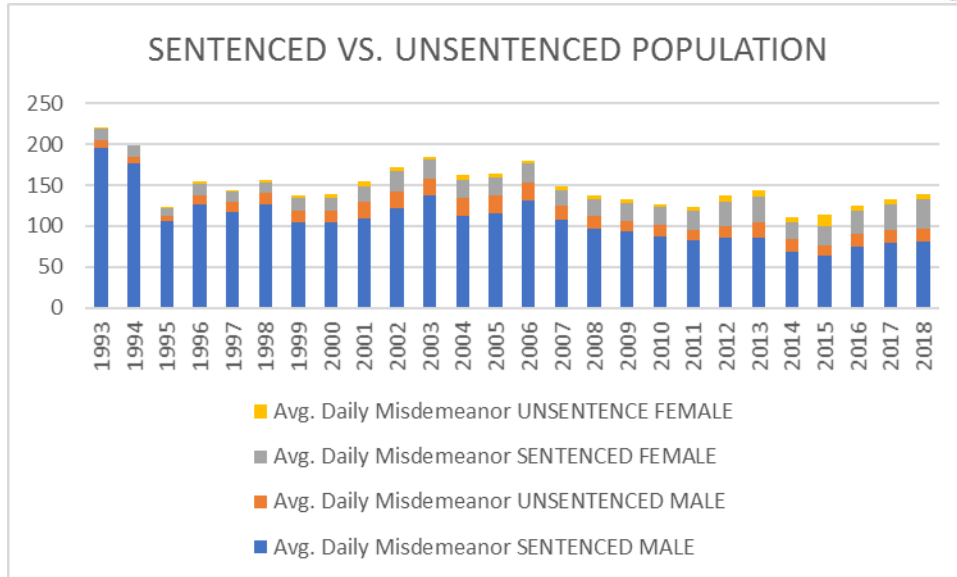


Table 11: Sentenced vs. Unsentenced Population

Inmate Profile – Unsentenced / Sentenced (Felon)

The sentenced / unsentenced information was developed from data snapshots that were provided by the Lake County Sheriff’s Office. The data shows that there are 1.77 unsentenced persons to the number of sentenced persons. There are nearly twice as many pretrial male inmates in the jail to sentenced inmates today. This shows the impact of a substantially longer case timeframe for felony-based cases. The female count is up from the previous study and is now 1.3 on average for 5 years of unsentenced versus sentenced. The female population has been on the rise for the last 10 years.

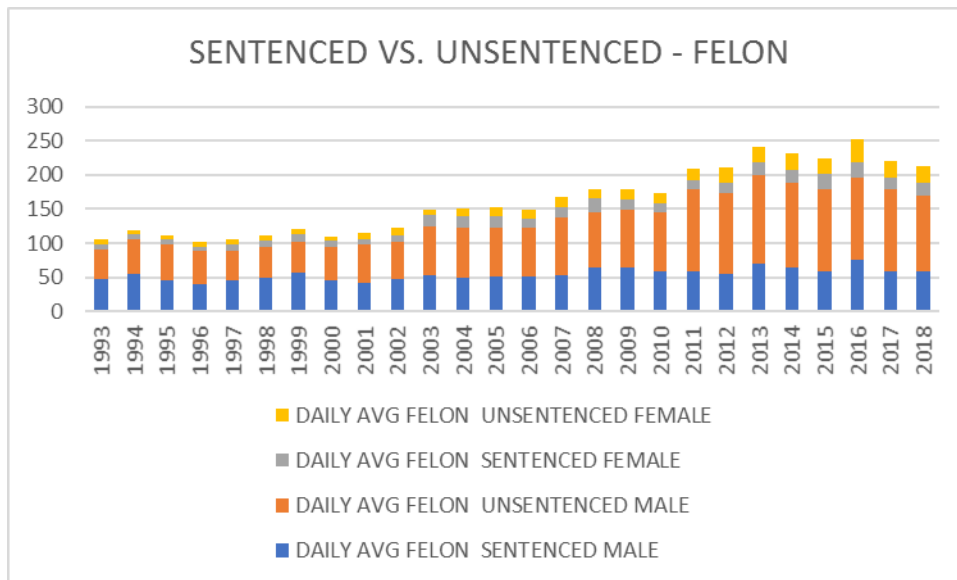


Table 12: Sentenced vs. Unsentenced Felon

Inmate Profile – Misdemeanant / Felon

The misdemeanor / felon information was developed from the annual reports provided to us by Lake County. The chart shows two groups that could be considered separate within the facility. Felons tend

to stay in jail a much longer time where misdemeanants have a quick turnover. We continue to support the current classification that establishes multiple factors on housing status within the facility given the limitations set by the physical infrastructure itself. There has been a steady increase in housed misdemeanants and felons are averaging 224 per year for the last 5-years which is an increase by 22 from the previous 5-year period.

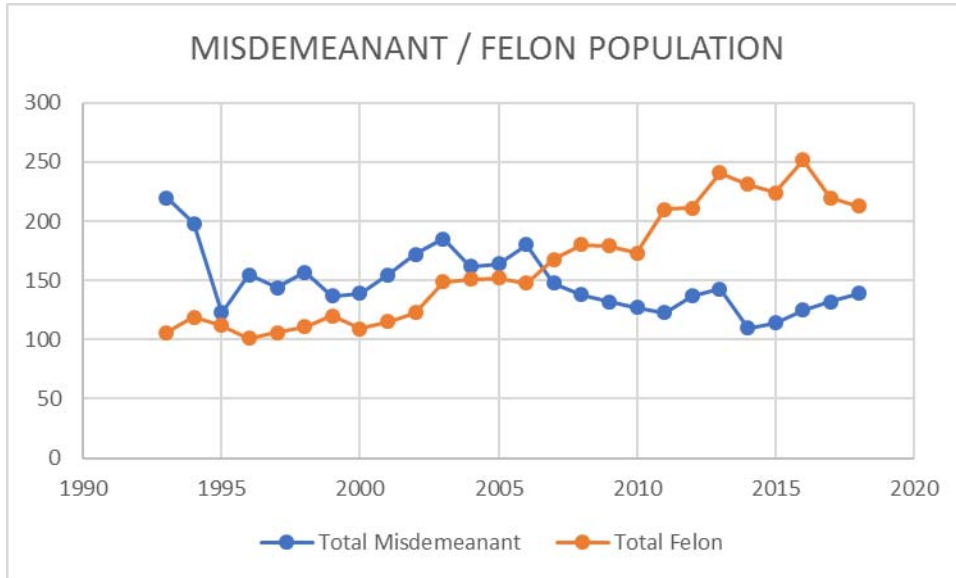


Table 13: Misdemeanant / Felon Population

Inmate Population – Men and Women

The male and female population count information was developed from data snapshots that were provided by the Lake County Sheriff’s Office. The male population for the last 5 years averaged 270 males compared to 267 the previous 5-year period. This represents the average number of males in the facility is consistent over a 10-year period of time. The most noticeable change is in the female population which has increased by a factor of 2.83x since the statistics were tracked. This population is putting great pressure on the jail that was never designed to house as many females.

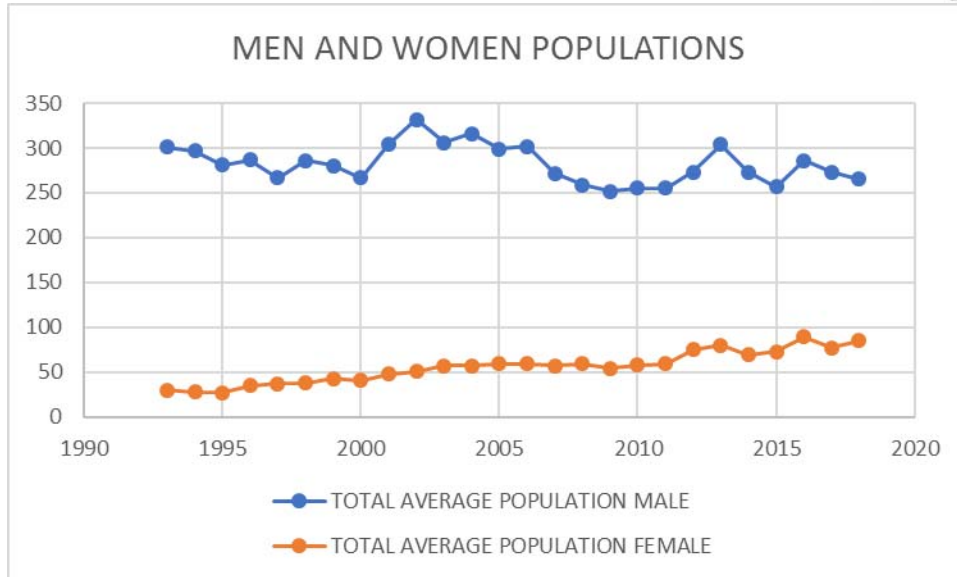


Table 14: Men and Women Populations

Inmate Profile – Classification

The facility uses an objective classification system to assign inmates to housing units. The intake officer assigns the inmate based on sex, age, criminal sophistication, seriousness of the crime charged, physical or mental health needs, and assaultive or non-assaultive behavior tendencies. Unsentenced inmates are separated from sentenced inmates whenever possible. A point system is used to assign inmates their custody level.

The security level count information was developed from data snapshots that were provided by the Lake County Sheriff’s Office. Inmates are broken down into three overall classifications – minimum, medium or maximum. The table below shows the classification averages for the County. Each population count shows an interesting trending. Minimum security continues to decline. There were 103 inmates on average the past 5-years and 124 inmates in the previous 5-year period representing a decline of .83. Medium security is the most challenging inmate profile count and is quite unpredictable from an average’s perspective. The swings when evaluating the last five years result in a 1.8x change in population year over year with 2.5x growth between 2017 and 2018. Maximum security classification averages 35 inmates for a 5-year period and is a 1.4x increase over the previous 5-year period.

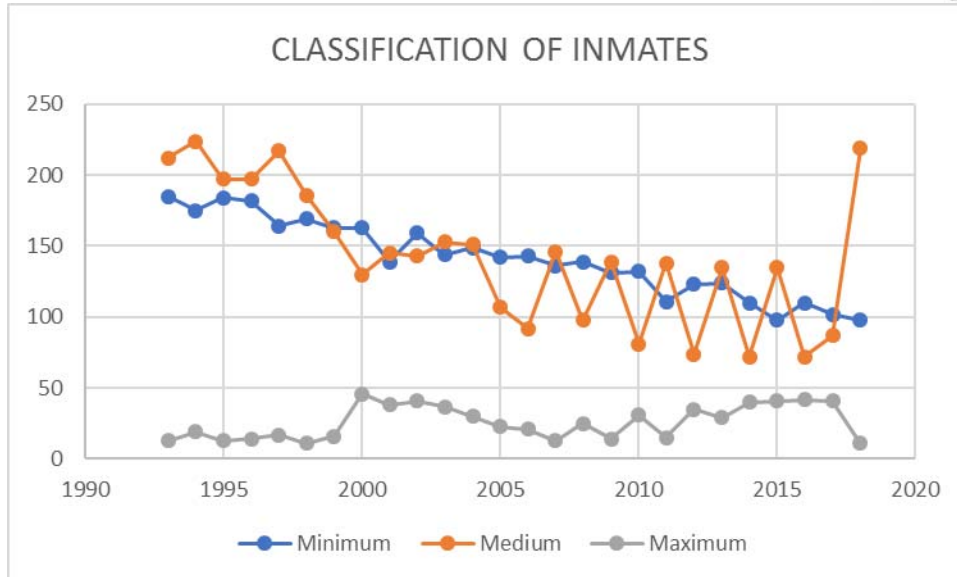


Table 15: Classification of Inmates

JAIL CAPACITY

A jail’s average daily population (ADP) is a factor of the number of people booked / admitted into the jail and their average length of stay (ALOS). Significant increases in the number of admissions or an average length of stay will cause a jail population to exponentially increase.

Current Capacity

The facility was built with a capacity of 383 beds which translates into an operational capacity of 360 beds. When the facility was first constructed, the County rented on average 120 beds to outside agencies such as the City of Cleveland and the US Marshal’s Office. Today this figure is 3 beds on average which represents that the County is housing its own population with no capacity to accommodate outside sources.

Future Projections

The projections for average daily population and bed space needs are based on three major factors: system based statistical models, demographic based statistical models, and time series modeling. The development of the Lake County system-wide jail ADP and bed space projections uses these models to forecast population levels to the year 2039. The primary factors employed for the models were the annual ADP, annual ADM, and ALOS in Lake County. It is important to note that population statistics were not considered given the negligible rate of growth or decline.

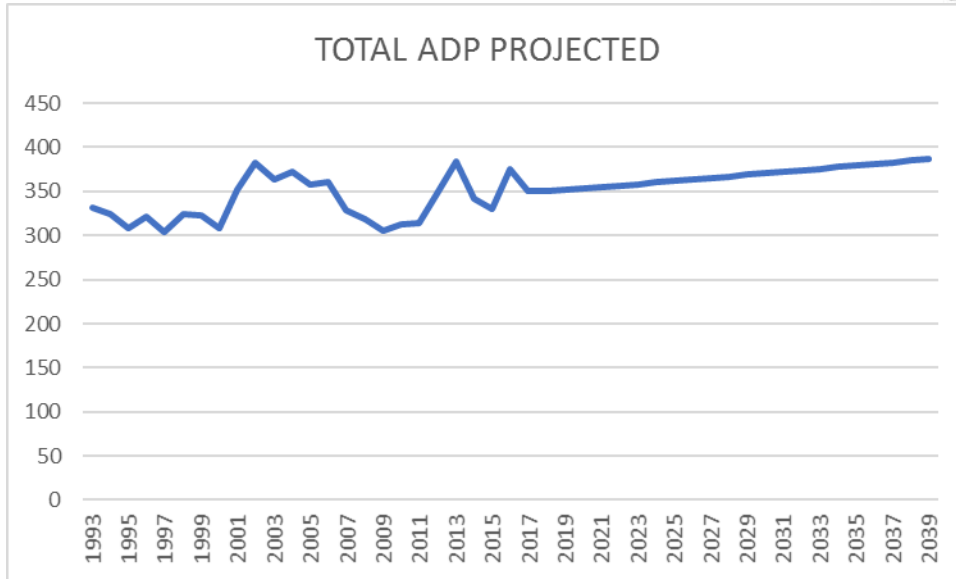


Table 16: Total ADP Projected

The population is expected to grow at a very low rate of .004% The total rated bed count required in 2029 is 369 and in 2039 is 387.

When looking at the Lake County inmates (non-bed rentals) over the entire statistical period the picture shows a greater increase in Lake County men and women being housed in the facility. The population is expected to grow at a low rate of 1.2% requiring upwards of 450 beds over the survey period.

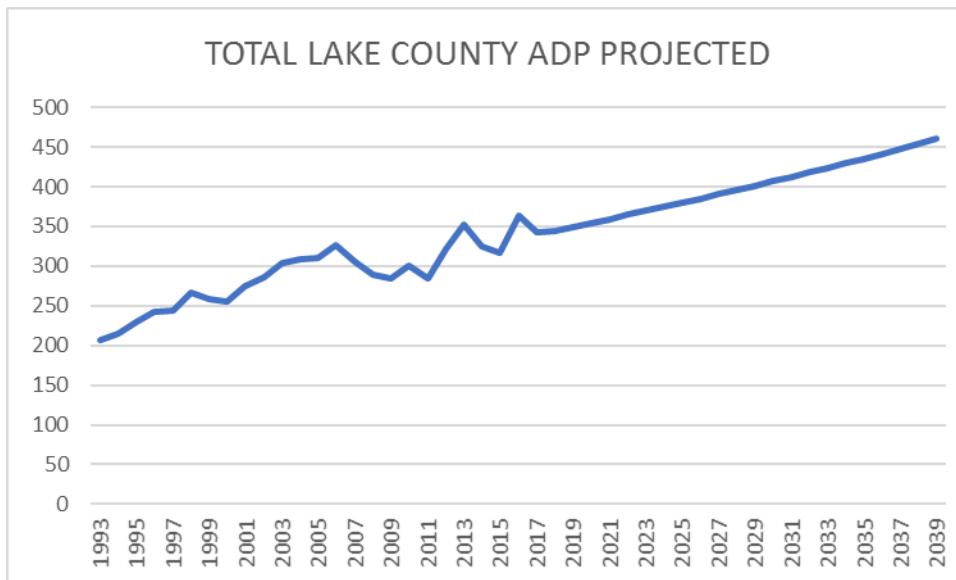


Table 17 - Lake County ADP Projected

Criminal justice facilities cannot be planned for the ADP solely; peaks in population must be accommodated, along with beds for differing inmate classification. The peaking value of the Lake



County Jail is calculated using monthly data from January 2013 to December 2018. The highest months of ADP compared to the annual ADP. The percentage difference for each year is calculated.

A peaking factor accounts for seasonal variations in the inmate population. There needs to be enough beds to accommodate seasonal increases without overcrowding. The actual factor is the percentage above the average daily population. Data was analyzed to ascertain the actual peaking factor for Lake County. For the monthly dataset from January 2013 to December 2018, the average peaking percentage was 11-percent. This means that the largest number of inmates held in Lake County was 11-percent higher than the average inmate population during the time period examined.

A classification factor accounts for a fluctuation in the type of inmates held at any given time. There may be times where there are more maximum-security inmates than the average number conversely there may be times when there are more minimum-security inmates than the average. There needs to be enough flexibility in the type of beds needed at any given time to be able to provide appropriate separations between the classification levels of inmates. It is very difficult or impossible to ascertain a historical percentage for a classification factor as systems do not retain classification data in an aggregate manner historically. As a result, and based on experience, a 7 percent factor is applied.

The peaking and classification factors were added together and applied to the population projections to give a bed space need. The projected bed space need for Lake County is 435 in 2029, growing to 457 by 2039. The recommended ADP and jail bed space projections are based on status quo conditions moving forward in time.

JAIL BED SPACE NEEDS PROJECTIONS						
Year	2019	2024	2029	2034	2039	# Change
ADP - Recommended	352	360	369	378	387	35
Peaking (11%)	39	40	41	42	43	4
Classification (7%)	25	25	26	26	27	2
Recommended Bed Space Need	415	425	435	446	457	42

Table 18: Jail Bed Space Needs Projections

Separate projections were run for females and males, using the same models used for the aggregate projections. The female population in the jail has increased 5 percent from 2009 to 2018, from 54 in 2009 to 85 in 2018. This increase drives the projected female population to a projected 95 in 2039. Most projected ADP growth is assigned to females, as the male ADP increases only slightly on a total percentage basis.

ADP PROJECTIONS: BY GENDER						
Year	2019	2024	2029	2034	2039	# Change
ADP - Recommended	352	360	369	378	387	35
ADP - Females	75	83	86	91	95	20
ADP - Males	276	277	282	287	292	16

Table 19: ADP Projects: by Gender



The jail bed space need by gender is shown on table below determined from the projected ADP by gender. The peaking and classification percentages were split between the genders, with the male population given a larger weight of the peaking and classification as it is the largest population in the jail. The peaking and classification factor for the females ranges between 23-25% percent of the whole. The number of jail male bed space needed is 333 in 2029 and 344 in 2039. The number of jail female beds needed grows from 89 in 2019 to 102 in 2029, and 112 in 2039.

JAIL BED SPACE NEEDS PROJECTIONS: BY GENDER						
Year	2019	2024	2029	2034	2039	# Change
Bedspace - Females	89	98	102	107	112	23
Bedspace - Males	326	327	333	338	344	18
Total Bedspace	415	425	435	446	457	42

Table 20: Jail Bed Space Needs Projections: By Gender

An addition to the recommended bed space projections is beds for those in violation of alternatives to incarceration programs that violate the conditions of their program, and bed space for those released due to the current lack of beds. This includes Electronic Monitoring violations, probation violations, and pretrial releases terminations. The impact of no space for alternatives adds 30 beds for a total alternate recommended bed space need of 487 by 2039. 10 beds would be allocated to females and 20 beds allocated for males.

ALTERNATIVE BED SPACE NEEDS PROJECTIONS: BY GENDER						
Year	2019	2024	2029	2034	2039	# Change
Bedspace - Females	89	98	102	107	112	23
Alternative Beds - Female	10	10	10	10	10	10
Total Female Beds	99	108	112	117	122	23
Bedspace - Males	326	327	333	338	344	18
Alternative Beds - Male	20	20	20	20	20	20
Total Male Beds	346	347	353	358	364	18
Total Beds	445	455	465	476	487	42

Table 21: Alternative Bed Space Needs Projections: By Gender

When considering the total bed capacity, it is important to consider the type of beds that could be required in this facility. Inmates are assigned to appropriate housing units based on classification and security level of the housing unit. Rarely does the number of inmates identically match the number and type of detention beds available per classification (or vice-versa). Therefore, in order to provide enough beds for each security level, we provide the following factors for consideration.



BENCHMARKING HOUSING REQUIREMENTS AGAINST TOTAL JAIL BED NEEDS: BY GENDER											
Year		2019		2024		2029		2034		2039	
Classification	Benchmark	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Maximum	12%	42	12	42	13	42	13	43	14	44	15
Special Needs	15%	52	15	52	16	53	17	54	18	55	18
Segregation	3%	10	3	10	3	11	3	11	4	11	4
Medium	46%	159	46	160	50	163	51	165	54	168	56
Minimum	24%	83	24	83	26	85	27	86	28	87	29
Total	100%	346	99	347	108	353	112	358	117	364	122

Table 22: Benchmarking Housing Requirements Against Total Jail Bed Needs: By Gender

Based upon conversations with the Sheriff’s Office, and our own reviews of the population, we created the Project Program found in the next chapter to allow for flexibility in managing populations for this renovation / expansion project. The program is largely based on utilizing the existing space in its current function unless noted otherwise.



Chapter 3 Programming

CHAPTER THREE - PROGRAMMING

INTRODUCTION

The Lake County Sheriff's Office and Jail is an integral part of the local criminal justice system. The modified facility has been programmed to safely house and provide appropriate services and programs for inmates pursuant to the Ohio Minimum Jail Standards and County guidance. The goal of the Program is to identify the spaces required, aiding the planning team in the development of blocking and stacking diagrams. The facility will be designed and programmed to safely house and provide appropriate services and programs for the incarcerated pursuant to the corresponding standards.

The program areas and sizes allow for maximum flexibility in their use, as operating requirements do change. In addition to functional flexibility, the team will create construction / expansion flexibility enabling the facilities to adjust to changes in the law, sentencing practices, and crime rate increases that are difficult to predict as they are truly an unknown. Taken together, it is the intention of the project team to create facilities that accommodate the next 20 years of population growth and be flexible in its adaptation for growth beyond the planning period.

The project program is developed in two components as it exists today. The program lists the room number designation, current program element (existing condition) with corresponding quantity and square footage as well as the proposed program element based upon the standards and programming requirements reviewed with the project team members. Concluding the program is the addition of the grossing factors to calculate out the total gross square footage requirements.

This chapter explains the progression from net space to department occupied area to total building size for space planning purposes. We use grossing factors to calculate the total building requirement and make the assumption that the jail will employ an indirect management philosophy as it current does Taken together the program yields a 210,696 square foot building requirement for the Sheriff's Office / Jail or a 60,484 square foot building addition.

The following is a summary of the Lake County Jail Program:



Program Summary - Lake County Sheriff's Office and Jail		
No.	Name	Square Feet
1.0	Entry	2654
2.0	Sheriff's Administration	1565
3.0	Sheriff's Operations	3765
4.0	Road Patrol	3578
5.0	Detectives	1080
6.0	Evidence	2400
7.0	Jail Administration	3685
8.0	Food Service / Laundry	5825
9.0	Intake / Receiving	9200
10.0	Psychiatric Clinic / Jail Treatment Program	1359
11.0	Visitation	1320
12.0	Work Release Program	3300
13.0	Medical	3285
14.0	Housing	50420
15.0	Jail Programming	24364
16.0	Staff Support	4892
17.0	Building Support	8003
18.0	Probation	3215
	Net Grossing Factor Increase (25%)	33385
	Department Grossing Factor Increase (20%)	33385
	Building Grossing Factor Increase (5%)	10016
	Total	210696

Table 23: Program Summary

To create the program of requirements for these facilities varying planning standards (Safety, Correctional, and Grossing) were used in addition to modeling the current functionality of the Sheriff's Office and Jail.

Correctional Standards

The Ohio Minimum Jail Standards, as prepared by the Ohio Department of Rehabilitation and Corrections (ODRC) are considered by those concerned to be the minimum conditions necessary to ensure the safe, efficient, effective, and legal operation of an adult jail. The standards serve as the basis for evaluating Ohio jails both individually and collectively and for developing courses of action for needed improvements. The standards apply to county jails, municipal jails, regional jails, and workhouses. The standards dictate planning requirements for new facilities in terms of square footages, physical construction, and programming needs.

Building Gross Square Feet

Building gross square feet (BGSF) is the sum of all assignable (department square foot) spaces and non-assignable spaces to include exterior wall thickness, common public circulation area, stairwells, and elevators. A BGSF factor is applied after the addition of all the Department Square Foot components to yield a final estimate of the full spatial impact of each component of the building.

Program of Requirements: Lake County Justice Center - Sheriff's Office and Jail										
No	Existing Room Name	Current Quantity	Unit	Unit SF	Current Total	Future Quantity	Unit	Unit SF	Future Total	Future Program Name
1.0 ENTRY										
	1.01 Vestibule	1	SF	82	82	1	SF	82	82	Vestibule
	1.02 Lobby	1	SF	2275	2275	1	SF	2275	2275	Lobby
	1.03 Mens Toilet	1	SF	118	118	1	SF	118	118	Mens Toilet
	1.04 Female Toilet	1	SF	153	153	1	SF	153	153	Female Toilet
	1.05 Janitor Closet	1	SF	26	26	1	SF	26	26	Janitor Closet
2.0 SHERIFF'S ADMINISTRATION										
	2.01 Sheriff's Reception	1	SF	230	230	1	SF	230	230	Sheriff's Reception
	2.02 Coat Closet	1	SF	23	23	1	SF	23	23	Coat Closet
	2.03 Storage	1	SF	155	155	1	SF	155	155	Storage
	2.04 Sheriff's Office	1	SF	341	341	1	SF	341	341	Sheriff's Office
	2.05 Private Toilet	1	SF	27	27	1	SF	27	27	Private Toilet
	2.06 Sheriff's Storage	1	SF	83	83	1	SF	83	83	Sheriff's Storage
	2.07 Chief Deputy	1	SF	276	276	1	SF	276	276	Chief Deputy
	2.08 Library / Conference Room	1	SF	270	270	1	SF	270	270	Library / Conference Room
						1	SF	160	160	Storage / Work Area
3.0 SHERIFF'S OPERATIONS										
	3.01 Open Work Area	1	SF	386	386	1	SF	386	386	Open Work Area
	3.02 Court Officers' Office	1	SF	327	327	1	SF	327	327	Court Officers' Office
	3.03 Clerk - Accounts Receivable	1	SF	105	105	1	SF	105	105	Clerk - Accounts Receivable
	3.04 Payroll	1	SF	122	122	1	SF	122	122	Payroll
	3.05 Sheriff's Auction	1	SF	82	82	1	SF	82	82	Sheriff's Auction
	3.06 IT Supervisor	1	SF	189	189	1	SF	189	189	IT Supervisor
	3.07 IT Office / Storage	1	SF	190	190	1	SF	190	190	IT Office / Storage
	3.08 Data Server	1	SF	97	97	1	SF	97	97	Data Server
	3.09 General Storage	1	SF	118	118	1	SF	118	118	General Storage
	3.10 Records / File Room	1	SF	332	332	1	SF	332	332	Records / File Room
	3.11 Copy / Work Area	1	SF	371	371	1	SF	371	371	Copy / Work Area
	3.12 Traffic Reporting	1	SF	64	64	1	SF	64	64	Traffic Reporting
	3.13 Summons Workstation	1	SF	64	64	1	SF	64	64	Summons Workstation
	3.14 Sheriff's Auction Workstations	2	SF	64	128	2	SF	64	128	Sheriff's Auction Workstations
	3.15 Administrative Support Services	1	SF	80	80	1	SF	80	80	Administrative Support Services
	3.16 Administrative / Front Office	1	SF	160	160	1	SF	160	160	Administrative / Front Office
	3.17 Jail Records / Warrants / Receiving	1	SF	250	250	1	SF	250	250	Jail Records / Warrants / Receiving
	3.18 Sheriff's Records - Third Floor	1	SF	700	700	1	SF	700	700	Sheriff's Records - Third Floor
4.0 ROAD PATROL										
	4.01 Lieutenants Office	1	SF	392	392	1	SF	392	392	Lieutenants Office
	4.02 Administrative Classroom / Ready Room	1	SF	1111	1111	1	SF	1111	1111	Administrative Classroom / Ready Room
	4.03 Property Room / Supplies	1	SF	114	114	1	SF	114	114	Property Room / Supplies
	4.04 Report Writing	1	SF	197	197	1	SF	197	197	Report Writing
	4.05 Road Patrol Sergeant's Office	1	SF	119	119	1	SF	119	119	Road Patrol Sergeant's Office
	4.06 Kitchenette	1	SF	30	30	1	SF	30	30	Kitchenette
	4.07 Mens Toilet	1	SF	142	142	1	SF	142	142	Mens Toilet
	4.08 Womens Toilet	1	SF	139	139	1	SF	139	139	Womens Toilet
	4.09 Janitor Closet	1	SF	31	31	1	SF	31	31	Janitor Closet
	4.10 Interview Room	1	SF	89	89	1	SF	89	89	Interview Room
	4.11 Interview Room	1	SF	99	99	1	SF	99	99	Interview Room
	4.12 Road Patrol Commander Office	1	SF	125	125	1	SF	125	125	Road Patrol Commander Office
	4.13 Range Shooting Office / Supply	1	SF	98	98	1	SF	98	98	Range Shooting Office / Supply
	4.14 SWAT Vehicle Storage	1	SF	801	801	1	SF	801	801	SWAT Vehicle Storage
	4.15 SWAT Equipment	1	SF	91	91	1	SF	91	91	SWAT Equipment
5.0 DETECTIVES										
	5.01 Administrative Assistant	1	SF	217	217	1	SF	217	217	Administrative Assistant
	5.02 Detective Bureau Command Officer	1	SF	172	172	1	SF	172	172	Detective Bureau Command Officer
	5.03 Interview Room	1	SF	149	149	1	SF	149	149	Interview Room
	5.04 Detectives Area (4) workstations and conf table	1	SF	474	474	1	SF	474	474	Detectives Area (4) workstations and conf table
	5.05 Storage	1	SF	42	42	1	SF	42	42	Storage
	5.06 Storage	1	SF	26	26	1	SF	26	26	Storage

No	Existing Room Name	Current Quantity	Unit	Unit SF	Current Total	Future Quantity	Unit	Unit SF	Future Total	Future Program Name
6.0 EVIDENCE										
6.01	General Storage	1	SF	86	86	1	SF	80	80	General Storage
6.02	Armory	1	SF	143	143	1	SF	140	140	Armory
6.03	Short Term Evidence	1	SF	74	74	1	SF	80	80	Short Term Evidence
6.04	Evidence - Weapons Storage	1	SF	47	47	1	SF	80	80	Evidence Storage - Weapons
6.05	Sheriff's Evidence - Third Floor	1	SF	520	520	1	SF	520	520	General Storage / Expansion Area
						1	SF	1500	1500	Evidence Record Storage
7.0 JAIL ADMINISTRATION										
7.01	Jail Visitor Lobby	1	SF	202	202	1	SF	240	240	Jail Visitor Lobby w/ kiosk
7.02	Jail Administrator	1	SF	193	193	1	SF	193	193	Jail Administrator
7.03	Shift Lieutenant Office	1	SF	157	157	1	SF	157	157	Shift Lieutenant Office - shared office with 4 of them
3.03	Jail Records	1	SF	271	271	1	SF	271	271	Jail Records
3.04	Storage	1	SF	78	78	1	SF	78	78	Storage
3.05	Central Control - First Floor	1	SF	318	318	1	SF	318	318	Central Control - First Floor
3.06	Staff Toilet	1	SF	25	25	1	SF	45	45	ADA Staff Toilet
3.07	Interview Room	1	SF	96	96	1	SF	96	96	Interview Room
3.08	Storage	1	SF	56	56	1	SF	56	56	Storage
3.09	Jail Sergeant's Office	1	SF	156	156	1	SF	156	156	Jail Sergeant's Office - 6 of them share this. 2 at a time
3.10	Central Control - Second Floor	1	SF	381	381	1	SF	381	381	Central Control - Second Floor
3.11	Central Control - Fourth Floor	1	SF	381	381	1	SF	381	381	Central Control - Fourth Floor
3.12	Central Control - Fifth Floor	1	SF	381	381	1	SF	381	381	Central Control - Fifth Floor
3.13	Safety Officer Office - Second Floor	1	SF	167	167	1	SF	167	167	Safety Officer Office - Second Floor
						1	SF	400	400	Briefing / Staff Muster / Conference Room
						1	SF	240	240	Auxiliary Central Control
						1	SF	80	80	Auxiliary Central Control - Electronics Room
						1	SF	45	45	Central Control Toilet Room
8.0 FOOD SERVICE / LAUNDRY										
8.01	Kitchen	1	SF	1076	1076	1	SF	1400	1400	Kitchen
8.02	Food Prep	1	SF	173	173	1	SF	200	200	Food Prep
8.03	Dishwashing	1	SF	336	336	1	SF	340	340	Dishwashing
8.04	Toilet	1	SF	26	26	1	SF	45	45	Inmate Toilet
8.05	Lieutenant - Kitchen & Maintenance	1	SF	121	121	1	SF	140	140	Lieutenant - Kitchen & Maintenance
8.06	Kitchen Storage	1	SF	160	160	1	SF	160	160	Kitchen Storage
8.07	Staff Dining	1	SF	124	124	1	SF	360	360	Staff Cafeteria
8.08	Office	1	SF	86	86	1	SF	120	120	Office with Shadow Board
8.09	Dry Storage	1	SF	65	65	1	SF	400	400	Dry Storage
8.10	Walk-in Freezers / Cooler	1	SF	92	92	1	SF	400	400	Walk-in Freezers / Cooler
8.11	Dry Storage	1	SF	103	103					
8.12	Receiving Staging	1	SF	168	168	1	SF	280	280	Secure Receiving
						1	SF	140	140	Loading Dock
						1	SF	120	120	Secure Vestibule
						1	SF	200	200	Trash Handling (exterior)
						1	SF	20	20	Can Wash
8.13	Commissary	1	SF	522	522	1	SF	600	600	Commissary
8.14	Laundry	1	SF	531	531	1	SF	500	500	Laundry
						1	SF	200	200	Soiled Linen
						1	SF	200	200	Clean Linen
9.0 INTAKE / RECEIVING										
9.01	Vehicle Sallyport	1	SF	1439	1439	4	SF	700	2800	Vehicle Sallyport - 4 Bay
						1	SF	80	80	Decontamination Room
9.02	Breathalyzer Room	1	SF	218	218	1	SF	80	80	Breathalyzer Room
						1	SF	80	80	Report Writing Room
						1	SF	140	140	Body Scanning Room
9.03	Intake Waiting	1	SF	310	310	1	SF	240	240	Intake Waiting - Male
						1	SF	140	140	Intake Waiting - Female
9.04	Inmate Property	1	SF	326	326	1	SF	600	600	Inmate Property
9.05	Clean Clothes Issue	1	SF	92	92	1	SF	90	90	Clean Clothes Issue
9.06	Toilet	1	SF	26	26	1	SF	45	45	Toilet
9.07	Male Booking	1	SF	1005	1005	1	SF	1000	1000	Male Booking
9.08	Male Shower	1	SF	188	188	1	SF	200	200	Male Shower
9.09	Inmate Toilet	1	SF	28	28	1	SF	45	45	Inmate Toilet
9.10	Cell	12	SF	73	876	12	SF	70	840	Cell (wet)
9.11	Group Cell	1	SF	147	147	1	SF	120	120	Group Cell
9.12	Group Holding	1	SF	145	145	1	SF	120	120	Group Holding
9.13	Group Holding	1	SF	113	113	1	SF	120	120	Group Holding
9.14	Male Holding Dayroom	1	SF	672	672	1	SF	700	700	Male Holding Dayroom
9.15	Male Shower	1	SF	36	36	1	SF	45	45	Male Shower
9.16	Male Inmate Toilet	1	SF	36	36	1	SF	45	45	Male Inmate Toilet
9.17	Female Booking	1	SF	558	558	1	SF	550	550	Female Booking
9.18	Female Shower	1	SF	124	124	1	SF	120	120	Female Shower
9.19	Storage	1	SF	36	36	1	SF	40	40	Storage
9.20	Cell	8	SF	73	584	12	SF	70	840	Cell (wet)
9.21	Group Cell	1	SF	144	144	1	SF	120	120	Group Cell
9.22	Classification Dayroom	1	SF	667	667					
9.23	Classification Cell	6	SF	73	438					
9.24	Classification Inmate Toilet	1	SF	36	36					
9.25	Classification Shower	1	SF	36	36					



No	Existing Room Name	Current			Future			Future Program Name
		Quantity	Unit	Unit SF	Quantity	Unit	Unit SF	
10.0 PSYCHIATRIC CLINIC / JAIL TREATMENT PROGRAM								
10.01	Waiting	1	SF	155	1	SF	155	Waiting
10.02	Testing	1	SF	57	1	SF	57	Testing / Interview (Psych)
10.03	Testing	1	SF	57	1	SF	57	Testing / Interview (Psych)
10.04	Staff Toilet	1	SF	42	1	SF	42	Staff Toilet
10.05	Administrative Assistants (2)	1	SF	131	1	SF	131	Administrative Assistants (2)
10.06	Jail Treatment Program / Conference Room	1	SF	200	1	SF	200	Jail Treatment Program / Conference Room
10.07	Jail Treatment Program Counselor	1	SF	136	1	SF	136	Jail Treatment Program Counselor
10.08	Jail Treatment Program Counselor	1	SF	135	1	SF	135	Jail Treatment Program Counselor
10.09	Doctor Office	1	SF	181	1	SF	181	Doctor Office
10.10	Jail Treatment Program Counselor	1	SF	112	1	SF	112	Jail Treatment Program Counselor
10.11	Jail Treatment Program Counselor	1	SF	121	1	SF	121	Jail Treatment Program Counselor
10.12	Supply	1	SF	32	1	SF	32	Supply
11.0 VISITATION								
11.01	Visitation	1	SF	667			667	
11.02	Confidential Visitation	1	SF	119	3	SF	119	357 Confidential Visitation
11.03	Video Visitation	1	SF	203	1	SF	203	203 Public Video Visitation
11.04	Visitor's Vestibule - Fourth Floor	1	SF	121	1	SF	121	121 Video Visitation - Fourth Floor
11.05	Attorney Room - Fourth Floor	1	SF	79	1	SF	79	79 Attorney Room - Fourth Floor
11.06	Visitation - Fifth Floor	1	SF	200	1	SF	200	200 Video Visitation - Fifth Floor
					2	SF	80	160 Attorney Room - Addition
					1	SF	200	200 Video Visitation - Addition
12.0 WORK RELEASE PROGRAM								
12.01	Work Release Waiting	1	SF	179	1	SF	180	180 Work Release Waiting
12.02	Work Release Locker Room	1	SF	374	1	SF	380	380 Work Release Locker Room
12.03	Male Work Release Dayroom	1	SF	416	1	SF	700	700 Male Work Release Dayroom
12.04	Male Work Release Dormitory	1	SF	638	1	SF	900	900 Male Work Release Dormitory - (20) males
12.05	Male Work Release Shower / Toilet	1	SF	47	1	SF	280	280 Male Work Release Shower / Toilet
12.06	Male Work Release Upper Shower / Toilet	1	SF	115				
					1	SF	200	200 Female Work Release Locker Room
					1	SF	210	210 Female Work Release Dayroom
					1	SF	270	270 Female Work Release Dormitory - (6) females
					1	SF	180	180 Female Work Release Shower / Toilet
13.0 MEDICAL								
13.01	Waiting / Toilet	1	SF	111	1	SF	110	110 Waiting / Toilet - Male
13.02	Waiting / Toilet	1	SF	116	1	SF	110	110 Waiting / Toilet - Female
13.03	Medical Ward	1	SF	274	1	SF	320	320 Medical Ward - male
					1	SF	240	240 Medical Ward - female
					7	SF	70	490 Medical Cell
					3	SF	70	210 Medical Cell
					1	SF	70	70 Negative Pressure Medical Cell - Male
					1	SF	70	70 Negative Pressure Medical Cell - Female
13.04	Inmate Toilet / Shower	1	SF	42	1	SF	90	90 Inmate Toilet / Shower - Male
					1	SF	90	90 Inmate Toilet / Shower - Female
13.05	Corrections Officer Workstation	1	SF	71	1	SF	180	180 Nurses Station
13.06	Lab	1	SF	24	1	SF	80	80 Lab
13.07	Staff Toilet	1	SF	28	1	SF	45	45 Staff Toilet
13.08	Doctor Office	1	SF	147	2	SF	140	280 Doctor / Psychologist Office
13.09	Pharmacy	1	SF	80	1	SF	80	80 Pharmacy
13.10	Records Storage	1	SF	68	1	SF	300	300 Records Storage
13.11	Exam Room	1	SF	154	2	SF	140	280 Exam Room
13.12	Dental Exam	1	SF	98	1	SF	140	140 Dental Exam
					1	SF	100	100 Sterilization Room

LAKE COUNTY, OHIO
LAKE COUNTY JAIL ANALYSIS



No	Existing Room Name	Current Quantity	Unit	Unit SF	Current Total	Future Quantity	Unit	Unit SF	Future Total	Future Program Name
14.0 HOUSING										
14.01	Minimum Security Dayroom - Second Floor	1	SF	677	677	1	SF	1680	1680	Male Minimum Dormitory - Dayroom (48) person unit
14.02	Minimum Security Dormitory - Second Floor	1	SF	1338	1338	1	SF	2400	2400	Dormitory - Housing
14.03	Minimum Security Shower / Toilet - Second Floor	1	SF	241	241	1	SF	480	480	Toilet / Shower Area
14.04	Minimum Security Upper Dayroom	1	SF	236	236	1	SF	1680	1680	Male Minimum Dormitory - Dayroom (48) person unit
14.05	Minimum Security Upper Dormitory	1	SF	770	770	1	SF	2400	2400	Dormitory - Housing
14.06	Minimum Security Upper Shower / Toilet	1	SF	115	115	1	SF	480	480	Toilet / Shower Area
14.07	Minimum Security Upper Dayroom	1	SF	497	497					
14.08	Minimum Security Upper Dormitory	1	SF	1099	1099					
14.09	Male Dayroom H - Second Floor	1	SF	855	855					
14.10	Shower / Toilet	1	SF	37	37					
14.11	Cell	12	SF	73	876	1	SF	840	840	Female Minimum Dormitory - Dayroom (24) person unit
14.12	Isolation Cell	1	SF	109	109	1	SF	240	240	Dormitory - Dayroom
14.13	Isolation Cell	1	SF	117	117					
14.14	Male Dayroom G - Second Floor	1	SF	931	931					
14.15	Shower / Toilet	1	SF	37	37					
14.16	Cell	12	SF	73	876					
14.17	Female Dayroom F - Second Floor	1	SF	916	916					
14.18	Shower / Toilet	1	SF	37	37					
14.19	Cell	12	SF	73	876					
14.20	Female Dayroom E - Second Floor	1	SF	932	932					
14.21	Shower / Toilet	1	SF	37	37					
14.22	Cell	12	SF	73	876					
14.23	Female Dayroom D - Second Floor	1	SF	900	900					
14.24	Shower / Toilet	1	SF	37	37					
14.25	Cell	12	SF	73	876					
14.26	Male Dayroom C - Second Floor	1	SF	939	939					
14.27	Shower / Toilet	1	SF	37	37					
14.28	Cell	12	SF	73	876					
14.29	Trustee Dayroom B - Second Floor	1	SF	867	867					
14.30	Dormitory	1	SF	265	265					
14.31	Shower / Toilet - Mezzanine	1	SF	37	37					
14.32	Dormitory - Mezzanine	1	SF	1066	1066					
14.33	Dayroom - Mezzanine	1	SF	579	579					
14.34	Shower / Toilet - Mezzanine	1	SF	110	110					
14.35	Male Dayroom H - Fourth Floor	1	SF	855	855					
14.36	Shower / Toilet	1	SF	37	37					
14.37	Cell	12	SF	73	876					
14.38	Isolation Cell	1	SF	113	113	6	SF	110	660	Isolation Cells
14.39	Male Dayroom G - Fourth Floor	1	SF	931	931					
14.40	Shower / Toilet	1	SF	37	37					
14.41	Cell	12	SF	73	876					
14.42	Male Dayroom F - Fourth Floor	1	SF	921	921	1	SF	1680	1680	Female (Medium) Dayroom
14.43	Shower / Toilet	1	SF	37	37	4	SF	40	160	Shower / Toilet
14.44	Cell	12	SF	73	876	24	SF	100	2400	Female (Medium) Double Cell - 48 beds
14.45	Male Dayroom E - Fourth Floor	1	SF	932	932	1	SF	630	630	Female (Maximum) Dayroom
14.46	Shower / Toilet	1	SF	37	37	2	SF	40	80	Shower / Toilet
14.47	Cell	12	SF	73	876	18	SF	100	1800	Female (Maximum) Single Cell - 18 beds
14.48	Male Dayroom D - Fourth Floor	1	SF	900	900	1	SF	210	210	Female (Segregation) Dayroom
14.49	Shower / Toilet	1	SF	37	37	1	SF	40	40	Shower / Toilet
14.50	Cell	12	SF	73	876	6	SF	70	420	Female (Segregation) Single Cell - 6 beds
14.51	Male Dayroom C - Fourth Floor	1	SF	940	940	1	SF	630	630	Female (Special Needs) Dayroom
14.52	Shower / Toilet	1	SF	37	37	2	SF	40	80	Shower / Toilet
14.53	Cell	12	SF	73	876	18	SF	100	1800	Female (Special Needs) Single Cell - 18 beds
14.54	Male Dayroom B - Fourth Floor	1	SF	940	940	1	SF	1680	1680	Male (Medium) Dayroom
14.55	Shower / Toilet	1	SF	37	37	4	SF	40	160	Shower / Toilet
14.56	Cell	12	SF	73	876	24	SF	100	2400	Male (Medium) Double Cell - 48 beds
14.57	Male Dayroom A - Fourth Floor	1	SF	900	900	1	SF	1680	1680	Male (Medium) Dayroom
14.58	Shower / Toilet	1	SF	37	37	4	SF	40	160	Shower / Toilet
14.59	Cell	12	SF	73	876	24	SF	100	2400	Male (Medium) Double Cell - 48 beds
14.60	Isolation Cell	1	SF	112	112	1	SF	1680	1680	Male (Medium) Dayroom
14.61	Male Dayroom G - Fifth Floor	1	SF	931	931	4	SF	40	160	Shower / Toilet
14.62	Shower / Toilet	1	SF	37	37	24	SF	100	2400	Male (Medium) Double Cell - 48 beds
14.63	Cell	12	SF	73	876	1	SF	840	840	Male (Medium) Dayroom
14.64	Male Dayroom F - Fifth Floor	1	SF	921	921	3	SF	40	120	Shower / Toilet
14.65	Shower / Toilet	1	SF	37	37	24	SF	70	1680	Male (Medium) Single Cell - 24 beds
14.66	Cell	12	SF	73	876	1	SF	1680	1680	Male (Maximum) Dayroom
14.67	Male Dayroom E - Fifth Floor	1	SF	932	932	4	SF	40	160	Shower / Toilet
14.68	Shower / Toilet	1	SF	37	37	48	SF	70	3360	Male (Maximum) Single Cell - 48 beds
14.69	Cell	12	SF	73	876	1	SF	420	420	Male (Segregation) Dayroom
14.70	Male Dayroom D - Fifth Floor	1	SF	900	900	4	SF	40	160	Shower / Toilet
14.71	Shower / Toilet	1	SF	37	37	12	SF	70	840	Male (Segregation) Single Cell - 12 beds
14.72	Cell	12	SF	73	876	1	SF	1680	1680	Male (Special Needs) Dayroom
14.73	Male Dayroom - C - Fifth Floor	1	SF	940	940	4	SF	40	160	Shower / Toilet
14.74	Shower / Toilet	1	SF	37	37	48	SF	70	3360	Male (Special Needs) Single Cell - 48 beds
14.75	Cell	12	SF	73	876					
14.76	Male Dayroom - B - Fifth Floor	1	SF	940	940					
14.77	Shower / Toilet	1	SF	37	37					
14.78	Cell	12	SF	73	876					
14.79	Male Dayroom - A - Fifth Floor	1	SF	900	900					
14.80	Shower / Toilet	1	SF	37	37					
14.81	Cell	12	SF	73	876					
						1	SF	280	280	Juvenile Dayroom
						1	SF	40	40	Shower / Toilet
						8	SF	70	560	Cell

ID	Existing Room Name	Current			Future			Future Program Name	
		Quantity	Unit	Unit SF	Current Total	Future Quantity	Unit		Unit SF
15.0 JAIL PROGRAMMING									
15.01	Multipurpose Room / Gymnasium	1	SF	2867	2867	2	SF	2800	5600 Gymnasium
15.02	Outdoor Recreation	4	SF	1929	7716	6	SF	2000	12000 Outdoor Recreation
15.03	Video Arraignment - Fifth Floor	1	SF	83	83	2	SF	140	280 Video Arraignment
15.04	Video Arraignment - Fifth Floor	1	SF	83	83	1	SF	83	83 Video Arraignment - Fifth Floor
15.05	Storage - Fifth Floor	1	SF	929	929	1	SF	929	929 Storage - Fifth Floor
15.06	Briefing / Clergy / Attorney Room	1	SF	200	200	1	SF	200	200 Briefing / Clergy / Attorney Room
15.07	Program - Fifth Floor Mezzanine	1	SF	208	208	1	SF	208	208 Program - Fifth Floor Mezzanine
15.08	Classroom - Second Floor	1	SF	523	523	1	SF	523	523 Classroom - Second Floor
15.09	Mental Health Counselor - Second Floor	1	SF	92	92	1	SF	92	92 Mental Health Counselor - Second Floor
15.10	Mental Health Counselor - Second Floor	1	SF	82	82	1	SF	82	82 Mental Health Counselor - Second Floor
15.11	Library - Second Floor	1	SF	202	202	1	SF	240	240 Library
15.12	Storage (Medical Files) - Fourth Floor	1	SF	90	90	1	SF	90	90 Storage (Medical Files) - Fourth Floor
15.13	Storage (Medical Files) - Fourth Floor	1	SF	90	90	1	SF	90	90 Storage (Medical Files) - Fourth Floor
15.14	Classroom - Fourth Floor	1	SF	522	522	1	SF	522	522 Classroom - Fourth Floor
15.15	Observation Room - Fourth Floor	1	SF	162	162	1	SF	162	162 Observation Room - Fourth Floor
15.16	Library - Fourth Floor Mezzanine	1	SF	219	219	1	SF	219	219 Law Library
						2	SF	600	1200 Program / Multipurpose Room
						2	SF	240	480 Group Room
						2	SF	82	164 Counseling Office
						6	SF	80	480 Interview Rooms
						2	SF	240	480 Computer Training
						1	SF	240	240 BarberShop
16.0 STAFF SUPPORT									
16.01	Staff Toilet - Second Floor	1	SF	52	52	1	SF	52	52 Staff Toilet - Male
16.02	Staff Toilet - Second Floor	1	SF	54	54	1	SF	54	54 Staff Toilet - Female
16.03	Break Room - Second Floor	1	SF	270	270	1	SF	270	270 Break Room - Second Floor
16.04	Exercise	1	SF	1068	1068	1	SF	1068	1068 Exercise
16.05	Equipment Storage	1	SF	75	75	1	SF	75	75 Equipment Storage
16.06	Men's Locker Room	1	SF	968	968	1	SF	968	968 Men's Locker Room
16.07	Men's Shower / Toilet	1	SF	120	120	1	SF	120	120 Men's Shower / Toilet
16.08	Women's Locker Room	1	SF	617	617	1	SF	617	617 Women's Locker Room
16.09	Women's Shower / Toilet	1	SF	83	83	1	SF	83	83 Women's Shower / Toilet
						1	SF	40	40 Shared Staff Laundry Closet
16.10	Staff Toilet - Third Floor	1	SF	47	47	1	SF	47	47 Staff Toilet - Third Floor
16.11	Staff Toilet - Third Floor	1	SF	48	48	1	SF	48	48 Staff Toilet - Third Floor
16.12	Staff Toilet - Probation	1	SF	45	45	1	SF	45	45 Staff Toilet - Probation
16.13	Staff Toilet - Probation	1	SF	45	45	1	SF	45	45 Staff Toilet - Probation
						2	SF	45	90 Staff Toilet - Addition - Male
						2	SF	45	90 Staff Toilet - Addition - Female
						1	SF	80	80 De-Stress Room
						1	SF	1000	1000 Training / Matt Room
						1	SF	100	100 Matt Storage
17.0 BUILDING SUPPORT									
17.01	Fire Pump Room	1	SF	177	177	1	SF	177	177 Fire Pump Room
17.02	Generator Room	1	SF	247	247	1	SF	247	247 Generator Room
17.03	Electrical Equipment	1	SF	402	402	1	SF	402	402 Electrical Equipment
17.04	Telephone Room	1	SF	66	66	1	SF	66	66 Telephone Room
17.05	Elevator	1	SF	73	73	1	SF	73	73 Elevator
17.06	Elevator Machine Room	1	SF	73	73	1	SF	73	73 Elevator Machine Room
17.07	Maintenance Office	1	SF	106	106	1	SF	120	120 Maintenance Office
17.08	Mechanical Room	1	SF	197	197	1	SF	197	197 Mechanical Room
17.09	Telephone Closet	1	SF	56	56	1	SF	56	56 Telephone Closet
17.10	Maintenance Room	1	SF	154	154	1	SF	154	154 Maintenance Room
17.11	Maintenance Room	1	SF	171	171	1	SF	171	171 Maintenance Room
17.12	Maintenance Storage	1	SF	47	47	1	SF	47	47 Maintenance Storage
17.13	Mechanical Room	1	SF	1874	1874	1	SF	1874	1874 Mechanical Room
17.14	Communication Closet - Fourth Floor	1	SF	158	158	1	SF	80	80 Communication Closet - Fourth Floor
17.15	Janitor Closet - Fifth Floor	1	SF	34	34	1	SF	150	150 Janitor Closet - Fifth Floor
17.16	Electrical Room - Fifth Floor	1	SF	200	200	1	SF	200	200 Electrical Room - Fifth Floor
17.17	Storage - Fifth Floor	1	SF	170	170	1	SF	170	170 Storage - Fifth Floor
17.18	Storage - Fifth Floor Mezzanine	1	SF	157	157	1	SF	157	157 Storage - Fifth Floor Mezzanine
17.19	Janitor Closet - Second Floor	1	SF	148	148	1	SF	148	148 Janitor Closet - Second Floor
17.20	Electrical Room - Second Floor	1	SF	85	85	1	SF	85	85 Electrical Room - Second Floor
17.21	Data Room - Second Floor	1	SF	121	121	1	SF	121	121 Data Room - Second Floor
17.22	Storage - Second Floor	1	SF	168	168	1	SF	168	168 Storage - Second Floor
17.23	Janitor Closet - Fourth Floor	1	SF	149	149	1	SF	149	149 Janitor Closet - Fourth Floor
17.24	Electrical Room - Fourth Floor	1	SF	85	85	1	SF	85	85 Electrical Room - Fourth Floor
17.25	Storage - Fourth Floor Mezzanine	1	SF	182	182	1	SF	182	182 Storage - Fourth Floor Mezzanine
17.26	Storage - Fourth Floor Mezzanine	1	SF	159	159	1	SF	159	159 Storage - Fourth Floor Mezzanine
17.27	Janitor Office	1	SF	92	92	1	SF	92	92 Janitor Office
17.28	Janitor Supply	1	SF	120	120	1	SF	120	120 Janitor Supply
						1	SF	240	240 Electrical Room
						1	SF	400	400 Mechanical Room
						1	SF	160	160 Fire Suppression Room w/ Pump
						2	SF	80	160 Elevator
						1	SF	120	120 Elevator Machine Room
						1	SF	80	80 Telephone / Security Room
						2	SF	80	160 Electrical Room
						2	SF	40	80 Communication Closet
						4	SF	140	560 Janitor Closet
						2	SF	160	320 Storage Room



No	Existing Room Name	Current				Future				Future Program Name
		Quantity	Unit	Unit SF	Current Total	Quantity	Unit	Unit SF	Future Total	
18.0 PROBATION										
18.01	Waiting / Reception Area	1	SF	150	150	1	SF	150	150	Waiting / Reception Area
18.02	Administrative Assistants	1	SF	240	240	1	SF	240	240	Administrative Assistants
18.03	Chief	1	SF	180	180	1	SF	180	180	Chief
18.04	Probation Officer	3	SF	140	420	3	SF	140	420	Probation Officer
18.05	Probation Officer	2	SF	120	240	2	SF	120	240	Probation Officer
18.06	Conference Room	1	SF	200	200	1	SF	200	200	Conference Room
18.07	Probation Officer	1	SF	130	130	1	SF	130	130	Probation Officer
18.08	Probation Officer	2	SF	100	200	2	SF	100	200	Probation Officer
18.09	Fiscal Manager	1	SF	100	100	1	SF	100	100	Fiscal Manager
18.10	Urine Collection	1	SF	100	100	1	SF	100	100	Urine Collection
18.11	Drug Lab	1	SF	65	65	1	SF	65	65	Drug Lab
18.12	Urine Collection Toilet	1	SF	35	35	1	SF	35	35	Urine Collection Toilet
18.13	Staff Toilet	1	SF	35	35	1	SF	35	35	Staff Toilet
18.14	Probation Records	1	SF	320	320	1	SF	320	320	Probation Records
18.15	Probation Files	1	SF	260	260	1	SF	260	260	Probation Files
18.16	Probation Officer	1	SF	139	139	1	SF	139	139	Probation Officer
18.17	Probation Officer	1	SF	143	143	1	SF	143	143	Probation Officer
18.18	Probation Officer / Conference Room	1	SF	210	210	1	SF	210	210	Probation Officer / Conference Room
18.19	Files Area	1	SF	48	48	1	SF	48	48	Files Area
		Net Total SF				Net SF Total				133540
		Net Factors (20%)				Net Factors (25%)				33385
		Department Factors (20%)				Department Factors (20%)				33385
						Building Gross Factors (5%)				10016
		Total Gross SF				Total Gross SF				210326

Table 24: Program of Requirements



Chapter 4 Blocking and Stacking Diagrams

CHAPTER FOUR – BLOCKING AND STACKING DIAGRAMS

INTRODUCTION

The Sheriff’s Office and Jail spaces are programmed to safely house as well as provide appropriate services and programs for the incarcerated pursuant to the Bureau of Adult Detention (BAD) Minimum Standards for Jails.

Planning Objectives

The conceptual drawings “blocking and stacking diagrams” included in this Chapter are a “test” solution to verify the program in the previous chapter. In addition, it is used to establish a base for capital and operational costs presented in Chapter Five.

The diagrams are based on two main types of planning factors. First, the design is derived from a response to “internal” forces: secure separation and management of inmates, staff efficient design and layout, clear lines of sight, stacked housing unit design, indirect supervision, and cost-conscious construction techniques. The second is the design responds to “external” forces: separation of circulation for those approaching the building (public, staff, and prisoner), building codes, jail standards, and site constraints. The effectiveness of the design will be measured over time and this “blocking and stacking” diagram addresses the projections contained in Chapter Two.

OPPORTUNITIES

Three opportunities have been developed in a “blocking and stacking” diagram format. Each opportunity is narrated and contains a few core points on the pluses and minuses of the design. The existing site was studied to determine additional parcels of land required to complete the expansion portion of the project.

Site

The project site defined for this study is to the northeast of the existing Sheriff’s Office / Jail and occupies a portion of the County owned parking lot. There are two parcels, that depending on which general design direction is taken, should be acquired in order to make the concepts presented herein workable. The first parcel is the existing automotive / tire store and the second is the credit union.

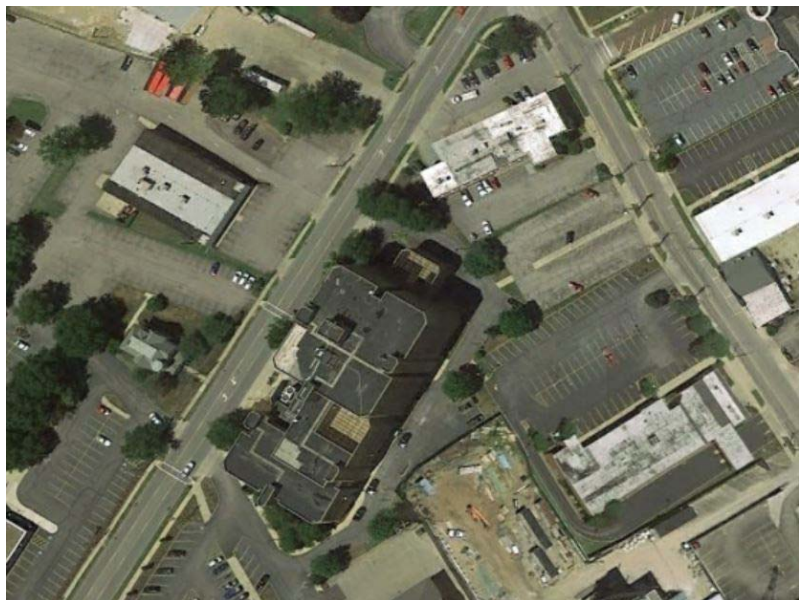


Diagram 1: Existing Site

Opportunity 1

Opportunity 1 consists of a 2-story concept where in the existing ground floor of the jail is renovated for the programming, work release, staff support and medical spaces. A building addition with connecting corridor is placed on adjacent site and contains the new intake, kitchen, laundry, additional administrative area, and building support for the addition.

Pros

- The housing can be on a single level making the movement of inmates safer and easier.
- The existing ground floor is maximized with programmatic functions that are woefully short of space in the existing jail.
- The overall scale of the building will align close to the surrounding properties than a 3-story configuration.
- The future expansion would be a vertical solution.

Cons

- The ground floor area is 30,000 square feet for the addition which requires a greater floor area and thus the need to purchase the entire credit union property and raise the building.
- Evidence storage is in the addition versus using existing space in the jail.
- The existing County owned parking lot is required for the addition.

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Diagram 2: Ground Floor and Site Plan – (2) Story Opportunity



Diagram 3: Second Floor Plan – (2) Story Opportunity

Opportunity 2

Opportunity 2 consists of a 3-story concept with mezzanine levels like the existing jail. The existing ground floor of the jail is renovated for the programming, work release, staff support, evidence storage, and medical spaces same as Opportunity 1. A building addition with connecting corridor is placed on adjacent site and contains the new intake, kitchen, laundry, additional administrative area, and building support for the addition. This concept occupies a smaller, 20,000 square foot area, hence is compact shape.

Pros

- The existing adjacent buildings can be maintained if a portion of the credit union parking lot can be acquired.
- The existing ground floor is maximized with programmatic functions that are woefully short of space in the existing jail.
- The existing vehicular sallyport can still be used as a place to transport inmates to and from such as those in work release.
- The jail admin and staff support space for this housing block could be consolidated to the existing jail allowing future housing growth or a general reduction in new construction square footage.

Cons

- The construction cost of going vertical is minimally more expensive than horizontal.
- The overall scale of the building will match the existing jail (height and proportion).
- Vehicular circulation pathways are awkward given the position on the site.
- The future expansion would be towards the automotive / tire store which would require another acquisition by the County.

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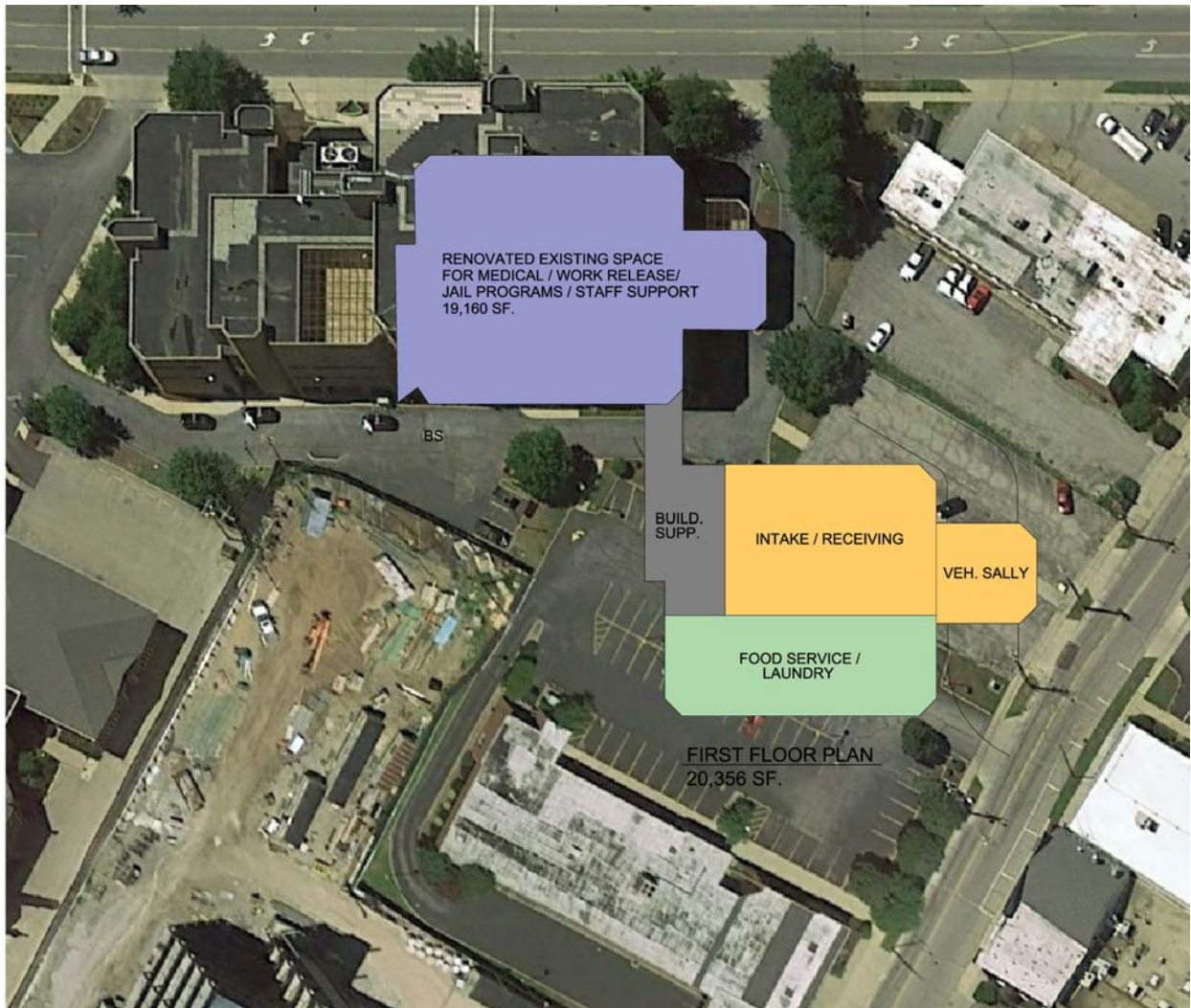


Diagram 4: Ground Floor and Site Plan – (3) Story Opportunity

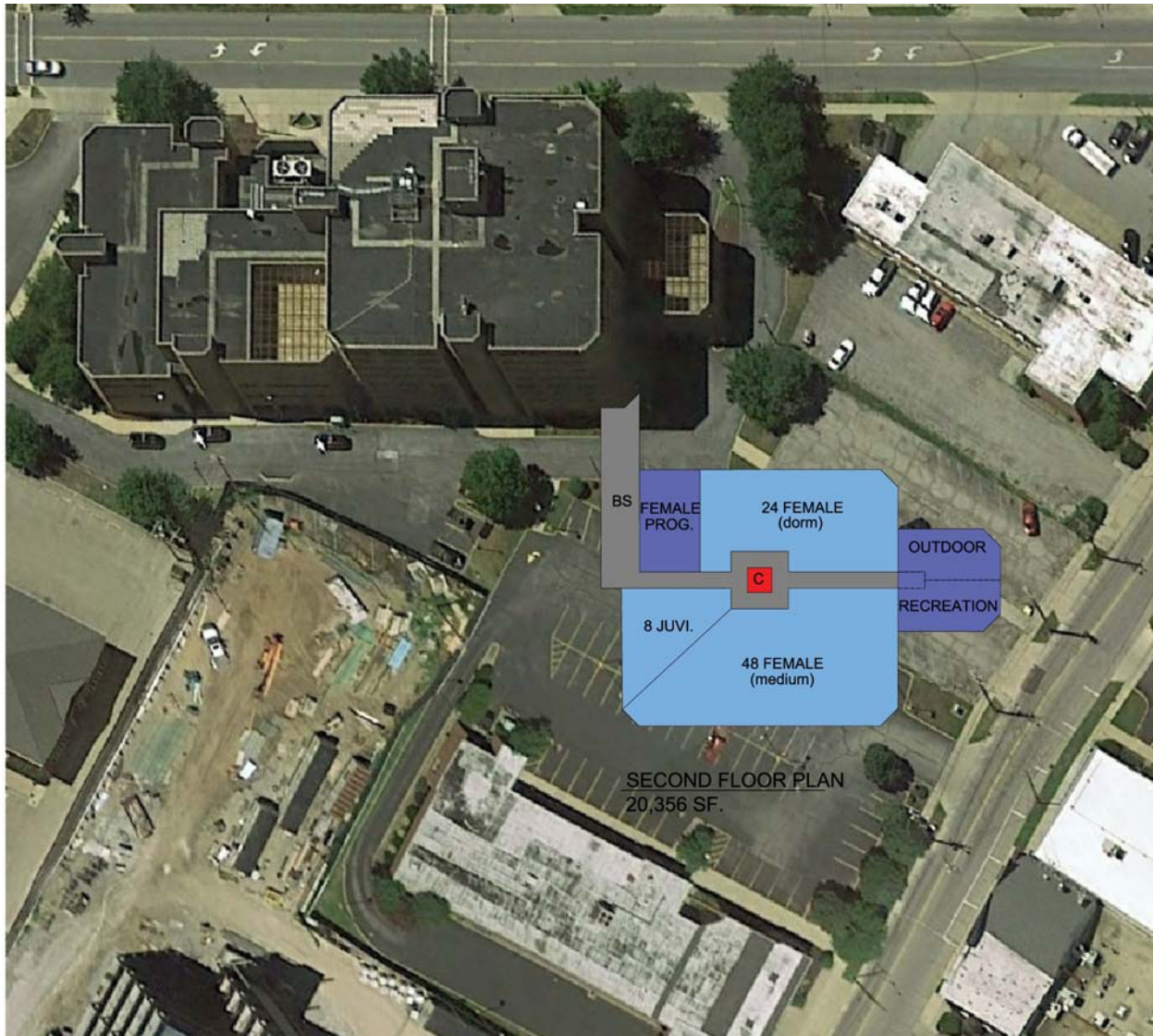


Diagram 5: Second Floor Plan – (3) Story Opportunity

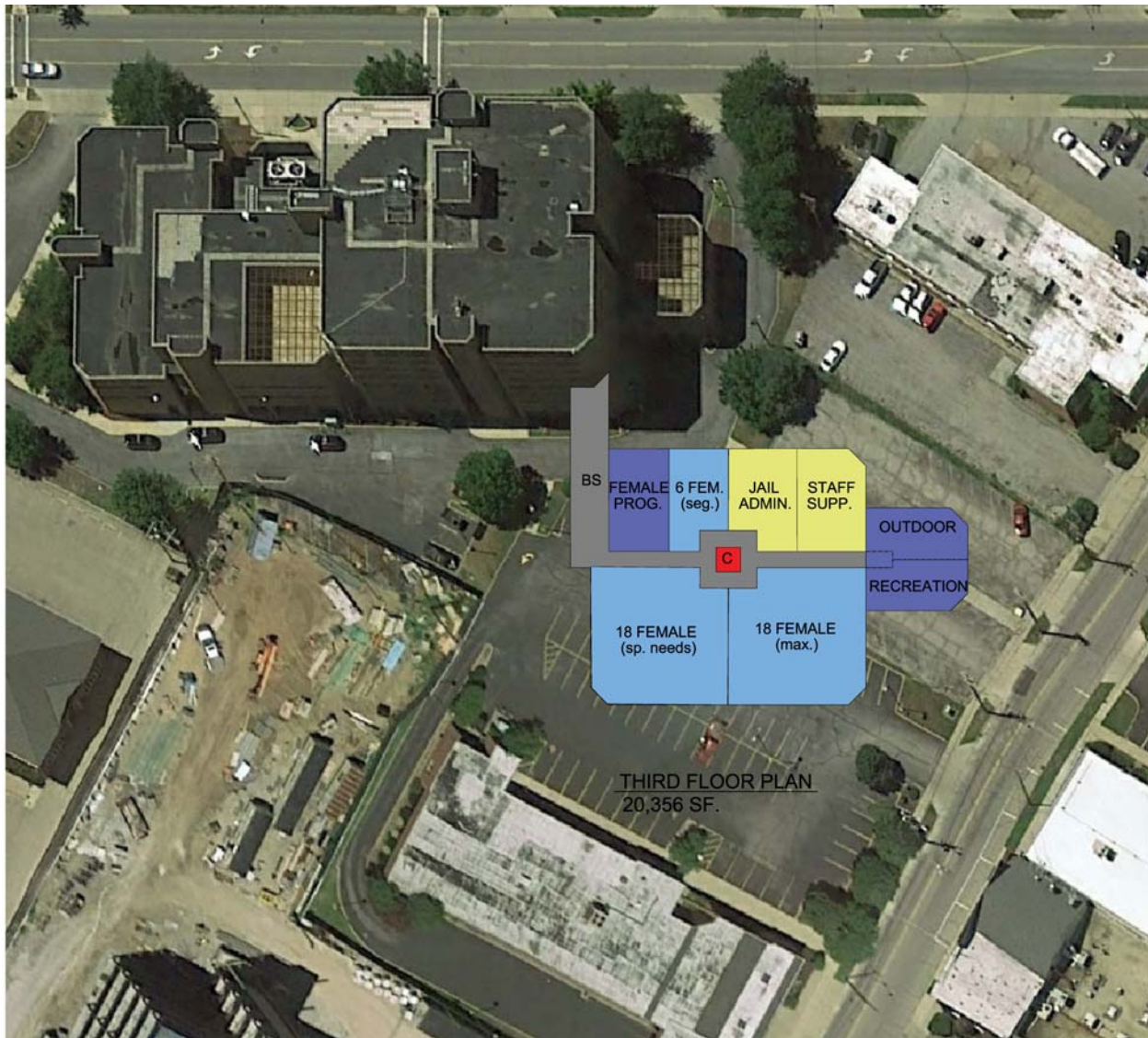


Diagram 6: Third Floor Plan – (3) Story Opportunity

Opportunity 3

Opportunity 3 consists of a 3-story concept with mezzanine levels like the existing jail. The existing ground floor of the jail is renovated for the programming, work release, staff support, evidence storage, and medical spaces same as Opportunity 1. A building addition with connecting corridor is placed on adjacent site and contains the new intake, kitchen, laundry, additional administrative area, and building support for the addition. This concept occupies a smaller, 20,000 square foot area, hence is compact shape. The approximate size of the addition is very similar to the housing footprint in the existing jail.

Pros

- The existing adjacent buildings can be maintained if a portion of the credit union parking lot can be acquired.
- The existing ground floor is maximized with programmatic functions that are woefully short of space in the existing jail.
- The building placement on the site complements the street corner and replaces a lesser aesthetically please automotive / tire store.
- The existing county parking lot is used for circulation connecting to the existing jail driveway creating a pass thru for vehicles.

Cons

- The construction cost of going vertical is minimally more expensive than horizontal.
- The overall scale of the building will match the existing jail (height and proportion).
- The automotive / tire store property would need to be purchased.

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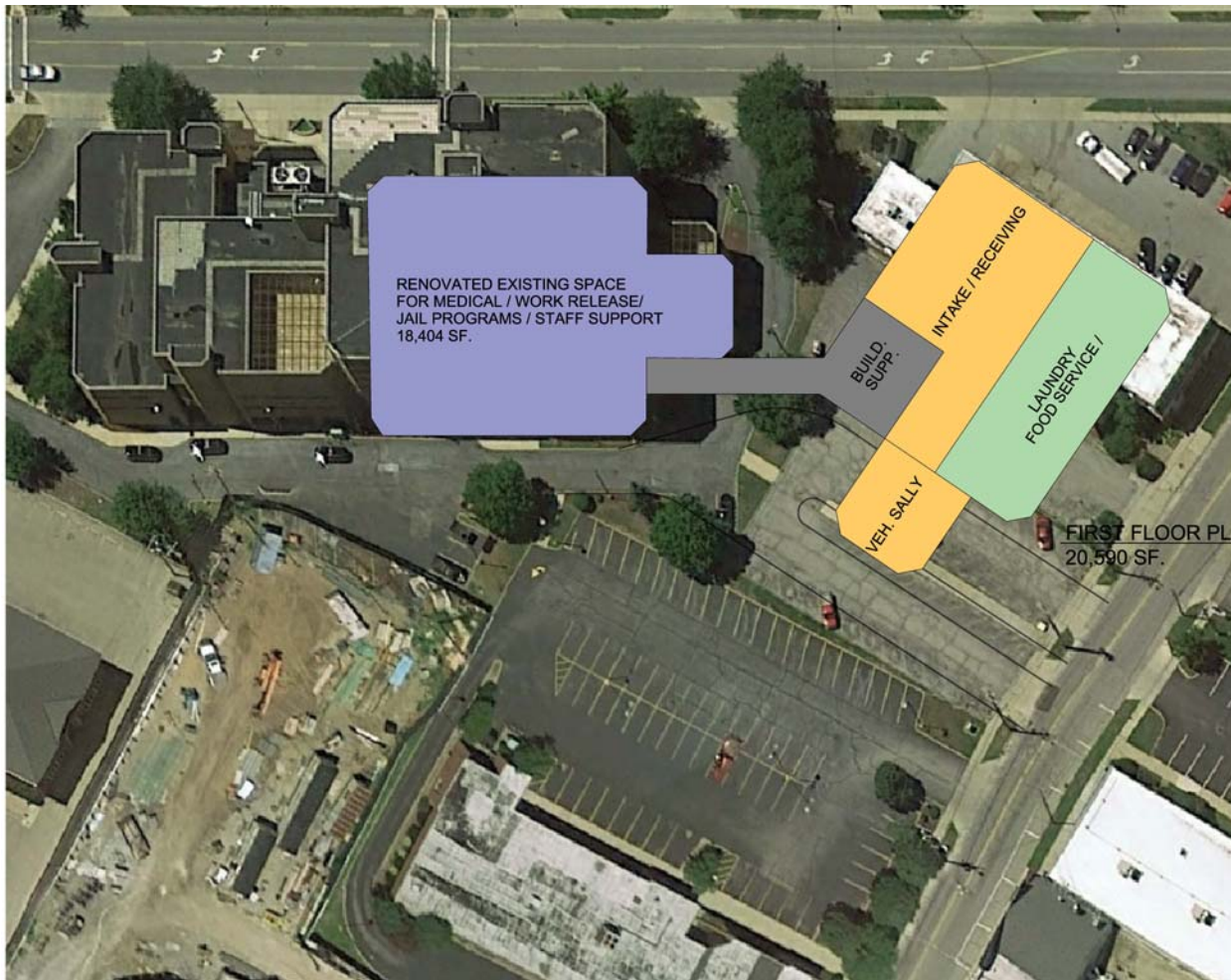


Diagram 7: Ground Floor and Site Plan – (3) Story Opportunity – Alternate Location

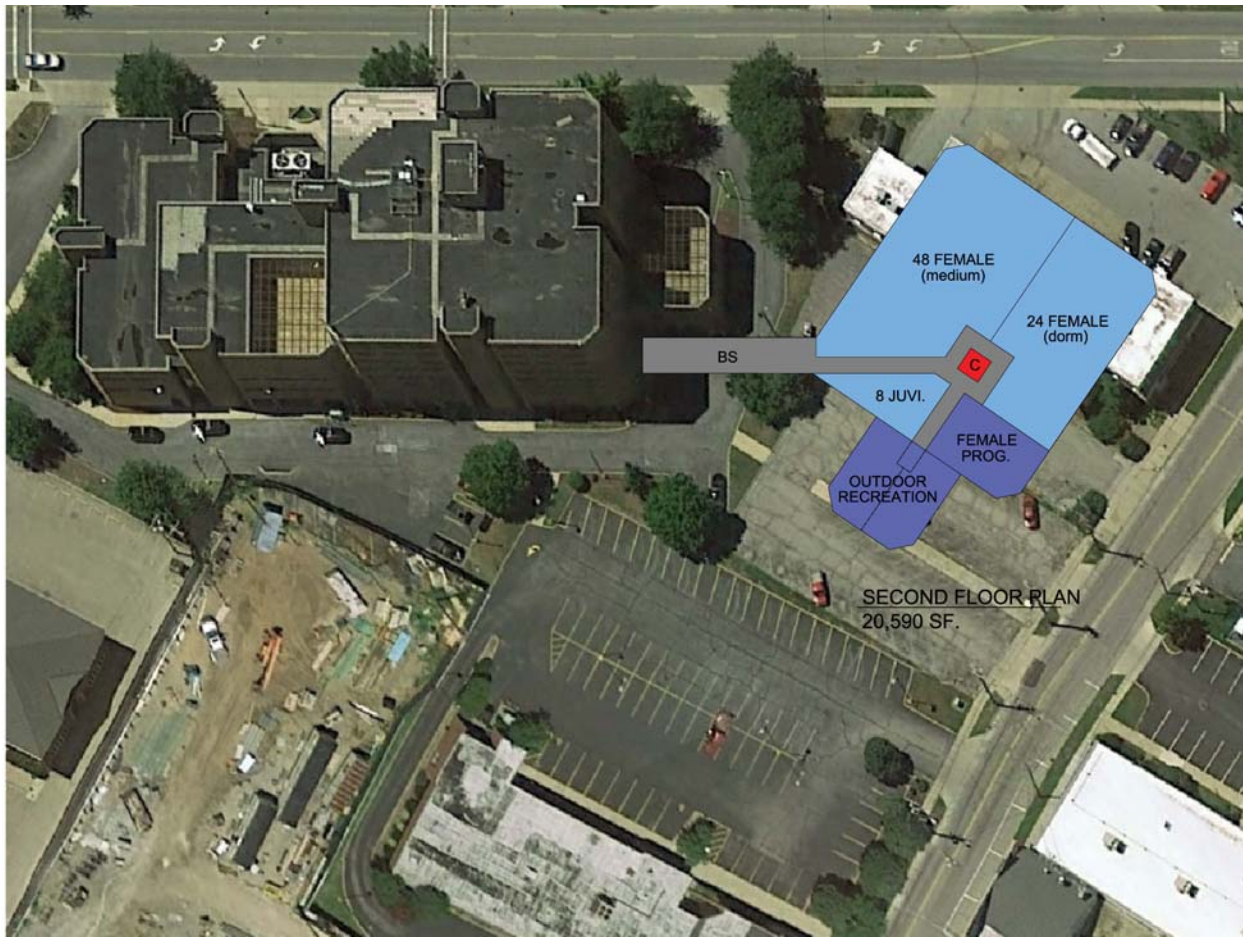


Diagram 8: Second Floor Plan – (3) Story Opportunity – Alternate Location



Diagram 9: Third Floor Plan – (3) Story Opportunity – Alternate Location

Implementation Plan

The following narrative describes the implementation of either of the renovation / expansion opportunities. The relationship of key construction activities between the existing facility and expansion is described to better understand how and why these activities control other actions during the implementation.

When evaluating the existing building and the areas for expansion, there are logical places that can be easily added on to and other areas that require a complex renovation. We are anticipating a phased approach to a renovation / expansion project.

- Phase 1: The starting point to the renovation / expansion is waterproofing the building envelope. Should a utility chase be designed in association with this building shell this work would occur at this time and be readied to connect to the housing units as they are renovated.
- Phase 2: Construction of the building expansion can occur in a similar timeframe to Phase 1 as the envelope issues are resolved where the buildings connect. Once the expansion is constructed the female population, kitchen, and intake functions would be relocated.



- Phase 3: The primary interior renovation would occur in this phase where the former female range can be renovated, males shifted to them, and then each subsequent range renovated. The former intake, kitchen, and laundry would be converted to programming space, a new medical area, and storage.
- Phase 4: The Sheriff's Office remodel is proposed in this phase but may occur at any point upon completion of Phase 1 given its independence from the jail renovation. The remodel will need to be phased and temporary measures provided with onsite office trailers. This will provide the greatest work area for the contractors and therefore be more cost effective to construct.
- Phase 5: The balance of the facility condition assessment recommendations should be done in accordance with the timing described in Chapter 1 where they had not been previously addressed during the renovations.



Chapter 5 Cost Analysis

CHAPTER FIVE – COST ANALYSIS

INTRODUCTION

The Cost Benefit Analysis chapter evaluates three primary components: the anticipated project budget projections for construction, the cost of operations for the new Sheriff's Office / Jail, and the maintenance costs to operate the existing Sheriff's Office / Jail facility prior to renovation or new construction. Each section is described below.

CONSTRUCTION COSTING

Anticipated Project Budget Projections for Construction

This estimate is based upon the Blocking & Stacking Diagram and has been calculated using the program area, volume and / or similar conceptual estimating techniques. The preliminary costs that have been used up to this point were based on assumptions relating to square footage, Ohio jail construction costs averages, soft costs, and acceptable contingencies given the level of development.

The following costs do account for the conditions of the specific sites although allowances are provided for a typical building structure.

There will be ongoing dialog opportunities for the entire project team to ensure that the County receives a proper balance of quality and value in the final construction. Whether new construction or renovation / expansion is considered, your design, construction, and owner representation professionals will update and refine the costs estimates in greater detail as that detail is developed in the project documents.

Special Note: Evaluations of the County's budget for the Project, the preliminary estimate of the Cost of the Work and updated estimates of the Cost of the Work prepared by the Architect represent the Architect's judgment as a design professional familiar with the construction industry. It is recognized, however, that neither the Architect nor the County has control over the cost of labor, materials or equipment, over the Contractor's methods of determining bid prices, or over competitive bidding, market or negotiating conditions. Accordingly, the Architect cannot and does not warrant or represent that bids or negotiated prices will not vary from the County's budget for the Project or from any estimate of the Cost of the Work or evaluation prepared or agreed to by the Architect.

Project Cost

The Cost of the Work includes the estimated Construction Budget (Hard Costs) plus the estimated Project Overhead Budget (Soft Costs). Soft Costs are typically estimated as a percentage of the Construction Budget in the early planning stages of a Project, until more definitive costs have been estimated by the Owner and consultants. Soft Costs may include, but are not limited to, miscellaneous budget costs such as:

- Site Investigation (soil borings & geotechnical report)
- A/E Design & Contract Administration fees (Schematic Design, Design Development, Construction Documents, Bidding & Negotiation, Construction Administration)
- Construction Manager Pre-Construction Services fees (recommended)
- Construction phase testing & IBC (International Building Code) Special Inspections



- Reimbursable (out-of-pocket) consultant expenses (miscellaneous printing, telephone, postage, travel, etc.)
- Furnishings & miscellaneous movable equipment
- Builder’s Risk/All Risk insurance
- Escalation Rate

What is not included are the:

- Additional property/land purchase cost
- Data/Communications equipment (phones/computers/servers)
- Authorities Having Jurisdiction Permit Processes – County to provide this at \$0.00
- Fiscal Agent/Bond fees & Bond insurance, etc.

As listed in the following budget project, the unit costs are current construction costs per square foot for the jail and administrative space that we are experiencing in Ohio and the value of the Facility Condition Assessment in the Renovation / Expansion option. Note: the FCA figure contains soft costs and contingency.

Lake County Jail and Sheriff's Office Project Costing (Renovation / Expansion)				
Function Name	Cost	Measure	Unit	Total
Facility Condition Assessment	\$ 30,544,155.00	LS	1	\$ 30,544,155.00
Sheriff's Administration Renovation	\$ 10.00	SF	21843	\$ 218,430.00
Jail Renovation (20%)	\$ 75.00	SF	29752.6	\$ 2,231,445.00
Jail Expansion	\$ 376.00	SF	60484	\$ 22,741,984.00
Soft Costs (less FCA)	\$ 25,191,859.00	PERCENT	0.24	\$ 6,046,046.16
Contingency (less FCA)	\$ 25,191,859.00	PERCENT	0.1	\$ 2,519,185.90
Escalation (2 Years @ 3% each yr)	\$ 33,757,091.06	PERCENT	0.06	\$ 2,025,425.46
Total				\$ 66,326,671.52
Cost Per Square Foot				\$ 386.37

Table 25: Project Costing (Renovation / Expansion)

Lake County Jail and Sheriff's Office Project Costing (New Construction)				
Function Name	Cost	Measure	Unit	Total
Sheriff's Administration	\$ 250.00	SF	20000	\$ 5,000,000.00
Jail (320sf / inmate)	\$ 376.00	SF	155520	\$ 58,475,520.00
Soft Costs	\$ 63,475,520.00	PERCENT	0.24	\$ 15,234,124.80
Contingency	\$ 63,475,520.00	PERCENT	0.1	\$ 6,347,552.00
Escalation (2 Years @ 3% each yr)	\$ 85,057,196.80	PERCENT	0.06	\$ 5,103,431.81
Total				\$ 90,160,628.61
Cost Per Square Foot				\$ 525.21

Table 26: Project Costing (New Construction)

It should be noted that this budget represents a broad range of design decisions that have not yet been finalized with the County and represents costing solutions based on similar projects. As the County proceeds with the design of facilities and project parameters established, more precise budgets should be defined.



OPERATIONAL ANALYSIS

The model for developing staffing is described below was completed in conjunction with the Lake County Sheriff's Office. It is important to note that once the facilities are designed each agency will be able to finalize the staffing requirements.

Note:

The Jail is the focus of this Report. The Sheriff's Office Administration was not operationally evaluated and is expected to maintain status quo serving the needs of the community and justice system. The proposed program aligns only to the current functionality of the administrative departments, building support, and staff support. As such, no attempt has been made to address: a) future socio-economic conditions; b) future law enforcement agency policies and practices relative to arrests; c) potential new and/or additional community based treatment programs; and/or, d) other difficult to quantify factors, which could influence arrest rates and recidivism levels, and in turn, future jail-bed needs.

Staffing Projections – Lake County Jail

Currently, the jail staff consists of 102 full-time personnel. As of August 2019, the following staff is assigned at the Jail:

STAFF COUNT	
Correction Officers	83
Nurses	5
Kitchen Staff	4
Clerks	5
Jail Treatment	5
Total	102

Table 27: Current Staff Count

After review of the three opportunities with the Sheriff's administration we determined that three (3) new Correction Officer posts would need to be created in the addition and one (1) new Jail Treatment position created. The CO post would yield 15 new full-time employees as each post represents (5) new hires. The projections do not show an increase in nurses, kitchen staff, or clerks as the current count should be able to support the future requirement.

STAFF COUNT (FUTURE)	
Correction Officers	98
Nurses	5
Kitchen Staff	4
Clerks	5
Jail Treatment	6
Total	118

Table 28: Future Staff Count

Project Impact of Staffing on Annual Operating Expenses

This projected budget impact is based upon the staffing projections developed above and 2019 jail staff salary levels as provided to us. The increase will occur when the jail addition is operational. All costs are escalated at 2% per year over the 20-year span of time. It is assumed that the additional staff would have a start date of January 1, 2022 for this analysis. The following table demonstrates the staff costs



for the renovation / expansion project as well as what would be required if the County constructed a new jail which the Sheriff's administration believes could be operated with the same number of corrections officers plus one jail treatment specialist. There is a significant cost increase of \$37,420,661 that must be factored into the overall analysis whether to building new or to renovate / expand the current facility.

STAFFING COST ANALYSIS					
Jail Staff	2019	2024	2029	2034	2039
Corrections Officers	\$ 5,550,864.00	\$ 6,128,602.38	\$ 6,766,472.24	\$ 7,470,732.11	\$ 8,248,291.91
Additional Hires - Correction Officers	\$ -	\$ 1,063,051.21	\$ 1,423,598.56	\$ 1,847,682.18	\$ 2,039,990.43
Nurses	\$ 327,365.00	\$ 361,437.41	\$ 399,056.11	\$ 440,590.19	\$ 486,447.17
Kitchen Staff	\$ 178,661.00	\$ 197,256.18	\$ 217,786.76	\$ 240,454.18	\$ 265,480.85
Clerks	\$ 273,815.00	\$ 302,313.89	\$ 333,778.96	\$ 368,518.94	\$ 406,874.69
Jail Treatment Counselors	\$ 228,009.00	\$ 251,740.36	\$ 277,941.70	\$ 306,870.09	\$ 338,809.38
Additional Jail Treatment Counselor		\$ 49,361.07	\$ 54,498.61	\$ 60,170.87	\$ 66,433.50
Overtime	\$ 1,013,491.00	\$ 1,118,975.96	\$ 1,235,439.87	\$ 1,364,025.45	\$ 1,505,994.31
Additional Overtime		\$ 195,183.65	\$ 215,498.52	\$ 237,927.77	\$ 262,691.49
Hospitalization	\$ 1,695,841.00	\$ 1,872,345.49	\$ 2,067,220.72	\$ 2,282,378.71	\$ 2,519,930.52
Additional Hospitalization		\$ 241,598.86	\$ 266,744.66	\$ 294,507.66	\$ 325,160.25
Staffing Total (Renovation / Expansion)	\$ 9,268,046.00	\$11,781,866.46	\$13,258,036.71	\$14,913,858.16	\$16,466,104.49
Staffing Total (New Construction)	\$ 9,268,046.00	\$10,282,032.74	\$11,352,194.97	\$12,533,740.54	\$13,838,262.32
Difference	\$ -	\$ 1,499,833.72	\$ 1,905,841.74	\$ 2,380,117.62	\$ 2,627,842.17
Total 20 Year Difference	\$37,420,661.52				

Table 29: Staffing Cost Analysis

The inmate paid programs and food service are assumed to be carried forward and will increase proportionally to the number of inmates in the facility. The utilities will increase when the expansion is put into operation and decrease as the new equipment is placed in service in the existing building.

Summary

Considering all the costs above we have projected the total cost of ownership for the new Sheriff's Office and Jail. The following stipulations apply:

- Does not include the cost of project financing.
- Does not include the cost of land.

Should the staffing counts for the existing jail translate to a zero net add in a new construction option, the new construction option will be substantially lower in cost over the lifetime of the facility than the renovation / expansion opportunities presented herein.

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CONSTRUCTION AND STAFFING COSTS OVER 20 YEARS FOR RENOVATION / EXPANSION			
Year	Construction	Staffing	Total
2022	\$ 3,316,333.58	\$ 11,324,362.22	\$ 14,640,695.80
2023	\$ 3,316,333.58	\$ 11,550,849.47	\$ 14,867,183.05
2024	\$ 3,316,333.58	\$ 11,781,866.46	\$ 15,098,200.04
2025	\$ 3,316,333.58	\$ 12,017,503.79	\$ 15,333,837.36
2026	\$ 3,316,333.58	\$ 12,493,344.10	\$ 15,809,677.68
2027	\$ 3,316,333.58	\$ 12,743,210.99	\$ 16,059,544.56
2028	\$ 3,316,333.58	\$ 12,998,075.21	\$ 16,314,408.78
2029	\$ 3,316,333.58	\$ 13,258,036.71	\$ 16,574,370.29
2030	\$ 3,316,333.58	\$ 13,778,099.64	\$ 17,094,433.22
2031	\$ 3,316,333.58	\$ 14,053,661.64	\$ 17,369,995.21
2032	\$ 3,316,333.58	\$ 14,334,734.87	\$ 17,651,068.45
2033	\$ 3,316,333.58	\$ 14,621,429.57	\$ 17,937,763.14
2034	\$ 3,316,333.58	\$ 14,913,858.16	\$ 18,230,191.73
2035	\$ 3,316,333.58	\$ 15,212,135.32	\$ 18,528,468.90
2036	\$ 3,316,333.58	\$ 15,516,378.03	\$ 18,832,711.60
2037	\$ 3,316,333.58	\$ 15,826,705.59	\$ 19,143,039.16
2038	\$ 3,316,333.58	\$ 16,143,239.70	\$ 19,459,573.28
2039	\$ 3,316,333.58	\$ 16,466,104.49	\$ 19,782,438.07
2040	\$ 3,316,333.58	\$ 16,795,426.58	\$ 20,111,760.16
2041	\$ 3,316,333.58	\$ 17,131,335.12	\$ 20,447,668.69
Total	\$ 66,326,671.52	\$ 282,960,357.65	\$ 349,287,029.18

The following are the costs associated with the new construction option.

CONSTRUCTION AND STAFFING COSTS OVER 20 YEARS FOR NEW CONSTRUCTION			
Year	Construction	Staffing	Total
2022	\$ 4,508,031.43	\$ 9,882,768.88	\$ 14,390,800.31
2023	\$ 4,508,031.43	\$ 10,080,424.26	\$ 14,588,455.69
2024	\$ 4,508,031.43	\$ 10,282,032.74	\$ 14,790,064.17
2025	\$ 4,508,031.43	\$ 10,487,673.40	\$ 14,995,704.83
2026	\$ 4,508,031.43	\$ 10,697,426.87	\$ 15,205,458.30
2027	\$ 4,508,031.43	\$ 10,911,375.40	\$ 15,419,406.83
2028	\$ 4,508,031.43	\$ 11,129,602.91	\$ 15,637,634.34
2029	\$ 4,508,031.43	\$ 11,352,194.97	\$ 15,860,226.40
2030	\$ 4,508,031.43	\$ 11,579,238.87	\$ 16,087,270.30
2031	\$ 4,508,031.43	\$ 11,810,823.65	\$ 16,318,855.08
2032	\$ 4,508,031.43	\$ 12,047,040.12	\$ 16,555,071.55
2033	\$ 4,508,031.43	\$ 12,287,980.92	\$ 16,796,012.35
2034	\$ 4,508,031.43	\$ 12,533,740.54	\$ 17,041,771.97
2035	\$ 4,508,031.43	\$ 12,784,415.35	\$ 17,292,446.78
2036	\$ 4,508,031.43	\$ 13,040,103.66	\$ 17,548,135.09
2037	\$ 4,508,031.43	\$ 13,300,905.73	\$ 17,808,937.16
2038	\$ 4,508,031.43	\$ 13,566,923.85	\$ 18,074,955.28
2039	\$ 4,508,031.43	\$ 13,838,262.32	\$ 18,346,293.75
2040	\$ 4,508,031.43	\$ 14,115,027.57	\$ 18,623,059.00
2041	\$ 4,508,031.43	\$ 14,397,328.12	\$ 18,905,359.55
Total	\$ 90,160,628.61	\$ 240,125,290.12	\$ 330,285,918.73



Chapter 6 Findings and Recommendations

CHAPTER SIX – FINDINGS AND RECOMMENDATIONS

LAKE COUNTY PUBLIC SAFETY COMPLEX

There are three critical factors that form the basis of our recommendation to substantially improve and expand the existing Sheriff's Office and Jail or to construct new. They are the capacity of the current facility to meet the housing and programmatic demands, the significant challenges associated with the current physical plant / structure, and the lack of functional flexibility in the Sheriff's operations.

The first consideration is the facility is at its maximum operational capacity and is unable to classify and house the detained in a manner keeping with the offense or need. The building is not designed to deal with the high rate of mental health issues (nearly 70% of those detained have some sort of mental health issue according to national metrics). Programmatically the facility is woefully short on program space for treatment and education with the desired outcome being a reduction in recidivism.

The second component is the challenges associated with physical plant and structure as defined in the Chapter 1. The current facility has significant issues and will require \$30 million just to restore it to its intended condition. Given the fact that the facility regularly exceeds its maximum capacity, this investment by the County would do little to serve the future needs of the Jail for the short and long term.

The third component is the way the Sheriff's Office was designed. The "hardness" of the administrative area is very similar to that of the jail. This hardness makes it extremely difficult to make interior alterations enabling the Sheriff to respond to new requirements in law, events in the community, or operational strategies. Having a facility designed as an administrative type facility where the interiors are modifiable will enable the flexibility needed.

The following series of recommendations are designed to improve the efficiency and effectiveness of the Lake County Jail.

- The existing jail must be expanded either through renovation / expansion or new construction to meet current correctional standards, programming needs, mental health treatment, and provide an operationally efficient design.
- Given the population forecasting, we recommend the expansion be created to house females and the existing building used to house males. Portions of the existing housing units can be converted from double occupancy cells to single occupancy cells to allow for a more diverse housing / classification system for males.
- In order to maintain operation in the existing facility while construction occurs, the expansion will need to house the intake, kitchen, and laundry programmatic functions. Each area will be expanded to account for the increased population. Once operational, the existing areas can be repurposed for work release, programming, evidence storage, and medical space.
- The renovated / expanded facility must be flexible to allow for gender, age, classification separation, and mental health requirements.
- The facility should be designed to increase programming to inmates.
- The layout and configuration of the addition should allow a mass supervision from the central control station supported by "roaming" staff located directly with the inmates.



- Accessibility upgrades must be made throughout the existing building to bring it in to full compliance.
- Energy efficient building systems should be designed into the new building to mitigate long term operating costs.
- The building envelop issues must be addressed first prior to any renovation.
- Early in the design phase a study should be done to determine the feasibility of creating a new building shell and rear utility chase in lieu of utilizing the current configuration.
- The total cost of ownership must be factored into the decision-making process as the new construction option will be far less costly than the renovation / expansion option.

The next step for the County is to review the options and strategies provided and to confirm the preferred direction for the project. Thereafter, the County can arrange financing, determine project delivery method, solicit for the design professional services, and implement the project.