



## **JAIL AND SHERIFF'S FACILITY NEEDS ASSESSMENT AND MASTER PLAN**

*Miami County, Ohio*

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## DEFINITIONS

**Average Daily Population (ADP):** The average number of detainees housed daily during a specified time.

**Average Length of Stay (ALOS):** The average time a detainee spends in a facility/jail before being released.

**Bureau of Adult Detention (BAD):** The Bureau of Adult Detention is a bureau within the Ohio Department of Rehabilitation and Correction. BAD creates minimum standards for jails and inspects jails to ensure compliance with the Minimum Standards for Jails in Ohio.

**Direct Supervision:** Direct supervision is a jail supervision model whereby a correctional officer is stationed inside a housing unit with the detainees. In the housing unit the officer can manage the behavior of the detainees. This model has been successfully and safely used in facilities throughout the country since the late 1970s.

**Functional Capacity:** Generally, 85% of rated capacity which allows the jail to function well by having bed space to properly separate and classify detainees as well as have beds available for peaks in the population.

**Incarceration Rate (IR):** This is the number of jail detainees in a jurisdiction per 100,000 population.

**Indirect Supervision:** In indirect supervision, the correctional officer is separated from detainees via security glass and walls and has views into their housing units. In this model, the officer is observing behavior and reacting to incidents when they occur rather than managing detainees' behavior.

**Non-Violent Crimes:** Non-Violent crimes for the purpose of this report include non-support of dependents and criminal trespass.

**ODRC:** Ohio Department of Rehabilitation and Correction

**Rated Capacity:** This is the official capacity of a jail per the state governing/monitoring agency.

**Violent Crimes:** Violent crimes for the purpose of this report include murder, rape, assault, burglary, robbery, and domestic violence.

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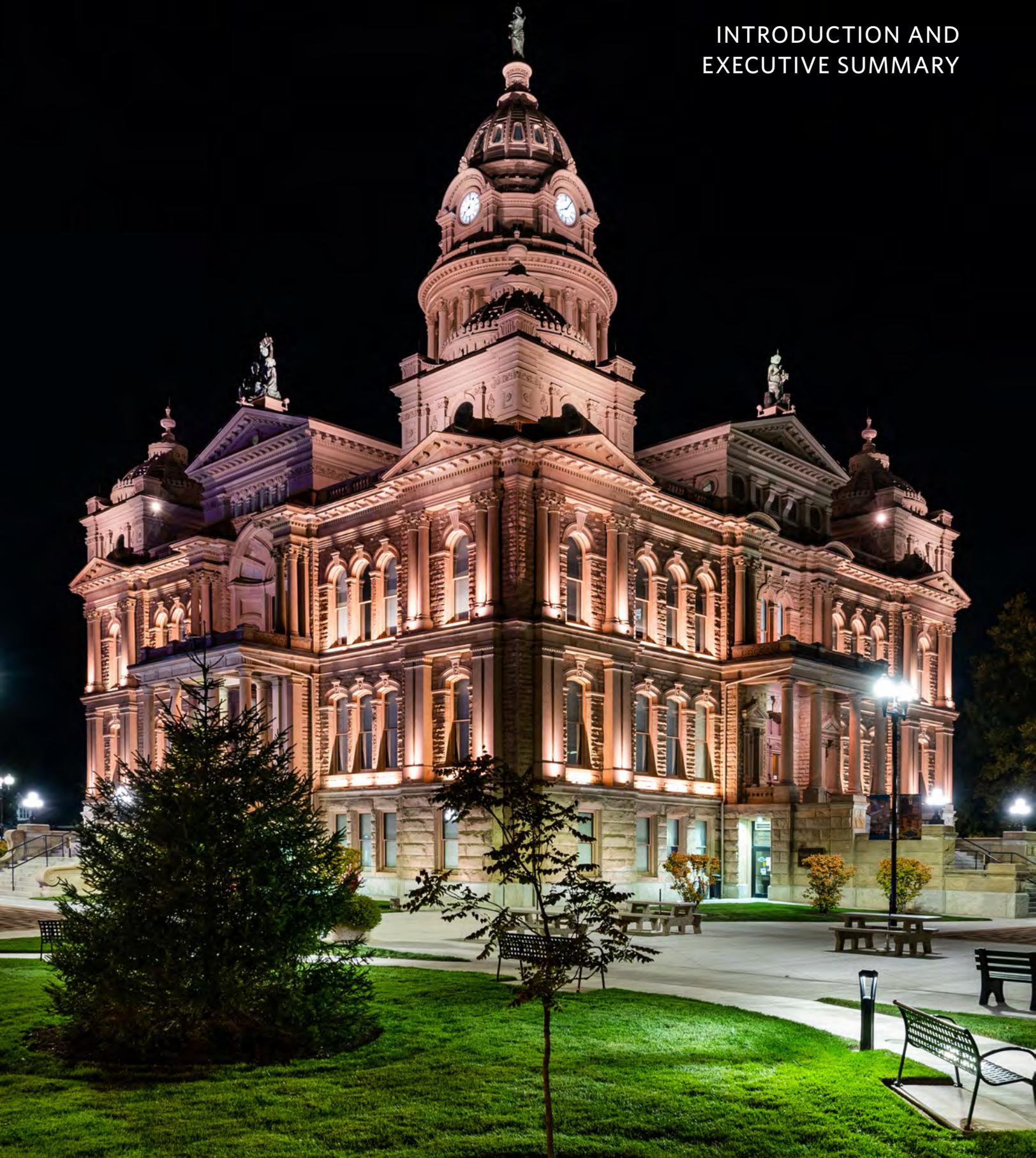
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INTRODUCTION AND  
EXECUTIVE SUMMARY





## INTRODUCTION

In February of 2024, Miami County authorized Henningson, Durham, & Richardson, Inc. (HDR) to provide justice consulting and planning services for a comprehensive assessment of the County's jails — Miami County Jail (MCJ) and the Miami County Incarceration Facility (MCIF) and the County's criminal justice system. Tasks also included the development of a comprehensive master plan to accommodate future needs of the criminal justice system in the areas of detention and law enforcement.

The HDR planning team includes:

- Levin Porter Architects
- Kleinfelder
- Danis-Granger JV
- MJ Martin, Inc.

The planning team completed the following tasks:

1. Goal setting with criminal justice system stakeholders
2. Development of a demographic profile of Miami County
3. Physical plant and functional evaluation of the MCJ and MCIF
4. Development of a profile of characteristics of the detainee population
5. Review of historical jail and criminal justice system data
6. Interviews with criminal justice stakeholders including:
  - a. Common Pleas Judges
  - b. Municipal Court Judges
  - c. Local law enforcement agencies including the Miami County Sheriff's Office, Ohio State Patrol, Troy Police Department, Piqua Police Department, Tipp City Police Department, Covington Police Department, and West Milton Police Department.
  - d. County Prosecutor's Office
  - e. County Public Defender's Office
  - f. County Probation and Parole
  - g. Jail Administrator
7. Developed recommendations for enhanced diversion, alternatives to incarceration, and re-integration back into the community using a Sequential Intercept Mapping (SIM) framework.
8. Development of jail capacity recommendations through the year 2050
9. Development of an architectural program for a new or renovated jail facility
10. Development of an architectural program for Sheriff's Office needs
11. Development of jail and law enforcement options for analysis. Analysis includes:
  - a. Concept diagrams and test fits
  - b. Construction and project cost opinions
  - c. Staffing estimates and costs

## EXECUTIVE SUMMARY

### Background

Miami County has two detention facilities. The Miami County Jail (MCJ), built in 1972, occupies several floors of the Safety Building in downtown Troy. It has a housing capacity of 106 medium- and maximum-custody beds. The Ohio Bureau of Adult Detention (BAD) however recommends a housing capacity of 42 beds based on total available living space and other state requirements.<sup>1</sup> The other detention facility is the Miami County Incarceration Facility (MCIF), built in 1999. It is not considered a full-service jail by BAD but a less secure Minimum-Security Jail (MSJ) that can legally only house minimum-custody detainees. The MCIF has a rated capacity of 240 beds.

Since the jails were built, detainees' characteristics have changed considerably. Today, most of the population detained are charged with a felony offense or a high (M1) misdemeanor offense. Very few lower-level misdemeanors are detained in jail. There are also more detainees with mental health and substance abuse issues and the facilities lack appropriate spaces to care for this population. And finally, there are many more female detainees than what the buildings were designed for.

The MCJ, in particular, has many deficiencies and the County should consider replacing it. These deficiencies include:

- Lack of rated capacity
- Lack of appropriate housing for today's detainee population with mental health and behavioral health needs
- Lack of medical care spaces and medical housing areas
- Poor environmental conditions, in particular lack of natural light, that leads to decompensation of detainees' mental health
- Suicide concerns including security bars in housing areas that are frequently used for suicide attempts including 31 attempts in 2020
- Inability to provide constant supervision and surveillance of housing areas by staff to manage detainee behavior and ensure their safety
- Difficulty in assigning detainees to proper classifications for safety and security
- Lack of space for inmate programs and services to address behavioral health issues and assist with reintegration back into the community
- Lack of smoke containment and smoke zones creates life safety concerns in the event of a fire emergency
- A difficult work environment and lack of amenities for staff that makes recruitment and retention of staff challenging

Besides these functional issues, the MCJ physical plant is not in alignment with the County's criminal justice system's focus on reducing recidivism and helping detainees' transition back into the community.



<sup>1</sup> Ohio Department of Correction, Bureau of Adult Detention, 2019 Annual Inspection.

## Goals

Goals that Miami County wants to achieve regarding the jails and criminal justice system include:

- Provide adequate jail bed capacity to meet the needs of Miami County until the year 2050
- Provide appropriate housing and support spaces for the needs of today's detainee population
- Provide enough capacity and appropriate beds for the female population
- Provide a continuum of housing for persons with mental health needs including acute care, non-acute care, and step-down housing
- Enhance medical care at the MCJ and MCIF to reduce trips outside for treatment and reduce the number of medical furloughs
- Provide space for detainees to engage in counseling, education, and therapies to help them successfully reintegrate back into the community
- Consolidate the jail functions under one roof to create more efficient and effective staffing and enhance medical and mental health care of detainees
- Combine the jail and Sheriff's Office to improve communication throughout the agency and eliminate space redundancies
- Provide back-up 911 dispatch and Emergency Management Agency (EMA) as part of a new Sheriff's Office



## Evaluation of the Criminal Justice System

The Miami County criminal justice system functions very well as evidenced by the County's low incarceration rate (IR) of 111 persons in jail per 100,000 of population in 2023. This is 44% lower than the 2023 national jail IR of 198/100,000. Miami County's IR is also lower than neighboring counties contacted as part of this study including Clark County (125/100,000), Warren County (119/100,000), and Greene County (118/100,000).

Miami County system stakeholders utilize several tools to manage jail capacity needs. Among these include:

- Local law enforcement agencies use court summons in lieu of arrest for most minor offenses (Misdemeanors M2, M3, M4, and Minor misdemeanors)
- New offenses committed by persons on probation do not result in an automatic jail hold or revocation unless it is a felony offense
- One positive drug screen does not result in a jail sanction while on probation
- Municipal Court uses the Ohio Risk Assessment System (ORAS) pretrial assessment tool and this allows for uniform assessment of new arrestees for the setting of jail bonds
- Electronic monitoring is used for pretrial and sentenced individuals for some offenses thus diverting some individuals from the jail
- Traffic and theft diversion is available through Municipal Court
- Municipal Court has a drug court
- Court of Common Pleas has a drug and mental health court

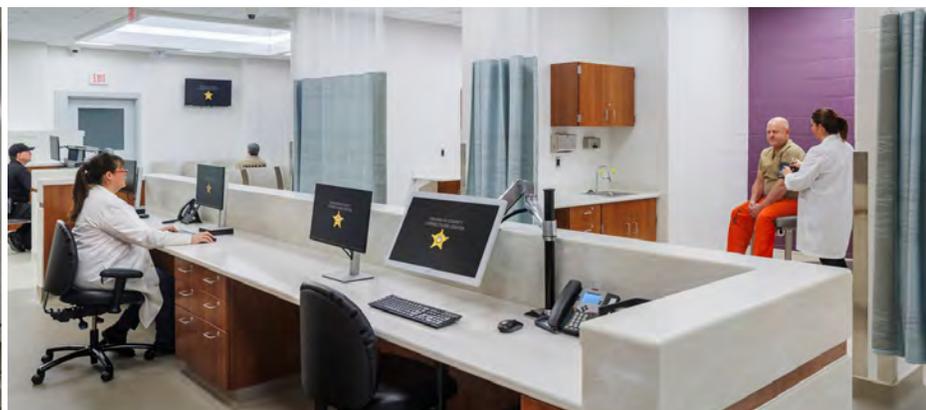
It should be noted that Municipal Court does not track the statistics to obtain a firm number on felony cases filed that are reduced to misdemeanors at sentencing.

### *Jail Capacity Projections*

Except for years of COVID-19, the jail population in the MCJ and MCIF has been steadily growing the past 10 years. The overall historical growth would have been greater if not for the tools used by stakeholders to manage the jail population needs. Factors leading to the steady increase in the jail population include:

- County population growth
- Persons convicted of non-violent Felony 4 and 5 offenses serving their sentence locally instead of prison as they did in the past
- Lack of mental health treatment beds in the community and at the state level has increased the length of stay of persons requiring mental health evaluations and treatment

The HDR research team projects that the jail average daily population (ADP) for Miami County will be 262 detainees in 2050. The recommended jail capacity is 300 beds. The capacity recommendation includes a peaking and classification factor of 15%. This factor accounts for variations and peaks in daily population, and it is also used to account for the inherent inefficiencies in housing assignments based on classification needs such as gender, risks, and special needs.



## Option Analysis

Three options were developed for analysis to meet the goals of the County to meet future jail and law enforcement needs.

### Option 1 – New 320-bed Jail, Sheriff’s Office, and Emergency Management Agency (EMA)

- Size = 132,056 gross square feet
- Construction Cost = \$119,708,609
- Project Cost = \$143,650,331
- Jail Staff = 56.1 correctional and support staff

### Option 2 – New 200-bed jail, Sheriff’s Office, and EMA

Assumes use of the MCIF for minimum security housing, kitchen, laundry, and jail lobby.

- Size = 88,418 GSF of New Construction
- Construction Cost = \$85,924,351
- Project Cost = \$103,109,222
- Jail Staff = 64.6 correctional and support staff

### Option 3 – New 200-bed jail, Reduced Sheriff’s Office, and no EMA

Assumes use of the MCIF for minimum security housing, kitchen, laundry, and jail lobby. Evidence storage, physical conditioning, and tactical training space removed from Sheriff’s Office program and EMA remains at the Hobart Building in downtown Troy.

- Size = 78,160 GSF of New Construction
- Construction Cost = \$79,434,753
- Project Cost = \$95,321,704
- Jail Staff = 64.6 correctional and support staff





## START, STOP, ENHANCE EXERCISE

The planning team met with criminal justice system stakeholders in February 2024 and conducted a “Start, Stop, Enhance” exercise to solicit goals for the study. The exercise asks participants to list things that they are not currently doing but want to in the future – in other words, “Start.” List items that are currently done in the system that should be “Stopped.” And finally, what things are currently being done that stakeholders would like to see “Enhanced.” The following are the results of that exercise.

### START

- **Meet Ohio Minimum Jail Standards.**

*The MCJ fails annual state jail inspections.*

- **Provide more space for programming at the jails.**

*The MCJs have limited space for detainees to engage in activities such as counseling, education, therapies, and industry that help detainees gain skills and help their reintegration back into the community. Moreover, programming spaces provide areas for therapies and counseling to persons with mental health diagnoses and substance use disorders. Programming has proven to reduce recidivism and programming reduces idleness which, in turn, enhances behavior management of detainees.*

- **Improve classification of the detainee population.**

*Effective detainee classification is essential to support daily management, administration, and safety of a jail. In Miami County, the MCJ lacks capacity to house detainees with medium custody level classifications and higher and the MCIF can only hold detainees with a minimum custody level per state standards. This presents problems in assigning persons to the right housing for their safety and security profile. In addition, with the increase in mental health population, there is a need to provide appropriate housing for this population including a continuum of housing for acute care, non-acute care, and step-down.*

- **Consolidate functions.**

*Consolidating the jail functions under one roof would have operational benefits compared to two separate facilities. A single consolidated jail would have:*

- *More efficient and effective staffing.*
- *Enhanced health care as medical staff would not have to travel between buildings to provide care.*
- *Enhanced mental health care as the staff and care could be in one location.*
- *If consolidated with the Sheriff’s Office, deputies would be readily available to provide back-up in the event of an emergency.*

- **Increase natural light.**

*The MCJ has few windows and little natural light. The BAD commented that some holding/housing areas do not provide natural light at all.<sup>2</sup> The lack of natural light has a detrimental impact on staff and detainees especially those with mental health issues held at the MCJ. Increasing natural light would provide a positive effect on mental and physical health and general well-being of staff and detainees.*

- **Provide staff amenities to enhance the recruitment and retention of correctional officers.**

*Recruiting and retaining correctional officers is probably the greatest challenge facing jails not only in Ohio but across the country. At the time of the staffing assessment, Miami County had five vacancies in correctional officer positions out of 53 authorized positions. In recent years, there has been a focus in jails on correctional officer hiring. Pay, benefits, training, and equipment are especially important but recently, authorities are investing in improving the environment where staff work with more natural light, more pleasing colors, less institutional appearances and providing amenities (comfortable break areas, locker areas, and fitness spaces) to help with recruitment and retain staff.*

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<sup>2</sup> Ohio Department of Correction, Bureau of Adult Detention, 2019 Annual Inspection.

## STOP

- **Hospital trips and treatment trips.**

*The current jails do not have infirmary beds and lack clinical space. According to health care staff, detainees are sicker now than in previous years and with limited clinical capabilities at the jails, this necessitates frequent trips to the hospital and for treatment. From 2019 through October 31, 2024, an annual average of 412 trips were made to the hospital and doctor's appointments. Trips outside the jail for treatment are costly to the County as it requires one transport officer earning overtime to escort the detainee to the appointment and back. There is also a risk of escape or contraband returning on these trips.*

- **Medical furloughs.**

*Some detainees are granted medical furloughs because the health care at the jail is limited. Since 2019, an annual average of 26 furloughs have been granted for health-related reasons. In 2023, a high of 61 furloughs were granted.*

## ENHANCE

- **Increase participation in specialty dockets.**

*The courts have several specialty docket courts that have proven successful, and they would like to expand them. Currently the Common Pleas Courts has a drug and mental health court, and the Municipal Court has a drug court.*

- **Enhance video court system and increase its use among attorneys.**

*Video court offers many benefits including reductions in detainee movement, transportation costs, and escape risks. It can also be used to improve communication between attorneys and their client which can reduce pretrial lengths of stay.*

- **Increase the use of telemedicine.**

*Telemedicine allows detainees to visit doctors and specialists remotely. This saves transportation costs to a medical appointment and enhances safety as the detainee does not leave the facility.*



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## OVERVIEW OF MIAMI COUNTY

Miami County is in southwest Ohio. As of the 2020 census, the population was 108,774. Troy is the county seat and is the largest city in Miami County with an estimated 2020 population of 26,306. Miami County is located north of the city of Dayton and is part of the Dayton, Ohio Metropolitan Statistical Area.

**Figure 1:** Location of Miami County



In addition to Troy, there are two other cities in Miami County – Piqua and Tipp City. There are also parts of two other cities that are partially in Montgomery County to the south – Huber Heights and Union.

Miami County is bordered by Shelby County to the north, Champaign County to the northeast, Clark County to the southeast, Montgomery County to the south, and Darke County to the west.

Interstate Highway 75, a major north-south artery which runs through the County, serves as a primary transportation corridor through the major Ohio population centers of Toledo, Dayton, and Cincinnati.

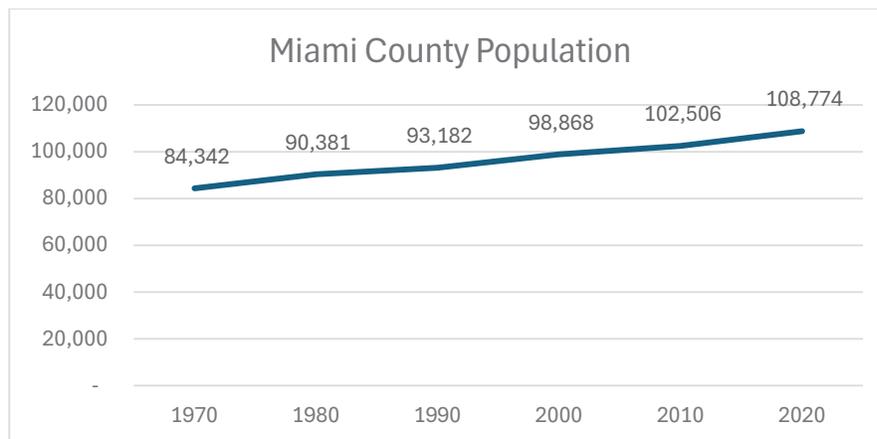
## POPULATION PROFILE

It is useful to understand the components of population change because it offers insight into the causes of growth or decline, and it helps highlight important areas of inquiry. For example, are people drawn by the geographic location, services available in the community, work opportunities, or other reasons.

### *Historical Population Trends and Projections*

Figure 2 shows the historic population growth for Miami County since 1970. The population has increased steadily each decade. From 2010 to 2020, the population grew 6.1% due to migration into the County. Most of this migration growth occurred in the southwest section of the County, specifically Census Tract 3801 bordering Montgomery County where the population grew from 5,802 to 10,409 (+79.4%).<sup>3</sup> This tract also added 1,652 (+69.4%) housing units over the same period.<sup>4</sup> Per the Ohio Department of Development, Miami’s county population for 2023 is estimated to be 110,876.<sup>5</sup>

**Figure 2:** Historic Miami County Population Growth



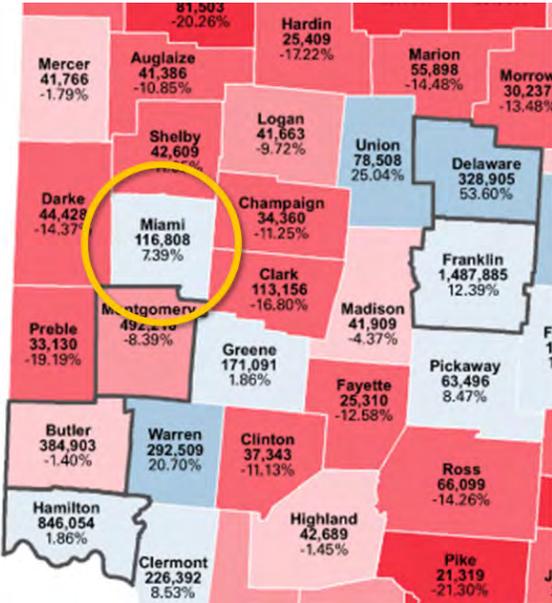
<sup>3</sup> [Census Tract 3801, Miami County, Ohio Demographics and Housing 2020 Decennial Census | cincinnati.com](#)

<sup>4</sup> Ibid

<sup>5</sup> US Census. [U.S. Census Bureau QuickFacts: Miami County, Ohio](#)

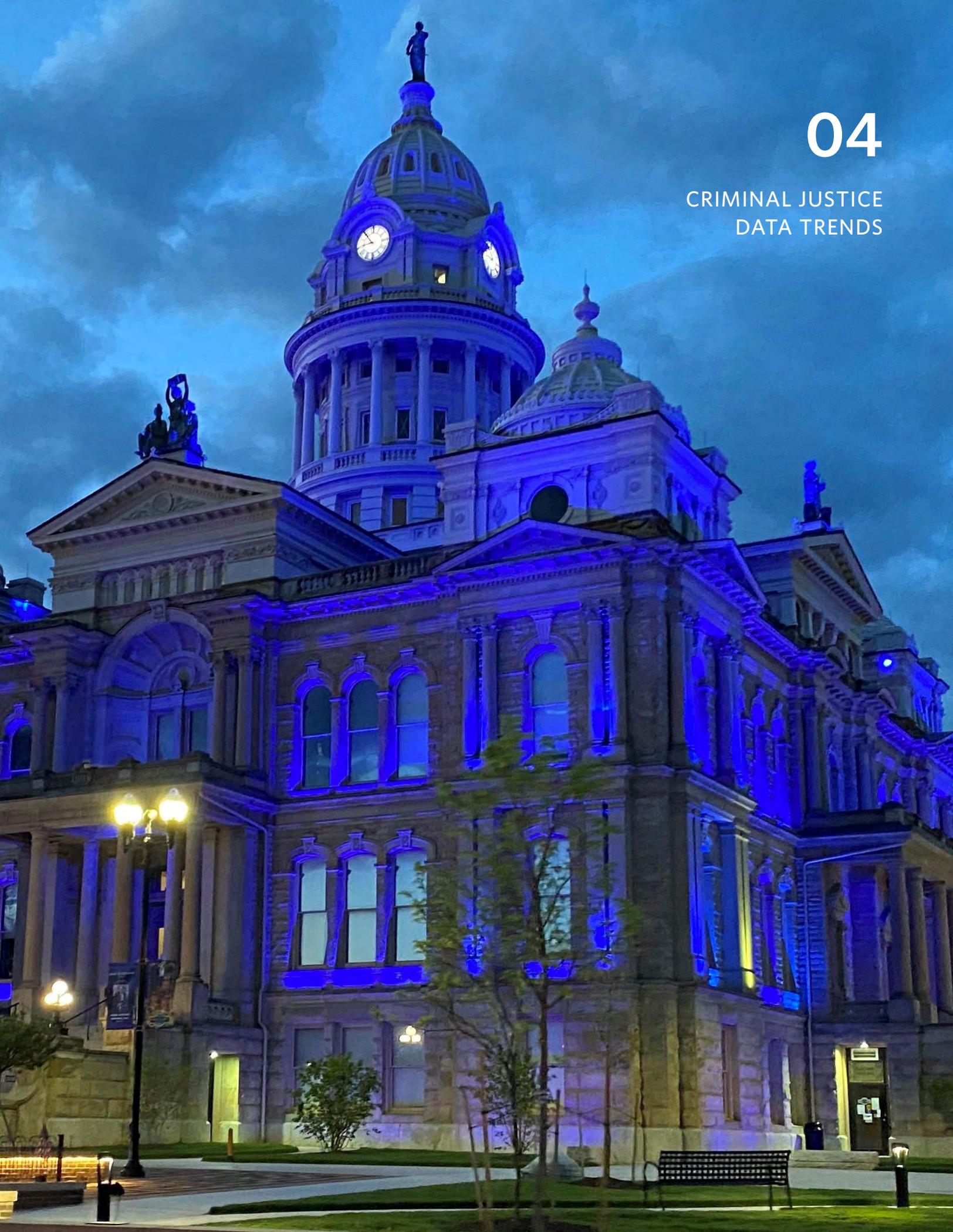
State officials estimate that Miami County will continue to experience population growth in the coming decades due to migration. It is estimated that Miami County will have a population of 116,808 (+7.4%) in 2050.<sup>6</sup> Figure 3: shows the State’s 2050 population estimate for Miami County and the surrounding counties.

**Figure 3:** 2050 County Population Forecasts for Miami and Surrounding Counties



<sup>6</sup> Ohio Department of Development. [miami.pdf\(ohio.gov\)](https://miami.pdf(ohio.gov))

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# 04

## CRIMINAL JUSTICE DATA TRENDS

## INTRODUCTION

In developing the criminal justice system assessment, a significant set of data extractions from the Miami County Sheriff's Office (MCSO) and other data sources was obtained and analyzed by the HDR research team. The most important measures that impact jail population include:

- Average Daily Population (ADP)
- Admissions
- Average Length of Stay (ALOS)

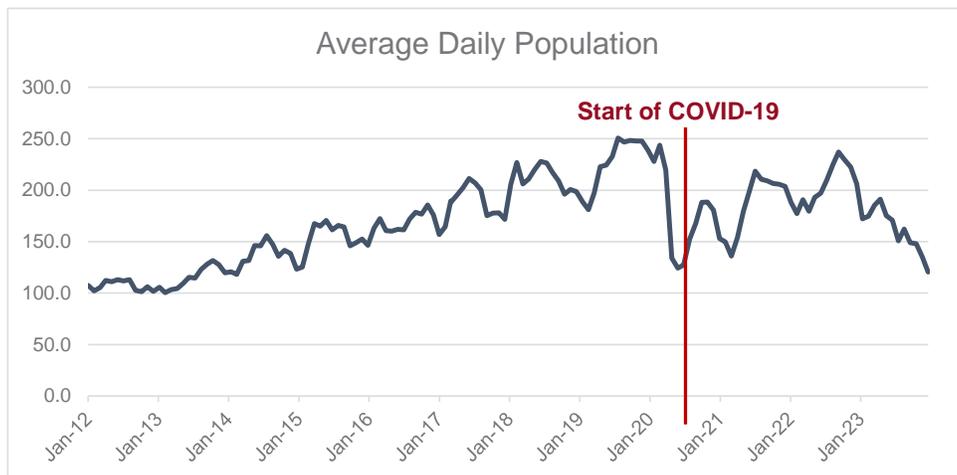
The data that follows describes how the jail has been used historically from a population loading point of view. The data includes measurable influences on the jail population, the criminal justice system including court caseloads and crime rate data.

## JAIL AVERAGE DAILY POPULATION

Figure 4 shows the combined ADP for the MCJ and the MCIF. It does not include beds rented to other jurisdictions or government entities.

The data shows that the jails had monthly low ADP in October 2012, and it steadily increased and reached a high of 248 detainees in September 2019. The monthly ADP then sharply declined due to the impact of COVID-19. In May 2020, the ADP was 124 detainees. Then after COVID began to subside the jails' population began to grow again.

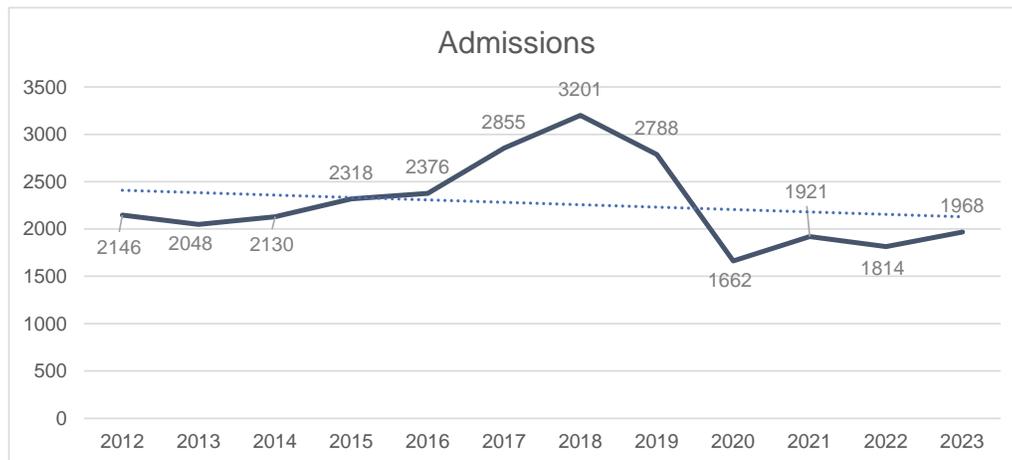
**Figure 4:** Historic Average Daily Population



## ADMISSIONS

All detention facility populations are determined by two factors: The number of people who are admitted into the facility and how long those people stay as indicated by ALOS. Figure 5 details the admissions into the jails from 2012 to 2023. The graph also includes a trend line.

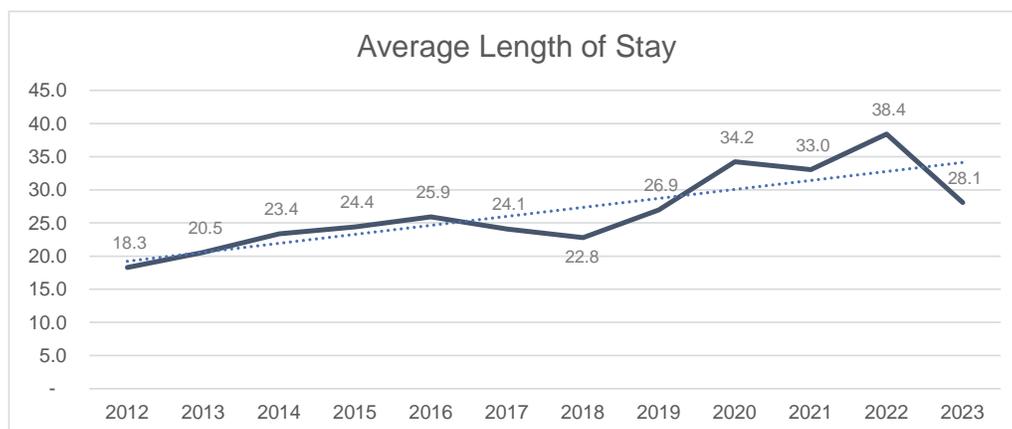
**Figure 5: Annual Admissions**



Admissions steadily increased from 2,048 in 2013 to a high of 3,201 in 2018. Admissions then declined in 2019 to 2,788 and then fell precipitously in 2020 to 1,662 during the first year of COVID. Admissions have been stable from 2021 to 2023 ranging from a high of 1,968 and a low of 1,814.

## AVERAGE LENGTH OF STAY

In addition to admissions, the other predictor of a facility's population is ALOS. ALOS is calculated by taking the average (mean) of how long everyone released during a given time stayed in custody. If a facility's ALOS increases, this will often result in an increase in the facility's population, unless admissions decrease to a point where the population stays the same or decreases. The reverse also holds true. A declining ALOS can portend decreases in a facility's population, if admissions don't increase at the same time to hold the population steady.



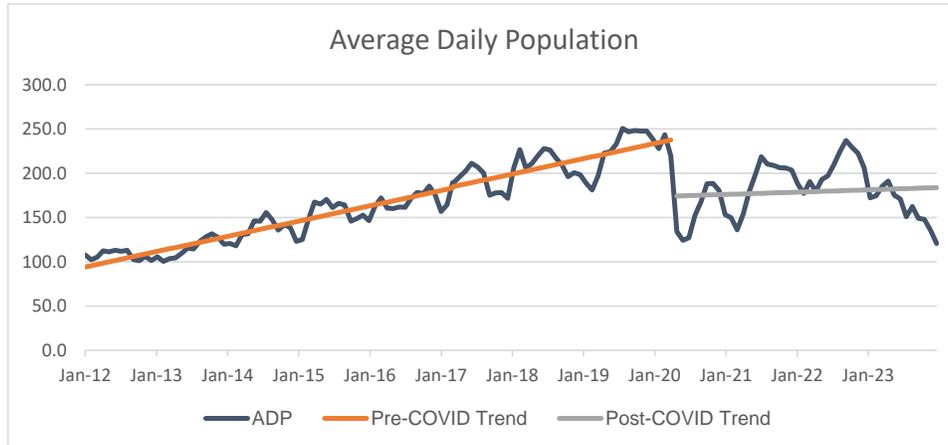
**Figure 6: Annual Average Length of Stay**

Figure 6 reflects the annual ALOS in days for the jails between 2012 and 2023. Except for a slight decrease in 2018, the ALOS has steadily grown and reached a high of 38.4 days in 2022.

## IMPACT OF COVID-19

As can be seen in figure 7 below with trend lines applied, the jail population of the MCJs increased steadily prior to COVID. Then the ADP fell during COVID and started to increase again but this time at a slower rate. This will be an area of inquiry for the research team especially in interviews with the system stakeholders.

**Figure 7:** ADP with Pre- and Post-Covid Trendlines

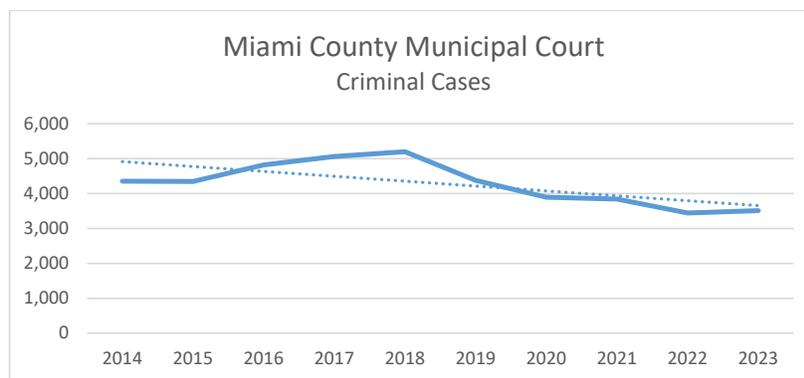


## CRIMINAL COURT DATA

Miami County has a municipal court with two judges and a magistrate and a common pleas court with two judges. The municipal court is a court of limited jurisdiction. In the area of criminal law, the court handles all traffic and non-traffic misdemeanors. It also conducts first appearance for misdemeanors and felony cases and can also conduct preliminary hearings in felony cases. The common pleas court has the jurisdiction to hear all criminal felony cases.

The number of criminal cases in municipal court has been trending down after a high of 5,196 cases in 2018. Overall, since 2014, the number of municipal criminal cases has been declining at a year over year (YOY) rate of -139.9 cases or -4% annually.<sup>7</sup>

**Figure 8:** Miami County Municipal Court Criminal Cases

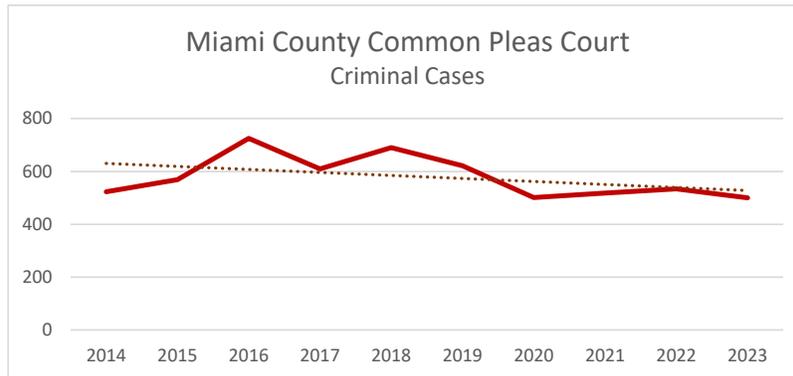


The number of criminal cases in common pleas court has also been declining, but at a smaller rate than municipal court. Since 2014, the number of criminal cases in common pleas court has been declining at a YOY rate of -11.4 cases or -2% annually.<sup>8</sup>

<sup>7</sup> <https://www.supremecourt.ohio.gov/>

<sup>8</sup> Ibid

**Figure 9:** Miami County Common Pleas Court Criminal Cases



The criminal court caseload closely follows the admission data from the jail. This is to be expected as there is a strong correlation between criminal caseload and jail admissions.

## CRIME RATE DATA

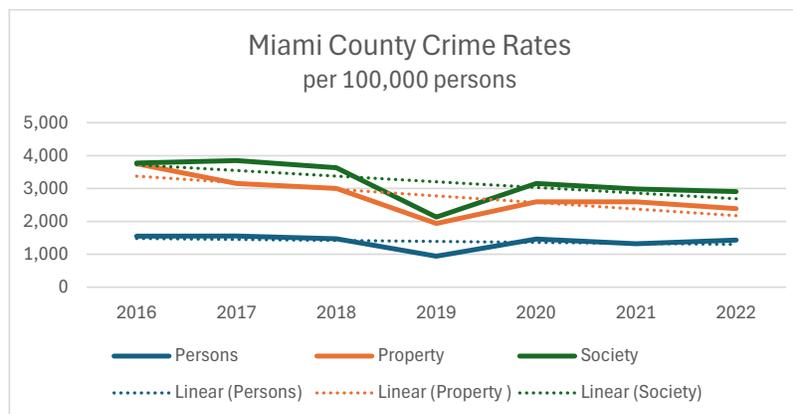
Ohio’s law enforcement agencies report crime data to the Office of Criminal Justice Services (OCJS) through the Ohio Incident-Based Reporting System (OIBRS). The system reports data for each County in the State. Data is available through the end of 2022.

Reported crime is categorized within OIBRS as follows:

- Crimes Against Persons – includes murder, rape, and assault
- Crimes Against Property – includes robbery, bribery, and burglary
- Crimes Against Society – includes gambling, prostitution, and drug violations

Figure 10 shows that all crime rate categories have declined from 2016 to 2022.<sup>9</sup> Property crimes and society crimes declined the most. Property crimes declined at a rate of -200 YOY or -8% annually. Society crimes declined at a YOY rate of -172 or -6% annually. Crimes against persons held steady over the period but overall declined slightly at a YOY rate of -30 or -2% annually.

**Figure 10:** Miami County Crime Rates – 2016-2022



Interestingly, there was a noticeable dip in all the crime rate categories in 2019. A deeper dive in the data revealed that the City of Piqua and Tipp City had no reported data in the OIBRS database in 2019. Also, Tipp City did not report data in 2020 and 2022.

<sup>9</sup> [Crime in Ohio Counties | Office of Criminal Justice Services](#)

Crime rates are not used to forecast jail needs because a reported crime does not necessarily result in an arrest. Moreover, jails are used for a variety of criminal justice system-related purposes including holds for probation and parole violations and failures to appear in court. Crime rates basically indicate the milieu of the county in terms of safety and law enforcement needs.

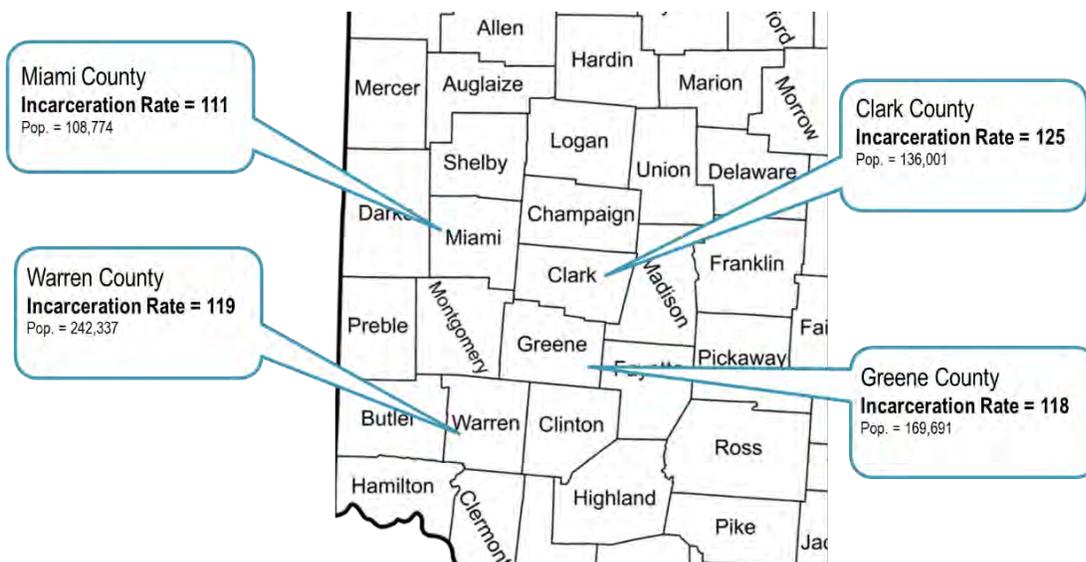
## INCARCERATION RATE

Counties often wonder if their jail population statistics are the same, similar, or different from comparable jurisdictions in their region. Comparing IRs answers that question. IR is the number of persons in jail per 100,000 population.

Figure 11 shows the IR of Miami County compared to several counties in the region. Compared to three comparable counties in the region, Miami County has a comparatively low IR of 111 jail detainees per 100,000 population.

As another point of comparison, the last reported national IR in 2023 was 198/100,000.

**Figure 11:** Surrounding County Incarceration Rates



05

DETAINEE PROFILE



## OVERVIEW

The following data presents a profile of Miami County detainees population characteristics. It was developed primarily from data collected by the Sheriff’s Office on all detainees who were held in the MCJ during the calendar year of 2023. Where relevant, Miami County data was compared to national data trends for comparison purposes. Where available, state data trends are used but state data is limited in availability.

Our data looks at variety of detainee characteristics including charges and demographics of the population. This information can be used to design programs, operations, as well as the physical design of the facility including housing subgroups.

For reference, below is a description of the types of felonies and misdemeanors in Ohio.

**Figure 12:** Ohio Criminal Charges Defined

FELONY CRIMES AND CHARGES IN OHIO			
CHARGE		PENALTIES	EXAMPLES
F1	First Degree Felony	Up to 11 years in prison and up to a \$20,000 fine	Kidnapping Voluntary manslaughter Rape Aggravated robbery
F2	Second Degree Felony	Up to 8 years in prison and up to a \$15,000 fine	Aggravated arson Abduction Felony Assault
F3	Third Degree Felony	Up to 3 years in prison and up to a \$10,000 fine	Reckless manslaughter Sexual battery Certain drug offenses Robbery
F4	Fourth Degree Felony	6-18 months in jail and up to a \$5,000 fine	Felony DUI/OVI Aggravated assault Motor vehicle theft
F5	Fifth Degree Felony	6-12 months in jail and up to a \$2,500 fine	Theft of \$1,000 or more Higher-level drug crimes Check fraud

MISDEMEANOR CRIMES AND CHARGES IN OHIO			
CHARGE		PENALTIES	EXAMPLES
M1	First Degree Misdemeanor	Maximum of 180 days in jail and up to a \$1,000 fine	Petty theft Violating a protection order Assault Domestic Violence
M2	Second Degree Misdemeanor	Maximum of 90 days in jail and up to a \$750 fine	Resisting arrest Unlawful weapons transaction
M3	Third Degree Misdemeanor	Maximum of 60 days in jail and up to \$500 fine	Criminal mischief Loitering for prostitution
M4	Fourth Degree Misdemeanor	Maximum of 30 days in jail and up to \$250 fine	Drug paraphernalia Public indecency
MM	Minor Misdemeanor	Maximum fine is \$150	Disorderly conduct Reckless driving Marijuana possession

## TYPE OF OFFENSES COMMITTED

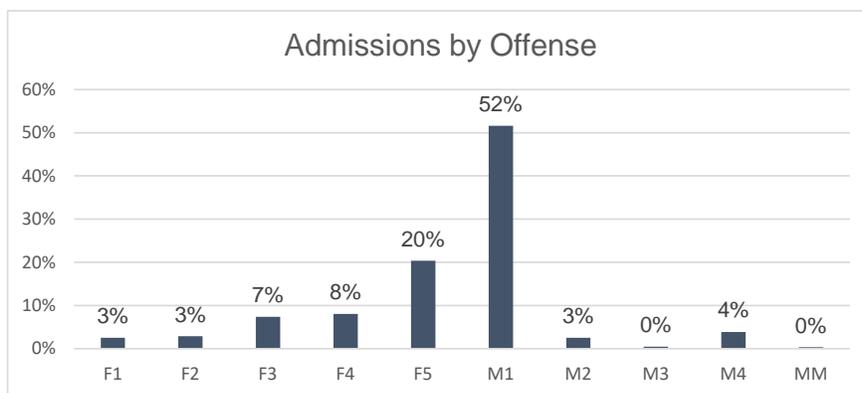
### Reason for Admission

Persons admitted to the MCJ may have more than one offense. To make comprehending the nature of the offenses involved across the population easier, the primary offense (most serious) has been indicated for each person. Figure 13 shows the primary offense charged against the individual. The graph is set up to show the most serious offenses to the left. First-degree felonies (F1) are the most serious offenses and carry the highest penalties. Minor Misdemeanor (MM) are the least serious offenses and do not result in jail time and are fine only.

As can be seen, over half (52%) of the persons admitted to the jail are charged with a first-degree misdemeanor (M1) charge. These charges carry a maximum sentence of 180 days of jail time and a \$1,000 fine. The most common M1 offenses include domestic violence (n=154), operating a vehicle under the influence of alcohol or drugs (n=124), and assault (n=31).

Fifth-degree felonies (F5) are the second most common offense persons are charged with when admitted to the MCJ. F5 offenses are punishable by up to 6- to 12-months in prison and fines up to \$2,500. The most common F5 charge in Miami County are drug possession (n=81) such as cocaine, LSD, heroin, and methamphetamines. The second most common charge, at a distant second, is theft (n=16).

**Figure 13:** Admissions by Offense



The admission data shows that very few lesser misdemeanors (M2, M3, M4, and MM) are admitted to the jail. This confirms the use of citations and court summons in lieu of arrest the research team heard from system stakeholders.

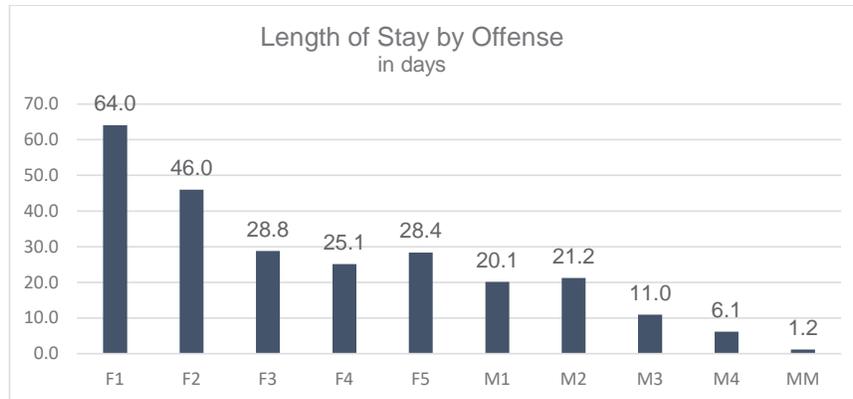
It should be noted that Municipal Court does not track the statistics to obtain a firm number on felony cases filed that are reduced to misdemeanors at sentencing.

## Length of Stay by Offense

The length of stays for charges and reasons for detention were extracted from the data. As shown in Figure 14, persons with more serious felony charges had the longer lengths of stay. Persons with first-degree felonies had the highest ALOS at 64 days but they only made up 3% of all admissions. It is typical to see the disposition of more serious offenses taking longer.

The more common charges of M1 and F5 have average lengths of stay of 20.1 days and 28.4 days, respectively.

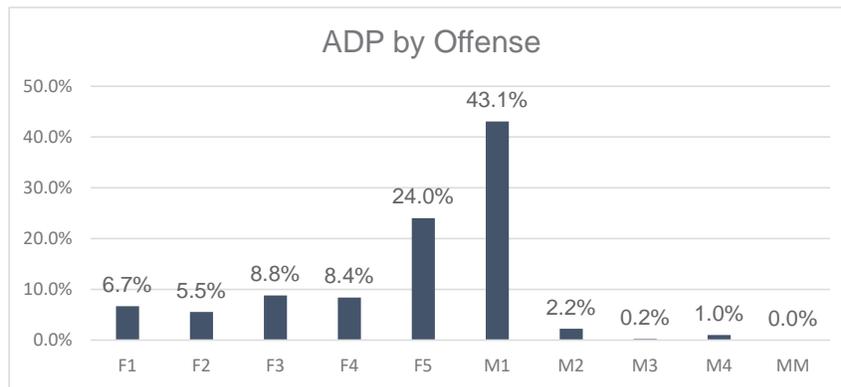
**Figure 14:** Length of Stay by Offense



## Average Daily Population by Offense

Figure 15 shows the distribution of detainee's charged offenses on a typical day in 2023. The most common offense is an M1 at 43.1% and the second most common is an F5 at 24.0%.

**Figure 15:** Average Daily Population by Offense - 2023

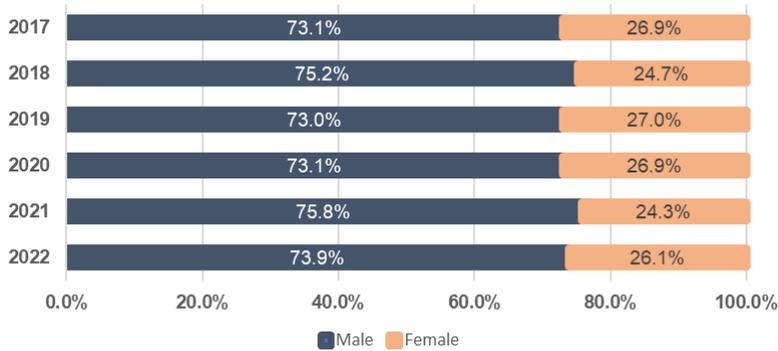


## DEMOGRAPHICS

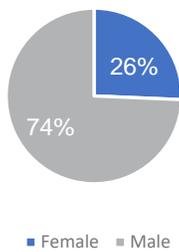
### Gender

Figure 16 below gives the admissions broken down by gender between 2017 and 2022 and figure 17 shows the gender distribution for 2023. The proportion of females admitted to the MCJ has ranged from 25% to 27% in recent years.

**Figure 16:** Historic Gender Distribution in the Jail



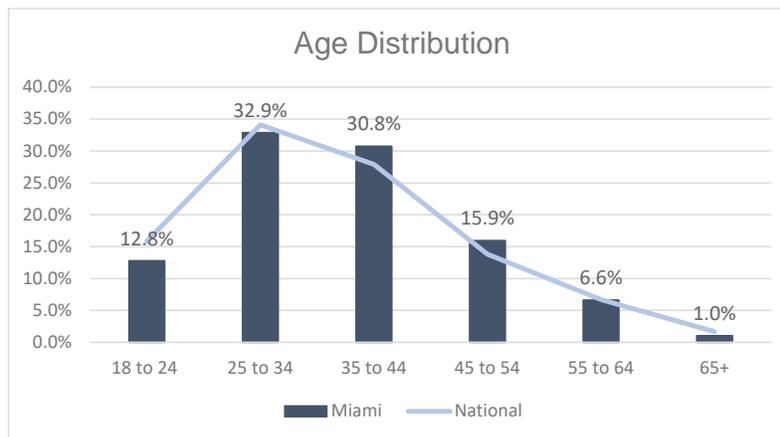
**Figure 17:** Gender Distribution in the Jail – 2023



### Age

Understanding the number of persons in custody per age cohort is often useful in facility planning, programming, and medical needs. Our research team reconstructed the ages served by the MCJ in 2023. Most of the population, 63.7%, falls between the ages of 25- to 44-years old. This closely tracks national trends. The blue line in figure 18 indicates the percentage of persons in jail by age nationally. As can be seen, most of the jail population nationally, 62.0% falls between 25- to 44-years.<sup>10</sup> National figures are from 2022.

**Figure 18:** Age Distribution of the Jail Population



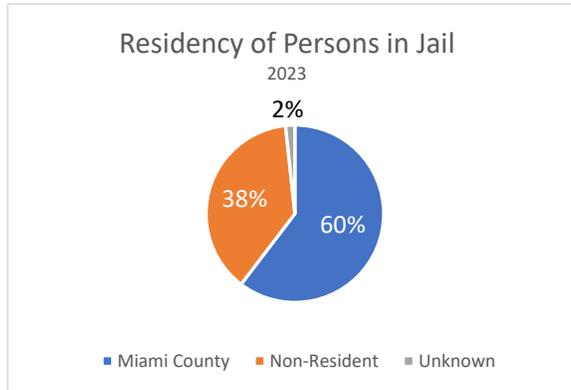
<sup>10</sup> Bureau of Justice Statistics, US Department of Justice. Jail Inmates in 2022 – Statistical Tables. December 2023.

In 2023, there were 2,076 admissions to the jail. On a per capita basis, there were 1,908 admissions per 100,000 population. This is -16% less than the national rate of 2,274 admissions per 100,000 population (2022-2023).<sup>11</sup>

## Residency

The number of persons admitted to jail who are not residents of the County is somewhat high. In 2023, 38% of those admitted to the jail were non-residents of the County. This is likely due to the influence of Interstate 75 which goes through Miami County but also the incorporated areas of the cities of Troy, Piqua, and Tipp City.

**Figure 19:** Residency of Persons Admitted to Jail - 2023



Arrested non-residents were charged typically with more serious crimes. 45% of non-residents admitted to the jail were charged with a felony compared to 38% of Miami County residents.

**Figure 20:** Charges by Residency

CHARGE	MIAMI COUNTY RESIDENT	OUT-OF-COUNTY
Felony	38%	45%
Misdemeanor	62%	55%

Arrestees that are Miami County residents can benefit from wraparound services (mental health, substance abuse services, vocational services, and educational services) that begin in jail (detainee programming) and continue after release into the community.

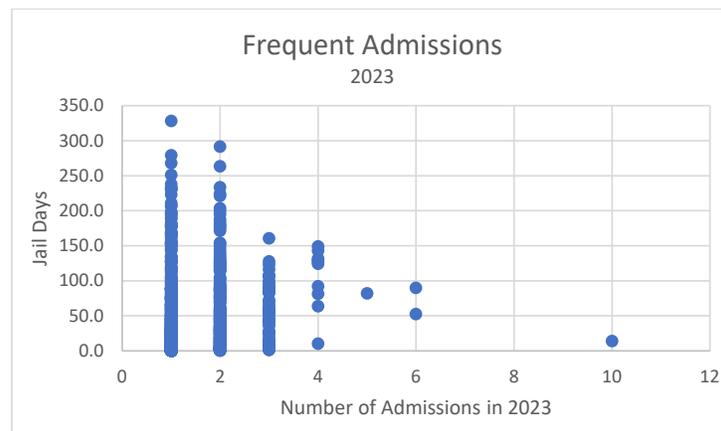
<sup>11</sup> Admission per capita based on data from Jail Report Series: Preliminary Data Release (2023), US Bureau of Justice Statistics and the US Census Bureau projected estimate January 1, 2023.

## Frequent Users of Jail

It is not unusual for persons to be admitted to jail multiple times especially if they suffer from mental health issues and/or substance use disorders. The HDR research team examined the admission records from 2023 to identify persons who were admitted multiple times to jail. In 2023, there were 293 persons admitted to jail more than once that year and they made up 27.9 ADP and 17.3% of the annual ADP. 149 people were admitted to the jail 3 or more times. These persons made up 5.9 ADP and 3.7% of the annual ADP.

Figure 21 shows the distribution of how many times persons were admitted to jail in 2023. From the graph, one can see that 2 persons were admitted 6 times, and 1 person was admitted 10 times in 2023.

**Figure 21:** Frequency of Admissions



## Mental Health

Mental health assessments are conducted during the intake process. Schizophrenic and bipolar disorders are common. A master's degree level therapist from Recovery and Wellness Center works in the jail. About 125 to 150 people are seen annually.

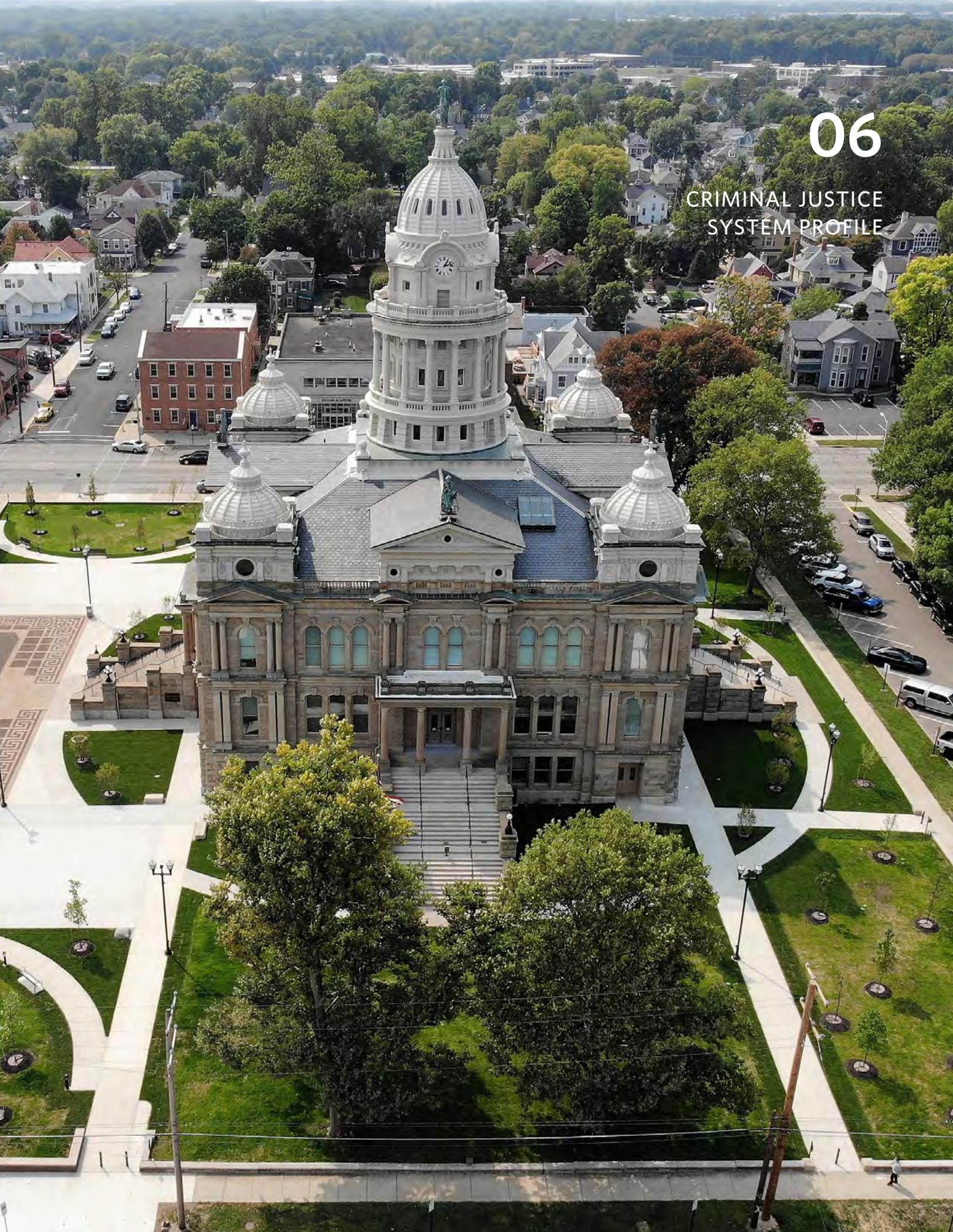
Medications cannot be forced at the jail. That can only happen at the state psychiatric hospital in Toledo, Ohio. If a forensic evaluation is needed, the wait time to get a bed is 6 to 8 weeks at the state psychiatric hospital.

Medication Assisted Treatment (MAT) is available. Coordination of MAT post-release is primarily through TCN Behavioral Health. If a person is not following through with their care, it will be reported to the Probation Office.

Tri-County Board of Recovery and Mental Health Services serves Miami, Darke, and Shelby Counties. Tri-County pays for medications used in jail through Central Pharmacy. Medications can only be prescribed by medical staff.

Of concern is suicide. 31 attempts in 2020 at the MCJ were reported.

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## OVERVIEW

Jail capacity needs are driven by number of persons admitted to jail and how long they stay in jail. Admissions to jail are generally driven by crime and law enforcement policies. The amount of time a person stays in jail (length of stay) is generally driven by a combination of legislative policies, local criminal justice system stakeholder (written and unwritten) policies, and the efficiency of the system in disposing of cases.

This section presents information surrounding the use of the jail based on surveys and interviews of key criminal justice system policymakers including judges, probation, prosecuting attorney, public defender, sheriff, jail administrator, and other local law enforcement agency representatives.

## ISSUES DRIVING JAIL CAPACITY

Below are a list of issues and trends that are driving the need for more jail capacity in Miami County:

- County is growing in population. Faster than state projections.
- Law enforcement contact with persons with mental illness has increased.
- Methamphetamine arrests have been increasing.
- Homelessness is an issue. Generally, results in repeat offenders for minor offenses.
- The ALOS in the jail has increased because persons convicted of non-violent Felony 4 and 5 crimes are serving their sentence locally at the jail in lieu of prison.
- Domestic violence charges require automatic holds (no bond) in jail. This is required by state law.
- A bond schedule is not used to set bond prior to arraignment. This likely adds to the number of overnight stays at the jail.
- Bonds cannot be paid 24-hours a day. This likely leads to longer stays in the jail. The County did indicate that they are looking into teaming with a third-party vendor to set up a system to accept bond payments for those awaiting arraignment in Municipal Court 24-hours a day.
- Incarcerated persons are not given priority in court processing or proceedings. This likely adds to the length of stay for persons in jail.
- Common Pleas Court presentence investigations (PSI) typically take 4-6 weeks to complete. A reduction in this timeframe could reduce the amount of time in jail as the investigation is completed.
- A call/text reminder system for court summons is not used by Common Pleas but is used by the Municipal Court. Such systems have proven to increase appearances of persons to their court date.
- Lack of mental health treatment beds in the community and at the state level increases the length of stay for persons with mental health issues.
- A lack of a community-based reentry or half-way house that could be used for stepdown. Such a facility could assist with reintegration back into the community and help to reduce recidivism.

## INITIATIVES TO MANAGE JAIL CAPACITY

The criminal justice system stakeholders are very active and have implemented several initiatives to manage and control jail capacity demand. The following are a list of those initiatives.

### Law Enforcement

- Law Enforcement agencies use citations and summons for the majority of minor offenses. This diverts admissions to the jail.
- Decriminalization of Marijuana has reduced the number of arrests.

### Probation

How the Probation Department uses the jail can greatly impact jail capacity needs. Probation typically uses the jail for technical violations of probation conditions. This can include failing a drug or alcohol test. Also, some jurisdictions will place an automatic “hold” on persons who have committed a new crime while on probation that will not allow the person to bond out.

The probation policies in Miami County do not appear to be a major driver of the jail population. These policies include:

- New offenses committed by persons on probation do not result in an automatic jail hold or revocation of probation unless it is a felony offense.
- Probation holds make up less than 10% of the jail population. This is lower than most jurisdictions.
- Positive drug screens are not typically sent to jail. Generally, multiple failures must occur before jail is used as a sanction. The first jail sanction is typically 2-3 days.
- Positive drug and alcohol tests do not automatically require a jail sanction.

### Courts

- The Ohio Supreme Court requires that cases be resolved within 6 months. This requirement keeps cases moving towards disposition and helps manage the length of stay in jail.
- Municipal Court judges use the Ohio Risk Assessment System (ORAS) pretrial assessment tool. The tool is designed to be predictive of both a defendant’s failure-to-appear and risk of violating pretrial probation with a new offense.<sup>12</sup>
- The County has two pretrial assessment workers to administer the ORAS.
- Sentenced misdemeanors can seek mitigation of their sentence after half of their time is served. This reduces lengths of stay at the jail.
- Detainee workers on Municipal Court sentences are given 3 days off their sentence for every 12 days worked. This reduces lengths of stay at the jail.
- Less incarceration for Driving under Suspension today than in the past.

### Diversion Opportunities

- Traffic, theft, and underage consumption diversion is available at the Municipal Court level.
- OVI diversion is available. It is a 72-hour program to be completed before sentencing.
- Electronic monitoring is used for pretrial and sentenced individuals.
- Intensive supervision is used.
- Upper Valley Medical Center is available as an alternative for persons with mental health issues.

### Treatment Opportunities

- Municipal Drug Court
- Common Pleas Drug Court and Mental Health Court

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<sup>12</sup> [Ohio Risk Assessment System \(uc.edu\)](https://uc.edu)

## INTERVIEWS WITH STAKEHOLDERS AND KEY FINDINGS

### Law Enforcement

On February 20, 2024, representatives from the primary local law enforcement agencies in Miami County were interviewed from Miami County Sheriff's Office, Tipp City Police Department, Covington Police Department, Troy Police Department, and Ohio Highway Patrol.

#### Key takeaways:

- Law Enforcement is spending more time on mental health and medical cases. Common situations for taking arrestee to the hospital include suicide, emergency withdrawal symptoms, and potential exposure to fentanyl.
- Currently there is no on-site help available for mental health evaluations.
- Legalization of marijuana has decreased the number of searches (e.g. automobiles) that in the past led to finding harder drugs. Possession arrests have decreased as a result.
- More females have been held in jail beginning in 2015 with increased bed space.
- Persons charged with misdemeanors now receive citations/court summons in lieu of being admitted to jail except for violent misdemeanors who are admitted to jail.
- Most persons charged with operating a vehicle while intoxicated (OVI) are no longer taken to jail. Officers write a citation and wait at the scene with the individual until a ride arrives.
- Persons arrested for drug possession are no longer held in the jail if they are waiting on lab results. This change occurred about 2 to 3 years ago.
- Local stores are reporting significantly less shoplifting since COVID.

### Municipal Court Prosecutor

The Miami County Municipal Court Prosecutor Lenee Brosh was interviewed on February 21, 2024. Current staffing is 3 attorneys (sometimes 4) and 1 secretary/receptionist. The Prosecutor reported that staffing is adequate for the workload.

#### Key takeaways:

- The average length of time between arrest and formal filing of charges is one day.
- The Prosecutor has three diversion programs where persons must attend a class.
  - Traffic diversion
  - Theft diversion
  - Underage consumption diversion

### Public Defender

Public Defender Joe Fulker was interviewed on February 22, 2024. The Public Defender's office is funded through partial reimbursement salaries and expenses from the Ohio Public Defender, contracts for services with the various municipalities, and a county grant. The office has 4 full-time attorneys and a part-time attorney who is largely assigned to Juvenile Court. The office also has 2 full-time assistants. The public defender reported that staffing is adequate for the workload.

Persons who seek services from the public defender apply for representation by submitting an Affidavit of Indigency. The affidavits are available in the jail and are delivered to the office daily. Most defendants ask for indigent representation.

Public defender staff visit the jail every day to meet with clients. Jail staff prioritizes attorney visits. A larger attorney/client room would be beneficial.

## Municipal Court

Miami County Municipal Court Judge Huffman was interviewed on February 21, 2024. The Municipal Court has 2 judges and 1 magistrate. The court operates a problem-solving drug court.

### Key takeaways:

- Fewer persons are incarcerated for driving under suspension because of recent law changes.
- OVI incarceration is down because OVI incarceration is not used unless there is an aggravating violent offense.
- There has been an uptick in methamphetamine cases. The court sees about a dozen a week.
- Persons with a mental health illness are sometimes deflected from jail. If they require mental health services, the judge will try to release the person on an own recognizance (OR) bond conditional that they have a safe place to go and get a mental health evaluation. This happens 1- to 2-times per week.
- The length of stay of persons in jail have been increasing because persons convicted of felony 4s and 5s are now serving their time locally rather than in prison. This began approximately 6 years ago.
- Female jail population has been rising. Generally, females are arrested on drug possession and fail to appear to court.
- A call reminder system for court summons has been implemented. Typically, two-thirds who have a summons show for their court date.
- Bonds are set at arraignment only. Persons accused of domestic violence are not eligible for a bond until after arraignment.
- Bonds cannot be paid 24-hours a day. The County is working with a third-party company to accept bonds 24-hours a day prior to arraignment.
- Video arraignments are conducted.

## Court of Common Pleas

Judge Jeannine Pratt was interviewed on February 20 and Judge Stacey Wall was interviewed on February 21, 2024 for this study.

### Key takeaways:

- The Court of Common Pleas has an adult drug court called “Second Chance.” The court has 50 participants annually. Participants are required to complete 3 phases of programming and monitoring to address drug/alcohol addiction often with secondary mental health diagnoses within a 12- to 18-month period. Potential participants are identified while incarcerated or in the early stages of the criminal processing i.e. pretrial/arraignment/bond. Participants who graduate could have their criminal charges dismissed, reduced, or expunged. Success rate is at the high 50% range.
- For persons on probation, a person with a positive drug and/or alcohol screen is not sent back to jail. Generally, persons must have multiple failures before jail is used as a sanction. The first jail sanction is usually 2-3 days of incarceration.
- Summons in lieu of arrest are issued on a regular basis. Summons are used for up to felony 3, 4, and 5 non-violent charges.
- Recommendations:
  - A half-way house or re-entry house as a step down from incarceration to allow detainees to integrate back into the community, which could reduce jail population and recidivism.
  - The ability to pay bail 24 hours a day at the jail pursuant to a bond schedule.
  - Work release for detainees serving local jail sentences so they don't lose their employment.
  - Having a jail/court employee working in the jail to identify potential detainees for specialty courts (drug/mental health) and educate them on what is entailed and preparing necessary information to meet eligibility standards.
  - Medication. What can be used or prescribed in the jail is a major issue. Many people are on suboxone but that is heavily restricted in the jail.
  - The Court would like to see detainees receive addiction and mental health medication injections if the defendant agrees. Expansion of medications is being explored.

## **Municipal Court Probation**

David Carlin of the Municipal Court Probation was interviewed on February 21, 2024. The department has the following staff: 1 Pretrial Officer, 2 Low-risk Officers, 2 High-risk Officers, 1 Drug Court Officer, 1 Community Service Officer, 1 Deputy Chief/PSI writer, and 1 Chief. There are also 3 support staff that are considered Court Services that are not part of the Probation Department but work closely together.

### **Key takeaways:**

- The department does graduated sanctions depending on the individual. This includes non-jail sanctions such as more frequent probation visits or more frequent drug screens.
- Revocation begins with a probation violation (PV) being filed and a PV arraignment being set. If the person is found to have violated at the PV hearing, their probation is revoked.
- The department operates both intensive (weekly) supervision and electronic monitoring (generally alcohol monitoring and not GPS).

## **Common Pleas Probation**

Justin Lande completed a survey administered by the HDR research team.

### **Key takeaways:**

- Nearly all convicted persons receive a presentence investigation (PSI). The average time between adjudication and submission of the PSI is 4- to 6-weeks. Sentencing dates are set at adjudication.
- If a person receives a new charge while on probation the judges are made aware of the new charges, but probation is not automatically revoked.
- Common Pleas Probation operates electronic monitoring.
- Common Pleas Probation operates pretrial probation.



## INTRODUCTION

The Sequential Intercept Model was developed by Mark Munetz, MD and Patty Griffin, PhD in conjunction with the National GAINS Center. The Sequential Intercept Model offers points during the criminal justice process at which a person with serious mental illness could be provided community-based treatment and alternative sanctions.

The model also provides an effective framework for more broadly examining the processing of cases involving all adult defendants through the criminal justice system. Case processing in the criminal justice system is a series of stages or decision-points that can be modified to improve outcomes. Day-to-day decisions and agency policies of key criminal justice system actors impact outcomes and use of limited resources. Modifications may include both process changes and program enhancements.

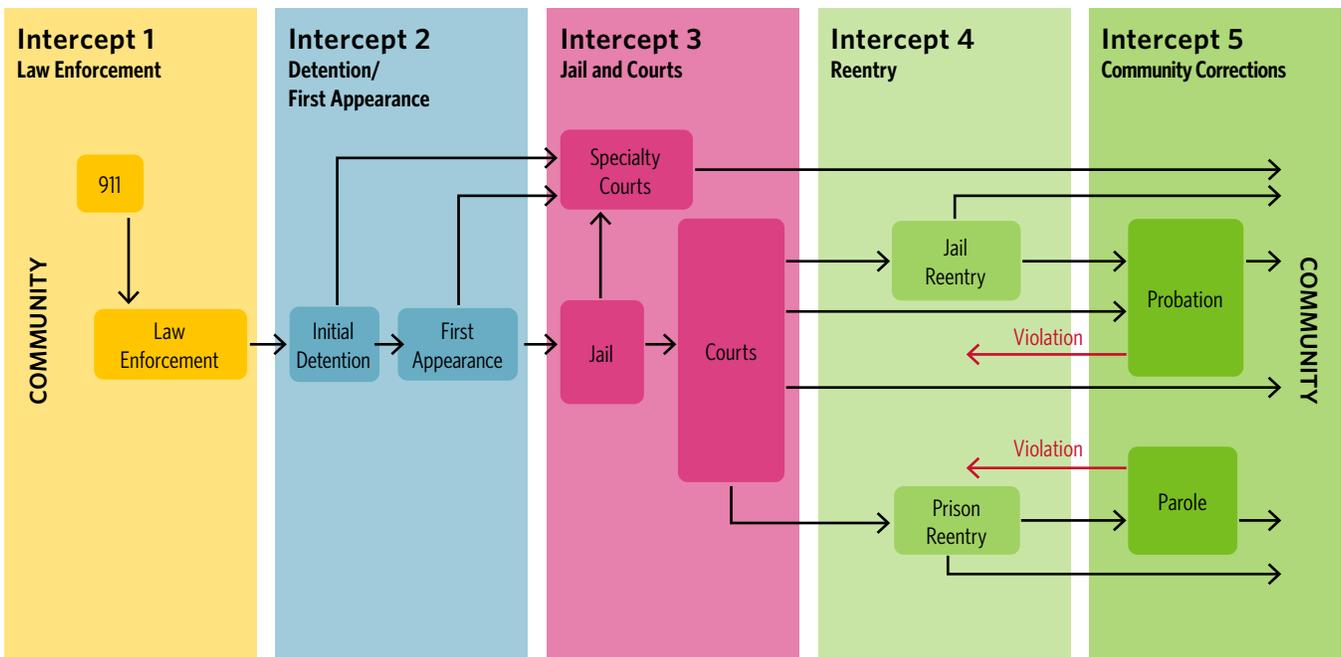
Process changes are changes in practice or policy intended to improve efficiency of the case handling process that may result in reducing delays in case processing, reduce need for costly programs, and reduce length of pretrial confinement in detention. Program enhancement may include implementation of interventions for specific offender populations intended to improve effectiveness of system in ways that may address specific social problems, improve offender competencies/skills, and/or provide less restrictive and less costly options for holding offenders accountable consistent with public safety.

The Sequential Intercept Model identifies five places at which a person could be diverted:

1. When law enforcement or emergency services encounter a person – typically a call for service
2. The initial court hearing where bail is set or detention imposed
3. At the disposition of a person’s case – either by court or jail
4. At the time a person re-enters the community from jail
5. At the point that a person is being supervised by corrections while in the community or receiving community support

Figure 22 illustrates these intercept points as they relate to the general sequence of the processing of cases through the criminal justice system.

**Figure 22:** Sequential Intercept Model



During the needs assessment study HDR, sought to develop a picture of how accused offenders (including those with mental illness and co-occurring disorders) flow through the Miami County criminal justice system along the five distinct intercept points: Law Enforcement, Initial Detention/Initial Court Hearings, Jails and Courts, Reentry, and Community Corrections. The purpose is to identify gaps, resources, and opportunities at each intercept that may serve to increase the efficiency and effectiveness of the criminal justice system and support appropriate use of county resources.

**Figure 23:** Programs and Practices Identified in Interviews and Surveys

<b>Intercept 1</b> <b>Law Enforcement</b>	<b>Intercept 2</b> <b>Detention/            First Appearance</b>	<b>Intercept 3</b> <b>Jail and Courts</b>	<b>Intercept 4</b> <b>Reentry</b>	<b>Intercept 5</b> <b>Community Corrections</b>
<p><b>Current Program Practices</b></p> <ul style="list-style-type: none"> <li>• Citation and Release for minor offenses</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• On-scene MH crisis response</li> <li>• Need for additional Emergency MH bed capacity</li> <li>• Need for detox/sobering beds</li> </ul>	<p><b>Current Program Practices</b></p> <ul style="list-style-type: none"> <li>• Pretrial Screening (ORAS)</li> <li>• Traffic and theft diversion opportunities - Municipal Court</li> <li>• OVI Diversion - Municipal Court</li> <li>• Pretrial Electronic Monitoring</li> <li>• Call reminder system in place</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Bond Schedule</li> <li>• Ability to post bond 24/7</li> </ul>	<p><b>Current Program Practices</b></p> <ul style="list-style-type: none"> <li>• Efficient case processing</li> <li>• Drug Court at Municipal and Common Pleas Court</li> <li>• Mental Health Court (Common Pleas)</li> <li>• Expand MAT to include injectables</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Broaden scope/availability of jail programs/treatment               <ul style="list-style-type: none"> <li>◦ Crisis response</li> <li>◦ Screening and identification</li> <li>◦ Counseling/Therapy</li> <li>◦ Life skills</li> <li>◦ Peer support</li> <li>◦ Case management</li> <li>◦ Space for programs</li> </ul> </li> </ul>	<p><b>Current Program Practices</b></p> <ul style="list-style-type: none"> <li>• Coordination with Tri-County Board of Recovery and Mental Health Services</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Reentry/Discharge planning               <ul style="list-style-type: none"> <li>◦ Employment/education</li> <li>◦ Transportation</li> <li>◦ Housing</li> <li>◦ MH/SA treatment</li> <li>◦ Peer support</li> <li>◦ Health care</li> <li>◦ Continuity of care</li> </ul> </li> <li>• CJ system coordination with community providers</li> <li>• Broaden scope/availability of jail programs/treatment</li> </ul>	<p><b>Current Program Practices</b></p> <ul style="list-style-type: none"> <li>• Graduated sanctions for dirty screens and probation violations</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Community residential treatment options</li> </ul>

## INTERCEPT I: LAW ENFORCEMENT / EMERGENCY SERVICES

### Overview

Law enforcement options following a report, observation of an offense, or when responding to people with mental illness include advise, summons, arrest, transport to county jail, referral to mental health services, referral to provider agencies, involuntary civil commitment (pink slip), referral to hospital emergency services, or a combination of these options.

In Miami County, law enforcement is provided by the County Sheriff's Office, Ohio State Highway Patrol, and the police departments in the cities of Troy, Piqua, Tipp City, Covington, and West Milton.

### Existing Positive Programs and Practices

- Citation and release for non-violent misdemeanor offenses

### Gaps

- Lack of a sobering center and short-term withdrawal management
- Crisis mobilization is available but is not coordinated with law enforcement

### Opportunities/Recommendations

- Expand/develop mental health bed capacity, including crisis stabilization and detox
- Establish a sobering site and 24-hour crisis drop-off center
- Create/expand mobile mental health crisis teams as co-responders with law enforcement

## INTERCEPT II: INITIAL DETENTION / INITIAL COURT HEARING

### Overview

Once an individual is taken into custody, a decision regarding pretrial detention is made. This decision is typically based upon the severity of the charges, the alleged offender's level of stability in the community, and his or her behavior at the time of arrest. The availability of resources in the community to mitigate the risk of further offending is also often a factor. The Court may delegate release authority to the jail or other criminal or juvenile justice officials for certain offenses based upon a bail schedule or other preset criteria.

If an individual is initially detained upon arrest, he or she has the right to a detention hearing before a judge. The judge may elect to release the accused from detention with or without conditions. The goal of the system at this stage is to provide the level of supervision and structure necessary to prevent further offending and to assure the availability of the accused for court. Information about the alleged crime, the individual's background and home situation, and risk of re-offending are helpful to the judge in making the pretrial release decision.

The Miami County Municipal Court has in place several programs and practices to assess arrested individuals, and it also has several diversion opportunities and alternatives to pretrial incarceration.

### Existing Positive Programs and Practices

- Pretrial screening using Ohio Risk Assessment System (ORAS)
- Traffic and theft diversion opportunities
- OVI diversion opportunity
- Pretrial electronic monitoring
- Pretrial probation
- Call reminder system – Notifies individuals of their court date. Such systems reduce failure to appear rates

### Gaps

- A bond schedule
- Inability to post bond 24-hours a day/7-days a week (starting this is being investigated by the County)

### Opportunities/Recommendations

- The use of a bond schedule coupled with the ability to receive bonds 24/7 could reduce the amount of time a person is in jail following initial intake. Right now, bonds are set at first appearance hearings by a judge. A bond schedule would allow some persons to leave jail on a bond before an initial hearing.
- Currently, individuals do not have the ability to post bonds outside of business hours. The County has indicated that they are looking to team up with a third party that will collect bonds outside of business hours.

## INTERCEPT III: JAILS / COURTS

### Overview

When a person is arrested, or served a summons or citation in lieu of arrest, the arresting officer must file a complaint without delay to formally begin the criminal case in court. The Municipal Court conducts arraignments shortly after arrest to confirm that the accused understands the charge and his or her rights and to set bail. The Municipal Court next conducts a preliminary hearing (unless waived) to determine if there is evidence sufficient to warrant further proceedings. If the evidence only supports a misdemeanor charge it will stay in that court. If there is probable cause that the accused committed a felony offense, the judge binds the case over to the grand jury for further action. The county attorney presents the evidence to the grand jury. If the grand jury finds there is sufficient evidence that the accused has committed a felony, it returns an indictment (or formal charge). The case then goes before the Common Pleas Court which has exclusive jurisdiction over felony cases.

The accused is then arraigned in the Common Pleas Court and the trial dates are scheduled. Prior to trial there are typically pleadings and motions that occur. Pretrial conferences are scheduled to get the parties together to address evidence issues and discuss potential pleas. This is a time in many jurisdictions that can lead to extensive delays in case processing with filing of motions, requests for continuances, etc. Often plea deals aren't made until final pre-trial conferences close to trial dates. Typically, a very low percentage of cases actually go to trial so getting to agreement on plea deals sooner than later is an important consideration in delay reduction strategies.

In minor criminal cases where a defendant is found guilty, sentencing usually takes place immediately. In serious criminal cases there is typically a pre-sentence investigation to help the judge determine the proper sentence. These may take 4-6 weeks depending upon the workload of the Probation Office and the scope of the investigation.

### Criminal Case Processing

Criminal case processing in the Miami County justice system appears to be very efficient based upon feedback received in interviews and review of case clearance rates. Clearance rate is the number of disposed cases as a percentage of the number of filed cases in a given time period. A clearance rate of 100% means the court has disposed of as many cases as were filed. A clearance rate under 100% means the court has disposed of fewer cases than were filed resulting in an increase in cases awaiting disposition and, consequently, longer case processing times. Clearance rates for misdemeanors in Miami Municipal Court from January 2023 to September 2024 are at 100%. For criminal cases in Common Pleas Court over the same timeframe, Judge Pratt has a clearance rate of 106% and Judge Wall has a clearance rate of 109%.<sup>13</sup>

### Specialty or Problem-Solving Courts

The Municipal Court and Court of Common Pleas operate problem-solving courts. These types of problem-solving courts have been found to be effective in diverting offenders with special issues from the mainstream justice process and sentencing.

The Municipal Court operates a drug court. In addition, the Court of Common Pleas (Judge Pratt) has an adult drug court called "Second Chance." The court has 50 participants annually. Participants are required to complete 3 phases of programming and monitoring to address drug/alcohol addiction often with secondary mental health diagnoses within a 12- to 18-month period. Potential participants are identified while incarcerated or in the early stages of the criminal processing i.e. pretrial/arraignment/bond. Participants who graduate could have their criminal charges dismissed, reduced, or expunged. Success rate is at the high 50% range.

The Court of Common Pleas also has a mental health court. It was launched in June 2022 by Judge Wall. It is available for defendants charged with third-, fourth-, and fifth-degree felonies and who are found to be legally and clinically eligible. The court has an intensive probation program offering targeted treatment to offenders who have been diagnosed with a serious mental illness and whose illness was a primary factor contributing to their involvement in the criminal justice system. The treatment team includes a representative of Tri-County Board of Recovery and Mental Health Services.

<sup>13</sup> [www.supremecourt.ohio.gov/eStatsPublic/Reports/ReportViewer](http://www.supremecourt.ohio.gov/eStatsPublic/Reports/ReportViewer)

### ***Detainees with Behavioral Health Issues***

Persons with a mental health illness are sometimes deflected from jail. If they require mental health services, the Municipal Court judge will try to release the person on an own recognizance (OR) bond conditional that they have a safe place to go and get a mental health evaluation. This happens 1- to 2-times per week.

Mental health services are provided by the Tri-County Board of Recovery and Mental Health Services. Clinical staff have seen an increase in persons with mental health and drug issues in the jail.

Some medications are provided via Medication Assisted Treatment (MAT) for opioids. Medications are delivered orally, and persons receive some medication upon release. Some jails are using injections for medications on release that deliver a 30-day dose. This is proving to be effective in controlling the person's symptoms until they have seen a doctor post-release.

### ***Detainee Programming***

The MCJ in downtown Troy is the only full-service jail in the County. The Incarceration Facility was not designed as a full-service jail and is limited to holding only minimum-security custody defendants. While space limitations and conditions in the MCJ limit current programming opportunities for many detainees, the Sheriff's Office supports a rehabilitative operational philosophy.

### **Existing Positive Programs and Practices**

- Efficient criminal case processing
- Drug Court in both Municipal Court and Court of Common Pleas
- Mental Health Court in Court of Common Pleas
- Medication Assisted Treatment
- If approved through Tri-County Board of Recovery & Mental Health Services, the judge and probation, Naltrexone is offered as an injectable

### **Gaps**

- Need for collection and tracking of mental health data.
- Insufficient capacity and the MCJ is operating at or near capacity much of the time. Managing detainees' behavior becomes exceedingly more difficult with when the jail is crowded, there are few opportunities for engaging in productive activities, and few incentives for detainees to improve their situation.
- Lack of suitable space for programming for most detainees at the MCJ.

### **Opportunities/Recommendations**

- Continue support for alternative courts (drug, mental health, etc.) and sentencing options for courts to help manage proper use of the existing jails and any new facilities which may be constructed.
- Expand in-jail services and program opportunities. Good behavior and program participation can be incentivized by aligning participation with pre-release and step-down opportunities. Classification reviews at regular intervals can result in a step down of classification within the jail and, with court approval, step down into community settings toward the back end of sentences.
- Intensify efforts to screen and identify detainees with needs that may be addressed through enhanced programming.
- Increase communication/coordination with community providers to provide services to offenders in the jail and community.
- Identify and initiate tracking of key metrics to track progress such as:
  - Prevalence of mental illnesses in the jail population
  - Length of stay of people with mental illnesses in jail
  - Utilization of community-based treatment and resources
  - Recidivism rates

## INTERCEPT IV: REENTRY

### Overview

There are basically three reentry models – all three of which involve close coordination between the jail and community service providers:

- Reach out – Jail staff provide detainee referrals to community-based services
- Reach in – Community service providers conduct intakes and arrange service plans in preparation for, and following, release from jail
- Transitional – Reentry planning and service delivery is a shared responsibility between the jail and community service providers

Miami County has a framework and is poised to provide excellent reentry services with the support of the Sheriff's Office and the current involvement of Probation, Tri-County Board of Recovery and Mental Health Services, and other community service providers in programming at the jail.

### Existing Positive Programs and Practices

- Coordination with community provider Tri-County Board of Recovery and Mental Health Services

### Gaps

- Limited reentry/discharge planning
- Limited pre-release stepdown opportunities
- Limited coordination in providing reentry services
  - Employment
  - Housing
  - Health care
  - Mental Health
  - Substance Use Disorder Treatment
  - Case Management and Continuity of care

### Opportunities/Recommendations

- Expand services available to the courts as sentencing options, alone or in combination with other sanctions, for offenders with mental health, substance abuse, and dual diagnosis treatment needs.

## INTERCEPT V: COMMUNITY CORRECTIONS

### Overview

After conviction, the sentences offenders receive may be modified under certain circumstances. For some, good behavior and compliance with the provisions of their sentences can lead to early release or discharge. More often, sentence modifications occur as a result of a violation of a condition of probation or parole. When a probation or parole violation is alleged, the offender is often placed into jail pending a hearing on the matter. Miami County, however, provides opportunities for sentence reductions and they use graduated sanctions for probation violations.

### *Sentence Reduction Opportunities*

The Miami County court system has programs in place to reduce sentences. For example, sentenced misdemeanors can seek mitigation of their sentence after half of their time is served. This reduces lengths of stay at the jail. In addition, detainee workers in the jail serving a Municipal Court sentence are given a 3-day sentence reduction for every 12 days worked.

### *Probation Violations*

Many communities discover a sizable portion of their jail population to be comprised of probation and parole violators. In Miami County that is not the case. The probation departments used graduated non-jail sanctions for some probation violations. For example, “day sanctions” can be imposed if a person fails a drug or alcohol screening whereby the offender is ordered to do a drug screening daily. Other minor violations may result in more frequent reporting to the probation officer. Moreover, being charged with a new crime does not automatically result in a revocation and a return in jail as it often is in other counties. The probation department generally waits for the disposition of the new charge. Probation revocations do occur, but it is not a default for all violations.

### Existing Positive Programs and Practices

- Sentence reduction opportunities
- Graduated probation sanctions

### Gaps

- Lack of community residential treatment options

### Opportunities/Recommendations

- Provide process/resources for continuity of care/treatment beyond jail and/or probation

JAIL CAPACITY PROJECTIONS

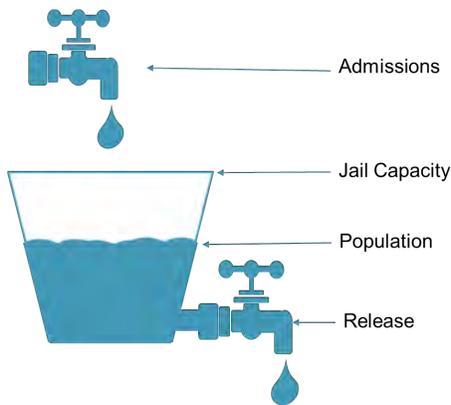


## OVERVIEW

The best predictor of a trend is the history of that trend. A detention facility’s population time series trend is no different. However, because of the existence of unforeseen circumstances, it should be noted that the precision of forecasts of all kinds diminishes the further into the future the trend is projected. All forecasts are only as good as what was known when the forecast was produced. The long-term accuracy of correctional population forecasting is heavily impacted by changes in public policy, law enforcement strategies, socioeconomic factors, and a host of other influences.

Population and capacity needs of the jail are the direct result of the number of admissions (bookings) to the jail and how long people stay in jail. The diagram below illustrates this using a bucket of water. The spigot represents admissions, and the size of the bucket represents the capacity of the jail. As water is added to the bucket, it fills up. If water is not released from the bucket, then the amount of water increases until it overflows. The same is true of jail populations.

**Figure 24:** Jail Population Bucket Analogy



There are numerous factors that influence the number of admissions and how they stay. Throughout this study, policies and attitudes regarding law enforcement, the severity of crimes committed, and the speed of adjudication are the main drivers behind who goes to jail and how long they stay. The following chart lists some of the many decisions, policies, and influencers that drive admissions and length of stay at the jail that have been discussed in this study.

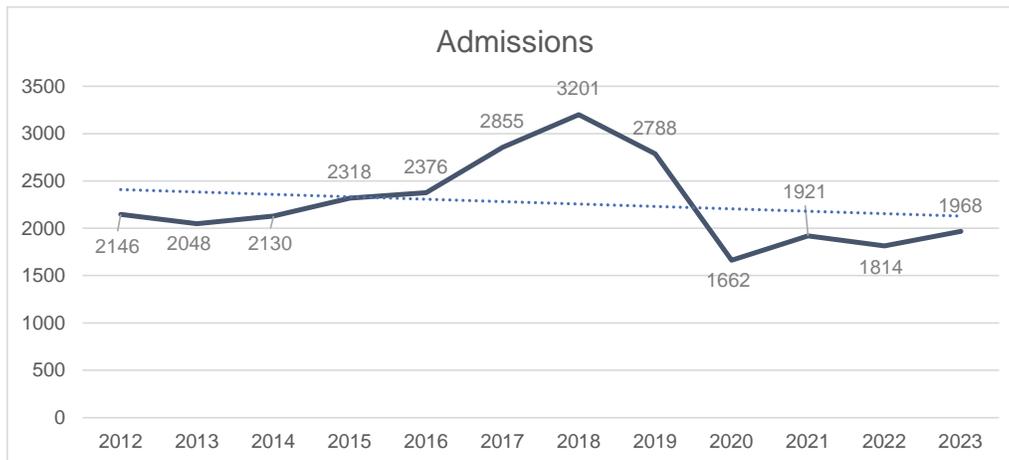
**Figure 25:** Factors that Influence Jail Populations

FACTORS THAT INFLUENCE JAIL POPULATIONS	
ADMISSIONS	LENGTH OF STAY
County Population	Timely pretrial assessments
Number of LE officers	Early appointment of counsel
Booking and cite & release policies	Pretrial bond review procedures
Availability of pre-booking alternatives	Step-down options from jail to alternative facilities/programs
Access to pretrial services	Case processing times
Failure to appear rate	Availability of jail alternatives
Pretrial supervision	Sentencing mandates
Availability of alternative sanctions and diversion options	Prevailing philosophy regarding punishment vs. treatment
	Length of sentence
	Pretrial release options

## ADMISSIONS

Admissions steadily increased from 2,048 in 2013 to a high of 3,201 in 2018. Admissions then declined in 2019 to 2,788 and then fell precipitously in 2020 to 1,662 during the first year of COVID. From stakeholder interviews, the rise in admissions from 2017 to 2019 was due, in part, to an uptick in fentanyl possession.

**Figure 26:** Miami County Jail Annual Admissions



### Upward Pressure

There are several factors that are pushing admissions higher in Miami County. These include:

- County Population growth (projected to increase +7.4% by 2050)
- Methamphetamine arrests have been increasing.
- Domestic violence charges require automatic holds (no bond) in jail. This is required by state law.

### Mitigating Factors

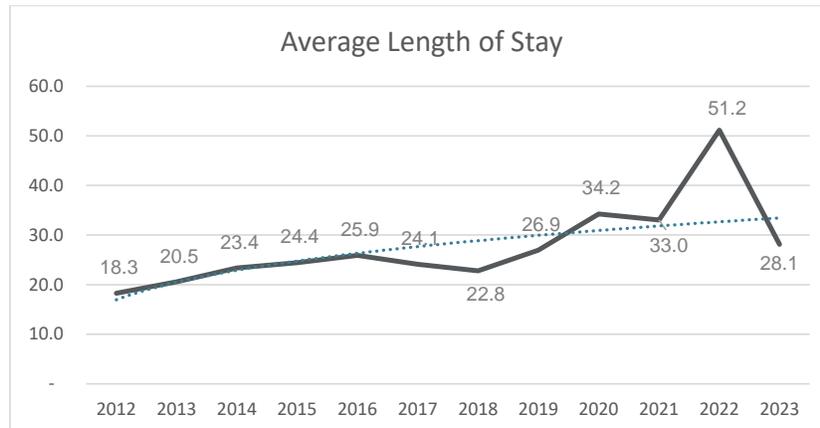
The following are factors that are helping to manage the number of admissions to MCJ. If any of these factors were to change, then an increase in admissions will occur and a corresponding increase in jail population. These include:

- Law Enforcement agencies use citations and summons for most minor offenses.
- Decriminalization of Marijuana has reduced the number of arrests.
- New offenses committed by persons on probation do not result in an automatic jail hold or revocation of probation unless it is a felony offense.
- For persons on probation, a positive drug and/or alcohol test does not automatically require a jail sanction.
- Persons charged with operating a vehicle while intoxicated (OVI) are no longer taken to jail.
- Local stores are reporting significantly less shoplifting since COVID.

## AVERAGE LENGTH OF STAY

Figure 27 reflects the annual ALOS in days for the jails between 2012 and 2023. Except for a slight decrease in 2018, the ALOS has steadily grown and reached a high of 51.2 days in 2022. This high ALOS was an exception, as ALOS fell back to 28.1 days in 2023. Overall, ALOS has been trending up year over year by 1.8 days from 2012 to 2023.

**Figure 27:** Miami County Jail Average Length of Stay



### Upward Pressure

There are several factors that are pushing length of stay higher in Miami County. These include:

- Persons convicted of non-violent Felony 4 and 5 crimes are serving their sentence locally at the jail in lieu of prison as they did in the past. These persons generally serve longer lengths of stay compared to the pretrial population.
- Incarcerated persons are not given priority in court processing or proceedings. This likely adds to the length of stay for persons in jail.
- Lack of mental health treatment beds in the community and at the state level increases the length of stay for persons with mental health issues.
- Common Pleas Court presentence investigations (PSI) typically take 4-6 weeks to complete. A reduction in this timeframe could reduce the amount of time in jail as the investigation is completed.

### Mitigating Factors

The following are factors that are helping to manage length of stay in Miami County. If any of these factors were to change, then an increase in length of stay will occur and a corresponding increase in jail population. These include:

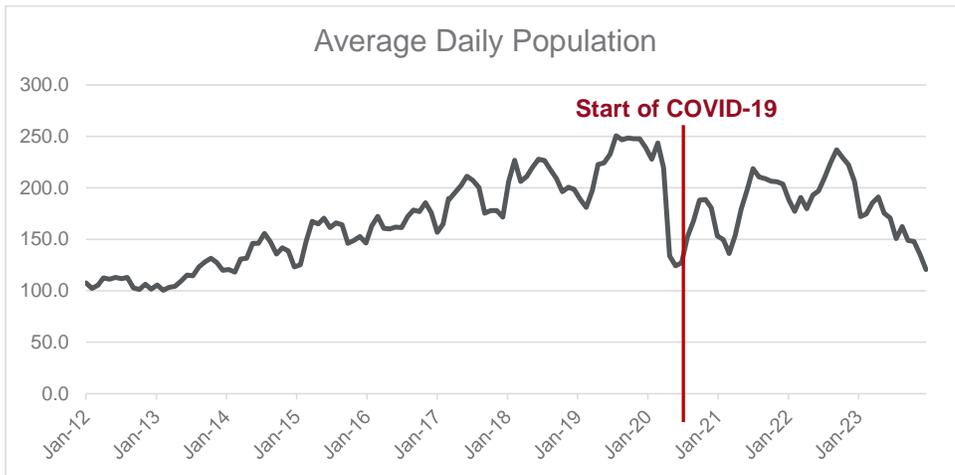
- The Ohio Supreme Court requires that cases be resolved within 6 months. This requirement keeps cases moving towards disposition and helps manage the length of stay in jail.
- Municipal Court judges use the Ohio Risk Assessment System (ORAS) pretrial assessment tool. Use of a pretrial assessment tool generally results in lower bonds and shorter lengths of stay.
- Sentenced misdemeanors can seek mitigation of their sentence after half of their time is served. This reduces lengths of stay at the jail.
- Diversion opportunities for traffic, theft, and OVI are available.

## AVERAGE DAILY POPULATION

Figure 28 shows the combined monthly ADP for the MCJ and MCIF. The jail population data presented is for both facilities combined, and it includes Miami County intakes only. It does not include beds rented to other jurisdictions or government entities.

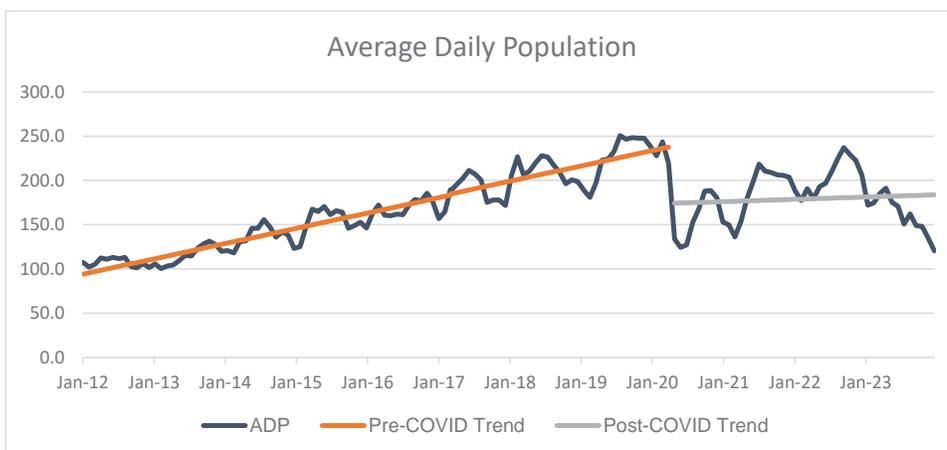
The data shows that the jails had monthly low ADP in October 2012, and it steadily increased and reached a high of 248 in September 2019. The monthly ADP then sharply declined due to the impact of COVID-19. In May 2020, the ADP was 124 detainees. Then after COVID began to subside the jails' population began to grow again but at a slower month over month rate.

**Figure 28:** Historic Average Daily Population



Separating the trend lines between pre- and post-COVID, it is apparent that post-COVID, ADP growth is slower. The slower ADP growth is attributable to fewer admissions to the jail which is likely due to an increase in the use of summons in lieu of arrest, fewer reports of theft from local retailers, and decriminalization of marijuana.

**Figure 29:** A DP with Pre- and Post-Covid Trendlines



# JAIL ADP PROJECTIONS

## Introduction

As mentioned previously, the long-term accuracy of detention population forecasting is heavily impacted by changes in public policy, law enforcement strategies, socioeconomic factors, and a host of other influences including the lack of jail beds.

A lack of jail bed capacity generally forces the justice system to work to manage the use of the limited jail beds they have. In Miami County, overcrowding may have forced system stakeholders (Courts, Prosecutor, Public Defender, Probation, and law enforcement) to actively manage the jail population. Actively managing how the jail is used is a good thing because jail beds are a valuable and expensive commodity.

Of concern is, if the County builds a new jail, will stakeholders no longer be vigilant in managing the jail population. This has been seen in other counties after jails with larger capacity are built and ADP increases with more beds available. The question is, will this happen in Miami County? Miami County has several effective jail population management tools in place and there are opportunities to add to that toolkit as shown in the sequential intercept map process.

## Forecast Methodologies

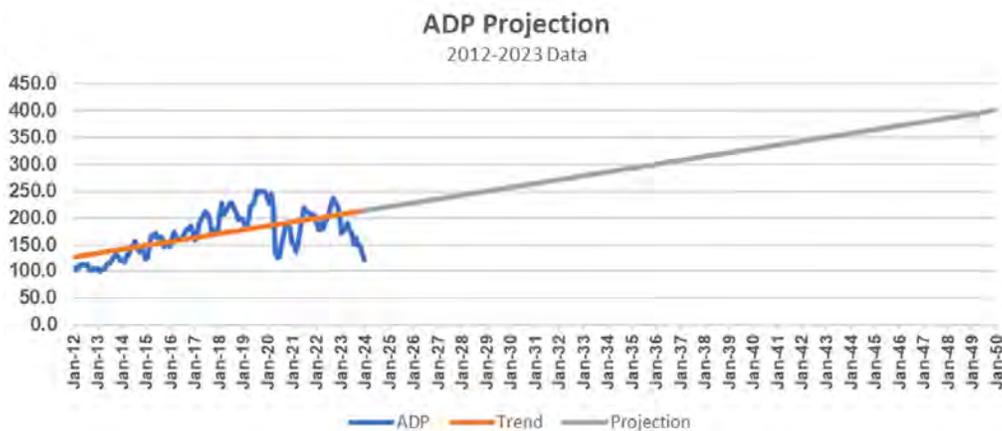
Two projection methodologies were chosen to create baseline projections for future jail bed capacity projections.

### Method 1 – ADP Projection based on 2012 through 2023 Data

This method uses the jail system’s historic annual ADP data (2012-2023) and linear regression to develop an ADP trend line which is then extrapolated to the year 2050. Historic ADP is a good predictor of future ADP because it encompasses all historical factors that have impacted a jail and justice system including admissions, length of stay, the use diversion and alternate sentences, and county population growth.

Figure 30 shows that this method yields an ADP projection of 400 detainees by 2050. This method responds to the strong ADP growth prior to COVID. Method 1 yields an IR of 342/100,000 population in 2050. This rate is approximately three times the current IR of 111/100,000.

**Figure 30:** Average Daily Population Projection based on 2012 through 2023 Data

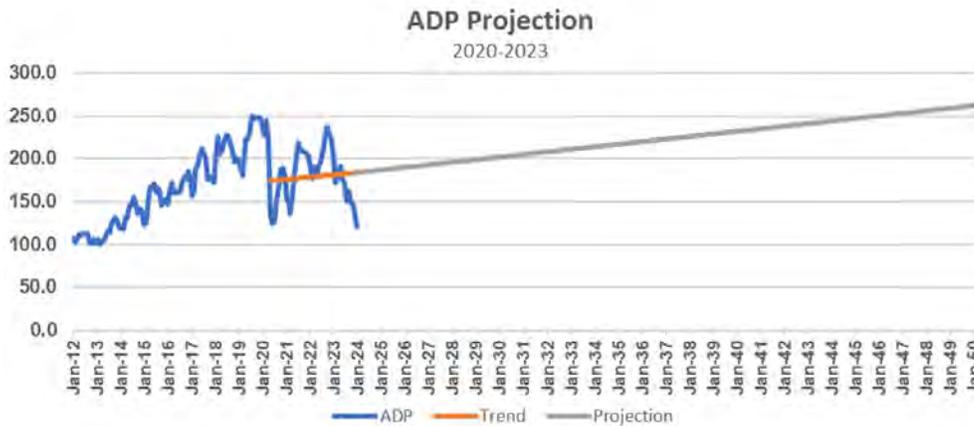


**Method 2 – ADP Projection based on Post-COVID 2020 through 2023 Data**

This method uses the jail system’s historic annual ADP data (2020-2023) and linear regression to develop an ADP trend line which is then extrapolated to the year 2050. This method is reflective of the slower post-COVID growth seen in the ADP data. This method reflects and is weighted towards more recent law enforcement practices and court initiatives.

Figure 31 shows that this method yields an ADP projection of 262 detainees by 2050. Method 2 yields an IR of 223/100,000 in 2050. As stated previously, the IR for Miami County in 2023 was 111/100,000.

**Figure 31:** Average Daily Population Projection based on 2020 through 2023 Data



Of the two forecasting methods, Method 2 is preferred for planning purposes for the following reasons:

1. The method is more reflective of the crime and the criminal justice system in Miami County post-COVID.
2. It provides flexibility for changes that may cause increases in admissions and/or length of stay.

Method two suggests a **projected ADP of 262** in the year 2050. For jail capacity, a peaking and classification factor is overlaid onto the ADP forecast. This factor accounts for variations and peaks in daily population, and it is also used to account for the inherent inefficiencies in housing assignments based on classification needs such as gender, risks, and special needs. This overlay is typically an additional 15% for planning purposes.

**Therefore, the jail capacity recommendation for 2050 is 300 beds** based on an ADP of 262 x 1.15 for peaking and classification factor.

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FUNCTIONAL ASSESSMENT OF  
THE MIAMI COUNTY JAIL AND  
INCARCERATION FACILITY



## INTRODUCTION

Miami County has two detention facilities. The MCJ occupies several floors of the Safety Building at 201 W. Main Street, Troy, Ohio. It is considered a full-service jail by the Ohio BAD and is allowed to hold minimum through maximum custody detainees.

The other facility is called the Incarceration Facility (MCIF) is located 2042 N County Road 25A, Troy, Ohio. The MCIF was designed and constructed has a Minimum-Security Jail (MSJ) and is built to less secure standards than the MCJ. Per the Ohio BAD, the MCIF can legally only house minimum security custody detainees or less such as weekenders and work release classifications.

The following is a functional and staffing assessment of the two facilities. A full physical plant conditions assessment for the two buildings is included in the appendix.

## ASSESSMENT PROCESS AND PURPOSE

Assessments of the MCJ and MCIF were conducted for the following purposes:

- Identify potential safety, security, and liability concerns
- Assess the extent to which the layout of the facilities supports effective supervision and management of detainees
- Assess the extent to which the facilities provide necessary support services required by the detainees population
- Assess the overall adequacy and functionality of current available space for detention uses

The project team toured and assessed the MCJ and MCIF. The assessments of each facility that follow are based upon information derived from this tour, state inspection reports, a study of the floor plans, and interviews with facility staff.

## MIAMI COUNTY JAIL

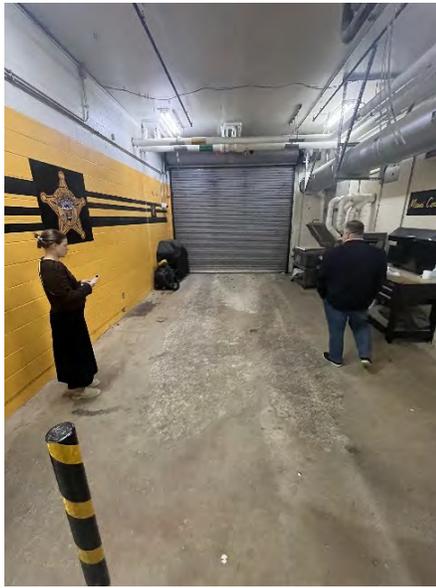
The MCJ was built in 1972 and is 52 years old. It is part of the County's Safety Building that also houses courts and other County functions. The MCJ occupies multiple floors in the building.

The MCJ has a general housing capacity of 106 medium and maximum custody beds however BAD's February 2024 inspection report recommends a housing capacity of 42 beds based on total available living space and other state requirements.

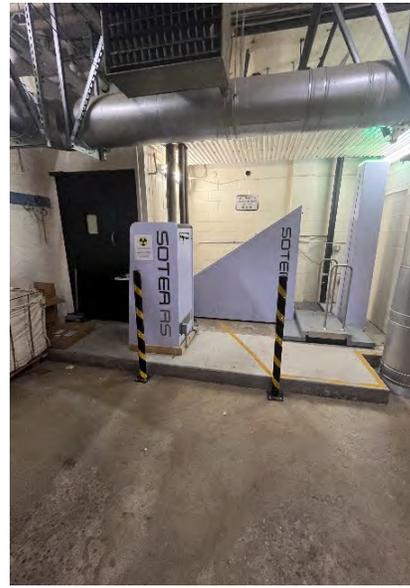
### Intake and Release Area

The intake and release area, commonly referred to as "booking," is where detainees are processed into and released from the facility. Reception and release areas should be located within the jail's security perimeter, but apart from detainees housing areas. Entrance to the intake and release area should be through a secure sally port apart from the public entrance to the jail. The intake and release area should include at least the following types of spaces and equipment necessary to complete the intake and release processing activities:

- Vehicular sallyport
- Weapons lockers at security perimeter entrances
- Booking, photograph, fingerprint and prisoner identification areas
- Breathalyzer space
- Shower/strip search areas
- Storage for detainees valuables
- Storage for clothing, linens, toiletries, etc. issued to newly admitted prisoners
- Telephone facilities
- Holding cells
- Detoxification cells



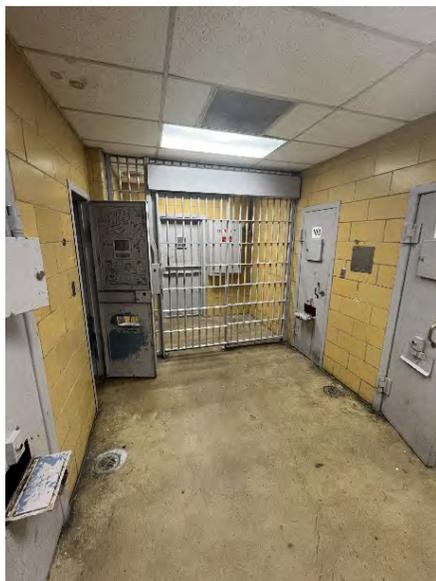
Vehicle Sallyport – One Stall



Vehicle Sallyport – Body Scanner

### Functional Issues

- The area is laid out poorly and lacks adequate space for the intake and release function; there is limited space for detainees pending processing, limited means to separate arrestees, and an insufficient staging area for intake activities.
- There is no separate space and flow for detainees being released or transferred to other facilities. Newly admitted arrestees may come in direct contact with detainees being discharged or transferred to other facilities, raising the potential for contraband exchange or violence.
- Law enforcement deputies and police officers complain that the vehicle sallyport at the is too small and that a drive-through sallyport is needed.
- The vehicle sallyport has several functional deficiencies: access through the door is too low for high profile vehicles (i.e. vans ambulances, other emergency vehicles); vehicular access into and out of the garage sallyport is difficult to navigate; limited capacity to accommodate only one vehicle at a time.
- Body scanner is inconveniently located in the vehicle sallyport away from the intake area (no other space in the intake area is available).



View of Booking Area



View of Holding Cell

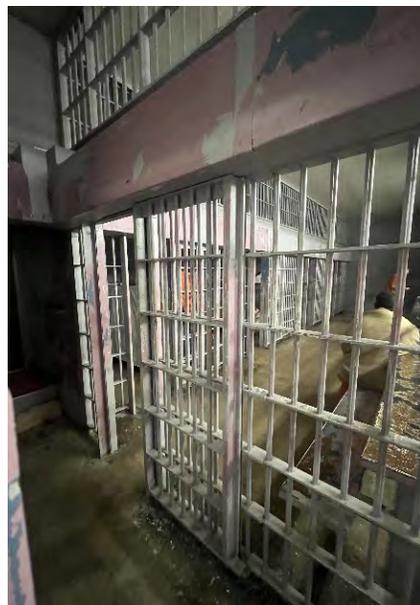
- The number and type of holding cells are insufficient for the current level of utilization. Staff report problems with keeping co-defendants properly separated during the intake process and challenges with managing multiple bookings.
- There is no pre-booking or triage area for law enforcement and jail staff to examine newly arrested detainees to determine if they are fit for confinement and for the arresting officer to complete paperwork.
- The area is not accessible to persons with disabilities and does not meet other Americans with Disabilities Act (ADA) requirements.
- Law enforcement deputies and police officers complain that the blood alcohol testing room is isolated from other staff.
- The interview room at the jail is not adequate, which requires police interviews to be conducted at local police stations.
- More interview rooms with video capabilities and sight and sound control would be beneficial.

## Detainee Housing

Detainee housing in the MCJ is predominantly of linear design which dictates an intermittent mode of supervision. In other words, cells are located adjacent to a security/inspection corridor where staff intermittently patrol to check on detainees' welfare and behavior. Staff are not posted directly in or immediately adjacent to the housing area where they can observe and actively manage behavior of detainees on an ongoing basis. The jail consists of detainee housing on multiple floors.



**Security/Inspection Corridor**

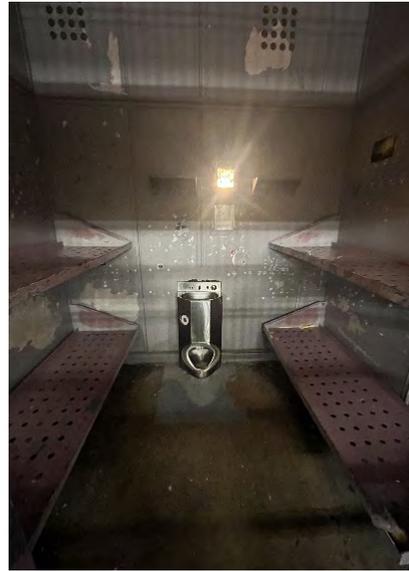


**Dayroom in Housing Area**

The jail layout is a typical linear style with cells backing up to a common pipe chase. The cells in each unit open to dayroom spaces. A security corridor used by staff to make well-being checks surrounds units. Dayroom and cell fronts are constructed of bars. Windows in the exterior walls with translucent glass provide limited access to natural light into the dayrooms and cells.



**Single – Occupancy Cell**



**4-Person Cell**

Access to the units is through security vestibules that are manually keyed. Barred slider doors on the cells are controlled remotely by the floor officer from panels mounted in the security corridor at the entrances to the units. The doors however cannot be opened and closed by Central Control. This is a concern in the event of fire because staff must unlock each housing block door from the door panel adjacent to the block.



**Door Control Cabinet**



**Door Control Cabinet – Closeup**

### **Functional Issues**

Given the layout of the housing, officer safety is a significant concern. There is limited ability for staff to interact with the detainees, and in most cases, detainees are forewarned of an officer's pending presence when they enter the housing area.

Special needs detainees represent a growing portion of the jail population in Miami County as well as the rest of the country. Special needs detainees are those who require special housing or care because of particular conditions or their status. These detainees often require separate housing from the general population and may require higher levels of supervision and services. The Jail lacks sufficient and appropriate housing for these types of detainees, which may include those who are:

- Suicidal
- Mentally disturbed
- Intoxicated
- Contagious
- Physically or developmentally disabled
- Vulnerable (protective custody)
- Present behavioral problems

The following concerns about the quality and functionality of the housing area were noted:

- The linear arrangement of the detainees housing limits staff ability to provide effective detainee supervision.
- Staff efficiency and effectiveness is inhibited by the housing of detainees on multiple levels. Staff posted on each floor are somewhat isolated from other staff, possibly resulting in delays in backup and response to incidents which arise.
- Bars in the housing areas can be used for suicide by hanging or asphyxiation. Medical staff reported that there were 16 suicide attempts in 2019 and 31 attempts in 2020 at the MCJ and overall, there have been 7 successful completions.
- There is insufficient capacity to house current and future population needs.
- The jail bed capacity (106) and population levels exceed the Ohio BAD recommended capacity of 42 based on available living space and related requirements.
- There is insufficient classification and housing separation to meet current and future needs.
- There is a lack of suitable housing for special management detainees. Health care staff report the physical environment is contributing to persons with mental health issues to decompensate.
- Housing areas are not ADA compliant.

## Program and Exercise Areas

Program and exercise areas in jails provide space for detainees to engage in activities such as physical exercise, counseling, education, industry, worship, and leisure-time recreation. Newer jails typically provide dedicated program space for indoor and outdoor exercise, a legal and a general library, classrooms, a commissary and rooms for individual and group counseling and religious services/instruction.

An Outdoor Exercise Area is located on the ground floor of the Safety Building and occupies a portion of the building's public parking area. Adjacent to the outdoor area is a large room with a low ceiling that is used for Indoor Exercise. Detainees usually walk in circles for exercise.



Indoor Exercise Area with Low Ceiling



Outdoor Exercise Adjacent to Public Parking

### Functional Issues

- Indoor and outdoor exercise areas are limited for detainees to get meaningful physical exercise
- Outdoor exercise areas open and visible to the public
- Space for programs is inadequate and accessibility to existing space is problematic

With the lack of adequate program space, detainees have few opportunities to engage in productive activities, work on self-improvement, or get sufficient exercise to maintain physical well-being. Lack of access to program activities increases idleness which, in turn, leads to more behavior problems in the jail.

## Medical Services

Medical services are provided by contract health care providers. Health care staff provide health screenings, sick call, minor treatment, and medication rounds. Detainees are transported to local health care facilities for other health care services. The health care staff move back and forth daily between the MCJ and the MCIF.

Many detainees have a history of cardiac issues, stroke, seizures, and extremely high blood pressures. The medical staff see a fair number of veterans who have PTSD. Pregnant women do enter the jail. Fetal demise is a concern.

Space in the MCJ for medical services is limited. Office space, clinical exam space, and equipment storage, and medication cart are all in one room. Medical records are held at the MCIF only.



**Medical Area in the MCJ**

Because of physical limitations of the medical spaces, the County must frequently transport detainees to local hospitals and medical appointments. For example, figure 32 shows that from 2019 through October 31, 2024, an annual average of 412 trips were made to the hospital and doctor's appointments. Trips outside the jail for treatment is costly to the County as it requires two transport officers earning overtime to escort the detainee to the appointment and back. There is also a risk of escape on these trips.

**Figure 32: Medical Transports and Furloughs**

YEAR	ER TRANSPORTS				MEDICAL APPOINTMENTS		MEDICAL FURLOUGHS
	JAIL	MCIF	TOTAL				
2019	116	101	217		-		13
2020	87	45	132		-		13
2021	152	81	233		214		17
2022	120	64	184		187		33
2023	69	100	169		330		61
2024	101	93	194		165		20

Note: These figures do not include mental health medical clearance or MH hospital admission transports  
 Medical appointments not kept track of until 2021  
 2024 Figures are January through October 31st

Again because of physical plant limitations, detainees are granted medical furloughs. Since 2019, an annual average of 26 furloughs have been granted for health-related reasons. In 2023, a high of 61 furloughs were granted.

### Functional issues

- There are no infirmary beds.
- No beds for medical observation, use of CPAPs, prosthetics, and oxygen.
- Storage and management of medications, medical records, medical equipment, and biohazards is inadequate.
- The MCJ does not have a negative-pressure cell for isolation of detainees with communicable air-borne disease.
- Having two separate facilities requires the maintenance of two pharmacies and two licenses.

## MCJ Assessment Summary

Detention facilities must provide a safe, secure, healthy, humane and constitutional environment for those incarcerated and awaiting trial, and/or those sentenced to serve time by the courts. Facilities must provide jail officials with the capacity to offer a variety of programs and services that prevent the debilitating effects of long-term confinement.

The MCJ is obsolete by current standards and technology. The jail operates at capacity much of the time (and well above the recommended capacity set by state standards). The lack of sufficient bed capacity and inability to properly house detainees who must be kept separate due to classification jeopardizes the security of the facility, the safety of the staff who work there, the safety of incarcerated detainees, and the vulnerability of local officials to further litigation.

Specific facility deficiencies include the following:

- **Supervision and Surveillance.** The jail layout limits the staff to periodic or intermittent surveillance of the detainee population. This is the least effective and least secure method of detainee control since it restricts an officer to only intermittent periods of contact and control every 30 to 60 minutes or so. Thus, the jail officer and, by extension, the County must depend, in part, on the good intentions and behavior of the detainees for the avoidance of fights, sexual assaults, vandalism, intimidation, self-destructive behavior and escape attempts. In essence, this type of obsolete and inefficient design can allow the detainees to run the housing units with little active staff management of detainee behavior.
- **Safety.** The facility features manually controlled locks for detainees-housing areas, some cell doors, and dayroom doors as opposed to the electronic remotely controlled locks prevalent in facilities constructed in the past 20 years. Slider cell doors in many housing units are controlled locally in panels just outside the units. This provides a major obstacle to the efficient evacuation of detainees in the event of a fire or other disaster.

- There is a lack of suitable housing for special management detainees. Health care staff report the physical environment is contributing to persons with mental health issues to decompensate.
- Major functional facility issues include:
  - Lack of adequate capacity to meet current and future demand
  - Limited separation and classification capability
  - No suitable space for high-risk detainees, or detainees with special needs who must be housed separate from the general population
  - Inadequate intake and release area
  - Lack of adequate program space
  - Limited exercise space
  - Inadequate storage space
  - General lack of accessibility under ADA requirements
  - Lack of adequate space for staff support
  - Limited access to natural light in the housing areas as noted in BAD inspections
- The existing jail, in addition to not being able to accommodate the County's existing or future bed capacity needs, has several significant deficiencies that pose risks and potential liabilities for Miami County that should be of concern.

## MIAMI COUNTY INCARCERATION FACILITY

The Miami County Incarceration Facility (MCIF) and it is located 2042 N County Road 25A, Troy, Ohio. The facility opened in 1999 and was designed and constructed has a Minimum-Security Jail (MSJ) and thus is built to less secure standards than the MCJ. Per the Ohio BAD, the MCIF can legally only house minimum security custody detainees or less such as weekenders and work release classifications. It's rated capacity is 240 beds and has 4, 60-bed direct supervision dormitories.

The MCIF does not have a secure vehicular sallyport. Officers/deputies and inmates use a non-secure and uncovered walkway to enter the building.



## Housing

Detainee housing consists of four direct supervision dormitory housing units. They are all open bay dormitories with bunk beds lining the walls of the units and fixed steel tables and seating in the central open area. All four dormitories have a staff workstation, inmate telephones, drinking fountain, and televisions. Each has a common shower and toilet area located along a side wall that is separated from the main living/sleeping area by a partial height modesty wall. The area includes individual shower stalls, individual toilet stalls, wall-mounted urinals, and sinks. All toilets, urinals, and sinks are vitreous china. The Pods have access to natural light from large windows on the upper portions of outer walls of the units.



**Minimum Security Dormitory at the MCIF**



**Minimum Security Dormitory at the MCIF**

## Program and Exercise Areas

The MCIF has a commons area between the housing pods that is intended to be used for programming. There is also a room adjacent to Central Control that is available for programming as well.

The MCIF does not have a dedicated indoor exercise area. Some recreational equipment is provided in the housing units such as table tennis. The MCIF does have an outdoor exercise area that is enclosed by a chain link fence and razor wire. The public can see the detainees. The area is also located near a railroad track. Given its location and openness, it is easy for people to throw contraband into the exercise area. Also, the fencing is not security grade, and the exercise area is not used much because of the risk of escape.



**Commons Area between Housing Pods at the MCIF**



**Outdoor Exercise Area with Railroad in the Background**

## Medical

The medical suite consists of an exam room, restroom, medical office, and medical records storage area. After initial construction of the MCIF, 5 single-occupancy cells were added that are used for multi-purpose housing, including for medical housing. These are located near the medical suite.



Medical Exam Room at the MCIF

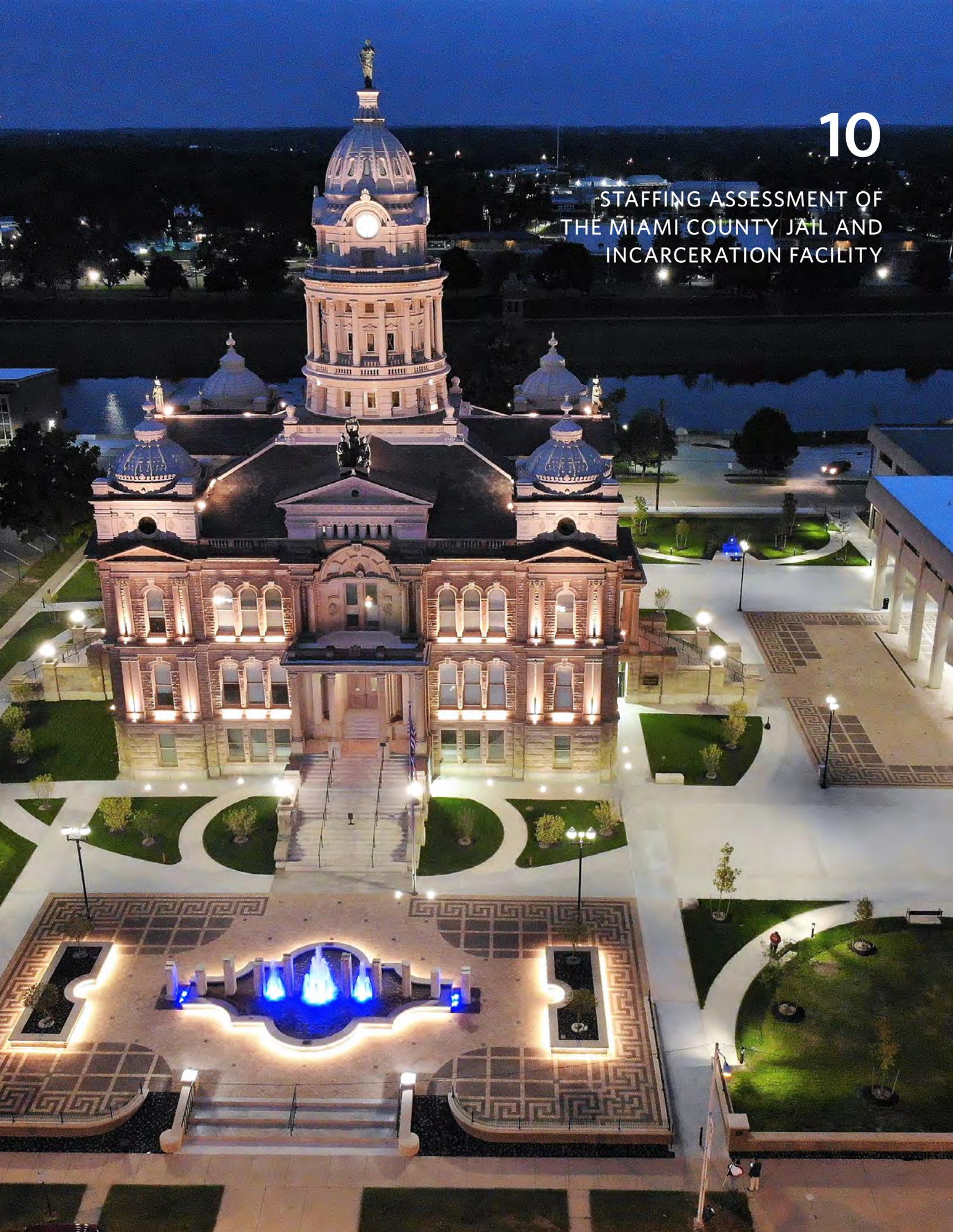


Medical Office at the MCIF

## Food Service

The MCIF has a full-service kitchen that provides meals for the MCIF and the MCJ. In addition to the main food service preparation and clean up, there is also an office for food service director and restroom for food service staff available in the food services area. Food service is contracted, and detainee workers assist with the food service operation.

STAFFING ASSESSMENT OF  
THE MIAMI COUNTY JAIL AND  
INCARCERATION FACILITY



## INTRODUCTION

A staffing assessment of the existing Miami County jail facilities was conducted to provide a baseline that may be used to evaluate overall staffing implications for any renovation, expansion, or new construction options that may be developed pursuant to the needs assessment.

Staffing needs and practices respond to the facilities, technology, and operations that comprise the jail setting. Staffing is often the primary response to challenges and deficiencies in facilities and technology.

Several characteristics of the Miami County jail facilities pose challenges to efficient and effective staffing. These include:

- Duplication of functions and services, and the associated staffing required to perform these functions, resulting from the operation of two detention facilities.
- Housing on multiple levels at the MCJ - Staffing is required for each floor of inmate housing. Multi-story buildings typically require more staff.
- Linear style of architecture at the MCJ - Linear designs or areas with blind spots typically require more staff to circulate through the facility (or lone staff may be somewhat isolated on each floor placing them at higher risk).
- High levels of inmate idleness due to limited availability of program space (particularly within the MCJ).
- Mission confusion with distinctly different operational philosophies between the MCJ with its multi-level, linear design and the MCIF with its direct supervision architecture. Staff working alternately in both facilities manage inmates in a distinctly different manner based upon where they are assigned. The MCJ and MCIF lack a unified operational philosophy for the overall detention program due to the disparate design of the two facilities.
- Incongruence between the risks and needs presented by the inmate population with the housing options available between the two facilities. A substantial proportion of the overall beds available between the two facilities are in the MCIF which is all dormitory housing designed for inmates classified as minimum security.
- Ongoing maintenance issues, particularly at the MCJ, which may result in disruption of operations or diminished access to housing areas where maintenance issues occur.

Staffing efficiency in the MCIF is somewhat better with housing units designed for direct supervision, availability of program space, and access to both indoor and outdoor exercise areas. The Incarceration Facility, however, was designed to house only lower custody inmates, limiting its utility for managing more serious offenders.

The inmate population in Miami County is changing in ways that present new demands for jail staffing:

- More inmates with mental health needs and problems that often impact behavior and present additional risk of harm to self and others.
- More inmates with medical needs, some of whom may require specialized housing and enhanced supervision by medical professionals alongside custody staff.
- Longer-term inmate population for which facilities were not designed.
- Significant female population with more diverse needs for classification, separation, and programming.

These characteristics of the jail population and setting pose unique and changing demands for the number and types of staff needed to operate the facilities and needed corresponding skills and abilities.

## CURRENT STAFFING

Corrections Officers and Supervisors work on a 12-hour, two week rotating schedule, working 7 out of every 14 days. Corrections Officers are scheduled to work either the day shift which runs 7:00 a.m. to 7:00 p.m. or the night shift which runs 7:00 p.m. to 7:00 a.m. Corrections Supervisors work the same daily schedule, but hours worked are: 6:00 a.m. to 6:00 p.m. for the day shift and 6:00 p.m. to 6:00 a.m. for the night shift. Correctional staff may be assigned to work in either facility based upon scheduling and need over the course of their two week rotation. As such, they may be assigned to work in one facility one day and the other the next.

The Corrections Division currently has a total of 55 authorized staff positions, including administrative, support, and custody staff. A separate unit within the Sheriff's Office is responsible for transport of inmates outside the facilities. Actual staffing levels at the time of the staffing assessment stood at 50 with 5 vacancies in Correctional Officer positions.

Food services, commissary services, medical, and some laundry services are contracted. Routine facility maintenance is provided by a maintenance worker assigned to, but not paid by, the Sheriff's Office. Mental Health and Crisis Intervention Services are provided by Tri-County Board of Mental Health and Recovery and Wellness Center, funded through grants. None are County employees.

The breakdown of combined staff in the two facilities at the time of the staffing assessment is presented in the table below:

CURRENT AUTHORIZED STAFFING		
JOB CLASSIFICATION	AUTH. POSITIONS	VACANT POSITIONS
Captain	1	0
Asst. Jail Admin	2	0
Lieutenants	4	0
Sergeants	4	0
Correctional Officers	43	5
Jail Secretary	1	0
Total	55	5

## NET ANNUAL WORK HOURS

"Net Annual Work Hours" (NAWH) is a term and technique developed by the National Institute of Corrections. It is similar to a "Shift Relief Factor" (SRF) but has proven more accurate and flexible in its application. NAWH provides accurate calculations of the actual hours per year each classification of employee is available to work in the jail.

Miami County Corrections custody staff are contracted to work 2,086 hours each year. This is the "gross" number of hours that each employee may be paid for regular hours, working the 12-hour shift schedule, with an 84-hour work schedule every two pay periods and a 72 hour work schedule every third pay period. According to the 2023 data provided by the Sheriff's Office, Corrections Officers and Supervisors (which include Correctional Officers, Lieutenants and Sergeants) are available to work on average of 1587 hours annually. This represents the "net" hours that each employee may be deployed. See the NAWH calculations based on 2023 leave usage for Corrections Officers and Supervisors in the County Jail and Incarceration Facility in the following table:

MIAMI COUNTY JAIL AND INCARCERATION FACILITY - 2023		
NET ANNUAL WORK HOURS (NAWH)		
<b>A</b>	<b>Total hours contracted per employee per year (2190 based upon 12-hour shift - 84 hour two week time period.)</b>	<b>2086.00</b>
<b>B</b>	Vacation	93.24
	Compensatory Time	16.68
	Personal Days	20.40
	Sick/Unpaid/Funeral Leave	66.96
	Holidays	13.80
	Training Days	60.00
	Personal Leave	33.72
	Sick Leave	194.52
<b>C</b>	<b>Total Unavailability (Total of all lines in B)</b>	<b>499.32</b>
<b>D</b>	<b>Net Annual Work Hours/Line A Minus Line C)</b>	<b>1586.68</b>

There are several keys to calculating accurate NAWH figures each year:

- Collect data on all activities and circumstances that take employees away from jail deployment
- Calculate NAWH for each classification of employee
- Divide total annual hours away from jail by the correct number of Full Time Employee (FTE) (not the number of individuals who worked in the year, but the number of calendar days they were on the payroll)

The NAWH calculation is applied within the Staff Coverage Plan for those posts that are relieved, in other words those posts which must be staffed during designated hours of shifts. (See Coverage Plan in the Staff Coverage section).

## INMATE CHARACTERISTICS AND TRENDS

The types and frequency of facility operations and activities influence the workload, schedule, and the number and type of staff required for coverage of shifts to manage the workload. Operations and activities include:

- **Routine custody operations** such as bookings and releases, head counts, security checks, maintenance, sanitation, searches, admissions and releases, escorts, transports, shift changes and briefings, surveillance and monitoring, etc.
- **Inmate services** such as meals, laundry, sick call, medication rounds, visitation, mail, commissary, haircuts, library, etc.
- **Programs** such as religious services, education, AA, substance abuse services, volunteers, etc.

The nature and scope of activities are defined largely by the mission of the facility, size and characteristics of the inmate population, standards and case law, facility capabilities, and sound security practice. The scheduling, sequence, and interactions of these activities must be coordinated with the location and coverage of posts and positions in order to avoid unnecessary “peaks” and “valleys” in the workload and scheduling conflicts between activities.

Frequency of functions and activities can also affect staffing needs. For example, the frequency and duration of exercise periods, visits, commissary, sick call, and similar activities might require additional staff where inmate movement is required, or additional staff for supervision of programs delivered by contractors or volunteers. Sometimes the location and scheduling of the activity can be altered to accommodate the existing staff level, but in other cases additional staff is essential for safe and effective supervision. A useful way to assess the impact of functions and activities on staffing levels and deployment is to construct a *Master Activity Schedule*. The Master Activity Schedule charts out all the programs, activities, support services, and security functions that take place *intermittently* in a facility and charts the times they occur over the course of a typical day.

Master Activity Schedules were developed for the MCJ and for the Incarceration Facility working with information provided by jail officials. Many of the functions and activities that occur over the course of the day or week are listed in the left-hand column. The times during which each function is to occur are highlighted in the appropriate columns to the right. When all the scheduled activities are highlighted, the table can provide a visual depiction of the overall workload – when the jail is busiest and least busy over the course of the day. It can highlight potential conflicts between scheduled activities and times when staff may be expected to be attending to two or more functions at the same time. Tables presenting the Master Activity Schedules for both facilities are presented below.

**Figure 33:** Miami County Jail Activities Chart

Activity	Day	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Lightson/Wake up	All																								
Meal Pass	All																								
Medication Pass	All																								
Inmate Count	All																								
Bond Hearings	Sun																								
Morning Video Arraignments	M-F																								
Men's Church Service	Sun																								
Afternoon Video Court	M-F																								
Cells Cleaned	All																								
Lights Out	All																								
Lockdown/Inmate Count	All																								
Laundry Exchange																									
Sick Call	M-F																								
Sick Call	S-S																								
Diabetic check	All																								
Inmate Personal Visits (via video)	All																								
Professional visits	All																								
Reentry services interviews	M-F																								
Contracted Mental Health Services	M-F																								
Inmate Showers (Single Cell/Holding)	All																								
Cell Shakedowns (various times)	All																								
Security Checks	All																								
Inmate fingerprints	All																								
Trash cans emptied/catwalks cleaned	All																								
Drain enzymes	Th,Su																								
Peak Booking Hours	All																								
Peak Release Hours	All																								

A significant amount of the workload at the MCJ appears to occur between 8:00 AM to about 10:00 PM, with most occurring during the dayshift and the first few hours of the night shift. As with the MCJ, it appears that much of the workload at the MCIF occurs during the dayshift and early parts of the night shift prior to lockdown. Activity levels at the MCIF, presented in figure 33, are higher because the majority of programs offered to the incarcerated population are limited to the MCIF given the physical plant constraints of the MCJ.

Effective staffing responds to the ebb and flow of daily activities and to the relative risks that are associated with these activities. There are some aspects of daily jail operations over which the jail does not have control, such as when arrestees are brought by local police for initial processing and detention, and when the courts order inmates to be present for proceedings. But the jail staff does have control over many of the intermittent events that occur each day.

Many times, we let the “schedule manage us”, not vice versa. By stepping back and looking at the current patterns of activities, it is possible to identify times where our practices are creating staffing problems and inefficiencies, and subsequently allowing us to address these to get the most efficient use of our existing staff. Creating the Master Activity schedule presents a “picture” of the workload. Administrative review of these schedules is recommended to determine the need for rescheduling of certain activities to less busy times or scheduling additional staff to accommodate those peak periods of activity.

**Figure 34:** Miami County Incarceration Facility Activities Chart

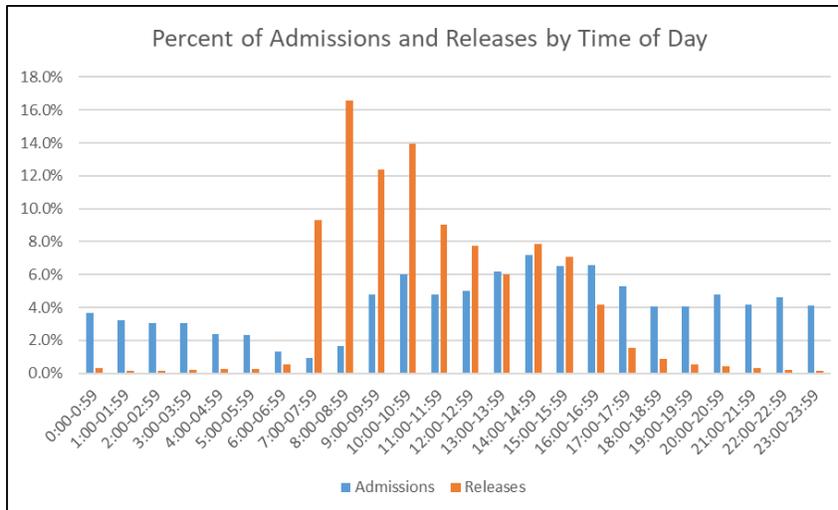
Activity	Day	Time																							
		0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Lightson/Wake up	All																								
Meal Pass	All																								
Medication Pass	All																								
Inmate Count	All																								
Bond Hearings	Sun																								
Morning Video Arraignments	M-F																								
Men's Church Service	Sun																								
Afternoon Video Court	M-F																								
Pods Cleaned	All																								
Lights Out	All																								
Inmates to Bunk/Inmate Count	All																								
Laundry Exchange Pod A 1900; Pods C,D 0600	M-Th																								
Inmate Workers to Kitchen	All																								
Men's Alpha Group	Sun																								
Women's Alpha Group	Sun																								
GED	M-Th																								
TCN Services	W																								
Sunrise Service	W																								
Getting Ahead While Getting Out	W																								
Narcotics Anonymous	W																								
Men's Church Services	Th																								
Alcoholics Anonymous	Th																								
Criminal fingerprint walk-in	T,Th,Sa																								
Women's Celebrate Recovery	Sa																								
Women's Celebrate Recovery - Step Study	Sa																								
Men's Celbrate Recovery	Sa																								
Sick Call	M-F																								
Sick Call - Weekends	Sa - Su																								
Video Visitation	All																								
Professional Visits	All																								
Contracted MH Visits	M-F																								
Reentry Services Interviews	M-F																								
Video Court for Other Counties	M-F																								
Inmate showers for Holding Cells	All																								
Incarcerated Inmate Fingerprints	All																								
Cell Shakedown	All																								
Security Checks	All																								
Recreation	All																								
Court	M-F																								
Passing/Collecting Tablets	All																								
Meal/Laundry Transport	All																								
Peak Booking Hours	All																								
Peak Release Hours	All																								
Walk-in Fingerprints	Tu, Th																								
Walk-in Fingerprints	Sa																								
Conc Carry Permit Pick-up	M-F																								
Conc Carry Permit Pick-up	Sa, Su																								

## Booking and Release

The booking and release of inmates is a function that can occur any time of the day or night, although there are certain times during the day when bookings and releases occur which may require additional staff to safely accomplish. As such, the peak times when bookings and releases occur are illustrated in the Master Activity Charts along with the other functions and activities that may be happening at the same time.

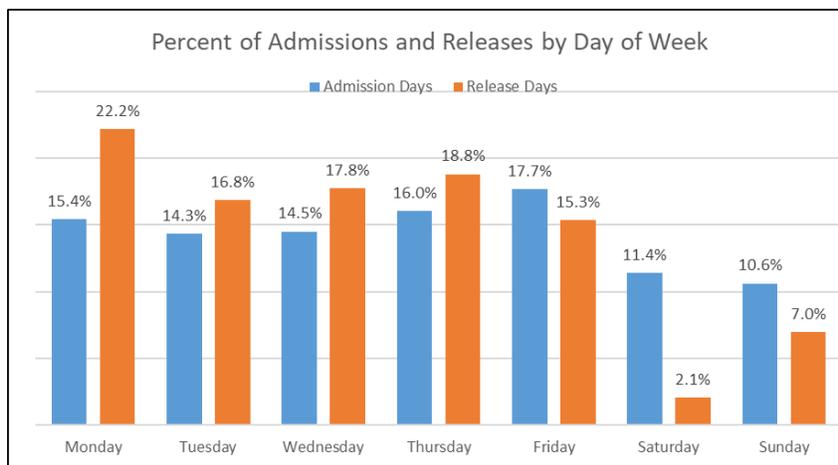
The below show the peak booking and release times by hour of the day and day of the week for 2023.

**Figure 35:** Percent of Admissions and Releases by Time of Day



Arrival times for booking peak in the morning occur between 7:00 AM and 8:00 AM and remain fairly frequent throughout the day until about 4:00 PM. They are lowest just prior and during shift change from 6:00 AM 8:00 AM. Releases are highest between the hours of 7:00 AM and 4:00 PM.

**Figure 36:** Percent of Admissions and Releases by Day of Week



Peak day for admissions were Fridays which accounted for 17.7% of the annual bookings with the fewest booking occurring on Sundays at 10.6%. Peak days for release were Mondays and Thursdays, accounting for 22.2% and 18.8% of releases over the year. The fewest releases occurred on Saturdays (2.1%).

Some of the workload challenges offered by staff during the assessment include:

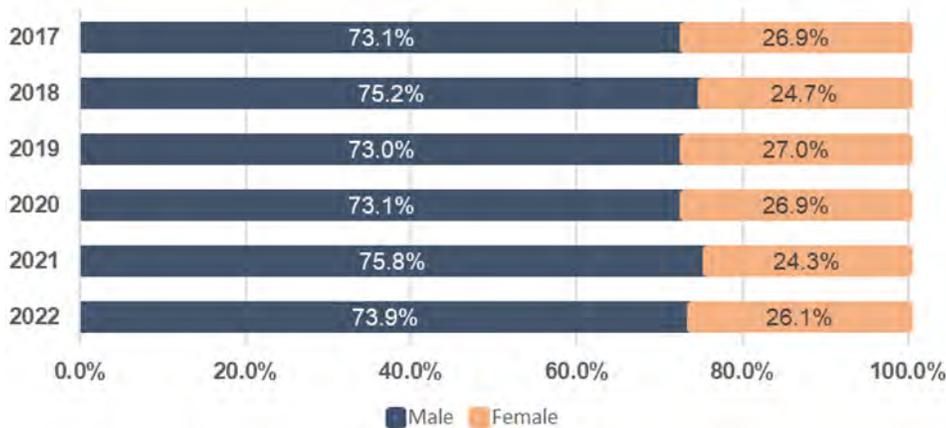
- Booking and release of new arrestees and commitments at both facilities. The intake processing of most new arrestees occurs at the MCJ, however those who are deemed eligible for housing at the MCIF are transferred there by the arresting agency where intake processing is completed. Some detainees may bypass the MCJ and are taken directly to the Incarceration Facility for intake processing.
- Bookings, in particular, may occur when there is minimal staffing at the MCJ when the Floater post is not scheduled to work.
- Meal and laundry deliveries to the MCJ from the MCIF were mentioned as a staffing challenge. Meals are prepared at the MCIF for inmates in both facilities. The prepared food is transported in bulk to the MCJ twice daily by Correctional staff from the MCIF. The food is then trayed by inmate workers at the MCJ and served at scheduled mealtimes. Meals consist of one “hot” meal and two “cold” meals that are bagged for individual servings. Most laundry services that are not provided by an outside vendor are provided at the MCIF for both facilities. Soiled and clean laundry are also moved between the facilities on the scheduled runs. The MCIF runs short staffed when Correctional staff are outside the facility making these twice daily deliveries to the MCJ.

## INMATE CHARACTERISTICS

The characteristics of the inmate population are additional factors influencing staffing needs. The charts below show several trends that impact staffing needs at both facilities.

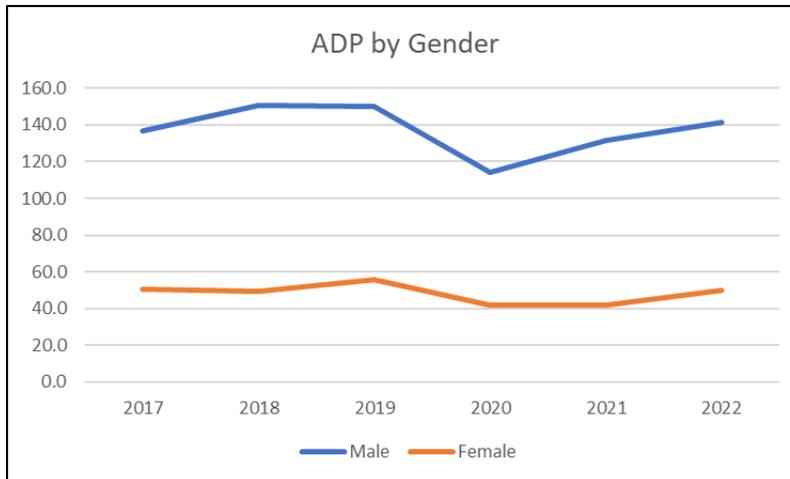
Female inmates comprise a significant percent of the overall inmate population. The percentage of females incarcerated averaged around 26% from the study period of 2017 through 2022 – significantly higher than the national average but similar to other jurisdictions in Ohio. Female officers are required to be on duty when female inmates are held. Females may be held at both the MCJ and the MCIF.

**Figure 37:** Gender Distribution



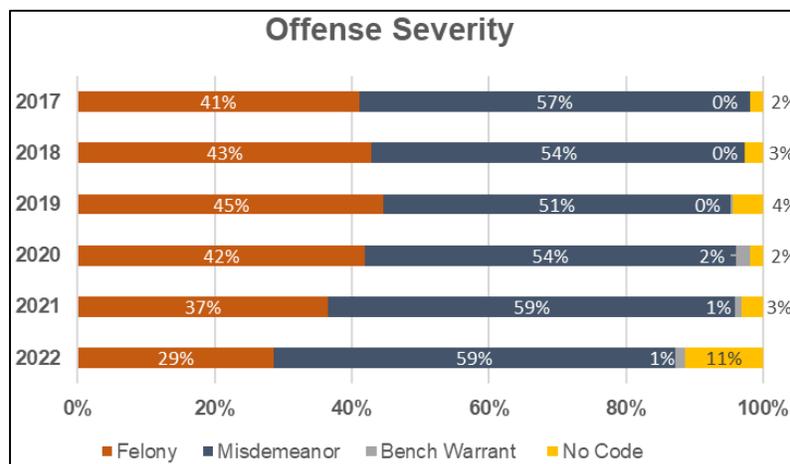
The overall ADP over the period was about 186.6, with the chart showing a decline during the COVID peaks in 2020 and 2021 and an increase to closer to previous levels since. There were similar trends for both male and female inmates. The number of inmates impact the number of beds and housing units that are required to operate. Lower numbers permit some consolidation of inmates where housing units may be unoccupied, reducing the number of staff required for coverage. At the time of the project team’s visit, Pod B was designated as being permanently closed and Pod C was unoccupied, but available if needed. Housing Unit 204 at the MCJ, typically used to house females or overflow as needed was also unoccupied. When any or all these housing areas are occupied, there is an impact on staffing needs.

**Figure 38: ADP by Gender**



Offense severity of the crime charged at admission is a factor in staffing as it impacts the overall safety and security of the facilities when the population consists of inmates with higher risks and needs. The chart below shows there has been a decrease in the last two years in the percentage of arrestees charged with felony offenses. The percentage dropped from a high of 45% in 2019 to 29% in 2022. Conversely, the overall percentage of arrestees charged with misdemeanors has increased over the study period. The breakdown of the categories of offense severity also impacts housing decisions and utilization of existing housing resources between the two facilities. Inmates who are misclassified or housed in units not suited for their classification create potential problems for staff, particularly when the facility is operating at minimum staffing levels. The facilities need the operational capacity to separate and manage the “sheep” from the “wolves”.

**Figure 39: Offense Severity**



## STAFF COVERAGE

The current staffing plan from the Miami County correctional facilities provides for the coverage of the following posts:

### Miami County Jail

The MCJ describes the minimum post coverage of four posts at the MCJ to include the Control Room, Supervisor/Officer in Charge posted on the first floor, Second Floor Officer post, and a Third Floor Officer post. An additional Floater is assigned when there are sufficient staff available for assignment.

### Incarceration Facility

The MCIF has a minimum staff level of five or six depending upon the number of pods that are occupied. The posts that are staffed on a 24-hour basis include: Control Room, Alpha Pod, Delta Pod, Floater, Supervisor/Officer in Charge, and Charlie Pod, if open. As previously mentioned, Bravo Pod is currently closed.

Administrative staff include the Jail Administrator, an Assistant Jail Administrator for Programs, an Assistant Jail Administrator for Operations, and a secretary.

A coverage plan is comprised of four components:

1. Relieved posts and positions
2. Non-relieved posts and positions
3. The shift schedule and amount of coverage required on each shift
4. The availability of staff to work (NAWH)

In the MCJ and MCIF, the Correctional Officer posts are all relieved posts. These are posts for which the NAWH availability factor must be applied to determine the total number of FTEs required to provide the coverage needed. The Shift Supervisor post is also designed as a relieved post staffed on a 24/7 basis in each facility. However, it is not fully staffed by an officer of rank so lead Correctional Officers are assigned as Officers in Charge during those times when a Sergeant or Lieutenant is not assigned to work.

The combined staff coverage plan presented below for the MCJ and the MCIF Facility is based on the current allocation and deployment of staff in the Corrections Division at the two facilities. The NAWH availability factor for the correctional officers in each facility was used to calculate the total number of FTEs required to provide the coverage indicated.

The Coverage Plan presented in Figure 40 assumes all defined posts are filled (with the exception of the closed Bravo Pod at the Incarceration Facility). To provide full coverage would require a total of 64.4 FTE. Coverage based upon minimum staffing levels that have been established for the facilities would require 58.9 FTE, which is more in line with the current authorized staffing.

Of note, the Coverage Plan includes a Shift Supervisor at each facility primarily filled by a Lieutenant or Sergeant assigned on a 24/7 basis. As there are only four Sergeants and four Lieutenants to be assigned to shifts at both facilities, relief is provided by Correctional Officers designated as Officers in Charge to provide for the 5.5 FTE required to fully cover the Shift Supervisor post. The Coverage Plan attempts to account for this by showing the Sergeants and Lieutenants assigned as Shift Supervisors on a separate line from Correctional Officers who are assigned as the relief Officer in Charge. The combined total of the two lines provides for the 5.5 FTE required to fully cover the Shift Supervisor post at each facility. By so doing, the Coverage Plan more accurately reflects the total number of Correctional Officers needed to provide either minimum or full coverage at both facilities.

**Figure 40:** Miami County Jail Facilities Staff Coverage Plan

	JOB	TOTAL HRS. ON	TOTAL HRS. ON	DAYS PER	HOURS PER	HOURS OF COVERAGE	RELIEF	RELIEF FACTOR	TOTAL FTES
POST/POSITION	CLASS	DAYS	NIGHTS	WEEK	WEEK	PER YEAR	NEEDED?	NAWH	NEEDED
<b>ADMINISTRATION</b>									
Captain	CAP	8	0	5	40	2086	No		1.0
Asst Jail Admin	AJA	16	0	5	80	4171	No		2.0
Jail Secretary		8	0	5	40	2086	No		1.0
<b>Subtotal</b>		<b>4</b>	<b>0</b>		<b>160</b>				<b>4.0</b>
<b>CLASSIFICATION/PROGRAM</b>									
Local Providers									
Subtotal									
<b>SUPPORT STAFF</b>									
Medical (contracted)									
Food Service (contracted)									
Maintenance (County)									
<b>Subtotal</b>									
<b>SECURITY/CUSTODY</b>									
<b>County Jail</b>									
Shift Supervisor	LT/SGT	12	12	6.6	158.4	8259	No	1,587	4.0
OIC	CO	12	12	1.9	45.6	2378	Yes	1,587	1.5
Control Room	CO	12	12	7	168	8760	Yes	1,587	5.5
Floater	CO	12	12	7	168	8760	Yes	1,587	5.5
2nd Floor	CO	12	12	7	168	8760	Yes	1,587	5.5
3rd Floor	CO	12	12	7	168	8760	Yes	1,587	5.5
<b>Subtotal</b>		<b>5</b>	<b>5</b>						<b>27.5</b>
<b>County Incarceration Facility</b>									
Shift Supervisor	LT/SGT	12	12	6.6	158.4	8259	No	1,587	4.0
OIC	CO	12	12	1.6	38.4	2002	Yes	1,587	1.3
Control Room	CO	12	12	7	168	8760	Yes	1,587	5.5
Floater	CO	12	12	7	168	8760	Yes	1,587	5.5
Pod A	CO	12	12	7	168	8760	Yes	1,587	5.5
Pod B (permanently closed)	CO	0	0	0	0	0		1,587	0.0
Pod C (currently inactive)	CO	12	12	7	168	8760	Yes	1,587	5.5
Pod D	CO	12	12	7	168	8760	Yes	1,587	5.5
<b>Subtotal</b>		<b>6</b>	<b>6</b>						<b>32.8</b>
<b>TOTAL STAFF</b>									<b>64.4</b>

## STAFFING ASSESSMENT SUMMARY

The staffing levels in the two facilities provide a baseline for comparison with preliminary staffing estimates in a new facility that would serve the populations of both existing facilities, along with meeting future detention needs. More immediately, the staffing assessment may highlight shortfalls in staffing of the existing facilities based upon current post coverage requirements.

Minimum staffing according to the MCSO staffing plan includes four filled posts at the MCJ and five filled posts at the Incarceration Facility. Full staffing includes five filled posts at the MCJ and six filled posts (with Charlie Pod open) at the MCIF.

Based upon numbers in the Coverage Plan presented above, the number of Correctional Officers staffing both facilities are approximately **ten FTE short of meeting full coverage requirements** as they are currently established in the MCSO's Jail Staffing Plan, but only **3.9 FTE short to provide minimum coverage** as currently established (with Charlie Pod occupied and staffed).

Given the facility constraints and other factors influencing staffing needs described above in the assessment narrative, it is clearly desirable for the facilities to operate at full coverage for safety and security reasons as well as ensuring that all essential services and programs are provided. The Coverage Plan indicates the need for several more Correctional Officers to provide the full coverage indicated (with Charlie Pod open).

Ideally, the Shift Supervisor posts should be filled full time by a Sergeant or Lieutenant, however the current practice appears to work satisfactorily assuming there are sufficient numbers of Correctional Officers (assigned as OIC) to provide Shift Supervisor relief as well as cover all other custody posts. If planning results in the construction of a new or expanded facility that serve the combined inmate populations of the existing facilities, there are currently a sufficient number of Sergeants and Lieutenants to provide full coverage with relief, negating the need for Correctional Officers to serve as Officers in Charge.



## BASIS FOR PROGRAMMING

The following section presents a space program for a jail and a law enforcement facility. It assumes that all jail functions will be consolidated at one location and, if budget allows, the inclusion of a Sheriff's Office.

The program provides base information for the development of options that will be evaluated in subsequent sections of this study.

## JAIL SPACE PROGRAM

### Introduction

The following jail space program has been developed based on Ohio Department of Rehabilitation and Correction (ODRC) and BAD jail standards. The program was developed using data from the jail and justice system assessment including capacity recommendation and detainee characteristics (risks and needs).

The program was developed with the assistance of the Miami County Sheriff's Office. The project team worked closely with the Sheriff's Office to define basic operational concepts in the following areas:

- Housing density – Detainee to staff ratios
- Housing Classifications – Including housing approaches for medical, mental health, and other behavioral health issues
- Preferred & appropriate supervision modes – Indirect (pod-remote) surveillance is preferred
- Housing types – Use of dormitories, multiple-occupancy cells, and single-occupancy cells
- Visitation approaches
- Movement within the jail
- Movement to court
- Type, number, and location of program spaces

The jail space program identifies every space in the proposed facility and its size. The program includes net square feet (NSF) for each space/room, departmental grossing factors to capture the departmental gross square feet (DGSF) for circulation, and partitions within each component. And finally, the space program includes an overall building grossing factor that captures square feet needed for circulation between components, stairs, elevators, and the overall building envelope — this is referred to as the building's overall gross square feet (GSF).

### Facility Goals

Throughout the process, there were several overarching goals that needed to be achieved for project success. These include:

- Improve medical and mental health care of detainees.
- Improve suicide prevention.
- Provide housing that matches today's detainees' risks and needs by creating "better beds" that are more appropriately suited for detainee care and behavior management.
- Improve intake processing and initial assessments.
- Provide amenities and improved working conditions for staff.
- Provide solutions that take into consideration current and future staffing limitations.

## Major Design Considerations

### *Security Design Principles*

There are several basic principles regarding security that should be incorporated into the design of the jail facility.

1. The Jail Security Perimeter shall be a clearly defined, highly penetration resistant, three-dimensional envelope. It shall include all components of the jail except Administration, Lobby, and Staff Facilities.

Portions of the exterior of the jail that serves as the security perimeter should be uniformly secure in construction, materials, and hardware.

2. There will be a single security control center within the jail security perimeter that will control all jail security. It will be as penetration-resistant and self-contained as possible to insure the continuous maintenance of facility security and the continuous control of detainee activities. Broadly speaking, Central Control will control all jail perimeter access and monitoring systems; and will control (or at least) monitor detainee movement within the jail. Central Control will also control all entry and exit from housing pods.

Central Control will also monitor/control all major building alarm and response systems and be able to maintain constant communications with all staff posts and staff working throughout the facility. Central Control will also have a backup/override capacity over all jail housing control positions in the event of an emergency and will maintain a link to all records and data systems relevant to the processing and management of the detainee population.

A secure means must be provided to access the Central Control in the event its occupants become incapacitated.

3. All access into the jail security perimeter shall be through at least two doors that are interlocked. All interlocking systems will have an electronic override that can be activated by staff in emergency situations.
4. All pass-through penetrations between the jail security perimeter and public areas will be security quality pass-throughs.
5. Security for areas of the jail used by officials, outside service providers (lawyers, medical staff, counselors, etc.) will be monitored from a nearby staff post, by CCTV, and/or audio monitoring (consistent with confidentiality needs).
6. All visitors and service providers entering the jail security perimeter will be searched via metal detection and personal belongings will be x-rayed.
7. Surveillance by direct staff view or contact is preferred over reliance upon electronic surveillance equipment (CCTV), except in the case of areas such as exterior perimeters, egress stairs, outside grounds, and facility corridors where unescorted movement is used.
8. Housing pod officers will have primary control over doors and security systems in their immediate area. Central Control will provide backup and will override or shut down security systems in the event of an emergency.
9. Each housing pod and its associated functions will be developed as a discrete security zone.
10. All weapons will be kept out of the jail security perimeter and will be stored in secure weapons lockers. Restraint equipment for the secure movement of detainees will be maintained inside the jail perimeter.

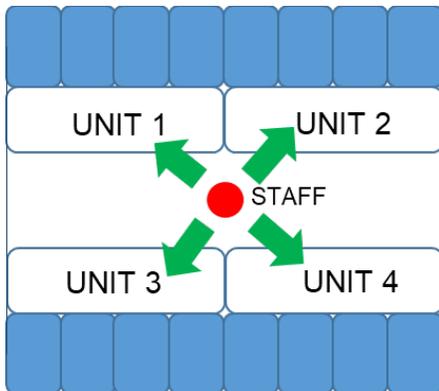
### *Housing Supervision and Surveillance Approach*

The surveillance and supervision method chosen for housing units is critical for safety and security of staff and detainees and, moreover, it has a fundamental impact on staffing requirements. After review of various supervision and surveillance approaches with the Sheriff's Office, indirect (pod-remote) surveillance is preferred.

In indirect surveillance, a corrections officer is positioned to observe detainees through a secure physical barrier unassisted by CCTV. Indirect surveillance allows an officer to observe multiple housing units from a fixed post without the aid of CCTV. Features of this approach include:

- Corrections Officer observes detainees from a fixed post
- Detainees are grouped in smaller housing units
- There is a physical barrier between the detainees and the staff post
- Good sightlines are important for observation and behavior management

**Figure 41:** Indirect Surveillance



## Housing Plan Considerations

### Overview

Housing (or classification) plans assist in providing direction, so detainees are housed logically, consistently, and with a clear purpose of better detainee management. The following principles were used in the development of the housing plan.

- A formal housing plan exists that defines the custody designation for each housing unit in the facility. The housing plan provides for the placement of minimum, medium and maximum custody detainees, as well as for special classification areas such as medical units, mental and behavioral health units, disciplinary segregation units, detainee worker units, segregation units, and protective custody units.
- Ideally, detainees will not be mixed in housing units with detainees of other custody levels. Minimum custody detainees should never be housed with maximum custody detainees.
- The structure, supervision, programming and privilege level of the housing units will be suited for the custody levels of the detainees housed there.
- Only those detainees who exhibit a willingness and ability to obey the rules of the facility will be allowed to remain in general population.
- All detainees remaining in general population, whether minimum, medium, or maximum custody will be afforded enough privileges and living conditions to convince the detainees that it is in their own best interest to remain or improve their classification.
- All detainees should know what privileges they would lose if they were to be reclassified to a higher custody level. They should also know what privileges they would gain if they were to be reclassified to a lower custody level.
- Security staff should be encouraged to document detainee behavior, both positive and negative. A detainee's institutional behavior should be used to determine housing placements, program eligibility, future classifications, and release conditions.

### Required Housing Separations

In accordance with industry and state jail standards, the following classifications will not share the same housing unit:

- Males and females
- Adults and juveniles
- Behavior management detainees
- Violent/non-violent detainees
- Detainees who have work assignments inside the facility and those who do not

### Housing for General Population

The MCSO anticipates it will use an objective classification process to initially assess the risks and needs of newly admitted detainees but also to meet basic needs and manage their behavior while in the facility. The classifications are determined by, among other things, an assessment of the person's charge, offense history, prior institutional history, and behavior. Based on this assessment a person is assigned a classification and housing assignment. The following is a list of the planned housing classifications.

*Restrictive/Disciplinary.* Highest classification based on risk factors and institutional history. Generally separated for protection of other detainees. Housing assignment to a single-occupancy cell with limited out-of-cell time. More out of cell time (step down) is earned as behavior improves.

*Maximum.* Persons considered high to moderate risks. Housing assignment to multiple-occupancy cells.

*Medium.* Persons considered moderate risks. Housing assignment to multiple-occupancy cells.

*Minimum.* Persons considered minimum risks. Housing assignment can be multiple-occupancy cells or dormitories.

*Classification.* This is housing used for initial intake and evaluation for assigning classification. Persons will typically remain in classification no more than 72-hours after intake before being assigned to a housing unit.

*Inmate Worker.* These are detainees that may work in the kitchen or laundry or provide cleaning. They are generally kept separate from other detainees as they typically move more freely within the jail. Housing assignment can be multiple-occupancy cells or dormitories.

### Housing for Medical and Mental Health Care

Currently there is no infirmary-level care available at the MCJ and MCIF. To provide more care in-house in lieu of local hospitals, the program calls for new medical housing as well as mental health care for acute and step-down detainees. Moreover, many intake exhibit withdrawal symptoms. The program provides housing and treatment spaces for those suffering from alcohol and opioid withdrawal. A separate "special needs" housing pod has been created for medical and mental health patients.

### Housing Distribution

The following housing distribution plan describes the size and location of the various classifications. Please note that maximum and medium classifications are combined. This is done to primarily describe the furnishings and equipment. The higher level of security allows flexibility in housing assignments as classification needs fluctuate. For example, minimum and medium custody levels can be housed in a unit designed for maximum custody use. However, maximum custody cannot be housed in a unit designed for minimum custody use (minimum custody units are typically dormitories).

The distribution also illustrates the use of smaller housing units. Often detainees must be separated from others based on gang affiliations, keep co-conspirators away from each other, or other reasons. The smaller housing units facilitate these separation needs.

# Miami County Jail Housing Distribution

Troy, Ohio

**Notes:**

Each housing pod to contain: open staff post, staff toilet, counseling room (with video visit capability for professional visits), multipurpose room for programming, and indoor/outdoor exercise area.

**GENERAL POPULATION**

Housing Classification Units		Single Cell	2-Person Cell	4-Person Cell	Pod Capacity
Pod 1 Restrictive	Restrictive/Disciplinary	6			48
	Restrictive/Disciplinary	6			
	Restrictive/Disciplinary	6			
	Restrictive/Disciplinary	6			
	Maximum/Flex Mezzanine			12	
	Maximum/Flex Mezzanine			12	
Pod 2 Classification	Maximum/Flex	8			48
	Maximum/Flex	8			
	Classification			16	
	Classification			16	
Pod 3 Female	Maximum/Flex	8			48
	Maximum/Flex	8			
	Medium/Max			16	
	Medium/Max			16	
Pod 4 Male General	Medium/Maximum			16	48
	Medium/Maximum			16	
	Medium/Maximum			16	
Pod 5 Male General	Medium/Maximum			16	48
	Medium/Maximum			16	
	Medium/Maximum			16	
Pod 6 Male General	Medium/Maximum			16	48
	Medium/Maximum			16	
	Inmate Worker			16	
		56	0	232	<b>288</b>
		Single	2-Person	4-Person	TOTAL
		19%	0%	81%	

Restrictive/Disciplinary housing units to be located on ground floor. Maximum Flex units will be located on mezzanine level and will be available for keep separates and protective custody.

Classification pod for 72 hour holding. Pod will have a video arraignment adjacent. Maximum/Flex housing units can be used for maximum custody, protective custody, and female overflow housing. Located near Intake Area and Clinic.

Maximum Flex units will be available for maximum custody, keep separates and protective custody.

**SPECIAL NEEDS HOUSING**

Pod 7 Medical/ Mental Health	Medical Isolation	2			32
	Medical	6			
	Infirmery		4	4	
	Mental Health Acute	8			
	MH Stepdown		4		
	MH Non-Acute			4	
		16	8	8	<b>32</b>
		Single	2-Person	4-Person	TOTAL
		50%	25%	25%	

Note: Special Needs Housing will be designed to allow sight and sound separation between males and females. Will be located near clinic.

General Population	288 Beds
Special Needs Housing	32 Beds
Holding Capacity	20

## SHERIFF'S OFFICE SPACE PROGRAM

The Sheriff's Office space program was developed with the assistance of the Miami County Sheriff's Office. The project team reviewed the Office's organizational structure, services provided, equipment requirements, and technology needs. The program reflects current industry standards.

## SPACE PROGRAMS

The following are the space needs programs for both the jail and the Sheriff's Office. This information will be used to develop options and cost estimates.

## Space List - Option 1

### Miami County Jail and Sheriff's Office

Troy, Ohio

<b>Jail</b>					
COMPONENT/AREA:	# OF BEDS	TOTAL NET S.F.	GROSS FACTOR	TOTAL GROSS S.F.	
<b>320</b>					
1.1	Vehicle Sallyport	2,550	1.15	2,933	
1.2	Prebooking Area	330	1.35	446	
1.3	Booking/Intake	2,045	1.35	2,761	
1.5	Property	870	1.15	1,001	
2.1	Clinic	1,570	1.30	2,041	
2.2	Medical/Mental Health Housing	32	4,640	1.60	7,424
3.1	Housing - Restrictive	48	6,560	1.65	10,824
3.2	Housing - Classification	48	6,185	1.60	9,896
3.3	Housing - Female	48	6,830	1.60	10,928
3.4	Housing - General Population	48	6,565	1.50	9,848
3.4	Housing - General Population	48	6,565	1.50	9,848
3.4	Housing - General Population	48	6,565	1.50	9,848
4	Programs	615	1.15	707	
5	Central Control	670	1.25	838	
6	Lobby/Jail Administration	2,288	1.30	2,974	
7	Staff Facilities	520	1.25	650	
8	Food Service	4,120	1.20	4,944	
9	Laundry	1,250	1.30	1,625	
10	Maintenance	1,880	1.20	2,256	
11	Mechanical (5%)			4,589	
		<b>62,618</b>	<b>1.54</b>	<b>96,378</b>	

X Gen'l Bldg Gross Factor for Core ( corridors, stairs, chases, etc.): 1.1

**TOTAL GSF: 106,016**

**TOTAL G.S.F.**

GSF per bed: 331

<b>Sheriff's Office</b>				
COMPONENT/AREA:	TOTAL NET S.F.	GROSS FACTOR	TOTAL GROSS S.F.	
1	Public Lobby	990	1.30	1,287
2	Command Staff	1,752	1.30	2,278
3	Fiscal/Quartermaster	560	1.20	672
4	Records	670	1.30	871
5	EMA	2,946	1.30	3,830
6	Patrol	1,678	1.30	2,181
7	Detectives	1,467	1.30	1,907
8	Evidence	1,434	1.20	1,721
9	Staff Facilities	4,230	1.30	5,499
10	Technology	676	1.25	845
11	Facility Maintenance	200	1.20	240
12	Mechanical (5%)			1,067
		<b>16,603</b>	<b>1.35</b>	<b>22,397</b>

X Gen'l Bldg Gross Factor for Core ( corridors, stairs, chases, etc.): 1.1

**TOTAL G.F.: 24,637**

**TOTAL G.S.F.**

**JAIL & SHERIFF'S OFFICE GSF: 130,653**

**TOTAL G.S.F.**

# Space List - Option 2

## Miami County Jail and Sheriff's Office

Troy, Ohio

### Jail

COMPONENT/AREA:	# OF BEDS	TOTAL NET S.F.	GROSS FACTOR	TOTAL GROSS S.F.	
<b>200</b>					
1.1	Vehicle Sallyport	2,550	1.15	2,933	
1.2	Prebooking Area	330	1.35	446	
1.3	Booking/Intake	2,045	1.35	2,761	
1.5	Property	870	1.15	1,001	
2.1	Clinic	1,570	1.30	2,041	
2.2	Medical/Mental Health Housing	32	4,640	1.60	7,424
3.1	Housing - Restrictive	48	6,560	1.65	10,824
3.2	Housing - Classification	24	3,570	1.60	5,712
3.3	Housing - Female	48	6,830	1.60	10,928
3.4	Housing - General Population	48	6,565	1.50	9,848
3.4	Housing - General Population		6,565	1.50	0
3.4	Housing - General Population		6,565	1.50	0
4	Programs	140	1.15	161	
5	Central Control	610	1.25	763	
6	Lobby/Jail Administration	2,288	1.30	0	
7	Staff Facilities	520	1.25	0	
8	Food Service	4,120	1.20	0	
9	Laundry	1,250	1.30	0	
10	Maintenance	612	1.20	734	
11	Mechanical (5%)			2,779	

Reduced Pod Capacity by 24 beds

Deleted Pod from Program

Deleted Pod from Program

Deleted Centralized Classroom

Lobby/Jail Admin in MCIF = 2,787 SF

Staff Facilities in MCIF = 867 SF

Kitchen in the MCIF = 5,973 SF

Laundry in MCIF = 736 SF

Reduced Storage Needs

4,437

<b>58,200</b>	<b>1.00</b>	<b>58,352</b>
---------------	-------------	---------------

X Gen'l Bldg Gross Factor for Core ( corridors, stairs, chases, etc.): 1.1

**TOTAL GSF: 64,188**

**TOTAL G.S.F.**

GSF per bed: 321

### Sheriff's Office

COMPONENT/AREA:	TOTAL NET S.F.	GROSS FACTOR	TOTAL GROSS S.F.	
1	Public Lobby	990	1.30	1,287
2	Command Staff	1,752	1.30	2,278
3	Fiscal/Quartermaster	560	1.20	672
4	Records	670	1.30	871
5	EMA	2,946	1.30	3,830
6	Patrol	1,678	1.30	2,181
7	Detectives	1,467	1.30	1,907
8	Evidence	1,434	1.20	1,721
9	Staff Facilities	4,230	1.30	5,499
10	Technology	676	1.25	845
11	Facility Maintenance	200	1.20	240
12	Mechanical (5%)			1,067

<b>16,603</b>	<b>1.35</b>	<b>22,397</b>
---------------	-------------	---------------

X Gen'l Bldg Gross Factor for Core ( corridors, stairs, chases, etc.): 1.1

**TOTAL G.F.: 24,637**

**TOTAL G.S.F.**

**JAIL & SHERIFF'S OFFICE GSF: 88,825**

**TOTAL G.S.F.**

## Space List - Option 3

### Miami County Jail and Sheriff's Office

Troy, Ohio

Jail					
COMPONENT/AREA:	# OF BEDS	TOTAL NET S.F.	GROSS FACTOR	TOTAL GROSS S.F.	
	200				
1.1	Vehicle Sallyport	2,550	1.15	2,933	
1.2	Prebooking Area	330	1.35	446	
1.3	Booking/Intake	2,045	1.35	2,761	
1.5	Property	870	1.15	1,001	
2.1	Clinic	1,570	1.30	2,041	
2.2	Medical/Mental Health Housing	32	4,640	1.60	7,424
3.1	Housing - Restrictive	48	6,560	1.65	10,824
3.2	Housing - Classification	24	3,570	1.60	5,712
3.3	Housing - Female	48	6,830	1.60	10,928
3.4	Housing - General Population	48	6,565	1.50	9,848
3.4	Housing - General Population		6,565	1.50	0
3.4	Housing - General Population		6,565	1.50	0
4	Programs	140	1.15	161	
5	Central Control	610	1.25	763	
6	Lobby/Jail Administration	2,288	1.30	0	
7	Staff Facilities	520	1.25	0	
8	Food Service	4,120	1.20	0	
9	Laundry	1,250	1.30	0	
10	Maintenance	612	1.20	734	
11	Mechanical (5%)			2,779	

Reduced Pod Capacity by 24 beds

Deleted Pod from Program

Deleted Pod from Program

Deleted Centralized Classroom

Lobby/Jail Admin in MCIF = 2,787 SF

Staff Facilities in MCIF = 867 SF

Kitchen in the MCIF has 5,973 SF

Laundry in MCIF has 736 SF

Reduced Storage Needs

	58,200	1.00	58,352
--	--------	------	--------

X Gen'l Bldg Gross Factor for Core ( corridors, stairs, chases, etc.): 1.1

**TOTAL GSF: 64,188**  
**TOTAL G.S.F.**

GSF per bed: 321

Sheriff's Office				
COMPONENT/AREA:	TOTAL NET S.F.	GROSS FACTOR	TOTAL GROSS S.F.	
1	Public Lobby	990	1.30	1,287
2	Command Staff	1,752	1.30	2,278
3	Fiscal/Quartermaster	560	1.20	672
4	Records	670	1.30	871
5	EMA	2,946	1.30	0
6	Patrol	1,678	1.30	2,181
7	Detectives	1,467	1.30	1,907
8	Evidence	1,434	1.20	0
9	Staff Facilities	2,010	1.30	2,613
10	Technology	676	1.25	400
11	Facility Maintenance	200	1.20	240
12	Mechanical (5%)			622

Keep downtown

Locate in Transit Building

No Physical Fitness/Training Space

Reduce with EMA downtown

	14,383	0.91	13,072
--	--------	------	--------

X Gen'l Bldg Gross Factor for Core ( corridors, stairs, chases, etc.): 1.1

**TOTAL G.F.: 14,379**  
**TOTAL G.S.F.**

**JAIL & SHERIFF'S OFFICE GSF: 78,566**  
**TOTAL G.S.F.**

# Miami County Jail Housing Distribution - Option 1

Troy, Ohio

## GENERAL POPULATION

Housing Classification Units		Single Cell	2-Person Cell	4-Person Cell	Pod Capacity
Pod 1 Restrictive	Restrictive/Disciplinary	6			48
	Restrictive/Disciplinary	6			
	Restrictive/Disciplinary	6			
	Restrictive/Disciplinary	6			
	Maximum/Flex Mezzanine			12	
	Maximum/Flex Mezzanine			12	
Pod 2 Classification	Maximum/Flex	8			48
	Maximum/Flex	8			
	Classification			16	
	Classification			16	
Pod 3 Female	Maximum/Flex	8			48
	Maximum/Flex	8			
	Medium/Max			16	
	Medium/Max			16	
Pod 4 Male General	Medium/Maximum			16	48
	Medium/Maximum			16	
	Medium/Maximum			16	
Pod 5 Male General	Medium/Maximum			16	48
	Medium/Maximum			16	
	Medium/Maximum			16	
Pod 6 Male General	Medium/Maximum			16	48
	Medium/Maximum			16	
	Inmate Worker			16	
		56	0	232	<b>288</b>
		Single	2-Person	4-Person	TOTAL
		19%	0%	81%	

## Notes:

Each housing pod to contain: open staff post, staff toilet, counseling room (with video visit capability for professional visits), multipurpose room for programming, and indoor/outdoor exercise area.

Restrictive/Disciplinary housing units to be located on ground floor. Maximum Flex units will be located on mezzanine level and will be available for keep separates and protective custody.

Classification pod for 72 hour holding. Pod will have a video arraignment adjacent. Maximum/Flex housing units can be used for maximum custody, protective custody, and female overflow housing. Located near Intake Area and Clinic.

Maximum Flex units will be available for maximum custody, keep separates and protective custody.

## SPECIAL NEEDS HOUSING

Housing Classification Units		Single Cell	2-Person Cell	4-Person Cell	Pod Capacity
Pod 7 Medical/ Mental Health	Medical Isolation	2			32
	Medical	6			
	Infirmery		4	4	
	Mental Health Acute	8			
	MH Stepdown		4		
	MH Non-Acute			4	
		16	8	8	<b>32</b>
		Single	2-Person	4-Person	TOTAL
		50%	25%	25%	

Note: Special Needs Housing will be designed to allow sight and sound separation between males and females. Will be located near clinic.

General Population	288 Beds
Special Needs Housing	32 Beds
Holding Capacity	20



# Space List

Miami County

Troy, Ohio

Jail

J

Intake/ Release

1

Pre-Booking Area

2

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
				Located between the Vehicle Sallyport and Booking Area
Pre-Book Area				
Security Vestibule	(100)	1	100	Located between Pre-Booking Area and Booking Area
Officer Work Area	(0)	0	0	AO complete paperwork in car. Fingerprints done by arresting agencies.
Body X-ray	(120)	1	120	
Pass-thru Cell	(80)	1	80	Accessible from Vehicle Sallyport and Pre-Booking Area
Property Counter	(30)	1	30	6' long counter for collecting and vacuum sealing personal property

**SUB - TOTALS:** 4 **330**  
Spaces TOTAL N.S.F.

X Gross Factor of: **1.35 = 446**

TOTAL D.G.S.F.

# Space List

Miami County

Troy, Ohio

**Jail** **J**

Intake/ Release **1**

Booking and Holding **3**

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
Create a separate transport corridor to Vehicular Sallyport. Group holding cells will be used for booking and transport				
<b>Booking Area</b>				
Booking Processing Station	(45)	3	135	Raised Platform
File Storage (Active Files)	(80)	1	80	File cabinets. Behind Booking Processing Stations
Inmate Seating Area - Male	(20)	12	240	Open waiting. Provide television and access to phones
Detainee Toilet - Male	(60)	1	60	
Inmate Seating Area - Female	(20)	8	160	Open waiting. Provide television and access to phones
Detainee Toilet - Female	(60)	1	60	
Photo/ Fingerprint Station	(80)	1	80	Camera, backdrop, biometric fingerprint machine
Interview Room	(80)	1	80	A/ V recording equipment
Medical Alcove	(80)	1	80	Taking of vitals. BP cuff, scale, wall and base cabinets, sink.
Caseworker Office	(100)	1	100	
<b>Staff Area</b>				
Staff Restroom	(60)	1	60	
Kitchenette and table for 4.	(120)	1	120	Wall and base cabinets. Full-size refrigerator, microwave, ice/ water machine, sink.
<b>Holding</b>				
ADA Single-Occupancy Cell	(90)	1	90	Door with 2 food passes and trench drain in front of door.
Single-Occupancy Cell	(75)	2	150	Door with 2 food passes and trench drain in front of door.
Detox Cell	(75)	2	150	Comby and remote flushing floor drain. Bunk at 8" a.f.f. Door with 2 food passes and trench drain in front of door.
Group Cell for 6	(140)	2	280	Door with 2 food passes and trench drain in front of door. Rear door to Transport Corridor
<b>Support</b>				
Janitor Closet	(40)	1	40	
Restraint Chair Storage	(80)	1	80	
Release Corridor				Part of Jail Circulation. Provide seating, charging stations, telephone.
<b>SUB - TOTALS:</b>		<b>41</b>	<b>2,045</b>	
		Spaces	TOTAL N.S.F.	
		<b>1.35 =</b>	<b>2,761</b>	
			TOTAL D.G.S.F.	

# Space List

Miami County

Troy, Ohio

**Jail** **J**

Intake/ Release **1**

Property **4**

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
Property Room	(750)	1	750	Assume property bags. Provide space for bulk storage. Shrink wrap machine will be used. No washer and dryer.
Clothing Exchange Area (uni-sex)				
2 Showers/ 2 Dressing Stalls/ Search - ADA	(120)	1	120	Provide evidence style lockers for temporary storage of property between the Clothing Exchange Room and the Property Room. Door to Property Room.
<b>SUB - TOTALS:</b>				
		<b>2</b>	<b>870</b>	
		Spaces	TOTAL N.S.F.	
X Gross Factor of:		<b>1.15 =</b>	<b>1,001</b>	
			TOTAL D.G.S.F.	



# Space List

Miami County

Troy, Ohio

**Jail**

**J**

**Health Care**

**2**

**Clinic**

**1**

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS: Located near Lobby Assumes no on-site dialysis and general x-ray
<b>Clinic</b>				
Waiting Area (open)				No waiting
Triage Area	(80)	1	80	Vitals. Scale.
Exam/ Telemed Room	(150)	1	150	Telemedicine equipped with camera, video equipment; Lockable cabinets, privacy screens, exam tables, sinks, diagnostic equipment attached to wall (otoscope, ophthalmoscope, sphygmomanometer), work station for records review/charting, stool, phone, computer, work counter, locked specimen storage, "sharps" container, refrigerator, data ports/lines, phone, emergency generator back-up for all electrical. Provide headwall with medical gases.
Treatment/ Telemed Room	(180)	1	180	Telemedicine equipped with camera, video equipment; Lockable cabinets, privacy screens, exam table that can be accessed from 4 sides; diagnostic equipment attached to wall (otoscope, ophthalmoscope, sphygmomanometer), sink, workstation for records review/charting, stool, computer, work counter, locked specimen storage, "sharps" container, refrigerator, OB/GYN equipment, portable x-ray, with lead-lined walls, ceiling-mounted lighting, data ports/lines, phone, emergency generator back-up for all electrical. Provide headwall with medical gasses.
Medical Supply Storage	(150)	1	150	Adjustable shelving, some with bins for medical supplies. Includes clean utility. Shelving, floor space for wheelchair and gurney, canes, crutches and other assistive devices
Pharmacy/Medication Storage	(120)	1	120	Secure storage of medications, double-locked narcotics cabinet and 4 medication carts, 1 work stations (med orders/check-in meds) with work counter, sink, refrigerator.
Soiled Utility	(80)	1	80	Counter with sink, flushable hopper sink, adjustable shelves, bins; temporary secured biohazard storage.
Janitor's Closet	(40)	1	40	Utility sink, mop racks, broom rack, storage for limited cleaning supplies or dilution dispensers, mop buckets, ventilation such that wet mops dry without mildewing, glazing on doors for easy viewing inside.
Patient Toilet	(60)	1	60	
<b>Office Area</b>				
Clinicians Office	(300)	1	300	3 workstations and records storage
MH Service Providers Office	(120)	1	120	
Meeting Room	(200)	1	200	8 persons
Kitchenette	(30)	1	30	Sink, refrigerator, base cabinets, microwave
Staff Toilet	(60)	1	60	
<b>SUB - TOTALS:</b>		<b>13</b>	<b>1,570</b>	
		Spaces	TOTAL N.S.F.	
		<b>X Gross Factor of: 1.30 =</b>	<b>2,041</b>	
			<b>TOTAL D.G.S.F.</b>	

# Space List

Miami County

Troy, Ohio

**Jail**

Health Care 2

Medical and Mental Health Care Housing 2

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
<b>Medical Area</b>				
Negative Pressure Cell	(185)	2	370	Provide bed with 3-sided access. Provide ADA accessible toilet, lavatory, and shower.
Airlock	(80)	1	80	Shared by the 2 Negative Pressure Cells. Provide base cabinets and sink and electric outlets for oxygen and CPAP
Medical and Withdrawal Cell	(110)	6	660	ADA accessible.
Infirmary	(280)	1	280	4 beds
Infirmary	(110)	2	220	2 beds each
Dayroom	(35)	14	490	
Shower - ADA	(40)	1	40	
Shower	(25)	1	25	
<b>Mental Health Area</b>				
Mental Health Acute	(80)	7	560	
Mental Health Acute - ADA Accessible	(110)	1	110	
Mental Health Step Down	(110)	2	220	Double-Occupancy
Mental Health Non-Acute	(280)	1	280	4 beds
Dayroom	(35)	16	560	
Shower - ADA	(40)	1	40	
Shower	(25)	1	25	
<b>Support Space</b>				
Staff Post (open)	(120)	1	120	
Staff Toilet	(60)	1	60	
Counseling Room	(80)	1	80	Video visit capability for professional visits
Multipurpose	(200)	1	200	Seating for 8. Provide counter and lockable wall cabinets. Provide video capabilities for video court.
Clean Utility	(80)	1	80	
Janitor Closet	(40)	1	40	
Vending Machines	(20)	1	20	2 vending machines are assumed
Security Electronics Closet	(80)	1	80	

**SUB - TOTALS:** 65 Spaces **4,640** TOTAL N.S.F.

X Gross Factor of: 1.60 = **7,424** TOTAL D.G.S.F.



# Space List

Miami County

Troy, Ohio

Jail  
Housing  
Restrictive/ Disciplinary

J  
3  
1

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
Restrictive/Disciplinary - 6 Beds				
				Located on Lower Level
Single Cell	(70)	5	350	
Single-Occupancy Cell (ADA)	(110)	1	110	
Dayroom	(35)	6	210	
Shower (ADA)	(40)	1	40	
Restrictive/Disciplinary - 6 Beds				
				Located on Lower Level
Single Cell	(70)	5	350	
Single-Occupancy Cell (ADA)	(110)	1	110	
Dayroom	(35)	6	210	
Shower (ADA)	(40)	1	40	
Restrictive/Disciplinary - 6 Beds				
				Located on Lower Level
Single Cell	(70)	6	420	
Dayroom	(35)	6	210	
Shower	(25)	1	25	
Restrictive/Disciplinary - 6 Beds				
				Located on Lower Level
Single Cell	(70)	6	420	
Dayroom	(35)	6	210	
Shower	(25)	1	25	
Maximum/Flex - 12 beds				
				Located on Mezzanine
4-Person Cell	(265)	3	795	
Dayroom	(35)	12	420	
Shower	(25)	1	25	
Maximum/Flex - 12 beds				
				Located on Mezzanine
4-Person Cell	(265)	3	795	
Dayroom	(35)	12	420	
Shower	(25)	1	25	
Support Space				
Staff Post (open)	(120)	1	120	
Staff Toilet	(60)	1	60	
Janitor Closet	(40)	1	40	
Counseling Room	(80)	1	80	Video visit capability for professional visits
Multipurpose	(200)	1	200	Seating for 8. Provide counter and lockable wall cabinets. Provide video capabilities for video court.
Exercise	(750)	1	750	Indoor/Outdoor. No Basketball
Vending Machines	(20)	1	20	2 vending machines are assumed
Security Electronics Closet	(80)	1	80	

<b>SUB - TOTALS:</b>	<b>92</b>	<b>6,560</b>
	Spaces	TOTAL N.S.F.

X Gross Factor of: 1.65 = **10,824**  
TOTAL D.G.S.F.

# Space List

Miami County

Troy, Ohio

<b>Jail</b>	<b>J</b>
Housing	3
Classification	2

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
<b>Maximum Flex - 8 beds</b>				
Single Cell	(80)	8	640	One cell ADA Accessible
Dayroom	(35)	8	280	
Shower	(25)	1	25	ADA Accessible
<b>Maximum Flex - 8 beds</b>				
Single Cell	(80)	8	640	
Dayroom	(35)	8	280	
Shower	(25)	1	25	
<b>Classification - 16 beds</b>				
4-Person Cell	(265)	4	1,060	One cell ADA Accessible
Dayroom	(35)	16	560	
Shower	(25)	2	50	One shower ADA Accessible
<b>Classification - 16 beds</b>				
4-Person Cell	(265)	4	1,060	
Dayroom	(35)	16	560	
Shower	(25)	2	50	
<b>Support Space</b>				
Staff Post (open)	(120)	1	120	
Staff Toilet	(60)	1	60	
Janitor Closet	(40)	1	40	
Counseling Room	(80)	1	80	Video visit capability for professional visits
Video Arraignment	(375)	1	375	Seating for 15.
Attorney-Client Room	(60)	1	60	
Medical Exam Room	(120)	1	120	
Vending Machines	(20)	1	20	2 vending machines are assumed
Security Electronics Closet	(80)	1	80	

**SUB - TOTALS:** 87 6,185  
Spaces TOTAL N.S.F.

**X Gross Factor of: 1.60 = 9,896**  
TOTAL D.G.S.F.



# Space List

Miami County

Troy, Ohio

**Jail**

Housing

Classification

J
3
2A

Option 2 & 3 - 24 beds

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
<b>Maximum Flex - 8 beds</b>				
Single Cell	(80)	8	640	One cell ADA Accessible
Dayroom	(35)	8	280	
Shower	(25)	1	25	ADA Accessible
<b>Classification - 16 beds</b>				
4-Person Cell	(265)	4	1,060	One cell ADA Accessible
Dayroom	(35)	16	560	
Shower	(25)	2	50	One shower ADA Accessible
<b>Support Space</b>				
Staff Post (open)	(120)	1	120	
Staff Toilet	(60)	1	60	
Janitor Closet	(40)	1	40	
Counseling Room	(80)	1	80	Video visit capability for professional visits
Video Arraignment	(375)	1	375	Seating for 15.
Attorney-Client Room	(60)	1	60	
Medical Exam Room	(120)	1	120	
Vending Machines	(20)	1	20	2 vending machines are assumed
Security Electronics Closet	(80)	1	80	
<b>SUB - TOTALS:</b>		<b>48</b>	<b>3,570</b>	
		Spaces	TOTAL N.S.F.	
<b>X Gross Factor of: 1.60 =</b>			<b>5,712</b>	
			TOTAL D.G.S.F.	

# Space List

Miami County

Troy, Ohio

Jail

J

Housing

3

Female

3

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
Maximum/Flex - 8 beds				
Single Cell	(80)	7	560	
Single-Occupancy Cell (ADA)	(110)	1	110	
Dayroom	(35)	8	280	
Shower (ADA)	(40)	1	40	
Maximum/Flex - 8 beds				
Single Cell	(80)	8	640	
Dayroom	(35)	8	280	
Shower	(25)	1	25	
Medium/Maximum - 16 beds				
4-Person Cell	(265)	3	795	
4-Person Cell - ADA	(280)	1	280	
Dayroom	(35)	16	560	
Shower - ADA	(40)	1	40	
Shower	(25)	1	25	
Medium/Maximum - 16 beds				
4-Person Cell	(265)	4	1,060	
Dayroom	(35)	16	560	
Shower	(25)	2	50	
Support Space				
Staff Post (open)	(120)	1	120	
Staff Toilet	(60)	1	60	
Janitor Closet	(40)	1	40	
Counseling Room	(80)	1	80	Video visit capability for professional visits
Multipurpose	(375)	1	375	Seating for 15. Provide counter and lockable wall cabinets. Provide video capabilities for video court.
Exercise	(750)	1	750	Indoor/Outdoor. Basketball
Vending Machines	(20)	1	20	2 vending machines are assumed
Security Electronics Closet	(80)	1	80	
<b>SUB - TOTALS:</b>				
		86	6,830	
		Spaces	TOTAL N.S.F.	
X Gross Factor of:		1.60 =	10,928	
			TOTAL D.G.S.F.	



# Space List

Miami County

Troy, Ohio

Jail **J**  
 Programs **4**

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
Programs Room	(375)	1	375	
Storage	(100)	1	100	
Program Office (p)	(140)	1	140	Includes GED testing equipment
<b>SUB - TOTALS:</b>				
		3 Spaces	615 TOTAL N.S.F.	
X Gross Factor of: 1.15 =		<b>707</b> TOTAL D.G.S.F.		





# Space List

Miami County  
Troy, Ohio

Jail  
J  
6

Jail Lobby and Administration

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
<b>Lobby</b>				
Weather Vestibule	(100)	1	100	
Waiting Area	(400)	1	400	Seating for 12
Sex Offender Window	(50)	1	50	Ballistic Protection
Public Toilet	(60)	2	120	
Non-Contact Visitation/ Video Visitation	(80)	2	160	For face to face visits. Equipped with a video visit station on the public side for professional visitors. Provide lockable paperpass -- lock on secure side
Video Visitation Alcove	(100)	1	100	Located off of Lobby
Kiosks	(8)	2	16	2 kiosks for depositing money for commissary
<b>Administration Outside the Security Perimeter</b>				
Asst. Jail Administrators (p)	(120)	2	240	Located adjacent to the Jail Lobby
Conference Room - 6 persons	(150)	1	150	
Workstations (o)	(64)	3	192	
Records	(120)	1	120	Provide window to Lobby. Ballistic Protection
Office Equipment	(80)	1	80	Copier/ Printer, Office supplies, Files
<b>Administration Inside the Security Perimeter</b>				
Operations Lieutenants (s)	(240)	1	240	4 workstations
Sergeants (s)	(240)	1	240	4 workstations
Office Equipment	(80)	1	80	Copier/ Printer, Office supplies, Files
<b>SUB - TOTALS:</b>		<b>21</b>	<b>2,288</b>	
		<b>Spaces</b>	<b>TOTAL N.S.F.</b>	(p) = Private Office (o) = Open office workstation (s) = Shared office
<b>X Gross Factor of:</b>		<b>1.30 =</b>	<b>2,974</b>	
			<b>TOTAL D.G.S.F.</b>	



# Space List

Miami County

Troy, Ohio

Jail **J**  
Food Service **8**

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
<b>Food Service Area</b>				
Hot Food Production	(750)	1	750	
Tray Assembly	(600)	1	600	
Dry Storage	(300)	1	300	
Refrigerators/ Freezers	(400)	1	400	
Cold Food Production	(300)	1	300	
Dishroom	(500)	1	500	
<b>Support Spaces</b>				
Receiving Area	(250)	1	250	Area to tear down pallets
Janitor Closet	(60)	1	60	
Staff Toilet	(60)	1	60	
Inmate Toilet	(60)	1	60	
Worker Dining Area	(240)	1	240	Seating for 12
Security Vestibule	(200)	1	200	Oversized for the moving of pallets
Trash Room	(100)	1	100	
Office	(120)	1	120	
Commissary Storage	(180)	1	180	Commissary will be available through vending machines at the pod

**SUB - TOTALS:** 15 Spaces **4,120** TOTAL N.S.F.

X Gross Factor of: 1.20 = **4,944** TOTAL D.G.S.F.

# Space List

Miami County

Troy, Ohio

Jail **J**  
 Laundry **9**

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
Laundry Area				
Laundry	(360)	1	360	4 - 50# washers and 4 - 75# Dryers
Secure Chem Storage	(50)	1	50	
Lint Collector	(35)	1	35	
Cart Storage Area	(80)	1	80	
Scale Area	(25)	1	25	
Folding Tables	(100)	1	100	
Toilet	(60)	1	60	
Janitor Closet	(40)	1	40	
Linen/ Clothing Storage	(500)	1	500	Open Shelving

**SUB - TOTALS:** 9 **1,250**  
Spaces TOTAL N.S.F.

X Gross Factor of: **1.30 = 1,625**  
TOTAL D.G.S.F.

# Space List

Miami County

Troy, Ohio

Jail **J**

Dock and Maintenance Area **10**

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
ADJACENCIES: FOOD SERVICE AREA				
<b>Dock Area</b>				
Receiving Area	(300)	1	300	Enclosed. Overhead door and man door. Include dock leveler.
Trash/ Recycling	(150)	1	150	
<b>Maintenance</b>				
General Storage	(600)	1	600	
Chemical Storage	(100)	1	100	
Work Area	(350)	1	350	
Office	(120)	1	120	
Toilet	(60)	1	60	
<b>SUB - TOTALS:</b>				
		<b>7</b>	<b>1,680</b>	
		Spaces	TOTAL N.S.F.	
		<b>X Gross Factor of: 1.20 =</b>		<b>2,016</b>
				TOTAL D.G.S.F.

# Space List

Miami County

Troy, Ohio

Jail

J

Dock and Maintenance Area

10A

Option 2 & 3

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	TOTAL NET S.F.	REMARKS:
ADJACENCIES: FOOD SERVICE AREA				
<b>Dock Area</b>				
Receiving Area	(300)	1	300	Enclosed. Overhead door and man door. Include dock leveler.
Trash/ Recycling	(150)	1	150	
<b>Maintenance</b>				
General Storage	(600)	1		Use existing space in Incarceration Facility
Chemical Storage	(100)	1		
Work Area	(350)	1		
Office	(120)	1		
Toilet	(60)	1	60	

**SUB - TOTALS:**

7      510  
Spaces      TOTAL N.S.F.

X Gross Factor of: 1.20 = 612  
TOTAL D.G.S.F.



# SPACE LIST

Miami County, Ohio

Sheriff  
Public Lobby

**S**  
**1**

SPACE/ AREA NAME	Area Sq. Ft.	NUMBER OF SPACES	NET S.F.	Remarks
				KEY ADJACENCIES: Conference/ EOC Room
Weather Vestibule	(100)	1	100	
Lobby	(400)	1	400	Separate from the jail lobby. Seating for 12
Records Window				Ballistic Glass. SF included in Lobby
CCW alcove	(100)	1	100	
CCW office/ Web checks	(120)	1	120	
Report Room/ Conference Room	(120)	1	120	Space for 4 persons
Male Toilet	(60)	1	60	
Female Toilet	(60)	1	60	
Janitor Closet	(30)	1	30	
<b>SUB - TOTALS:</b>			<b>990</b>	(p) = Private Office
			<b>Total NSF</b>	(o) = Open office workstation
			<b>Current Need</b>	(s) = Shared office
Departmental Gross Factor:		<b>1.3</b>		
			<b>1,287</b>	
			<b>Total DGSF</b>	

# SPACE LIST

Miami County, Ohio

Sheriff  
Command Staff

S  
2

SPACE/ AREA NAME	Area Sq. Ft.	NUMBER OF SPACES	NET S.F.	Remarks
KEY ADJACENCIES: Near Lobby				
<b>Executive Offices</b>				
Sheriff (p)	(240)	1	240	Provide small conference area for 6 persons
- Toilet	(60)	1	60	
- closet	(12)	1	12	
Administrative Assistant (p)	(140)	1	140	Contains workstation and printer. Contains personnel files
Secure File Storage	(80)	1	80	
Chief Deputy (p)	(200)	1	200	
Captain - Jail Administrator (p)	(120)	1	120	
Captain - Administrative (p)	(120)	1	120	
Captain - Court Services (p)	(120)	1	120	
Captain - Patrol (p)	(120)	1	120	
Spare Office	(120)	2	240	For future growth
Conference Room	(300)	1	300	Seating for 12

**SUB - TOTALS:**

**1,752**

**Total NSF**

**Current Need**

Departmental Gross Factor:

**1.3**

**2,278**

**Total DGFS**

(p) = Private Office  
(o) = Open office workstation  
(s) = Shared office

# SPACE LIST

Miami County, Ohio

Sheriff

Fiscal and Quartermaster

**S**  
**3**

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	NET S.F.	Remarks
				KEY ADJACENCIES: Near Lobby
Office/ Supplies	(300)	1	300	Workstation. Shelving and hanging racks for uniforms
Fitting Room	(80)	1	80	
File Room	(100)	1	100	Open file shelving.
Supply Storage	(80)	1	80	Office Supplies
<b>SUB - TOTALS:</b>				
			<b>560</b>	(p) = Private Office
			<b>Total NSF</b>	(o) = Open office workstation
			<b>Current Need</b>	(s) = Shared office
Departmental Gross Factor:			<b>1.2</b>	
			<b>672</b>	
			<b>Total DGSF</b>	

# SPACE LIST

Miami County, Ohio

Sheriff

Records and Reception

S  
4

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	NET S.F.	Remarks
KEY ADJACENCIES: Adjacent to Public Lobby and near Dispatch				
<b>Offices/ Workstations</b>				
Workstations (o)	(64)	5	320	8' x 8' cubicles. 3 workstations + 2 for growth. Each station has CPU and monitor
<b>Support Spaces</b>				
Public Window	(80)	1	80	Dedicated workstation. Bullet Resistant glass. CPU and monitor. Open 8am to 5pm.
Office Equipment	(40)	1	40	
Open Files Room	(150)	1	150	
Office Supplies	(80)	1	80	
<b>SUB - TOTALS:</b>				
			<b>670</b>	(p) = Private Office
			<b>Total NSF</b>	(o) = Open office workstation
			<b>Current Need</b>	(s) = Shared office
Departmental Gross Factor:		<b>1.3</b>		
			<b>871</b>	
			<b>Total DGSF</b>	



# SPACE LIST

Miami County, Ohio

Sheriff

Emergency Management Agency

S  
5

SPACE/ AREA NAME	Area Sq. Ft.	NUMBER OF SPACES	NET S.F.	Remarks
Conference Room/ EOC	(1,000)	1	1000	Seating for 40 people. Audio visual equipment. Multiple lighting options
Storage	(100)	1	100	Table and chair storage
Buffet				Coffee, undercounter refrigerator. Included in square footage above.
Alternative Dispatch Center	(100)	7	700	6 consoles + 1 expansion.
Office Equipment	(40)	1	40	
Coffee Counter/ Refrigerator	(25)	1	25	
Amateur Radio Room	(120)	1	120	Connected to Alternative Dispatch Center. Include workstation and storage.
Office Space				
Office	(120)	2	240	
Open Office	(64)	4	256	8' x 8' cubicles. 2 workstations + 2 Expansion
Office Equipment	(40)	1	40	
Coffee Counter/ Refrigerator	(25)	1	25	
Support Spaces				
Supplies	(400)	1	400	
Alternate Dispatch Server Room				Located with main server
<b>SUB - TOTALS:</b>			<b>2,946</b>	(p) = Private Office (o) = Open office workstation (s) = Shared office
			<b>Total NSF</b>	
			<b>Current Need</b>	
Departmental Gross Factor:			<b>1.3</b>	
			<b>3,830</b>	
			<b>Total DGSF</b>	

# SPACE LIST

Miami County, Ohio

Sheriff

S

Patrol

6

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	NET S.F.	Remarks
KEY ADJACENCIES: Access to Administration. Access to Detectives and Evidence. Easy access to Patrol Vehicles. Located near Staff Facilities (Locker Rooms). Interview rooms should be located adjacent to parking.				
<b>Patrol Work Area Suite</b>				
Lieutenant (s)	(240)	1	240	4 workstations
Sergeant (s)	(240)	1	240	4 workstations
Crash Reconstruction (o)	(120)	1	120	Drone storage. Crash reconstruction.
Storage	(80)	1	80	
Report Writing	(168)	1	168	6 work stations. Printer/copier. 14'x 12' room assumed.
Briefing Room	(300)	1	300	Shift briefing for 12 people. TV monitor and white boards. Conference table
<b>Support Spaces</b>				
Supervised Supply Room	(120)	1	120	Open shelving. Radio batteries, body cameras, charging stations
Duty Supply Storage	(120)	1	120	Open storage shelving.
Armory	(100)	1	100	Hand guns, tazers with batteries, long guns. Weapons cleaning. Shelving.
Temporary Arms Storage	(40)	1	40	
Kit chenette	(30)	1	30	Coffee, microwave, undercounter fridge.
Event Storage Room	(120)	1	120	
<b>SUB - TOTALS:</b>				
			<b>1,678</b>	(p) = Private Office
			<b>Total NSF</b>	(o) = Open office workstation
			<b>Current Need</b>	(s) = Shared office
Departmental Gross Factor:			<b>1.3</b>	
			<b>2,181</b>	
			<b>Total DGSF</b>	



# SPACE LIST

Miami County, Ohio

Sheriff  
Detectives

S  
7

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	NET S.F.	Remarks
KEY ADJACENCIES: Near Road Patrol				
Detective Suite				
Lieutenant (p)	(120)	1	120	
Sergeant (p)	(120)	1	120	
Investigator Work Area (o)	(64)	8	512	8 cubical workstations (5 now +3) . 8' x8' in size. 5' high partitions. File storage areas included.
Office Equipment	(40)	1	40	
A/V Room	(60)	1	60	
Equipment Storage	(120)	1	120	
Kitchenette	(25)	1	25	Sink, Coffee, Microwave, Undercounter Fridge
Celluar/ Computer Download	(180)	1	180	Workstation, workbench, shelving, faraday boxes
Waiting Area	(100)	1	100	Seating for 4 persons (for parents of minor victims)
Support Spaces				
Conference/ Interview Room	(250)	1	250	Sized for 10 persons. Wired for interview and interrogations
Interview Rooms	(100)	1	100	Hardened
Interview Room	(80)	1	80	Hardened and adjacent to the jail

**SUB - TOTALS:**

**1,467**  
Total NSF  
Current Need

(p) = Private Office  
(o) = Open office workstation  
(s) = Shared office

Departmental Gross Factor: 1.3

**1,907**  
Total DGFSF

# SPACE LIST

Miami County, Ohio

Sheriff  
Evidence

S  
8

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	NET S.F.	Remarks
				KEY ADJACENCIES: Located near CID and Patrol functions
Officer Work Area	(200)	1	200	Variety of pass-through lockers including two refrigerated lockers. Include four 12" wide drying lockers (pass-thru). 3' x 8' worktable that is 36" high with storage underneath. Sink and counter with base cabinets and wall cabinets for packaging supplies. One long 2' wide cabinet for long storage boxes.
Property Room				
Officer Work Station	(64)	1	64	
Open Shelving	(600)	1	600	
Bulk Storage				Bulk storage at the training center. Includes bicycles.
Secure Storage	(120)	1	120	Guns, ammo, drugs, 2 refrigerators.
Vehicle Evidence Processing				
1 Bay	(450)	1	450	Adjacent to Evidence Room and Detectives. Minimum size: 4-door truck with long bed. 18'w x 25' d assumed
Work Bench				Counter, Sink, Wall cabinets. General storage areas. SF included in bay dimensions.
<b>SUB - TOTALS:</b>				
			<b>1,434</b>	(p) = Private Office
			<b>Total NSF</b>	(o) = Open office workstation
			<b>Current Need</b>	(s) = Shared office
Departmental Gross Factor:			<b>1.2</b>	
			<b>1,721</b>	
			<b>Total DGSF</b>	

# SPACE LIST

Miami County, Ohio

Sheriff  
Staff Facilities

S  
9

SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	NET S.F.	Remarks
Locker Room				
Lockers	(7.5)	120	900	Full size, 18" x 22" locker with under seat bin storage. Provide electrical outlet in each locker. "Fully powered lockers"
				Reduce 20 lockers and add 20 - 12" x 12" half-high day lockers
Tit/ Shower Room	(80)	4	320	
Janitor Closet	(40)	1	40	
Physical Fitness Room	(1,100)	1	1100	Variety of exercise equipment including weight machines and free weights.
Tactical Training Room	(1,000)	1	1000	Floor and wall padding.
Storage	(120)	1	120	For training equipment
Breakroom	(400)	1	400	High top tables. Seating for 16. Sink, base and wall cabinets, full-size refrigerator, 2 microwaves.
Staff Toilets				1 set is assumed close to Command Staff, Warrants, Records, and EMA
Male	(155)	1	155	2 toilets, 1 urinal, 2 sinks.
Female	(155)	1	155	3 toilets, 2 sinks
Janitor Closet	(40)	1	40	

**SUB - TOTALS:**

**4,230**

**Total NSF**

**Current Need**

- (p) = Private Office
- (o) = Open office workstation
- (s) = Shared office

Departmental Gross Factor: **1.3**

**5,499**

**Total DGSF**

# SPACE LIST

Miami County, Ohio

Sheriff  
Staff Facilities  
Option 3



SPACE/ AREA NAME:	Area Sq. Ft.	NUMBER OF SPACES	NET S.F.	Remarks
Locker Room				
Lockers	(7.5)	120	900	Full size, 18" x 22" locker with under seat bin storage. Provide electrical outlet in each locker. *Fully powered lockers* Reduce 20 lockers and add 20 - 12" x 12" half-high day lockers
Tit/ Shower Room	(80)	4	320	
Janitor Closet	(40)	1	40	
Physical Fitness Room	(1,100)	1		Deleted
Tactical Training Room	(1,000)	1		Deleted
Storage	(120)	1		Deleted
Breakroom	(400)	1	400	High top tables. Seating for 16. Sink, base and wall cabinets, full-size refrigerator, 2 microwaves.
Staff Toilets				1 set is assumed close to Command Staff, Warrants, Records, and EMA
Male	(155)	1	155	2 toilets, 1 urinal, 2 sinks.
Female	(155)	1	155	3 toilets, 2 sinks
Janitor Closet	(40)	1	40	
<b>SUB - TOTALS:</b>			<b>2,010</b>	
			<b>Total NSF</b>	(p) = Private Office
			<b>Current Need</b>	(o) = Open office workstation
				(s) = Shared office
Departmental Gross Factor:		<b>1.3</b>		
			<b>2,613</b>	
			<b>Total DGSF</b>	



# SPACE LIST

Miami County, Ohio

Sheriff  
Technology

**S**  
**10**

SPACE/ AREA NAME	Area Sq. Ft.	NUMBER OF SPACES	NET S.F.	Remarks KEY ADJACENCIES:
County Server Room	(256)	1	256	16' x 16' minimum per IT.
EMA Server	(120)	1	120	
3rd Party IT Room	(100)	1	100	
IT Office	(100)	1	100	
Storage	(100)	1	100	

<b>SUB - TOTALS:</b>			<b>676</b>	
			<b>Total NSF</b>	(p) = Private Office
			<b>Current Need</b>	(o) = Open office workstation
				(s) = Shared office
Departmental Gross Factor:		<b>1.25</b>		
			<b>845</b>	
			<b>Total DGSF</b>	





# 12

## OPTION ANALYSIS

## OVERVIEW

Three options were developed to meet the long-term needs of Miami County. Each option was developed to the point where the County and project team could evaluate potential conceptual designs, construction costs, construction sequencing, and staffing costs.

Option 1 is to build a new jail and Sheriff's Office based on the goals and needs described in the space program. Rough cost estimates showed that the total project cost of this option would be approximately \$143,650,331. Miami County Commissioners directed the project team to develop additional less expensive options that still met as many goals as possible for the project.

Options 2 and 3 are less expensive and they reuse portions of the MCIF for housing, food service, and laundry.

This section will explain what is included in a project cost estimate and show the three options in more detail including their staffing needs. A detailed construction cost estimates are in the appendix.

## CONSTRUCTION AND PROJECT COST DEFINITION

The terms "construction cost" and "project cost" are used in this section of the study. For clarity, the terms will be defined.

Construction costs are those costs directly related to the construction of a project. They are sometimes referred to as "hard" costs, and typically include the following:

- Physical building construction (bricks and mortar)
- Interiors
- Landscaping
- Demolition (if any)
- Site preparation
- Utility extensions

Project costs are sometimes referred to as "soft costs" and are indirectly related to the construction and furnishing of a building. These costs are in addition to the construction cost and the final "project cost" includes both hard and soft costs. Soft cost items typically include:

- Professional fees (architects, engineers, geotechnical, surveyors)
- Permits and Inspections
- Furniture, Fixtures, and Equipment
- Moving expenses
- Contingency (money held to pay for unforeseen conditions or changes)
- Escalation (generally, cost estimates are escalated to a point in time representing the midpoint of construction and the estimates in this report assume a midpoint of construction in January 2027)

Generally, not included in construction or project costs are site acquisition, soil remediation (if needed), and financing fees.

A detailed cost estimate for all three options is included at the end of this section.

## OPTION 1

Option 1 is a new consolidated full-service Jail, Sheriff's Office, and Emergency Management Agency. The jail would have a capacity of 320 beds and would allow the County to move out of the existing jail downtown and close the MCIF. This option also includes a new Emergency Management Agency (EMA) center that is currently located in the Hobart Center in downtown Troy. Space lists for Option 1 can be found in Section 11.

### Summary

#### *Jail*

- 320 beds
- Full-Service Jail compliant with BAD jail standards
- 107,419 GSF
- Construction Cost = \$100,572,175
- Project Cost = \$120,686,610

#### *Sheriff's Office and Emergency Management Agency*

- 24,637 GSF
- Construction Cost = \$15,586,296
- Project Cost = \$18,703,556

#### *Total Cost*

- Construction Cost = \$119,708,609
- Project Cost = \$143,650,331

#### *Jail Staffing at Opening*

- 56.1 Correctional and support staff
- \$5.2 million annually including salary and benefits

## OPTION 2

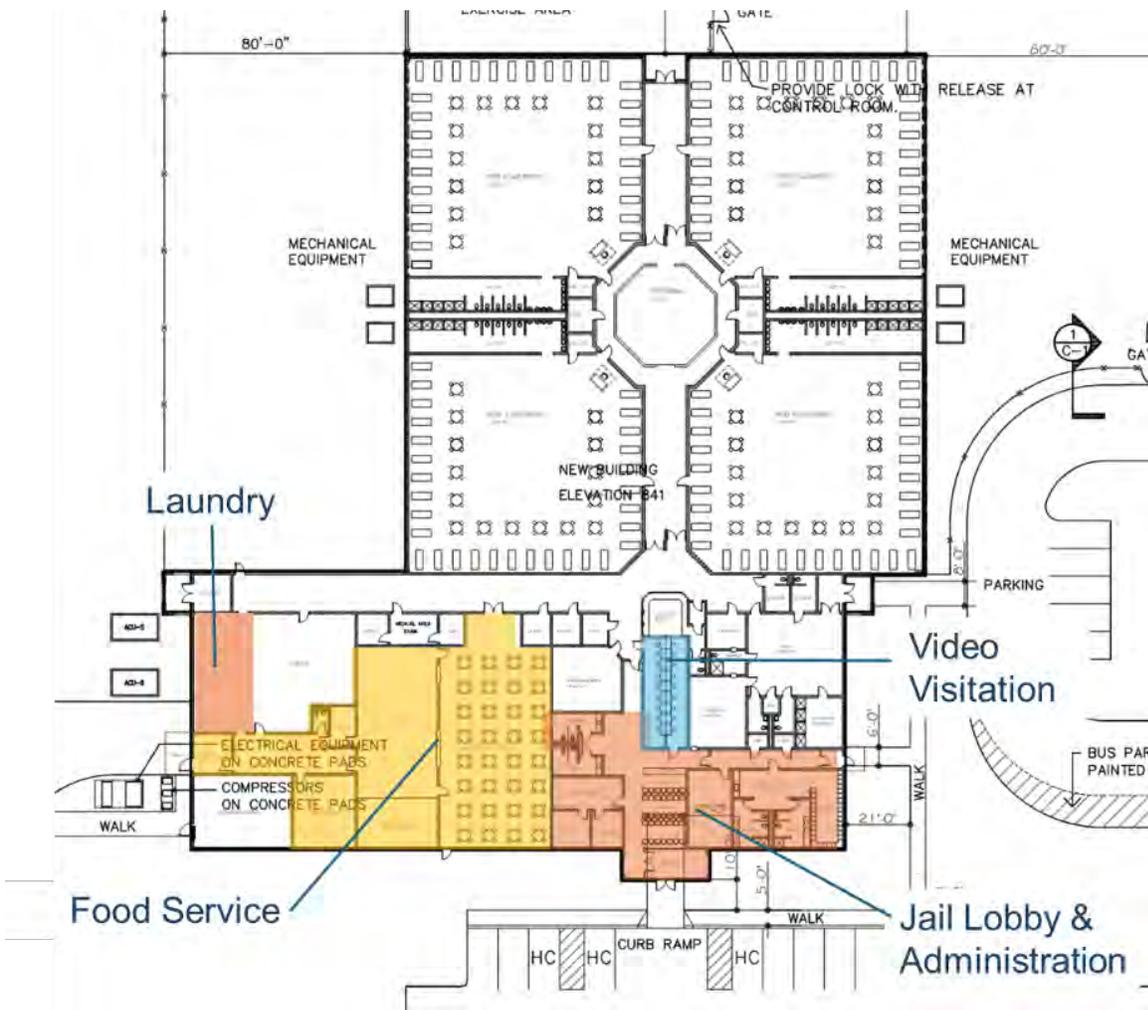
As mentioned previously, Miami County Commissioners asked the planning team to look for ways to reduce construction costs but still achieve as many goals as possible for the project. The following reductions were made:

- Reduce new jail beds from 320 beds to 200 beds
- Reduce the size of the jail vehicle sallyport
- Reuse portions of the MCIF for housing, food service, laundry, lobby, and visitation area

The key to option 2 is the reuse and connection of the MCIF to the new jail. As mentioned previously in the study, the MCIF was not built to full-service jail standards. It was built to Minimum Security Jail (MSJ) standards and, as such, the MCIF can only hold detainees classified as minimum-security.<sup>14</sup>

Although the plan would be to have a direct connection between the new jail and the MCIF, the two buildings would need to be separated by a security vestibule. In other words, passage from the new jail to the MCIF would require passing through two interlocking doors.

**Figure 42:** Portions to be reused in the MCIF in Option 2 and 3



<sup>14</sup> Confirmed in a phone call with Christopher Darlington, Ohio Bureau of Adult Detention, on August 28, 2024.

Figure 43 shows the housing distribution for Option 2 and 3. In the option, Restrictive/Disciplinary and Maximum Custody housing is maintained from Option 1 as well as special needs housing (medical and mental health). This option basically replaces the beds and classifications found in the MCJ.

**Figure 43:** Housing Distribution for Option 2 and 3

		<b>GENERAL POPULATION</b>			
Housing Classification Units		Single Cell	2-Person Cell	4-Person Cell	Pod Capacity
Pod 1 Restrictive	Restrictive/Disciplinary	6			48
	Restrictive/Disciplinary	6			
	Restrictive/Disciplinary	6			
	Restrictive/Disciplinary	6			
	Maximum/Flex Mezzanine			12	
	Maximum/Flex Mezzanine			12	
Pod 2 Classification	Maximum/Flex	8			24
	Maximum/Flex	0			
	Classification			16	
	Classification			0	
Pod 3 Female	Maximum/Flex	8			48
	Maximum/Flex	8			
	Medium/Max			16	
	Medium/Max			16	
Pod 4 Male General	Medium/Maximum			16	48
	Medium/Maximum			16	
	Medium/Maximum			16	
		48	0	120	<b>168</b>
		Single	2-Person	4-Person	TOTAL
		29%	0%	71%	
		<b>SPECIAL NEEDS HOUSING</b>			
Pod 7 Medical/ Mental Health	Medical Isolation	2			32
	Medical	6			
	Infirmery		4	4	
	Mental Health Acute	8			
	MH Stepdown		4		
	MH Non-Acute			4	
		16	8	8	<b>32</b>
		Single	2-Person	4-Person	TOTAL
		50%	25%	25%	
					<b>200</b>
					GRAND TOTAL

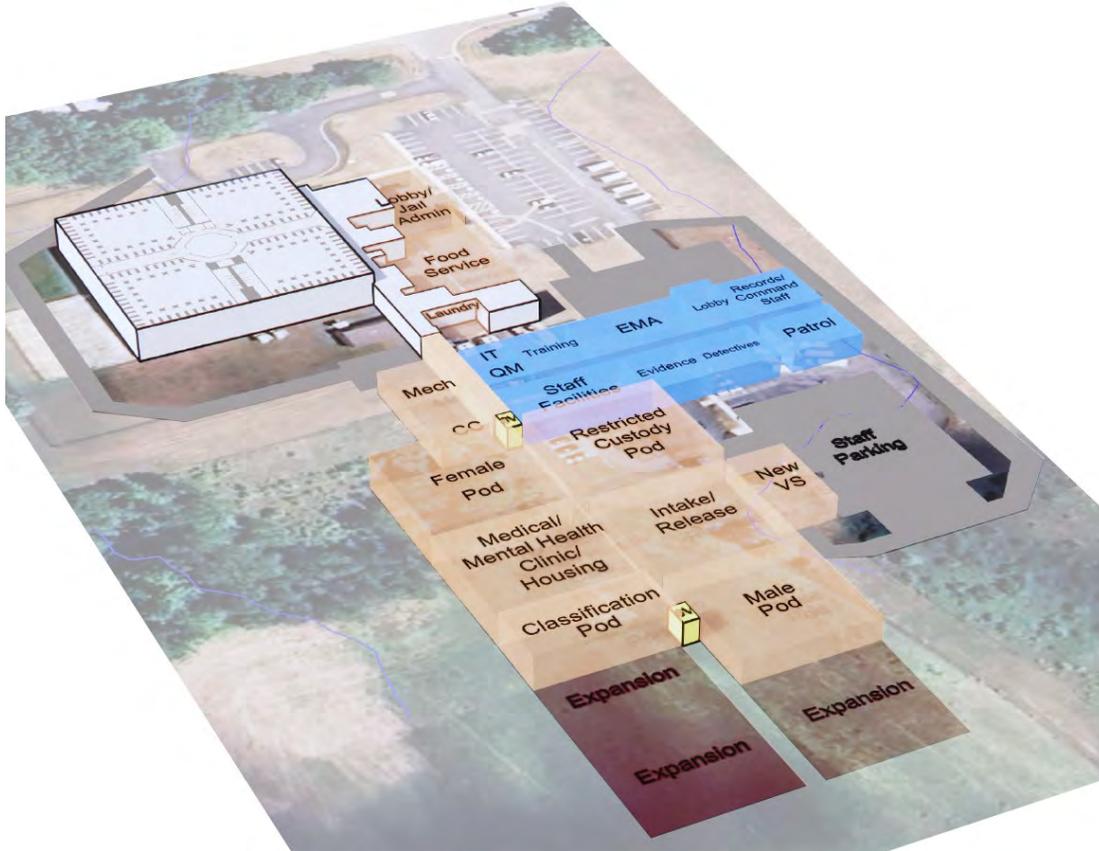
The revised space list for the jail in Option 2 is shown figure 44 (Please note that Option 3 has the same space list for the jail). Items in beige represent reductions and or elimination of program elements.

**Figure 44:** Revised Jail Space List for Option 2 (and Option 3)

<b>Jail</b>				
<b>COMPONENT/AREA:</b>	<b># OF BEDS</b>	<b>TOTAL NET S.F.</b>	<b>GROSS FACTOR</b>	<b>TOTAL GROSS S.F.</b>
	200			
1.1 Vehicle Sallyport		2,550	1.10	2,805
1.2 Prebooking Area		330	1.35	446
1.3 Booking/Intake		2,045	1.30	2,659
1.5 Property		870	1.15	1,001
2.1 Clinic		1,570	1.30	2,041
2.2 Medical/Mental Health Housing	32	4,640	1.60	7,424
3.1 Housing - Restrictive	48	6,560	1.65	10,824
3.2 Housing - Classification	24	3,570	1.60	5,712
3.3 Housing - Female	48	6,830	1.60	10,928
3.4 Housing - General Population	48	6,565	1.50	9,848
3.4 Housing - General Population		6,565	1.50	0
3.4 Housing - General Population		6,565	1.50	0
4 Programs		140	1.15	161
5 Central Control		610	1.25	763
6 Lobby/Jail Administration		2,288	1.30	0
7 Staff Facilities		520	1.25	0
8 Food Service		4,120	1.20	0
9 Laundry		1,250	1.30	0
10 Maintenance		510	1.20	612
11 Mechanical (5%)				2,761
		58,098	1.00	57,983
X Gen'l Bldng Gross Factor for Core ( corridors, stairs, chases, etc.):			1.1	
<b>TOTAL GSF:</b>				<b>63,781</b>
				<b>TOTAL G.S.F.</b>
GSF per bed:				319

Figure 45 shows how the 200-bed jail (shown in beige) would be connected to the MCIF and how the Sheriff's Office (shown in blue) would be integrated into the overall design. The new construction would be located to the south of the MCIF. Notice that the parking lot in front of the MCIF is extended to serve as public parking for the Sheriff's Office. Staff parking is located behind the Sheriff's Office. The plan allows for future expansion of the jail beyond 200 beds.

**Figure 45:** Option 2 Diagram



## Summary

### Jail

- 200 beds built to Full-Service BAD jail standards
- Reuse portions of the MCIF (an allowance of \$5.5 million for refurbishing the MCIF has been added to the construction cost)
- 63,781 GSF of New Construction
- Construction Cost = \$67,065,984
- Project Cost = \$80,479,180

### Sheriff's Office and Emergency Management Agency

- 24,637 GSF
- Construction Cost = \$15,586,296
- Project Cost = \$18,703,556

### Total Cost

- Construction Cost = \$85,924,351
- Project Cost = \$103,109,222

### Jail Staffing at Opening

- 64.6 Correctional and support staff
- \$6.0 million

Staffing assumes one Medium/Maximum Custody pod, Female pod, Restrictive/Disciplinary pod, Classification pod, and 1 MCIF Minimum Custody Pod are open at start-up. It also assumes a second MCIF pod to open later as need and as staffing permits. This staffing estimate assumes supervisors (Sergeants and Lieutenants) will also function as floaters and provides for 3 floaters most of the time using current numbers of Sergeants and Lieutenants in this capacity.

## OPTION 3

Option 3 assumes the construction of the same 200-bed jail as in Option 2 and the use of the MCIF for minimum security housing, kitchen, laundry, and jail lobby. Construction and staffing costs for the jail are the same for Option 2 and 3. This option assumes reductions in the Sheriff's Office program and that the Emergency Management Agency remains in the Hobart Building in downtown Troy. Option 3 is like Option 2 except for the following:

- Evidence Storage removed from new construction. Assume evidence will be stored in the existing transit building next to the MCIF
- Removal of Physical Conditioning space from the Sheriff's Office program
- Removal of Tactical Training space from the Sheriff's Office program
- Removal of the Emergency Management Agency. It will remain at its existing location

The following figure 46 shows the revised space list for the Sheriff's Office used in Option 3. Items in beige represent reductions and or elimination of program elements.

**Figure 46:** Sheriff's Office Space List for Option 3

COMPONENT/AREA:	TOTAL NET S.F.	GROSS FACTOR	TOTAL GROSS S.F.
1 Public Lobby	990	1.30	1,287
2 Command Staff	1,752	1.30	2,278
3 Fiscal/Quartermaster	560	1.20	672
4 Records	670	1.30	871
5 EMA	2,946	1.30	0
6 Patrol	1,678	1.30	2,181
7 Detectives	1,467	1.30	1,907
8 Evidence	1,434	1.20	0
9 Staff Facilities	4,230	1.30	2,613
10 Technology	676	1.25	400
11 Facility Maintenance	200	1.20	240
12 Mechanical (5%)			622
	<b>16,603</b>	<b>0.79</b>	<b>13,072</b>
X Gen'l Bldg Gross Factor for Core ( corridors, stairs, chases, etc.): 1.1			
		<b>TOTAL G.F.:</b>	<b>14,379</b>
			<b>TOTAL G.S.F.</b>

## Summary

### Jail

- 200 beds built to Full-Service Bureau of Adult Detention jail standards
- Reuse portions of the MCIF (an allowance of \$5.5 million for refurbishing the MCIF has been added to the construction cost)
- 63,781 GSF of New Construction
- Construction Cost = \$67,065,984
- Project Cost = \$80,479,180

### Sheriff's Office

- 14,379 GSF
- Construction Cost = \$9,096,698
- Project Cost = \$10,916,038

### Total Cost

- Construction Cost = \$79,434,753
- Project Cost = \$95,321,704

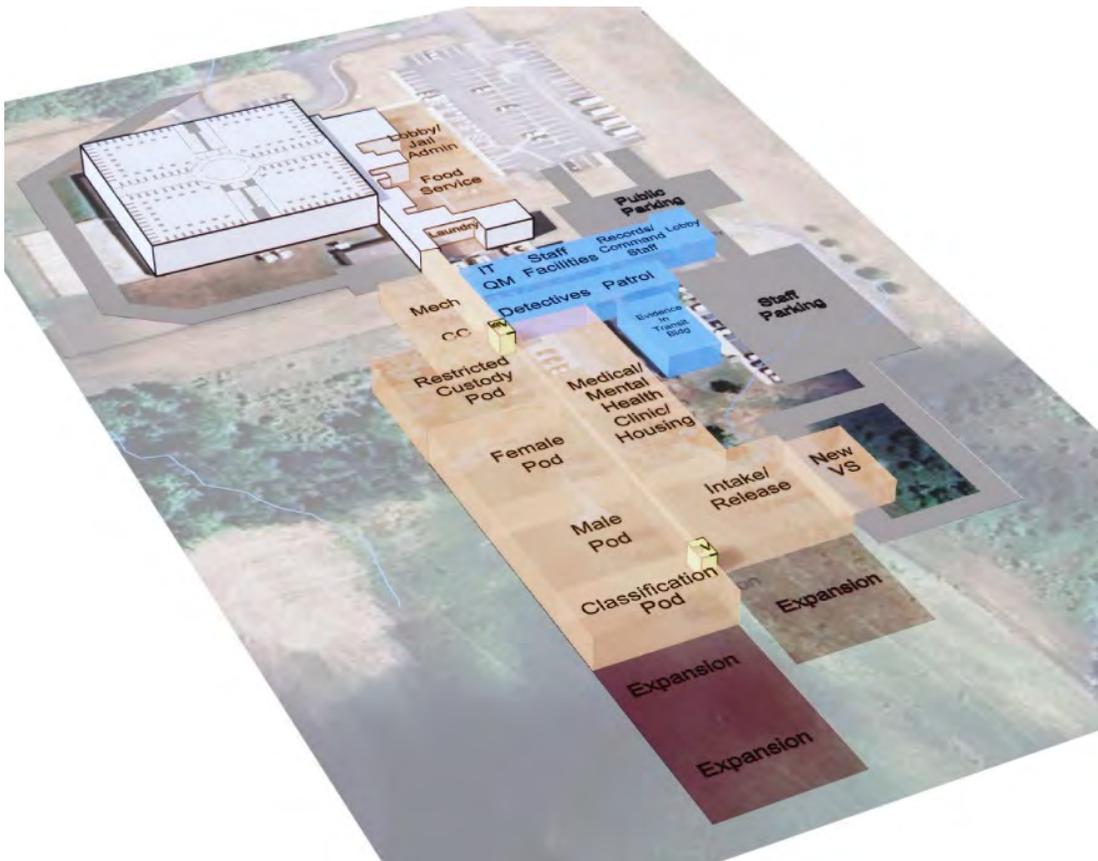
### Jail Staffing at Opening

- 64.6 Correctional and support staff
- \$6.0 million

Staffing is the same as Option 2 and assumes one Medium/Maximum Custody pod, Female pod, Restrictive/Disciplinary pod, Classification pod, and 1 MCIF Minimum Custody Pod are open at start-up. The estimate assumes second MCIF pod to open later as need and as staffing permits. This staffing estimate assumes supervisors (Sergeants and Lieutenants) will also function as floaters and provides for 3 floaters most of the time using current numbers of Sergeants and Lieutenants in this capacity.

Figure 47 shows how the 200-bed jail (shown in beige) would be connected to the MCIF and how the Sheriff's Office (shown in blue) would be integrated into the overall design. The evidence area is shown to be in the existing Transit Building. The new construction would be located to the south of the MCIF. Staff parking is located behind the Sheriff's Office. The plan allows for future expansion of the jail beyond 200 beds.

**Figure 47:** Option 3 Diagram



# Conceptual Estimate

PROJECT: New Miami County Jail Facility  
 BUILDING: New Jail, Sheriff's Office & EMA - Option #1  
 Escalated to 01/2027

DATE: 1/16/2025

Description	Total Project Cost		Jail		Sheriff's Office / EMA		Site	
	SF : 132,056		SF : 107,419		SF : 24,637		SF : 132,056	
	Total Cost	Cost Per Bldg. SF	Total Cost	Cost Per Bldg. SF	Total Cost	Cost Per Bldg. SF	Total Cost	Cost Per Bldg. SF
<b>Trade Costs</b>								
Division 1 - General Requirements	\$2,092,418	\$15.84	\$1,727,298	\$16.08	\$365,120	\$14.82	\$0	\$0.00
Division 2 - Existing Conditions	\$917,629	\$6.95	\$778,788	\$7.25	\$69,969	\$2.84	\$68,872	\$0.52
Division 3 - Concrete	\$5,398,078	\$40.88	\$4,625,462	\$43.06	\$772,616	\$31.36	\$0	\$0.00
Division 4 - Masonry	\$11,919,035	\$90.26	\$11,287,589	\$105.08	\$631,446	\$25.63	\$0	\$0.00
Division 5 - Metals	\$4,718,244	\$35.73	\$3,926,164	\$36.55	\$792,080	\$32.15	\$0	\$0.00
Division 6 - Wood, Plastics and Composites	\$882,776	\$6.68	\$782,010	\$7.28	\$100,765	\$4.09	\$0	\$0.00
Division 7 - Thermal & Moisture Protection	\$5,109,594	\$38.69	\$4,333,282	\$40.34	\$776,312	\$31.51	\$0	\$0.00
Division 8 - Openings	\$1,495,167	\$11.32	\$1,076,338	\$10.02	\$418,829	\$17.00	\$0	\$0.00
Division 9 - Finishes	\$4,614,356	\$34.94	\$2,760,668	\$25.70	\$1,853,688	\$75.24	\$0	\$0.00
Division 10 - Specialties	\$143,457	\$1.09	\$51,561	\$0.48	\$91,896	\$3.73	\$0	\$0.00
Division 11 - Equipment	\$15,539,762	\$117.68	\$15,357,694	\$142.97	\$182,067	\$7.39	\$0	\$0.00
Division 12 - Furnishings	\$226,417	\$1.71	\$214,838	\$2.00	\$11,579	\$0.47	\$0	\$0.00
Division 13 - Special Construction	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00
Division 14 - Conveying Equipment	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00
Division 21 - Fire Suppression	\$1,998,540	\$15.13	\$1,055,929	\$9.83	\$942,612	\$38.26	\$0	\$0.00
Division 22 - Plumbing	\$6,493,838	\$49.17	\$4,904,752	\$45.66	\$1,589,087	\$64.50	\$0	\$0.00
Division 23 - HVAC	\$12,144,952	\$91.97	\$10,992,186	\$102.33	\$1,152,765	\$46.79	\$0	\$0.00
Division 25 - Integrated Automation	\$1,417,159	\$10.73	\$1,238,541	\$11.53	\$178,618	\$7.25	\$0	\$0.00
Division 26 - Electrical	\$7,583,941	\$57.43	\$6,431,176	\$59.87	\$1,152,765	\$46.79	\$0	\$0.00
Division 27 - Communications	\$418,892	\$3.17	\$251,360	\$2.34	\$167,532	\$6.80	\$0	\$0.00
Division 28 - Electronic Safety and Security	\$3,871,808	\$29.32	\$3,458,892	\$32.20	\$412,916	\$16.76	\$0	\$0.00
Division 31 - Earthwork	\$779,790	\$5.90	\$0	\$0.00	\$0	\$0.00	\$779,790	\$5.90
Division 32 - Exterior Improvements	\$922,778	\$6.99	\$0	\$0.00	\$0	\$0.00	\$922,778	\$6.99
Division 33 - Utilities	\$885,000	\$6.70	\$0	\$0.00	\$0	\$0.00	\$885,000	\$6.70
<b>TOTAL TRADE COSTS</b>	<b>\$89,573,632</b>	<b>\$678.30</b>	<b>\$75,254,529</b>	<b>\$700.57</b>	<b>\$11,662,663</b>	<b>\$473.38</b>	<b>\$2,656,440</b>	<b>\$20.12</b>
<b>CM Costs</b>								
Design Contingency	\$7,165,891	8.00%	\$6,020,362	8.00%	\$933,013	8.00%	\$212,515	8.00%
CM Contingency	\$3,582,945	4.00%	\$3,010,181	4.00%	\$466,507	4.00%	\$106,258	4.00%
Escalation to 01/2027 @ 4.5% Annually	\$8,243,013	4.50%	\$6,925,298	4.50%	\$1,073,257	4.50%	\$244,459	4.50%
CM Construction Staffing	\$3,582,945	4.00%	\$3,010,181	4.00%	\$466,507	4.00%	\$106,258	4.00%
CM General Conditions	\$223,934	0.25%	\$188,136	0.25%	\$29,157	0.25%	\$6,641	0.25%
CM Fee/Bonds/Insurance/CAT	\$7,336,248	7.50%	\$6,163,487	7.50%	\$955,194	7.50%	\$217,567	7.50%
<b>TOTAL CONSTRUCTION COST</b>	<b>\$119,708,609</b>	<b>\$906.50</b>	<b>\$100,572,175</b>	<b>\$936.26</b>	<b>\$15,586,296</b>	<b>\$632.64</b>	<b>\$3,550,138</b>	<b>\$26.88</b>
<b>OWNER SOFT COST @ 20%</b>	<b>\$23,941,722</b>	<b>20.00%</b>	<b>\$20,114,435</b>	<b>20.00%</b>	<b>\$3,117,259</b>	<b>20.00%</b>	<b>\$710,028</b>	<b>20.00%</b>
<b>TOTAL PROJECT BUDGET</b>	<b>\$143,650,331</b>	<b>\$1,087.80</b>	<b>\$120,686,610</b>	<b>\$1,123.51</b>	<b>\$18,703,556</b>	<b>\$759.17</b>	<b>\$4,260,165</b>	<b>\$32.26</b>
<b>Cost Per Bed</b>	<b>\$448,907</b>	<b>320</b>	<b>\$377,146</b>	<b>320</b>				

# Conceptual Estimate

PROJECT: New Miami County Jail Facility  
 BUILDING: New Jail, Sheriff's Office & EMA - Option #2  
 Escalated to 01/2027

DATE: 1/16/2025

Description	Total Project Cost		Jail		Sheriffs Office / EMA		Site	
	SF : 88,418		SF : 63,781		SF : 24,637		SF : 88,418	
	Total Cost	Cost Per Bldg. SF	Total Cost	Cost Per Bldg. SF	Total Cost	Cost Per Bldg. SF	Total Cost	Cost Per Bldg. SF
<b>Trade Costs</b>								
Division 1 - General Requirements	\$1,390,719	\$15.73	\$1,025,598	\$16.08	\$365,120	\$14.82	\$0	\$0.00
Division 2 - Existing Conditions	\$601,253	\$6.80	\$462,412	\$7.25	\$69,969	\$2.84	\$68,872	\$0.78
Division 3 - Concrete	\$3,519,026	\$39.80	\$2,746,410	\$43.06	\$772,616	\$31.36	\$0	\$0.00
Division 4 - Masonry	\$7,333,554	\$82.94	\$6,702,107	\$105.08	\$631,446	\$25.63	\$0	\$0.00
Division 5 - Metals	\$3,123,275	\$35.32	\$2,331,196	\$36.55	\$792,080	\$32.15	\$0	\$0.00
Division 6 - Wood, Plastics and Composites	\$565,091	\$6.39	\$464,326	\$7.28	\$100,765	\$4.09	\$0	\$0.00
Division 7 - Thermal & Moisture Protection	\$3,349,237	\$37.88	\$2,572,926	\$40.34	\$776,312	\$31.51	\$0	\$0.00
Division 8 - Openings	\$1,057,915	\$11.96	\$639,086	\$10.02	\$418,829	\$17.00	\$0	\$0.00
Division 9 - Finishes	\$3,492,860	\$39.50	\$1,639,172	\$25.70	\$1,853,688	\$75.24	\$0	\$0.00
Division 10 - Specialties	\$122,511	\$1.39	\$30,615	\$0.48	\$91,896	\$3.73	\$0	\$0.00
Division 11 - Equipment	\$9,300,837	\$105.19	\$9,118,770	\$142.97	\$182,067	\$7.39	\$0	\$0.00
Division 12 - Furnishings	\$139,141	\$1.57	\$127,562	\$2.00	\$11,579	\$0.47	\$0	\$0.00
Division 13 - Special Construction	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00
Division 14 - Conveying Equipment	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00
Division 21 - Fire Suppression	\$1,569,579	\$17.75	\$626,967	\$9.83	\$942,612	\$38.26	\$0	\$0.00
Division 22 - Plumbing	\$4,501,327	\$50.91	\$2,912,240	\$45.66	\$1,589,087	\$64.50	\$0	\$0.00
Division 23 - HVAC	\$7,679,475	\$86.85	\$6,526,710	\$102.33	\$1,152,765	\$46.79	\$0	\$0.00
Division 25 - Integrated Automation	\$914,013	\$10.34	\$735,395	\$11.53	\$178,618	\$7.25	\$0	\$0.00
Division 26 - Electrical	\$4,971,334	\$56.23	\$3,818,568	\$59.87	\$1,152,765	\$46.79	\$0	\$0.00
Division 27 - Communications	\$316,779	\$3.58	\$149,248	\$2.34	\$167,532	\$6.80	\$0	\$0.00
Division 28 - Electronic Safety and Security	\$2,466,664	\$27.90	\$2,053,748	\$32.20	\$412,916	\$16.76	\$0	\$0.00
Division 31 - Earthwork	\$779,790	\$8.82	\$0	\$0.00	\$0	\$0.00	\$779,790	\$8.82
Division 32 - Exterior Improvements	\$789,711	\$8.93	\$0	\$0.00	\$0	\$0.00	\$789,711	\$8.93
Division 33 - Utilities	\$810,000	\$9.16	\$0	\$0.00	\$0	\$0.00	\$810,000	\$9.16
MCIF Renovation	\$5,500,000	\$62.20	\$5,500,000	\$86.23	\$0	\$0.00	\$0	\$0.00
<b>TOTAL TRADE COSTS</b>	<b>\$64,294,091</b>	<b>\$727.16</b>	<b>\$50,183,055</b>	<b>\$700.57</b>	<b>\$11,662,663</b>	<b>\$473.38</b>	<b>\$2,448,373</b>	<b>\$27.69</b>
<b>CM Costs</b>								
Design Contingency	\$5,143,527.30	8.00%	\$4,014,644	8.00%	\$933,013	8.00%	\$195,870	8.00%
CM Contingency	\$2,571,763.65	4.00%	\$2,007,322	4.00%	\$466,507	4.00%	\$97,935	4.00%
Escalation to 01/2027 @ 4.5% Annually	\$5,916,663.75	4.50%	\$4,618,096	4.50%	\$1,073,257	4.50%	\$225,312	4.50%
CM Construction Staffing	\$2,571,763.65	4.00%	\$2,007,322	4.00%	\$466,507	4.00%	\$97,935	4.00%
CM General Conditions	\$160,735.23	0.25%	\$125,458	0.25%	\$29,157	0.25%	\$6,121	0.25%
CM Fee/Bonds/Insurance/CAT	\$5,265,806.62	7.50%	\$4,110,086	7.50%	\$955,194	7.50%	\$200,526	7.50%
<b>TOTAL CONSTRUCTION COST</b>	<b>\$85,924,351</b>	<b>\$971.80</b>	<b>\$67,065,984</b>	<b>\$1,051.50</b>	<b>\$15,586,296</b>	<b>\$632.64</b>	<b>\$3,272,071</b>	<b>\$37.01</b>
<b>OWNER SOFT COST @ 20%</b>	<b>\$17,184,870</b>	<b>20.00%</b>	<b>\$13,413,197</b>	<b>20.00%</b>	<b>\$3,117,259</b>	<b>20.00%</b>	<b>\$654,414</b>	<b>20.00%</b>
<b>TOTAL PROJECT BUDGET</b>	<b>\$103,109,222</b>	<b>\$1,166.16</b>	<b>\$80,479,180</b>	<b>\$1,261.80</b>	<b>\$18,703,556</b>	<b>\$759.17</b>	<b>\$3,926,486</b>	<b>\$44.41</b>
<b>Cost Per Bed</b>	<b>\$515,546</b>	<b>200</b>	<b>\$402,396</b>	<b>200</b>				

# Conceptual Estimate

PROJECT: New Miami County Jail Facility  
 BUILDING: New Jail, Sheriff's Office & EMA - Option #3  
 Escalated to 01/2027

DATE: 1/16/2025

Description	Total Project Cost		Jail		Sheriffs Office / EMA		Site	
	SF : 78,160		SF : 63,781		SF : 14,379		SF : 78,160	
	Total Cost	Cost Per Bldg. SF	Total Cost	Cost Per Bldg. SF	Total Cost	Cost Per Bldg. SF	Total Cost	Cost Per Bldg. SF
<b>Trade Costs</b>								
Division 1 - General Requirements	\$1,238,695	\$15.85	\$1,025,598	\$16.08	\$213,097	\$14.82	\$0	\$0.00
Division 2 - Existing Conditions	\$572,121	\$7.32	\$462,412	\$7.25	\$40,836	\$2.84	\$68,872	\$0.88
Division 3 - Concrete	\$3,197,335	\$40.91	\$2,746,410	\$43.06	\$450,925	\$31.36	\$0	\$0.00
Division 4 - Masonry	\$7,070,641	\$90.46	\$6,702,107	\$105.08	\$368,534	\$25.63	\$0	\$0.00
Division 5 - Metals	\$2,793,480	\$35.74	\$2,331,196	\$36.55	\$462,285	\$32.15	\$0	\$0.00
Division 6 - Wood, Plastics and Composites	\$523,136	\$6.69	\$464,326	\$7.28	\$58,810	\$4.09	\$0	\$0.00
Division 7 - Thermal & Moisture Protection	\$3,026,008	\$38.72	\$2,572,926	\$40.34	\$453,082	\$31.51	\$0	\$0.00
Division 8 - Openings	\$883,529	\$11.30	\$639,086	\$10.02	\$244,443	\$17.00	\$0	\$0.00
Division 9 - Finishes	\$2,721,048	\$34.81	\$1,639,172	\$25.70	\$1,081,876	\$75.24	\$0	\$0.00
Division 10 - Specialties	\$84,249	\$1.08	\$30,615	\$0.48	\$53,634	\$3.73	\$0	\$0.00
Division 11 - Equipment	\$9,225,030	\$118.03	\$9,118,770	\$142.97	\$106,261	\$7.39	\$0	\$0.00
Division 12 - Furnishings	\$134,320	\$1.72	\$127,562	\$2.00	\$6,758	\$0.47	\$0	\$0.00
Division 13 - Special Construction	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00
Division 14 - Conveying Equipment	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00
Division 21 - Fire Suppression	\$1,177,108	\$15.06	\$626,967	\$9.83	\$550,141	\$38.26	\$0	\$0.00
Division 22 - Plumbing	\$3,839,686	\$49.13	\$2,912,240	\$45.66	\$927,446	\$64.50	\$0	\$0.00
Division 23 - HVAC	\$7,199,503	\$92.11	\$6,526,710	\$102.33	\$672,793	\$46.79	\$0	\$0.00
Division 25 - Integrated Automation	\$839,643	\$10.74	\$735,395	\$11.53	\$104,248	\$7.25	\$0	\$0.00
Division 26 - Electrical	\$4,491,362	\$57.46	\$3,818,568	\$59.87	\$672,793	\$46.79	\$0	\$0.00
Division 27 - Communications	\$247,025	\$3.16	\$149,248	\$2.34	\$97,777	\$6.80	\$0	\$0.00
Division 28 - Electronic Safety and Security	\$2,294,740	\$29.36	\$2,053,748	\$32.20	\$240,992	\$16.76	\$0	\$0.00
Division 31 - Earthwork	\$779,790	\$9.98	\$0	\$0.00	\$0	\$0.00	\$779,790	\$9.98
Division 32 - Exterior Improvements	\$789,711	\$10.10	\$0	\$0.00	\$0	\$0.00	\$789,711	\$10.10
Division 33 - Utilities	\$810,000	\$10.36	\$0	\$0.00	\$0	\$0.00	\$810,000	\$10.36
MCIF Renovation	\$5,500,000	\$70.37	\$5,500,000	\$86.23	\$0	\$0.00	\$0	\$0.00
<b>TOTAL TRADE COSTS</b>	<b>\$59,438,159</b>	<b>\$760.47</b>	<b>\$50,183,055</b>	<b>\$700.57</b>	<b>\$6,806,731</b>	<b>\$473.38</b>	<b>\$2,448,373</b>	<b>\$31.33</b>
<b>CM Costs</b>								
Design Contingency	\$4,755,052.74	8.00%	\$4,014,644	8.00%	\$544,538	8.00%	\$195,870	8.00%
CM Contingency	\$2,377,526.37	4.00%	\$2,007,322	4.00%	\$272,269	4.00%	\$97,935	4.00%
Escalation to 01/2027 @ 4.5% Annually	\$5,469,796.60	4.50%	\$4,618,096	4.50%	\$626,389	4.50%	\$225,312	4.50%
CM Construction Staffing	\$2,377,526.37	4.00%	\$2,007,322	4.00%	\$272,269	4.00%	\$97,935	4.00%
CM General Conditions	\$148,595.40	0.25%	\$125,458	0.25%	\$17,017	0.25%	\$6,121	0.25%
CM Fee/Bonds/Insurance/CAT	\$4,868,096.68	7.50%	\$4,110,086	7.50%	\$557,484	7.50%	\$200,526	7.50%
<b>TOTAL CONSTRUCTION COST</b>	<b>\$79,434,753</b>	<b>\$1,016.31</b>	<b>\$67,065,984</b>	<b>\$1,051.50</b>	<b>\$9,096,698</b>	<b>\$632.64</b>	<b>\$3,272,071</b>	<b>\$41.86</b>
<b>OWNER SOFT COST @ 20%</b>	<b>\$15,886,951</b>	<b>20.00%</b>	<b>\$13,413,197</b>	<b>20.00%</b>	<b>\$1,819,340</b>	<b>20.00%</b>	<b>\$654,414</b>	<b>20.00%</b>
<b>TOTAL PROJECT BUDGET</b>	<b>\$95,321,704</b>	<b>\$1,219.57</b>	<b>\$80,479,180</b>	<b>\$1,261.80</b>	<b>\$10,916,038</b>	<b>\$759.17</b>	<b>\$3,926,486</b>	<b>\$50.24</b>
<b>Cost Per Bed</b>	<b>\$476,609</b>	<b>200</b>	<b>\$402,396</b>	<b>200</b>				



# Facility Condition Report

## Miami County, Ohio Incarceration Facility

HDR | Levin Porter Architects | Kleinfelder

October 21, 2024



# **Facility Condition Report**

**Miami County  
Incarceration Facility  
2042 N. CR 25A  
Troy, Ohio**

**Prepared For:  
Miami County  
Troy, Ohio**

**October 21, 2024**

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## 1.0 Executive Summary

### 1.1 General Description

The purpose of this Facility Condition Assessment (FCA), and completing this Facility Condition Report (FCR), is to observe and report on the physical condition of the subject Property to the extent feasible as well as provide guidance on the likely conditions in need of improvement to bring the building to a state of good repair.

The site visit walk-through survey was completed on April 24, 2024.

The Property that is the subject of this FCA consists of the site and building known as the Miami County Incarceration Facility located at 2042 N. CR 25a in Troy, Ohio.

The Property is used as a minimum-security detention facility and is approximately 45,000 square feet in area. The building is a one-story, slab on grade, with a mix of masonry and pre-engineered metal building (PEMB). There are flat roofs as well as sloped metal roofs as part of the PEMB construction type. There is a central MEP area that services the facility. Additionally, a small addition was added in 2000 to accommodate an additional housing unit with 5 sleeping rooms. The subject Property site is located on a larger County campus which includes the subject building, parking, and other buildings and site improvements that are not part of this report.

### 1.2 General Physical Condition

#### 1.2.1 Assessment Criteria

The assessment criteria used in the FCR is based on a scale divided into 9 levels of degradation which are separated into three levels of operational capability which includes Fully Operational, Impaired Operation and Inoperable. Below is a description that is associated with the scale used in this FCR.

OPERATIONAL CAPABILITY	OPERATIONAL RATING	DEGRADATION	DCR	CI
Fully Operational	Green	Free of observable or known degradation.	Green (+)	100
		Normal wear requiring normal preventative maintenance.	Green	95
		Normal degradation requiring corrective maintenance.	Green (-)	88
Impaired Operation	Amber	Minor degradation requiring corrective maintenance.	Amber (+)	80
		Moderate degradation requiring corrective repair.	Amber	71
		Significant degradation requiring moderate repair.	Amber (-)	61
Inoperable	Red	Extensive degradation requiring major repair.	Red (+)	50
		Severe degradation requiring major rehabilitation or replacement.	Red	30
		Complete degradation requiring full replacement.	Red (-)	10

**Step 2: Consider the maintenance requirements of the component:**

Type	Green (G+/G-/G-)	Amber (A+/A-/A-)	Red (R+/R-/R-)
<b>Dynamic (Equipment)</b>	Distresses present are of no impact to the component's operation.  Example: The fan component is fully operational.	Distresses present are of impact to the component's operation. A repair is needed to bring the component back to proper operating condition.  Example: A fan has corrosion on the housing. A sanding and painting would remove the distress.	Distresses present are of impact to the component's operation. The component needs to be replaced.  Example: A fan motor has overheated and no longer functions. Replacement of the component is required.
<b>Non-Dynamic</b>	The architectural component is in good condition requiring no maintenance outside of normal operations.  Example: The carpet component is fully operational.	The architectural component has distress that requires an extra level of maintenance outside of normal operations. This extra maintenance (or repair) would be an action such as cleaning or painting of a surface.  Example: A carpet component has stains. A cleaning would remove the distress.	The architectural component has distress that a maintenance operation cannot fix. Replacement of the component is required.  Example: A carpet component is damaged (ripped). The component needs to be replaced.

### 1.2.2 Assessment Rating

The assessment rating below scores the main systems and equipment throughout the facility using the assessment criteria in this section.

Architectural Systems	Condition Index
Exterior Systems	
Metal Panel Siding	95
Brick Veneer	95
Windows	95
Doors	80
Standing Seem metal Roofing	90
EPDM	90
Modified Bitumen	71
Interior Systems	
CMU	95
Drywall	95
Metal Liner Panel	95
Hollow metal frames	95
Personnel Doors	95
Window openings - glazing	100
Window openings - Shutters	100
Access Doors	95
Interior Finishes	
Terrazzo	95
VCT	71
Carpet Tile	95
Mosaic Tile	85
Exposed Concrete	90
Epoxy	80
Quarry tile	80
Rubber wall base	71
Painted GWB	95
Exposed Vinyl Faced Insulation	95
2x4 ACT	95
Exposed metal panel	95
Physical Security & Security Electronics	
Physical Security	90
Security Electronics	90

Mechanical and Electrical System	Condition Index
Electrical Systems	
Power and Distribution	71
Emergency Power Distribution	95
General Lighting	80
Emergency Lighting	95
Mechanical Systems	
VAV Boxes	10
Smoke Control Dampers	10
Exhaust Fans	71
Kitchen Storage EF	10
Ductwork	61
Make up Air	10
AHU-1 through AHU-8	61
Domestic Water Heaters	71
Gas Piping	71
Domestic Water Piping	50

### 1.3 Recommended Projects and Opinions of Probable Costs

This FCR contains a section that identifies recommended projects which includes opinions of probable costs for suggested remedy of the physical deficiencies noted in the report. The recommended projects and opinions of probable costs are included in Section 8.0.

## 2.0 Purpose and Scope

### 2.1 FCA Objective

The purpose of this FCA, and completing this FCR, is to observe and report on the physical condition of the subject Property to the extent feasible from visual inspection. This FCR incorporates the information obtained during the walk-through survey and the document review of as-built documentation provided to the assessment team. The main three components of the FCA are as follows:

- Documentation Review.
- Walk-through Survey.
- Preparing a Facility Condition Report with Opinions of Probable Cost to Remedy Physical Deficiencies.

### 2.2 Methodology

The methodology included document reviews, interview and questions of staff, a walk-through survey and observations of the applicable building and site components and systems. Photos complementary to the narrative, showing specific conditions described in the FCR, are included in report.

## **3.0 System Description and Observations**

### **3.1 Overall General Description**

A walk-through survey was completed April 24, 2024, to visually observe and acquire information on material systems and components. Observation was made of general physical conditions of the subject Property, the age and expectant service life of specific construction materials and building systems.

### **3.2 Site**

A site boring study is in the appendix.

#### **3.2.1 Topography**

The site could be characterized as flat, with approximately a 5-foot grade change running down from the building pad to the surrounding areas. A level area was created for the building footprint, parking lot, and outdoor recreation area.

#### **3.2.2 Stormwater Drainage**

Underground stormwater drainage systems drain the parking lot and driveways to a detention pond located on the east side of the site. The system appears to be functioning appropriately.

#### **3.2.3 Access and Egress**

Parking lot vehicle access is a single two-way driveway that connects to a site access road to the parking lot for the facility. The parking lot is not gated or enclosed by a fence. There is a drop off drive lane for the intake area on the north side of the facility and there is a loading zone on the south side of the facility.

#### **3.2.4 Paving, Curbing, and Parking**

The parking lot is constructed out of asphalt with a mix of concrete curb and gutter and concrete curb stops around the perimeter. The parking lot contains 83 marked parking spaces with four of those spaces being marked as barrier free. Generally, the parking lot has typical cross slope with no area being excessively steep or flat that would hold water.

#### **3.2.5 Landscaping and Appurtenances**

Generally, the surrounding landscape area is predominantly turf. There is also a visual buffer of mature trees on the west and north sides of the facility which screens it from the adjacent properties and developments.

#### **3.2.6 Outdoor Recreational Area**

There is an outdoor recreational area on the west side of the building which is enclosed by the perimeter fence. There is access to the area from a corridor that accesses the housing pods as well as a gate that acts as exterior access to the recreation area.

The recreational area features a paved area that encompasses much of the fenced area.

### **Building Envelope and Interior**

#### **3.2.7 General Building Construction**

The actual construction of the building was not observable from any existing holes or openings and destructive investigation was not entertained as part of this report. However, the building has every indication of being constructed following the drawings and assuming that is the case, the following assumptions can be made:

- The level of insulation meets what was required by Code when originally constructed, which may be less than would be provided today.

- The sloped roof is mostly constructed of pre-engineered metal panel roofing system. This system has shown signs of sealant at the panel lap joints which will likely be in need of minor repair as an on-going maintenance activity.
- The flat roofed areas of the building have rigid insulation on a metal deck on steel beams. There are no signs of leaks, therefore, the steel components should be in good condition.
- The wall construction system offers an adequate level of protection against moisture penetration and there is no sign of failure.

## 4.0 Building Envelope

### 4.1 Exterior Walls

- The exterior envelope cladding predominantly consists of a single skin, vertical rib, metal panel system. The panels are physically in good shape with minimal damage or indication of corrosion. The panels don't exhibit oil canning and run the full height of the building exterior in a single panel. Panels are fastened to the interior girts via exposed fasteners. The panels are secure and appear watertight.
- Metal panel trims at building corners and at the sill of each wall were in place and in good condition.
- A small section of the building features a masonry brick veneer utilizing two masonry colors. The brick was in good condition without evidence of efflorescence or spalling. Mortar joints were in good condition and no cracks or settlement were evident.



Typical brick veneer condition



Typical metal panel cladding



Openings in wall cladding systems

### 4.2 Windows and Doors

- Punched window openings in each wall assembly featured intact glazing and no evidence of leaks.
- Exterior doors were steel doors with or without vision panels. These were in acceptable condition, exhibiting the anticipated level of wear for this type of facility. The glazing panels were intact.



Openings in metal panel cladding



Openings in brick veneer



Openings in metal panel cladding

### 4.3 Roofs

There are three roofing systems on the building.

- The majority of the roofing over the facility is a metal panel roof system featuring a standing lock seam. The panels are in good condition and lack oil canning or corrosion. Panel lap joints and eave fasteners are sealed with a white sealant material that, while dirty, was intact and functioning. Panel penetrations were sealed with some larger penetrations utilizing a boot/sleeve system that was manipulated to fit between the standing seam joints.
- Approximately 25% of the roof features a black, ethylene propylene diene terpolmer (EPDM) single-ply membrane roof system over rigid insulation. This system extends to the roof edge or parapet, utilizing crickets where needed to guide rainfall to the perimeter gutter system. The membrane was in good condition and securely fastened to the substrate. On the day of the visit, rain had recently come through the area and only a couple of locations had very minor ponding which was not a cause for concern.
- Joints between the standing seam metal roof and the EPDM were sealed with a mastic system or termination bar. These areas were also in good condition.
- A portion of roof lies between the two higher building volumes. This area utilizes a Modified Bitumen system, draining to interior roof drains. Several pieces of rooftop mechanical equipment are installed on this section of roof.



Typical condition at standing seam system



Example at penetration



EPDM roofing, minimal standing water



Typical brick veneer condition



Typical metal panel cladding



Openings in wall cladding systems

#### 4.4 Miscellaneous – Outdoor Recreation Area

- The perimeter fencing around the outdoor recreational area of the building was reported to be in non-compliance of Bureau of Adult Detention (BAD) Standards due to sub-standard installation techniques. It was reported to the assessment team that there are plans to correct this deficiency and that the plan for correction was submitted to BAD and they are waiting approval to move forward.



Outdoor recreation area gate



Outdoor recreation area fence

### 5.0 Building Interior

#### 5.1 Floors

- The facility utilizes a wide range of flooring systems across the various use areas.
- A poured terrazzo system is used in the main entrance lobby and corridors, staff locker rooms and the medical exam room and support area. The system is in good condition, free from any notable cracks or chips. The system is not covered at the perimeter walls but rather terminates at a traditional rubber wall base.
- A vinyl composition tile is utilized in areas such as storage rooms, restrooms, hallways and other staff areas such as offices. This flooring is generally sound with some tiles exhibiting cracks. The tiles in high use areas show staining and the expected level of wear.
- A room which previously contained fixed seating over the VCT floor has been converted to a storage room. The anchor locations for the removed seating are evident in the flooring, showing staining and leaving holes through the tile.
- A couple of rooms in the facility utilize a carpet tile as the floor finish. The dark colorway and overall pattern conceal wear. The carpet did not show fraying, stains or other significant wear.

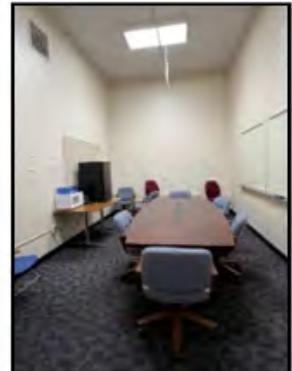
- Exposed sealed concrete is used throughout the facility including in storage areas and restrooms, visitation areas and inmate common areas.
- Most of these floors are physically sound, lacking large cracks, chips or spalls. The surface is generally mottled and, in some instances, reveals markings from a previous floor finish that was installed over top of the slab. Surface markings are worn in many areas.
- Restroom facilities in the open inmate common areas feature a mosaic floor tile and associated tile base.
- The primary corridors for inmate travel through the facility utilize an epoxy floor system with an aggregate admixture to increase slip resistance.
- The system is securely bonded to the substrate below with only a few exceptions. There are cracks evident in several areas. The location of some suggests they could be correlated to control joints in the slab below, but this is not certain. Others just appear in what are high traffic areas.



Terrazzo at main lobby



Vinyl Composition Tile



Carpet Tile



VCT with residual anchor markings



Housing area sealed concrete



Visitation with ghosted markings



Mosaic Tile in Restroom Area



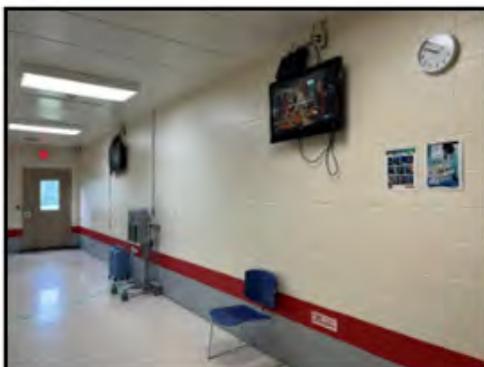
Damaged Tile Base



Epoxy Flooring in Program Area

## 5.2 Walls

- Concrete masonry unit (CMU) walls are used throughout the majority of the facility with few exceptions.
- The walls are in good condition and, with one exception (see photo). Generally, walls do not exhibit cracks, settlement or other damage or deterioration.
- A paint finish is applied in all occupied spaces and is fully bonded to the CMU. No peeling or chipped paint was found during the investigation.
- Additional paint markings are used on some walls to identify fire exits. These markings were clear and easily discerned.
- Some wall areas exhibit surface wear of the paint finish. In these instances, the CMU substrate is undamaged. An updated paint coating would address the aesthetic concerns.
- While an investigation and identification of fire rated partitions was not part of this review, several CMU walls featured penetrations for various building systems. These penetrations were clean and sealed with what appeared to be fire rated (red colored) sealant.
- Bullnose corners were employed at door and window openings. All were in good condition.
- A painted drywall interior finish is used in the large, open inmate areas on interior walls. This surface starts at 10'-0" above finish floor (AFF) and extends to the underside of the roof structure.
- On exterior walls in the open inmate areas, a painted metal liner panel has been utilized as part of the pre-engineered building system. These panels are in good condition. No dents, buckling or other deterioration was observed.



Typical painted CMU wall condition



Crack in CMU. Sealed penetrations.



Surface wear on CMU



CMU walls with drywall above



CMU walls at toilets



CMU walls with linear panel above

### 5.3 Ceilings

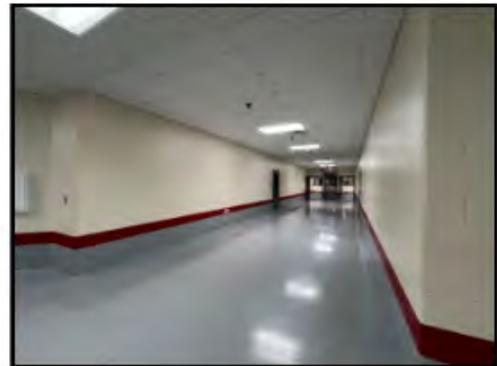
- The facility utilizes a painted gypsum wallboard ceiling for a large percentage of the occupied spaces for staff, inmates and visitors. These ceilings were in good shape in terms of physical condition lacking stains, peeling paint or other deterioration. Access panels are provided in strategic locations to allow access to above ceiling infrastructure.
- The large inmate assembly areas feature an exposed building structural system. A vinyl faced insulation is run above the structural members and is left exposed to the building interior. This insulation system was in good condition.
- A 2x4 suspended acoustical ceiling system is utilized in circulation corridors and some other portions of the facility. This system is in good condition. The ceiling pads did not exhibit sagging, cracks or stains from water leaks.
- A holding area addition to the original building features a painted, metal panel as the exposed ceiling. The panels are in good condition and do not exhibit any deterioration or failures.



Typical painted drywall ceilings



Typical exposed vinyl faced insulation



Typical example 2x4 ACT system

### 5.4 Doors and Windows

- Interior doors and windows feature a welded hollow metal frame. When installed within a CMU partition, the frame is installed within the masonry opening without any overlap of the adjacent CMU. As previously noted, all openings feature a bullnose profile on the CMU.

- Jamb face dimensions vary across the facility as several openings have special locking conditions which require a wider jamb on the latch side of the opening. The masonry opening has been sized to accommodate this variation.
- Interior frames were in good condition. Normal wear and tear were exhibited, primarily with the exposed finish.
- A variety of glazed openings are found in the facility. In each opening, the vision panel was intact and securely in place.
- Several fire rated openings were encountered during the site visit. The doors in these openings featured the required tag indicating the construction of the door and the fire rating at that opening.
- A large, glazed vision panel is installed within a major circulation hallway. Rather than utilize fire rated glazing, this opening is protected by a surface mounted fire shutter designed to deploy in the event of a fire. The swing doors on either side of the vision panel were rated assemblies as required by the Code.
- In areas where transactions are required, provisions such as deal trays, talk box penetrations or operable shutters are employed to facilitate the necessary interactions across the openings. If this opening takes place in a fire rated wall, a fire shutter is installed and tied into the fire alarm system.
- Metal access doors are provided in the wall construction where access is needed for maintenance of systems. Observed access doors were in good condition.



Hollow metal frame in CMU



Typical interior window installation



Typical detention door



Vision panel with fire shutter



Service window with fire shutter



Typical access panel

## 6.0 Mechanical System

### 6.1 Plumbing and Fire Protection Systems

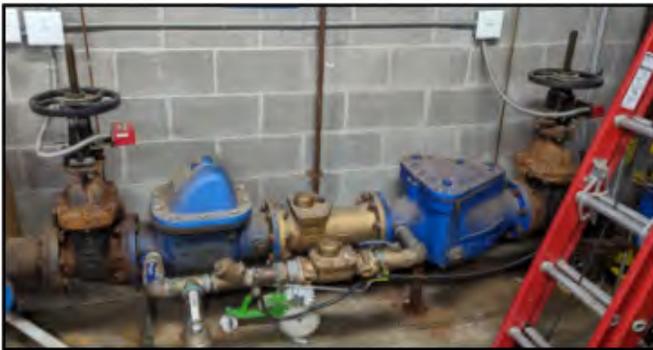
#### 6.1.1 Supply and Waste Piping

##### 6.1.1.1 Sanitary Sewer

The original building design drawings indicate a 6-inch sanitary sewer pipe serves all areas of the building and exits the facility on the north side in line with the corridor release/exit door. The sewer pipe materials within the building were observed to be predominately no-hub cast iron. Contraband entrapment pit has had all catch fingers removed and no longer functions with its intended purpose. Access to spaces where exterior piping conditions could be reviewed was very limited.

##### 6.1.1.2 Domestic Water

A 6-inch domestic cold-water service enters the building from beneath the floor of the receiving and storage room located on the northwest side of the building. This service supplies all plumbing fixtures. Cold and hot water supply piping throughout the structure is copper, mostly located above ceilings and inside plumbing chases with access doors. The piping system appears to be in fair condition with several components in need of repair or replacement. See recommended projects for more information.



Water isolation valves



Mineral buildup on domestic water piping



##### 6.1.2 Domestic Hot Water Production

Domestic hot water is produced from the three domestic water heaters each 720 MBH capable of 674 GPH @ 100 degrees Fahrenheit. All three water heaters have been recently replaced.



Domestic hot water heaters

### 6.1.3 Plumbing Fixtures

Fixtures appeared appropriate for the use and in generally good condition. The fixtures at in-custody areas are currently vitreous china which is appropriate for the current custody level being served. It should be noted that if these areas are being considered for a higher custody level, plumbing fixture replacement to detention grade fixtures may be recommended.



Housing unit toilet



Housing unit urinals and sinks



Housing unit shower

### 6.1.4 Natural Gas Supply

The natural gas supply is located on the south side of the building near the mechanical room. Service appears to be a 2-inch pipe before the meter which increases to 4-inch pipe after the meter, which is then distributed to gas fired equipment. Piping appears to be in good condition, however the exterior piping that feeds air handling units shows signs of pitting and should be addressed. See recommended projects for more information.



Example roof mounted gas piping

### 6.1.5 Fire Protection

The fire protection sprinkling system covers all areas of the building from the 6-inch riser. Threaded steel pipe is used to distribute the water and includes exposed type sprinkler heads. The piping system appears to be in good to fair condition. The systems appear to have ligature resistant heads in areas where occupants could gain access to the heads. Other heads, outside the reasonable reach of occupants, may be standard type sprinkler heads.

## 6.2 Heating, Ventilating and Air Conditioning Systems

### 6.2.1 Heating, Cooling and Air Handling Equipment

The building is heated and cooled by eight packaged air handling units (ACH-1 through ACH-8) which include gas heating and electric cooling ranging in capacity between 30 MBH to 600 MBH on the heating side, 15 MBH to 444 MBH on the cooling size, and between 595 to 14,345 CFM on the air side. These units are either ground mounted

or roof mounted. AHU-1 thru ACU-8: All units are original to the building constructed in 1998. Although maintenance has been performed regularly, ASHRAE life expectancy is 15 – 20 years. Units will need to be replaced soon, especially with the code change in refrigerants and the upcoming lack of refrigerant supply that will happen soon. See recommended projects for more information.



Packaged Air Handling Units

### 6.2.2 Variable Air Volume Boxes

The building air delivery system includes thirteen VAV boxes as part of the building terminal box system. It was reported that this system was disconnected a few years after occupancy of the building as the boxes were unserviceable due to local service contractors not being able to obtain parts to fix or maintain the system. As a consequence, the system has been bypassed and currently operates as a constant volume system since that time. The VAV boxes include electric SSR heating that ranges from 3.8kW to 16.7kW and from 445 CFM to 1,795 CFM. All of these units are in need of replacement to restore the functionality of the system. See recommended projects for more information.

### 6.2.3 Air Distribution Ductwork

Air is distributed through sheet metal ducts throughout the facility. There is both interior and exterior supply ductwork. The interior ductwork is generally above ceilings or in the open area in those areas that do not have ceilings. The supply air sheet metal ducts are original to the building and have external insulation on them when located on the exterior or above ceilings. Interior ductwork is generally in good to fair condition. Outdoor air handling unit ductwork appears to have been used as a maintenance platform due to poor layout and routing. Ductwork has been flattened and insulation is extremely deteriorated. Ductwork and insulation also sit very close to the ground, causing it to sit in the snow during the winter, which will further cause it to deteriorate. See recommended projects for more information.

Ceiling and wall-mounted diffusers and grilles deliver and return air from the spaces. These appear to be in good to fair condition.



Exterior ductwork examples

### 6.2.4 Exhaust System

The building has a series of 9 exhaust fans (EF-1 through EF-9) and one rooftop supply fan (SF-1) with a capacity of 3,300 CFM. The exhaust fans are split between centrifugal roof upblast and centrifugal wall exhaust fans. The exhaust fans range in capacity between 300 CFM and 6,600 CFM. All fans are original to the building constructed in 1998. ASHRAE life expectancy is 15-20 years. Units will need to be replaced soon due outliving their useful life. See recommended projects for more information.



Roof Exhaust Fan



Wall Mounted Exhaust Fan

### 6.2.5 Smoke Control Dampers

The existing wall mounted smoke control dampers serving housing units are currently blocked with Styrofoam inserts which require manual removal in the event of system activation. The smoke hatches located in the roof of the building also requires manual activation. It is recommended that this system be replaced with actuators, controls and alarms to provide for automatic activation of the system. See recommended projects for more information.



Smoke damper - wall mounted



Smoke hatch - roof mounted

## 7.0 Electrical Systems

### 7.1 Electrical Service and Meter

The building pad mounted utility transformer, wall mounted CT cabinet, and electric meter is located south of the building in an outdoor mechanical equipment yard. Main Service Distribution is 480/277V from an assumed 1500kVA Utility Pad Mounted Transformer. The equipment appears to be original to the building.

### 7.2 Electrical Distribution System

The building distribution system consist of a Main Switchboard (“MSBH”) 1600A 480/277V 3P, 4W, Main Fuse Gear section with digital metering, a 1600A distribution section with fuse type buckets and surge arrestors feeding the following equipment:

- 200A 3P Disconnect with a 200A fuse feeding 250A 480/277V 3P, 4W (Panelboard “AH1”)
- 200A 3P Disconnect with a 200A fuse feeding 250A 480/277V 3P, 4W (Panelboard “AH2”)
- 400A 3P Disconnect with a 400A fuse feeding 400A 480/277V 3P, 4W (Panelboard “BH1”) Feeding
  - 75kVA (Transformer “T-2”) feeding 225A 208Y/120V 3P, 4W (Panelboard “BL1”)
- 60A 3P Disconnect with a 60A fuse feeding 36W (Booster Heater)
- 60A 3P Disconnect with a 40A fuse feeding (Dishwasher)
- 200A 3P Disconnect with a 125A fuse feeding (ACU-5)
- 200A 3P Disconnect with a 175A fuse feeding (ACU-6)
- 200A 3P Disconnect with a 200A fuse feeding 260A Automatic Transfer Switch (ATS-1) feeding
  - Emergency Fed From 480/277V 125KW Generator
  - 250A 480/277V 3P, 4W (Panelboard “EMH”) feeding
    - 30kVA (Transformer “T-3”) feeding 100A 208Y/120V 3P, 4W (Panelboard “EML1”)
    - 30kVA (Transformer “T-4”) feeding 100A 208Y/120V 3P, 4W (Panelboard “EML2”)
- 400A 3P Disconnect with a 250A fuse feeding 225kVA 208Y/120V Pad Mounted (Transformer “T-1) feeding
  - Main Switchboard (MSBL”) 600A 208Y/120V 3P, 4W, 600A distribution section with a 600A Main Fuse Switch with fuse type buckets with surge arrestors feeding the following Equipment:
    - 200A 3P Disconnect with a 200A fuse feeding 225A 208Y/120V 3P, 4W (Panelboard “AL1”)
    - 200A 3P Disconnect with a 200A fuse feeding 225A 208Y/120V 3P, 4W (Panelboard “AL2”)
    - 200A 3P Disconnect with a 200A fuse feeding 225A 208Y/120V 3P, 4W (Panelboard “KL1”)
    - 200A 3P Disconnect with a 200A fuse feeding 225A 208Y/120V 3P, 4W (Panelboard “KL2”)

For onsite back-up power, the building includes a Kohler 480/277V, 135 kW/ 169 kVA, 12v battery system diesel-fueled, engine generator set located in the outdoor mechanical equipment yard. This generator set appears to be original to the building (1998) and is in fair condition. Upon loss of utility power, the transfer switch initiates the

startup of the engine generator set and transfers power to the facility. Based on general observations, current emergency power system is fully operational with normal wear of equipment function. It was not known when the last operational load test was done on the generator.

The efficacy of the electrical distribution system’s grounding electrode system is unknown. Testing and inspection of the grounding electrode system would be required if there are concerns on whether the grounding electrode system has been installed and performs properly.



Switchgear



Distribution Panel



Electrical Subpanel



Standby Power Generator



Automatic Transfer Switch



Standby Battery

### 7.3 Electrical Wiring Devices

Electrical switches and receptacles are installed throughout the building. General observation and input from maintenance staff identified that the current system is fully operational with normal wear of equipment function. If there are concerns about the efficacy of this system, inspection and testing of the wiring devices would be required to determine the condition and requirements for replacement. There was a specific concern of a keyed lighting switch in the inmate intake shower area stall. An outdoor wash cover was placed on this switch at some point. There was also a minor issue where a wire junction is not in a junction box and the wire is exposed. The switch and wire junction are not code compliant and should be corrected. See recommended projects for more information.



Switch with non-compliant cover



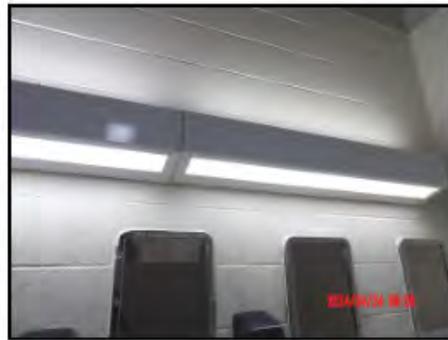
Non compliant wiring

## 7.4 Lighting

Based on general observations, current lighting system is fully operational with normal wear of equipment function. Most equipment seems to be recently updated and installed. Based on conversation with staff, the lighting was updated in 2017 or 2018. Lighting fixtures above sink wash areas in the housing units seem to have some impaired operation. Based on observations these fixtures are not damp location rated and are rusting. Silicone sealant has been applied around the edging and joints to prevent water intrusion, but this is only a stop gap measure and not a long term correction. This presents a moderate deterioration of equipment and could lead to safety hazards to building occupants. See recommended projects for more information.



Typical lighting at drywall ceilings



Lights at wet location



Typical lighting at open ceilings

## 7.5 Low Voltage Systems

The low voltage system in the facility includes a traditional voice/data system which is supported by free-standing racks with patch panels, cabling, network electronics, and communication equipment. This system is reported to be in good to fair condition to support the operational needs of the building.

The facility includes a security system for door controls, intercom and cameras. The security system controls all the security doors from a central secure location as well as providing targeted camera supervision in appropriate areas across the building. General observation and discussion with staff indicate that the system is fully operational with normal wear of equipment function. It was further relayed to the assessment team that the facility underwent a camera upgrade project within the last 5 years and this system is operating at an acceptable level.

## 7.6 Fire Alarm System

Based on general observations current Fire Alarm Devices and system appear to have normal wear of equipment. It is suggested that a Certified Fire Alarm Inspection is performed to ensure full function of system.



Fire Alarm System

## 8.0 Recommended Project and Opinions of Probable Cost

The recommended projects can be broken down into two categories. The interior projects are identified not due to current conditions, but rather considering that a renovation will occur and that creates the opportunity and likely necessity in some areas to update finishes as infrastructure work occurs. The balance of the recommended projects are for correction of system deficiencies or end of life considerations for equipment. A summary of the recommended project is included below.

- Interior Architecture           \$ 915,350
- Exterior Architecture         \$ 40,950
- Plumbing                         \$ 396,500
- HVAC                             \$1,856,200
- Electrical                        \$ 82,600

Total Recommended Projects   \$3,677,500

### 8.1 Project 1 – Interior Refresh Ceilings

This project includes refreshing interior ceiling finishes that include removal and replacement of approximately 3,800 SF of ACT ceilings as well as painting approximately 20,250 SF of hard ceilings.

Probable Cost: \$183,850

### 8.2 Project 2 – Interior Refresh Walls

This project includes refreshing interior wall finishes that includes painting of all interior walls that currently have a painted finish.

Probable Cost: \$141,750

### 8.3 Project 3 – Interior Refresh Floor and Base

This project includes refreshing floor and base finishes that includes the following:

- Remove and replace quarry tile flooring and base in Kitchen, approximately 1,415 SF.
- Remove and replace epoxy flooring in program areas, approximately 5,800 SF.
- Remove and replace mosaic tile floor and base in restroom areas, approximately 2,300 SF.
- Remove and replace VCT flooring, approximately 2,800 SF.
- Refinish sealed concrete flooring, approximately 20,935 SF.
- Remove and replace minor areas of carpeting and rubber base as needed throughout the facility.

Probable Cost: \$526,750

#### **8.4 Project 4 – Interior Refresh Interior Casework**

This project includes an allowance for replacing selected casework that may become required due to other recommended projects.

Probable Cost: \$63,000

#### **8.5 Project 5 – Selective Roof Replacement**

This project includes an allowance for replacing selected sections of the modified bitumen roofing system that may become required due to mechanical projects.

Probable Cost: \$40,950

#### **8.6 Project 7 – Plumbing Piping Replacement and Treatment System**

This project includes the removal and replacement of domestic water supply piping that has experienced a large amount of mineral buildup over the life of this system. Pipes have demonstrated clogging due to calcium build up and the installation of a water treatment system for the domestic water system is recommended to help reduce mineral buildup in the renovated system. This project includes the following:

- Water Treatment System: 120 GPM.
- Domestic Water Piping: Approximately 1,700 feet of copper piping ranging in size from ½" to 3".
- Domestic Water Piping Insulation: Approximately 1,700 feet of piping insulation ranging from ½" to 3".

Probable Cost: \$384,100

#### **8.7 Project 8 – Plumbing Gas Pipe Rehabilitation**

This project includes rehabilitation of the exposed exterior gas piping which exhibits significant pitting and will require sanding and painting. It was also noted that some exposed exterior piping needs to be re-secured due to a recent roofing project.

Probable Cost: \$12,400

#### **8.8 Project 9 – HVAC Replacement of existing terminal box system (VAVs)**

This project includes -the removal and replacement of the existing VAV terminal box system in the facility as it is antiquated and no longer serviceable. This assessment identified 13 VAVs in need of replacement throughout the building. This project includes the following:

- TB-1: Electric SSR heating 16.7 kW, 1360 cfm, 480-volt 3 phase electrical.
- TB-2: Electric SSR heating 10.3 kW, 720 cfm, 480-volt 3 phase electrical.
- TB-3: Electric SSR heating 5.3 kW, 480 cfm, 480-volt 3 phase electrical.
- TB-4: Electric SSR heating 5.9 kW, 620 cfm, 480-volt 3 phase electrical.

- TB-5: Electric SSR heating 5.0 kW, 445 cfm, 480-volt 3 phase electrical.
- TB-6: Electric SSR heating 15.2 kW, 1060 cfm, 480-volt 3 phase electrical.
- TB-7: Electric SSR heating 5.9 kW, 520 cfm, 480-volt 3 phase electrical.
- TB-8: Electric SSR heating 5.6 kW, 475 cfm, 480-volt 3 phase electrical.
- TB-9: Electric SSR heating 3.8 kW, 500 cfm, 480-volt 3 phase electrical.
- TB-10: Electric SSR heating 12.0 kW, 1455 cfm, 480-volt 3 phase electrical.
- TB-11: Electric SSR heating 11.4 kW, 1330 cfm, 480-volt 3 phase electrical.
- TB-12: Electric SSR heating 4.4 kW, 530 cfm, 480-volt 3 phase electrical.
- TB-13: Electric SSR heating 14.1 kW, 1795 cfm, 480-volt 3 phase electrical.

Probable Cost: \$281,600

## 8.9 Project 10 – HVAC Replacement of Packaged Air Handling Units

This project includes the removal and replacement of ACH-1 through ACH-8. All units are original to the building constructed in 1998. Although maintenance has been performed regularly, ASHRAE life expectancy is 15 – 20 years. Units are past their useful life, especially with the Code change in refrigerants and the upcoming lack of refrigerant supply that will happen soon. This project includes the following:

- ACH-1: Gas heating 300 MBH, 4500 cfm, 144 MBH Electric Cooling, hot gas bypass, economizer.
- ACH-2: Gas heating 300 MBH, 4500 CFM, 144 MBH Electric Cooling, hot gas bypass, economizer.
- ACH-3: Gas heating 300 MBH, 4500 CFM, 144 MBH Electric Cooling.
- ACH-4: Gas heating 300 MBH, 4500 CFM, 144 MBH Electric Cooling, hot gas bypass, economizer.
- ACH-5: Gas heating 300 MBH, 8325 CFM, 252 MBH Electric Cooling, VAV Operation with heat wheel, hot gas bypass, economizer, VFD.
- ACH-6: Gas heating 600 MBH, 14,345 CFM, 444 MBH Electric Cooling, Heat wheel, hot gas bypass, economizer.
- ACH-7: Gas heating 30 MBH, 595 CFM, 15 MBH Electric Cooling.
- ACH-8: Gas heating 100 MBH, 2270 CFM, 60 MBH Electric Cooling, hot gas bypass.

Probable Cost: \$1,028,600

## 8.10 Project 11 – HVAC Replacement of Exhaust and Supply Fans

This project includes the removal and replacement of EF-1 thru EF-9 and SF-1: Rooftop and wall fans are original to the building constructed in 1998. ASHRAE life expectancy is 15-20 years. Units will need to be replaced soon due outliving useful life cycle. This project will also add an exhaust fan at the Kitchen Storage area which is needed due to storage contents of that space. This project includes the following:

- EF-1: Centrifugal roof upblast. 1310 CFM, 0.5" ESP, ½ HP, 115-volt 1 phase electrical power.
- EF-2: Centrifugal roof upblast. 1310 CFM, 0.5" ESP, ½ HP, 115-volt 1 phase electrical power.
- EF-3: Centrifugal roof upblast. 1310 CFM, 0.5" ESP, ½ HP, 115-volt 1 phase electrical power.
- EF-4: Centrifugal roof upblast. 1310 CFM, 0.5" ESP, ½ HP, 115-volt 1 phase electrical power.
- EF-5: Centrifugal roof upblast. 6600 CFM, 1.75" ESP, 5 HP, 460-volt 3 phase electrical power.
- EF-6: Centrifugal wall. 1115 CFM, 0.625" ESP, ¼ HP, 115-volt 1 phase electrical power.
- EF-7: Centrifugal wall. 2420 CFM, 0.75" ESP, ½ HP, 460-volt 3 phase electrical power.
- EF-8: Centrifugal roof upblast. 300 CFM, 0.325" ESP, ¼ HP, 115-volt 1 phase electrical power.
- EF-9: Centrifugal roof upblast. 600 CFM, 0.625" ESP, ¼ HP, 115-volt 1 phase electrical power.
- SF-1: Roof mounted filter centrifugal. 3300 CFM, 1.25" ESP, 3 HP, 460-volt 3 phase electrical power.

Probable Cost: \$228,400

### **8.11 Project 12 – HVAC Replacement of Exterior Ductwork**

This project includes the removal and replacement of exterior ductwork associated with air handling units that have deteriorated and are therefore in need of replacement. This project includes the following:

- 3600 sq. ft. of G90 sheet metal at 5962 lbs. Removal of existing and replacement with new.
- 3600 sq. ft. of insulation. Removal of existing and replacement with new.

Probable Cost: \$309,900

### **8.12 Project 13 – HVAC Smoke Control System Improvements**

This project includes improvements to the smoke control system to provide for automated system activation in all housing units. This project includes the following:

- Adding actuators to dampers.
- Adding controls to damper actuators.
- Adding alarms to damper actuators.

Probable Cost: \$155,800

### **8.13 Project 14 – HVAC Interlock Makeup Air Dampers with Dryers**

This project includes providing interlocks between the outside air dampers and the laundry dryer such that the dampers are opened when the dryers are active.

Probable Cost: \$7,700

### **8.14 Project 15 – HVAC Computer Room Air Condition (CRAC) Unit Installation**

This project includes providing a CRAC unit in the main low voltage / computer electronics room as it has been reported that this room has significant heat gain and does not have a dedicated cooling system. This project would include the installation of a mini split system to cool the space.

Probable Cost: \$28,500

### **8.15 Project 16 – Miscellaneous Electrical Improvements**

This project includes miscellaneous electrical improvements across the building. This project includes the following:

- Replacement of lighting in wet areas with fixtures rated for damp environments
- Correcting/Adding code compliant junction boxes at various locations
- Adding alarms to damper actuators.

Probable Cost: \$82,600



**KOONTZ BRYANT  
JOHNSON WILLIAMS**

December 2, 2024

Miami County Commissioners  
201 W. Main S.  
Troy, Ohio 45373

Attn: Mr. Ben Howlett  
Director of Facilities and Maintenance

Re: Geotechnical Engineering Investigation for the Proposed Miami County Incarceration Facility Project to be Constructed at 2042 N. County Road 25A, Troy, Ohio; KBJW Report No. 31563-001-01-1224

Mr. Howlett:

Koontz Bryant Johnson Williams, Inc. (KBJW, formerly CBC Engineers & Associates, Ltd.) is pleased to submit our report of the geotechnical engineering investigation for the above-referenced project. The purpose of this study was to provide an evaluation of the physical characteristics of the soil strata and net allowable bearing capacities at the locations tested. Also noted are other conditions that might affect the proposed Miami County incarceration facility to be constructed at 2042 N. County Road 25A, Troy, Ohio based on the results of the testing.

For your convenience, the samples collected that were not used to perform the laboratory tests will be kept in our office for a period of three months. If you have any questions, or if we can be of further service, please call us.

Respectfully submitted,

Koontz Bryant Johnson Williams, Inc.

Deepa Nair, M.S., P.E.  
Project Engineer

Mitchell T. Hardert, P.E.  
Chief Engineer



DN/MTH/mt  
cc: Client (bhowlett@miamicountyohio.gov)  
1-File

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**SECTION I**

**TEXT**

## **1.0 INTRODUCTION**

Authorization to proceed with this investigation was given by the Miami County Commissioners. Work was to proceed in accordance with KBJW Quotation No. 31563-001, dated September 9, 2024, and the terms and conditions of the executed contract.

The proposed Miami County incarceration facility is to be constructed at 2042 N. County Road 25A, Troy, Ohio. A Vicinity Map is presented in Figure 1 in Section III of this document.

## **2.0 WORK PERFORMED**

### **2.1 FIELD WORK**

Seven (7) borings were made in the relative positions shown on the Boring Location Plan (Figure 2) in Section III. The boring logs and resulting data are also included in Section III. The borings were made with an ATV-mounted drilling rig using hollow-stem augers and employing standard penetration resistance methods (ASTM D-1586, which includes 140-pound hammer, 30-inch drop, and two-inch-O.D. split-spoon sampler) at maximum 2.5 foot intervals for 10 feet below the ground surface and at 5 foot intervals to the bottom of the borings. The disturbed split-spoon samples were visually classified, logged, sealed in moisture-proof jars, and taken to the KBJW laboratory for study. The depths where these "A"-type split-spoon samples were collected are noted on the boring logs.

### **2.2 LABORATORY WORK**

Five (5) natural moisture content tests were performed on the "A" type split-spoon samples in accordance with ASTM D-4643. The results of these tests are tabulated in Table 1 as follows, and are also included in Section III of this report:

TABLE 1

RESULTS OF NATURAL MOISTURE CONTENT TESTS (ASTM D-4643)

BORING NO.	DEPTH INCREMENT, (FT.)	NATURAL MOISTURE CONTENT, %
KBJW-2	1.0 – 2.5	16.7
KBJW-3	1.0 – 2.5	23.8
KBJW-4	1.0 – 2.5	32.5
KBJW-5	1.0 – 2.5	17.7
KBJW-6	1.0 – 2.5	20.1

**3.0 SOIL CONDITIONS AND GROUNDWATER LEVELS**

Seven (7) borings were made at the proposed construction site at the locations shown on the Boring Location Plan (Figure 2) in Section III of this report. The borings showed the presence of approximately 4 to 6 inches of topsoil overlying the project site. The topsoil was generally underlain in the borings by natural sandy clay/sand and gravel soils extending to the bottom of the performed borings except at boring KBJW-7. SPT blow counts in this original stratum generally varied from 8 to 72. Undocumented sandy clay fill soils were encountered underneath the topsoil in boring KBJW-7 extending to an approximate depth of 5.0 feet below the existing site grade. The existing fill in this boring was underlain by natural sand and gravel soils extending to the bottom of the boring with SPT blow counts varying from 21 to 53.

Groundwater observations were made during the drilling operations (by noting the depth of water on the drilling tools) and in the open boreholes following withdrawal of the drilling augers. Free groundwater was encountered at the time of drilling activities at the depths tabulated in Table 2 as follows at the time of drilling activities. However, it should be noted that short-term water level readings are not necessarily a reliable indication of the groundwater level and that significant fluctuations may occur due to variations in rainfall and other factors. For specific information on the soil conditions, please refer to the individual boring logs in Section III.

TABLE 2  
DEPTH TO FREE GROUNDWATER AT THE TIME OF DRILLING ACTIVITIES  
(AS MEASURED BENEATH THE EXISTING SITE GRADE)

BORING NO.	DEPTH TO GROUNDWATER DURING DRILLING ACTIVITIES (FT)	DEPTH TO GROUNDWATER AT THE COMPLETION OF DRILLING ACTIVITIES (FT)
KBJW-1	19.5	19.5
KBJW-2	19.0	19.0
KBJW-3	14.0	14.0
KBJW-4	18.0	18.0
KBJW-5	18.5	18.5
KBJW-6	18.0	18.0
KBJW-7	14.0	14.0

Based on the encountered soil conditions at the project site, the site classification was determined to be "Site Class D" per the Ohio Building Code. In addition, a  $S_{D5}$  coefficient of 0.232g was calculated, and a  $S_{D1}$  coefficient of 0.118g was also calculated for design based on the aforementioned building code. A "Site Class D" suggests that the soil materials are stiff with standard penetration test "N-values" between 15 and 50.

#### 4.0 DISCUSSION AND RECOMMENDATIONS

##### 4.1 PROJECT DESCRIPTION

Miami County Commissioners are currently developing information regarding the proposed Miami County incarceration facility to be constructed at 2042 N. County Road 25A, Troy, Ohio. No other details of the proposed project including the detailed spacial geometry of the facility and structural loads from the project have been provided to us at this time. The following recommendations are based on the assumption that no unusual loading conditions or special settlement restrictions apply to the proposed project and the foundations for the future construction are proposed to be shallow foundations. Consequently, if the above information is incorrect or if changes are made, KBJW should be notified so that the new data can be reviewed.

##### 4.2 PROPOSED BUILDING AREA

All topsoil should be stripped from the entire footprint of the proposed building area. Existing sandy clay fill soils exist underneath the topsoil to an approximate depth of 5.0 feet

below existing site grade in boring KBJW-7 as previously described. Any existing fill or softer soils encountered directly underneath the proposed footings are not suitable for direct foundation support in their in-situ conditions due to their potential for causing excessive total and/or differential settlement. Therefore, it is recommended that all existing fill or softer silty/clayey materials encountered at the base of the proposed foundation excavations at the project site should be undercut until stiffer silty clay/sand and gravel soils are reached, and the removed softer soils replaced with engineered fill compacted to at least 95% of the maximum dry unit weight with a moisture content within 2% of the optimum moisture content as determined by the modified Proctor test. In order to ensure the presence of suitable bearing soil at the bottom of the foundation excavation, the bottom of the excavation should be observed and tested by a representative of this office. All exposed subgrade at the bottom of the foundation excavations should be compacted to at least 95% of the maximum dry unit weight with moisture content within 2% of the optimum moisture content as determined by the modified Proctor test before engineered fill placement.

Any engineered fill placed should be compacted to at least 95% of the maximum dry unit weight with moisture content within 2% of the optimum moisture content as determined by the modified Proctor test. In general, any non-organic naturally-occurring soils can be used for structural fill. Cohesive soils with a Liquid Limit (LL) greater than 50, a Plasticity Index (PI) of greater than 25, or an organic content greater than 7 percent as determined by Loss-on-Ignition (ASTM D2974) should not be used for engineered fill. The fill should contain no fragments whose greatest dimension is larger than half the thickness of the lift being placed. Based on the soil conditions encountered in the borings, the on-site soils appear to be suitable for reuse as engineered fill but would require moisture adjustments and removal of deleterious content. The fill should be compacted in accordance with the Specifications for Engineered Fill contained in this report. The spread footing elements founded on such compacted engineered fill and/or stiff natural soils at the recommended bearing depths can be designed with a net allowable bearing pressure of 1,500 lbs./sq. ft. This net allowable bearing pressure can be increased by a factor of one-third when designing for transient loadings such as wind or earthquake ground motions. All exterior foundations should bear at a depth of at least 32 inches below the final grade for frost considerations. Interior footings (within permanently heated areas) can be located at nominal

depths below the finished floor provided the undesirable materials are removed and replaced with engineered fill. Square and continuous footings should be designed at least 3.0 feet and 2.0 feet wide, respectively, even if the anticipated structural loadings would allow for smaller foundation element sizes. KBJW should be retained to confirm the acceptability of the bearing soils at the bottom of the proposed foundation excavations and verify the recommended bearing capacity once the excavation is completed before the compacted fill is placed.

All soil bearing foundations settle as the result of the externally applied loads. Settlement of the proposed building should be anticipated, although such movements are estimated (based upon our experience in similar soils) to be well within the tolerable limits for the structure (i.e., the total settlement will be less than about 1.0 inch, while differential settlement will be limited to about 3/4 inch).

Backfill for utility trenches, foundation excavations, etc., within structures, driveways, or parking lot areas should be placed in successive, horizontal layers. Each layer should be compacted to at least 95% of the maximum modified Proctor dry unit weight within 2% of the optimum moisture content before the next layer is added. In no instance should puddling or jetting the backfill material be allowed as a compaction method. Any silty or clayey soils at foundation depth will soften and the bearing capacity will be reduced if water ponds in the excavation. Soils exposed in the bases of all satisfactory foundation excavations should be protected against any detrimental change in condition such as from disturbance, rain and freezing. Surface run-off water should be drained away from the excavation and not allowed to pond. If possible, all foundation concrete should be placed the same day the excavation is made. If this is not practical, the foundation excavations should be adequately protected. Also, for this reason, proper drainage should be maintained after construction.

All foundations should be located so that the least lateral clear distance between any two foundations will be at least equal to the difference in their bearing elevations (see Figure 3 in Section III of this document). If this distance cannot be maintained, the lower foundation should be designed to account for the load imparted by the upper foundation. If this condition occurs adjacent to a below-grade wall, the wall should be designed for the additional lateral earth pressure due to the upper foundation.

#### 4.2.1 LATERAL AND UPLIFT FORCES ON SHALLOW FOOTINGS

Lateral forces on the foundation elements can be resisted by passive lateral earth pressures against the opposite vertical face of the foundation and by friction along the soil/foundation interface. An allowable resisting passive earth pressure of 200 lbs./sq. ft., and coefficient of friction of 0.30, respectively, can be used for design purposes. The passive resistance should only be used for that portion of the foundation located at a depth greater than 2.5 feet beneath the final grade (Please see Figure 4 in Section III of this text). A factor of safety of 1.5 relative to the lateral capacity should be used in design. It should be noted that lateral movements, on the order of up to 0.5 inch, may occur to mobilize this lateral resisting force.

It is further recommended that only the weight of the footing and the total weight of the soil above and within the periphery of the footing be used for resisting uplift forces. A total soil unit weight of 120 lbs./cu. ft. should be used for these computations for backfill material compacted as recommended in Section 4.2 (Please see Figure 5 in Section III of this document). It is also recommended that a factor of safety of at least 1.5 be used in calculating uplift resistance due to the weight of the footing and the backfill soil.

#### 4.2.2 LATERAL EARTH PRESSURES ON BELOW GRADE WALLS

The magnitude of lateral earth pressure against subsurface walls is dependent on the method of backfill placement, the type of backfill soil, drainage provisions and whether or not the wall is permitted to yield during and/or after placement of the backfill. When a wall is held rigidly against horizontal movement, the lateral pressure against the wall is greater than the "active" earth pressure that is typically used in the design of free-standing retaining walls. Therefore, rigid walls should be designed for higher, "at-rest" pressures (using an at-rest lateral earth pressure coefficient,  $K_o$ ), while yielding walls can be designed for active pressures (using an active lateral earth pressure coefficient,  $K_a$ ).

For use in these computations, a total soil unit weight of 130 lbs/cu. ft. should be used. For below-grade walls, a coefficient of earth pressure at-rest ( $K_o$ ) of 0.5 and a coefficient of "active" earth pressure of 0.33 are recommended, provided a well-graded granular material is used for backfill (Please see Figure 6 in Section III of this document). The granular backfill

material should extend upward and outward from the base of the wall on a slope not steeper than about 1 (horizontal) to 1 (vertical). This method of computation presumes that there will be no hydrostatic pressure due to water build-up.

It is recommended that the static weight per axle of equipment utilized for the compaction of the backfill materials not exceed 2 tons per axle for non-vibratory equipment and 1 ton per axle for vibratory equipment. All heavy equipment, including compaction equipment heavier than recommended above, should not be allowed closer to the wall (horizontal distance) than the vertical distance from the backfill surface to the bottom of the wall. If it is desired to use heavier compaction equipment adjacent to the below grade wall, it is recommended that this office be contacted to determine the resulting earth pressures.

#### **4.2.3 SLABS-ON-GRADE**

Any existing fill or softer soils encountered underneath the proposed slab-on-grade should be removed until native stiff soils are reached and the removed fill/softer soils replaced with engineered fill compacted to at least 95% of the maximum dry unit weight with moisture content within 2% of the optimum moisture content as determined by the modified Proctor test. In order to ensure the presence of suitable bearing soil at the bottom of the slab-on-grade excavation, the bottom of the excavation should be observed and tested by a representative of this office. All exposed subgrade in the area of the slabs-on-grade should be compacted to at least 95% of the maximum dry unit weight with moisture content within 2% of the optimum moisture content as determined by the modified Proctor test before backfill and slab-on-grade placement. The proposed slab-on-grade can be supported on new compacted structural fill or on natural stiff soils.

It is recommended that all slabs-on-grade be "floating", that is, fully ground supported and not structurally connected to walls or foundations. This is to minimize the possibility of cracking and displacement of the slabs-on-grade because of differential movements between the slab and the foundation. Although the movements are estimated to be within the tolerable limits for structural safety, such movements could be detrimental to the slabs if they were rigidly connected to the foundations.

It is furthermore recommended that the slabs-on-grade be supported on a 4 to 6-inch layer of relatively clean granular material such as sand and gravel or crushed stone. This is to help distribute concentrated loads and equalize moisture conditions beneath the slab. Proper drainage must be incorporated into this granular layer to preclude future wet areas in the finished slab-on-grade. Provided that a minimum of 4 inches of granular material is placed below the new slab-on-grade (and the native soil is prepared as recommended), a modulus of subgrade reaction ( $k_{30}$ ) of 50 lbs./cu. in. can be used for design of the slabs.

#### **4.2.4 FOUNDATION EXCAVATIONS**

Each foundation excavation should be inspected to insure that all loose, soft or otherwise undesirable material is removed and that the foundation will bear on satisfactory material.

If pockets of soft, loose or otherwise unsuitable material are encountered in the footing excavations and it is inconvenient to lower the footings, the proposed footing elevations may be re-established by backfilling after the undesirable material has been removed. The undercut excavation beneath each footing should extend to suitable bearing soils and the dimensions of the excavation base should be determined by imaginary planes extending outward and down on a 1 (vertical) to 1 (horizontal) slope from the base perimeter of the footing as illustrated in Figure 7 in Section III. The entire excavation should then be refilled with a well-compacted engineered fill. Special care should be exercised to remove any sloughed, loose or soft materials near the base of the excavation slopes. Proper shoring techniques must be adopted during the excavation of the proposed footings below the bearing elevations of any nearby existing structure or utilities. All Federal, State, and Local regulations should be strictly adhered to relative to excavation side-slope geometry and any required shoring.

#### **4.3 PAVEMENT SUBGRADE**

All topsoil/fill should be stripped from the entire footprint of the proposed pavement areas. KBJW should be retained to confirm the acceptability of the native subgrade soils at the excavation depths before pavement sections are placed. The exposed subgrade should furthermore be inspected by proofrolling with a loaded tandem axle dump truck or other suitable equipment to check for pockets of soft material hidden beneath a thin crust of better soil. Any

unsuitable materials thus exposed should be removed and replaced with well-compacted, engineered fill as outlined in the specifications of this document. All exposed subgrade at the bottom of the excavations should be compacted to at least 95% of the maximum dry unit weight with moisture content within 2% of the optimum moisture content as determined by the modified Proctor test before engineered fill/pavement placement.

Several items should be carefully considered in the selection of a final design cross-section for the pavement. These factors are:

- A minimum of 2.5 inches of bituminous concrete should be provided if the pavement is placed directly on the ground surface. Experience has shown that even small areas where the pavement thickness is less than 2.5 inches, do not perform well over time.
- A tack coat should be used between layers of bituminous concrete.
- The paved area should have a minimum slope of 1.5 percent to provide adequate drainage. A means of draining the base material and/or surface of the pavement by the catch basins or draining through the subbase material must be provided. No undrained granular fill area should be allowed to exist in the pavement cross-section. This includes utility trenches, as well as the base course of the pavement. Prior to paving, the entire area should be thoroughly compacted, or recompact to a dry unit weight of at least 95% of the maximum modified Proctor dry unit weight at no more than three percent over optimum moisture.

The design of flexible pavement sections at the project site is dependent on several major design considerations such as the support capability of the subgrade soil underneath including its drainage characteristics, and anticipated truck traffic in the pavement sections, and the type of asphalt and aggregate proposed to be utilized in the pavement sections.

Based on the results of this investigation and our experience with similar soils, a California Bearing Ratio (CBR) value of 2 has been estimated for use in pavement design for the natural subgrade soils encountered at this site. The subgrade soils should be prepared and inspected as described in Section II of this report. CBR values are highly dependent on the moisture content of the subgrade soil. The moisture content of the subgrade can fluctuate/vary

depending on climatic conditions such as precipitation, rate of evaporation, proper drainage, etc., and elevated moisture contents can significantly reduce the CBR value of the subgrade soils. Therefore, it is recommended that proper drainage (surface and sub-surface) be provided in all pavement areas so that water is not able to build-up in the granular base or the subgrade which could potentially result in subgrade softening and pavement distress.

Anticipated truck traffic including the estimated volume of future truck traffic (expressed in terms of ESAL value) is another design consideration in determining the thickness of the pavement section. No detailed information regarding the anticipated automobile/truck traffic and type of pavement proposed at the project location is available at this time. Heavy-duty areas (truck areas) generally require thicker pavement sections compared to light-duty areas (non-truck areas). Therefore, in areas where truck traffic cannot be controlled (i.e., driveways), it is suggested that the thicker pavement section be utilized.

Details regarding site grading in pavement areas are not available at this time; however, depending upon grading requirements and seasonal conditions, it is possible that the pavement subgrade in some areas will be wet or spongy at the time of construction. If at the time of construction the subgrade is found to be excessively wet and spongy, it is recommended that the subgrade soils be stabilized by discing, aerating and recompacting. However, if it is not possible to suitably dry the subgrade soils, they should be chemically stabilized or a biaxial/triaxial geogrid with additional crushed stone placed over the subgrade and/or perforated pipe subdrains should be added to the pavement system. In any case, the subgrade surface should be uniformly sloped to facilitate drainage through the granular base and to avoid any ponding of water beneath the pavement. The storm water catch basins in pavement areas should be designed to allow water to drain from the aggregate base into the catch basins.

## **5.0 SLOPE CONSIDERATIONS**

A detailed slope stability analysis is beyond the scope of this study. However, it is recommended that fill slopes less than 10 feet in height be designed for slopes not steeper than 2.5 (horizontal) to 1 (vertical). For any fill greater than 10 feet in height, it is recommended that slopes be not steeper than 3 (horizontal) to 1 (vertical).

In general, temporary cut slopes of 2 (horizontal) to 1 (vertical) should remain stable during a reasonable construction period provided they are not higher than about 10 feet and are not subjected to excessive vibration from construction equipment and are protected from surface erosion. The need for temporary bracing of utility trenches should be anticipated. In general, any permanent cut slopes should be no steeper than about 3 (horizontal) to 1 (vertical).

## **6.0 CONSTRUCTION DEWATERING**

At the time of our investigation, the free groundwater level was noted to be generally below the anticipated excavation depths. However, significant quantities of groundwater should be anticipated in the proposed foundation/slab excavations due to the presence of sand and gravel zones. In order to maintain proper bearing support for the foundations/slabs, the entire foundation/slab excavation area must be dewatered (groundwater level lowered) to at least 2 feet below the deepest excavation elevation prior to the placement of the backfill/foundations/slabs, and the dewatering of the area maintained until the backfill/foundations/slabs are fully constructed. Sump pumping is generally a suitable method of dewatering in such areas where the required depth of groundwater to be lowered is generally less. Extra care must be exercised when pumping from sumps that extend into silts and other granular soils as observed at this site, as a general deterioration of the bearing soils and a localized "quick" condition could result. Extra care must also be exercised during pumping to ensure that the loss of fines does not occur and filter fabric should be used as necessary to maintain a soil-tight system. It is imperative that the dewatering of the foundations and subgrade soils be continually maintained until the foundations/slabs are fully constructed, and they are providing confinement of the underlying soils. If the groundwater level is allowed to rise to the surface of the excavation areas without the surface being confined, detrimental softening and degradation of the foundation and subgrade soils should be expected that will require remedial measures in order to provide adequate support for the structure. The evaluation and design of any required temporary or permanent dewatering measures to facilitate proper construction and proper in-service conditions is the responsibility of others than KBJW.

## 7.0 SITE PREPARATION

All areas that will support slabs-on-grade and pavements should be properly prepared. After rough grade has been established in cut areas and prior to placement of fill in all fill areas, the exposed subgrade should be carefully inspected by probing and testing as needed. Any topsoil or other deleterious/soft material still in place, frozen, wet, soft or loose soil, and other undesirable materials should be removed and replaced with engineered fill. Based on the test results presented in Table 1 of this document, aeration of the near-surface in-situ soils should be anticipated prior to their placement as engineered fill (or chemical stabilization can also be used). The exposed subgrade should furthermore be inspected by proofrolling with a loaded tandem axle dump truck or other suitable equipment to check for pockets of soft material hidden beneath a thin crust of better soil. Any unsuitable materials thus exposed should be removed and replaced with well-compacted, engineered fill as outlined in the specifications of this document. However, it may also become necessary (due to the presence of soft exposed soil materials) to employ chemical stabilization or to locally incorporate ODOT No. 2 aggregate into the subgrade to increase its stiffness.

Care should be exercised during the grading operations at the site. Due to the nature of the near surface soils, the traffic of heavy equipment, including heavy compaction equipment, may create pumping and general deterioration of the shallower soils, especially if excess surface water is present. If this occurs, it may be necessary to utilize a biaxial/triaxial geogrid, chemical stabilization, or other methodology (such as the incorporation of ODOT No. 2 aggregate into the subgrade) to stabilize the disturbed subgrade. The grading, therefore, should be done during a dry season, if at all possible.

In addition, it must be emphasized that once engineered fill is properly placed on the project site, that these materials can also degrade significantly due to the effects of heavy construction traffic and wet weather. This degradation may in some cases require the excavation and replacement of the engineered fill with aerated, chemically-stabilized fill materials; hence, caution should be exercised to avoid such degradation of these soil materials.

It should be noted that when vibratory rollers are utilized on certain soils types (such as fine grain sands or silts), that shear induced pore water pressures may be developed within these

materials which will result in significant "pumping" of these materials (even though these soils may be stiff and pass moisture density tests on engineered fills). Therefore (in these types of soils), it is imperative that the vibrator not be utilized and that these soils be statically rolled in order to preclude the development of such shear induced pore water pressures. These shear induced pore water pressures dissipate over a number of days (depending on the permeability of the soil materials); however in the short term, significant "pumping" of these materials can be witnessed in the field.

## **8.0 SOIL SWELLING POTENTIAL**

Based upon the laboratory tests performed for this study and the mineralogy of typical soils from the general vicinity of the project site, no significant soil swelling is anticipated. To our knowledge, there are no instances of problems associated with soil swelling in the project vicinity.

## **9.0 LIQUEFACTION**

When certain soils (generally only granular soils) below the groundwater table are subjected to dynamic loads, such as those produced by earthquakes, a sudden increase in pore water pressure occurs as the result of shearing of the soil particles past one another. In extreme cases, when these shear induced pore water pressures exceed the strength of the soil, the soil strength can reduce to zero thereby resulting in a phenomenon known as "liquefaction." Conditions at this site have been examined to determine the likelihood for liquefaction of the natural soils during earthquake ground motions.

Soil type, relative density, initial confining pressure (i.e., the depth of the potentially liquefiable soil below the ground surface) and the magnitude of potential ground motions are the most important factors in determining the liquefaction potential of a soil mass. It is generally agreed that saturated, relatively loose (with blow counts or "N" values typically less than about 13) in the upper 50 feet or so are most susceptible to liquefaction.

Clayey soils are generally considered to be non-vulnerable to liquefaction. It is, therefore, concluded that liquefaction (or any significant loss of strength) of the soils underlying

the project site during earthquake ground motions is extremely unlikely. To our knowledge, there are no recorded cases of liquefaction of subsurface materials similar to those at this project site. Therefore, no special design measures relative to soil liquefaction appear to be warranted.

## **10.0 BURIED UTILITY PIPES**

Excavations for buried utility pipelines should follow the guidelines set forth previously in this report. Depending on the pipeline material, a minimum thickness of at least 0.5 foot of select fine-grained granular bedding material should be used beneath all below-grade pipes, with a minimum cover thickness of at least 3 feet to afford an "arching" effect and reduce stresses on the pipe. The cover thickness may be reduced if the external loading condition on the pipe is relatively light or if the pipe is designed to withstand the external loading condition. It is not recommended that "pea-gravel" or other "open-work" aggregates be used for trench backfill since these materials are nearly impossible to compact and have a tendency to pond water within their interstices.

## **11.0 DRAINAGE**

Adequate drainage should be provided at the site to minimize any increase in moisture content of the foundation soils. The exterior grade (including all parking areas) should be sloped away from all facility structures to prevent ponding of water.

## **12.0 CLOSURE**

### **12.1 BASIS OF RECOMMENDATIONS**

The evaluations, conclusions, and recommendations in this report are based on our interpretation of the field and laboratory data obtained during the exploration, our understanding of the project and our experience with similar sites and subsurface conditions. Data used during this exploration included, but were not necessarily limited to:

- Seven (7) exploratory borings performed during this study,
- observations of the project site by our staff,
- results of the laboratory soil tests,
- site plans and drawings furnished by the client,

- supportive interaction with the client; and
- published soil or geologic data of this area.

In the event that changes in the project characteristics are planned, or if additional information or differences from the conditions anticipated in this report become apparent, KBJW should be notified so that the conclusions and recommendations contained in this report can be reviewed and, if necessary, modified or verified in writing.

## **12.2 LIMITATIONS OF STUDY/RECOMMENDED ADDITIONAL SERVICES**

The subsurface conditions discussed in this report and those shown on the boring logs represent an estimate of the subsurface conditions based on interpretation of the boring data using normally accepted geotechnical engineering judgments. Although individual test borings are representative of the subsurface conditions at the boring locations on the dates shown, they are not necessarily indicative of subsurface conditions at other locations or at other times.

Regardless of the thoroughness of a subsurface exploration, there is the possibility that conditions between borings will differ from those at the boring locations, that conditions are not as anticipated by designers, or that the construction process has altered the soil conditions. As variations in the soil profile are encountered, additional subsurface sampling and testing may be necessary to provide data required to re-evaluate the recommendations of this report. Consequently, after submission of this report it is recommended that KBJW be authorized to perform additional services to work with the designer(s) to minimize errors and omissions regarding the interpretation and implementation of this report.

Prior to construction, we recommend that KBJW:

- work with the designers to implement the recommended geotechnical design parameters into plans and specifications,
- consult with the design team regarding interpretation of this report,
- establish criteria for the construction observation and testing for the soil conditions encountered at this site; and
- review final plans and specifications pertaining to geotechnical aspects of design.

During construction, we recommend that KBJW:

- observe the construction, particularly the site preparation, fill placement, and foundation excavation or installation,
- perform in-place density testing of all compacted fill,
- perform materials testing of soil and other materials as required; and
- consult with the design team to make design changes in the event that differing subsurface conditions are encountered.

If KBJW is not retained for these services, we shall assume no responsibility for construction compliance with the design concepts, specifications or recommendations.

### **12.3 WARRANTY**

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. No other warranty, express or implied, is made.

While the services of KBJW are a valuable and integral part of the design and construction teams, we do not warrant, guarantee, or insure the quality or completeness of services provided by other members of those teams, the quality, completeness, or satisfactory performance of construction plans and specifications which we have not prepared, nor the ultimate performance of building site materials.

#### **12.3.1 SUBSURFACE EXPLORATION**

Subsurface exploration is normally accomplished by test borings, although test pits are sometimes employed. The method of determining the boring location and the surface elevation at the boring is noted in the report, and is presented on the Boring Location Plan or on the boring log. The location and elevation of the boring should be considered accurate only to the degree inherent with the method used.

The boring log includes sampling information, description of the materials recovered, approximate depth of boundaries between soil and rock strata and groundwater data. The boring log represents conditions specifically at the location and time the boring was made. The

boundaries between different soil strata are indicated at specific depths; however, these depths are in fact approximate and are somewhat dependent upon the frequency of sampling (The transition between soil strata is often gradual). Free groundwater level readings are made at the times and under conditions stated on the boring logs (Groundwater levels change with time and season). The borehole does not always remain open sufficiently long enough for the measured water level to coincide with the groundwater table.

### **12.3.2 LABORATORY AND FIELD TESTS**

Laboratory and field tests are performed in accordance with specific ASTM standards unless otherwise indicated. All determinations included in a given ASTM standard are not always required and performed. Each test report indicates the measurements and determinations actually made.

### **12.3.3 ANALYSIS AND RECOMMENDATIONS**

The geotechnical report is prepared primarily to aid in the engineering design of site work and structural foundations. Although the information in the report is expected to be sufficient for these purposes, it is not intended to determine the cost of construction or to stand alone as a construction specification.

Our engineering report recommendations are based primarily on data from test borings made at the locations shown on a boring location plan included in this report. Soil variations may exist between borings and these variations may not become evident until construction. If significant variations are then noted, the geotechnical engineer should be contacted so that field conditions can be examined and recommendations revised if necessary.

The geotechnical engineering report states our understanding as to the location, dimensions and structural features proposed for the site. Any significant changes in the nature, design, or location of the site improvements MUST be communicated to the geotechnical engineer such that the geotechnical analysis, conclusions, and recommendations can be appropriately adjusted. The geotechnical engineer should be given the opportunity to review all drawings that have been prepared based on their recommendations.

#### **12.3.4 CONSTRUCTION MONITORING**

Construction monitoring is a vital element of complete geotechnical services. The field engineer/inspector is the owner's "representative" observing the work of the contractor, performing tests as required in the specifications, and reporting data developed from such tests and observations. The field engineer or inspector does not direct the contractor's construction means, methods, operations or personnel. The field inspector/engineer does not interfere with the relationship between the owner and the contractor and, except as an observer, does not become a substitute owner on site. The field inspector/engineer is responsible for his own safety but has no responsibility for the safety of other personnel at the site. The field inspector/engineer is an important member of a team whose responsibility is to watch and test the work being done and report to the owner whether that work is being carried out in general conformance with the plans and specifications.

#### **12.3.5 GENERAL**

The scope of our services did not include an environmental assessment for the presence or absence of hazardous or toxic materials in the soil, surface water, groundwater or air, on, within or beyond the site studied. Any statements in the report or on the boring logs regarding odors, staining of soils or other unusual items or conditions observed are strictly for the information of our client.

To evaluate the site for possible environmental liabilities, we recommend an environmental assessment, consisting of a detailed site reconnaissance, a record review, and report of findings. Additional subsurface drilling and samplings, including groundwater sampling, may be required. KBJW can provide this service and would be pleased to provide a cost proposal to perform such a study, if requested.

This report has been prepared for the exclusive use of Miami County Commissioners for specific application to the proposed Miami County incarceration facility project at 2042 N. County Road 25A, Troy, Ohio (see Figure 1 in Section III of this report). Specific design and construction recommendations have been provided in the various sections of the report. The report shall, therefore, be used in its entirety. This report is not a bidding document and shall not be used for that purpose. Anyone reviewing this report must interpret and draw their own

conclusions regarding specific construction techniques and methods chosen. KBJW is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploratory and laboratory test data presented in this report.

**SECTION II**  
**SPECIFICATIONS**

## I - ENGINEERED FILL BENEATH STRUCTURES

### CLEARING AND GRADING SPECIFICATIONS

#### 1.0 GENERAL CONDITIONS

The Contractor shall furnish all labor, materials, and equipment, and perform all work and services necessary to complete in a satisfactory manner the site preparation, excavation, filling, compaction and grading as shown on the plans and as described therein.

This work shall consist of all clearing and grading, removal of existing structures unless otherwise stated, preparation of the land to be filled, filling of the land, spreading and compaction of the fill, and all subsidiary work necessary to complete the grading of the cut and fill areas to conform with the lines, grades, slopes, and specifications.

This work is to be accomplished under the constant and continuous supervision of the Owner or his designated representative.

In these specifications the terms "approved" and "as directed" shall refer to directions to the Contractor from the Owner or his designated representative.

#### 2.0 SUBSURFACE CONDITIONS

Prior to bidding the work, the Contractor shall examine, investigate and inspect the construction site as to the nature and location of the work, and the general and local conditions at the construction site, including without limitation, the character of surface or subsurface conditions and obstacles to be encountered on and around the construction site; and shall make such additional investigation as he may deem necessary for the planning and proper execution of the work. Borings and/or soil investigations shall have been made. Results of these borings and studies will be made available by the Owner to the Contractor upon his request, but the Owner is not responsible for any interpretations or conclusions with respect thereto made by the Contractor on the basis of such information, and the Owner further has no responsibility for the accuracy of the borings and the soil investigations.

If conditions other than those indicated are discovered by the Contractor, the Owner should be notified immediately. The material which the Contractor believes to be a changed condition should not be disturbed so that the Owner can investigate the condition.

#### 3.0 SITE PREPARATION

Within the specified areas, all trees, brush, stumps, logs, tree roots, and structures scheduled for demolition shall be removed and disposed of.

All cut and fill areas shall be properly stripped. Topsoil will be removed to its full depth and stockpiled for use in finish grading. Any rubbish, organic and other objectionable soils, and

other deleterious material shall be disposed of off the site, or as directed by the Owner or his designated representative if on site disposal is provided. In no case shall such objectionable material be allowed in or under the fill unless specifically authorized in writing.

Prior to the addition of fill, the original ground shall be compacted to job specifications as outlined below. Special notice shall be given to the proposed fill area at this time. If wet spots, spongy conditions, or groundwater seepage is found, corrective measures must be taken before the placement of fill.

#### **4.0 FORMATION OF FILL AREAS**

Fills shall be formed of satisfactory materials placed in successive horizontal layers of not more than eight (8) inches in loose depth for the full width of the cross-section. The depth of lift may be increased if the Contractor can demonstrate the ability to compact a larger lift. If compaction is accomplished using hand-tamping equipment, lifts will be limited to 4-inch loose lifts. Engineered fill placed shall be compacted to at least 95% of the maximum dry unit weight with a moisture content within 2% of the optimum moisture content as determined by the modified Proctor test.

All material entering the fill shall be free of organic matter such as leaves, grass, roots, and other objectionable material.

The operations on earth work shall be suspended at any time when satisfactory results cannot be obtained because of rain, freezing weather, or other unsatisfactory conditions. The Contractor shall keep the work areas graded to provide the drainage at all times.

The fill material shall be of the proper moisture content before compaction efforts are started. Wetting or drying of the material and manipulation to secure a uniform moisture content throughout the layer shall be required. Should the material be too wet to permit proper compaction or rolling, all work thus affected shall be delayed until the material has dried to the required moisture content. The moisture content of the fill material should be no more than two (2) percentage points higher or lower than optimum unless otherwise authorized. Sprinkling shall be done with equipment that will satisfactorily distribute the water over the disced area. Any areas inaccessible to a roller shall be consolidated and compacted by mechanical tampers. The equipment shall be operated in such a manner that hardpan, cemented gravel, clay or other chunky soil material will be broken up into small particles and become incorporated with the other material in the layer. The fill shall contain no fragments whose greatest dimension is larger than 1/2 of the thickness of the lift being placed.

In the construction of filled areas, starting layers shall be placed in the deepest portion of the fill, and as placement progresses, additional layers shall be constructed in horizontal planes. Original slopes shall be continuously, vertically benched to provide horizontal fill planes. The size of the benches shall be formed so that the base of the bench is horizontal and the back of the bench is vertical. As many benches as are necessary to bring the site to final grade shall be constructed. Filling operations shall begin on the lowest bench, with the fill being placed in horizontal eight (8) inch thick loose lifts unless otherwise authorized. The filling shall progress

in this manner until the entire first bench has been filled, before any fill is placed on the succeeding benches. Proper drainage shall be maintained at all times during benching and filling of the benches, to insure that all water is drained away from the fill area.

Frozen material shall not be placed in the fill nor shall the fill be placed upon frozen material.

The Contractor shall be responsible for the stability of all fills made under the contract, and shall replace any portion, which in the opinion of the Owner or his designated representative, has become displaced due to carelessness or negligence on the part of the Contractor. Fill damaged by inclement weather shall be repaired at the Contractor's expense.

#### **5.0 SLOPE RATIO AND STORM WATER RUN-OFF**

Slopes shall not be greater than 3 (horizontal) to 1 (vertical) in both cut and fill, or as illustrated on the construction drawings. Excavations shall be constructed in accordance with all Federal, State and local codes relative to slope geometry.

#### **6.0 GRADING**

The Contractor shall furnish, operate, and maintain such equipment as is necessary to construct uniform layers, and control smoothness of grade for maximum compaction and drainage.

#### **7.0 COMPACTING**

The compaction equipment shall be approved equipment of such design, weight, and quantity to obtain the required density in accordance with these specifications.

#### **8.0 TESTING AND INSPECTION SERVICES**

Testing and inspection services will be provided by the Owner.

**SECTION III**

**BORING LOGS, LAB TESTING RESULTS, & FIGURES**

## **BORING LOG TERMINOLOGY**

### **STRATUM DEPTH**

Distance in feet and/or inches below ground surface.

### **STRATUM ELEVATION**

Elevation in feet below ground surface elevation.

### **DESCRIPTION OF MATERIALS**

Major types of soil material existing at boring location. Soil classification based on one of the following systems: Unified Soil Classification System, Ohio State Highway Classification System, Highway Research Board Classification System, Federal Aviation Authority Classification System, Visual Classification.

### **SAMPLE NO.**

Sample numbers are designated consecutively, increasing with depth for each boring.

### **SAMPLE TYPE**

“A” Split spoon, 2” O.D., 1-3/8” I.D., 18” in length.

“B” One of the following:

- Power Auger Sample
- Piston Sample
- Diamond Bit NX: BX: AX:
- Housel Sample
- Wash Sample
- Denison Sample

“C” Shelby Tube 3” O.D. except where noted.

### **SAMPLE DEPTH**

Depth below top of ground at which appropriate sample was taken.

### **BLOWS PER 6” ON SAMPLER**

The number of blows required to drive a 2” O.D., 1-3/8” I.D., split spoon sampler, using a 140 pound hammer with a 30 inch free fall, is recorded for 6” drive increments. (Example: 3/8/9)

### **“N” BLOWS/FT.**

Standard penetration resistance. This value is based on the total number of blows required for the last 12” of penetration. (Example: 3/8/9 ∴ N = 8 + 9 = 17)

**WATER OBSERVATIONS**

Depth of water recorded in test boring is measured from top of ground to top of water level. Initial depth indicates water level during boring, completion depth indicates water level immediately after boring, and depth of "X" number hours indicates water level after letting water rise or fall over a time period. Water observations in pervious soil are considered reliable ground water levels for that date. Water observations in impervious soils can not be considered accurate ground water measurements for that date unless records are made over several days' time. Factors such as weather, soil porosity, etc., will cause the ground water level to fluctuate for both pervious and impervious soils.

**SOIL DESCRIPTION**

**COLOR**

When the color of the soil is uniform throughout, the color recorded will be such as brown, gray, black and may be modified by adjectives such as light and dark. If the soil's predominant color is shaded by a secondary color, the secondary color precedes the primary color, such as: gray-brown, yellow-brown. If two major and distinct colors are swirled throughout the soil, the colors will be modified by the term mottled, such as: mottled brown and gray.

PARTICLE SIZE	VISUAL	SOIL COMPONENTS	
Boulders	Larger than 8"	<b>Major Component</b>	<b>Minor Component Term</b>
Cobbles	8" to 3"	Gravel	Trace 1-10%
Gravel—Coarse	3" to ¾"	Sand	Some 11-35%
Fine	2 mm. To ¾"	Silt	And 36-50%
Sand —Coarse	2 mm.-0.6 mm. (Pencil lead size)	Clay	
—Medium	0.6 mm.-0.2 mm. (Table sugar and salt size)	<b>Moisture Content</b>	
—Fine	0.2 mm.-0.06 mm. (Powdered sugar and human hair size)	<b>Term</b>	<b>Relative Moisture</b>
		Dry	Powdery
		Damp	Moisture content below plastic limit
Silt	0.06 mm.-0.002 mm.	Moist	Moisture content
Clay	0.002 and smaller (Particle size of both Silt and Clay not visible to naked eye)		above plastic limit but below liquid limit
		Wet	Moisture content above liquid limit
<b>Condition of Soil Relative to Compactness Granular Material</b>		<b>Condition of Soil Relative to Consistency Cohesive Material</b>	
Very Loose	5 blows/ft. or less	Very Soft	3 blows/ft. or less
Loose	6 to 10 blows/ft.	Soft	4 to 5 blows/ft.
Medium Dense	11 to 30 blows/ft.	Medium Stiff	6 to 10 blows/ft.
Dense	31 to 50 blows/ft.	Stiff	11 to 15 blows/ft.
Very Dense	51 blows/ft. or more	Very Stiff	16 to 30 blows/ft.
		Hard	31 blows/ft. or more

### **STANDARD PENETRATION RESISTANCE (ASTM D1586)**

The purpose of this test is to determine the relative consistency of the soils in a boring, or from boring to boring over the site. This method consists of making a hole in the ground and driving a 2 inch O.D. split spoon sampler into the soil with a 140 pound hammer dropped from a height of 30 inches. The sampler is driven 18 inches and the number of blows recorded for each 6 inches of penetration. Values of standard penetration (N) are determined in blows per foot, summarizing the blows required for the last two 6 inch increments of penetration. (Example: 2-6-8; N = 14)

### **THIN-WALLED SAMPLER (ASTM D1587)**

The purpose of the thin-walled sampler is to recover a relatively undisturbed soil sample for laboratory tests. The sampler is a thin-walled seamless tube with a 3 inch outside diameter, which is hydraulically pressed into the ground, at a constant rate. The ends are then sealed to prevent moisture loss, and the tube is returned to the laboratory for tests.

### **UNCONFINED COMPRESSION OR TRIAXIAL TESTS (ASTM D2166)**

The unconfined compression test and the triaxial tests are performed to determine the shearing strength of the soil, to use in establishing its safe bearing capacity. In order to perform the unconfined compression tests, it is necessary that the soil exhibit sufficient cohesion to stand in an unsupported cylinder. These tests are normally performed on samples which are 6.0 inches in height and 2.85 inches in diameter. In the triaxial test, various lateral stresses can be applied to more closely simulate the actual field conditions. There are several different types of triaxial tests. These are, however, normally performed on constant strain apparatus with a deformation rate of 0.05 inches per minute.

### **CONSOLIDATION TEST (ASTM D2435)**

The purpose of this test is to determine the compressibility of the soil. This test is performed on a sample of soil which is 2.5 inches in diameter and 1.0 inch in height, and has been trimmed from relatively "undisturbed" samples. The test is performed with a level system or an air activated piston for applying load. The loads are applied in increments and allowed to remain on the sample for a period of 24 hours. The consolidation of the sample under each individual load is measured and a curve of void ratio vs. Pressure is obtained. From the information obtained in this manner and the column loads of the structure, it is possible to calculate the settlement of each individual building column. This information, together with the shearing strength of the soil, is used to determine the safe bearing capacity for a particular structure.

### **REVISED TO ASTM D4318 ATTERBERG LIMITS (ASTM D423 AND D424)**

These tests determine the liquid and plastic limits of soils having a predominant percentage of fine particle (silt and clay) sizes. The liquid limit of a soil is the moisture content expressed as a percent at which the soil changes from a liquid to a plastic state, and the plastic limit is the moisture content at which the soil changes from a plastic to a semi-solid state. Their difference is defined as the plasticity index ( $P.I. = L.L. - P.L.$ ), which is the change in moisture content required to change the soil from a "semi-solid" to a liquid. These tests furnish information about the soil properties which is important in determining their relative swelling potential and their classifications.

### **MECHANICAL ANALYSIS (ASTM D422)**

This test determines the percent of each particle size of a soil. A sieve analysis is conducted on particle sizes greater than a No. 20 sieve (0.074 mm), and a hydrometer test on particles smaller than the No. 200 sieve. The gradation curve is drawn through the points of cumulative per cent of particle size, and plotted on semi-logarithmic paper for the combined sieve and hydrometer analysis. This test, together with the Atterberg Limits tests, is used to classify a soil.

### **NATURAL MOISTURE CONTENT (ASTM D2216)**

The purpose of this test is to indicate the range of moisture contents present in the soil. A wet sample is weighed, placed in the constant temperature oven at 105° for 24 hours, and re-weighed. The moisture content is the change in weight divided by the dry weight.

### **PROCTOR TESTS**

The purpose of these tests is to determine the maximum density and optimum moisture content of a soil. The Modified Proctor test is performed in accordance with ASTM D1557-70. The test is performed by dropping a 10 pound hammer 25 times from an 18 inch height on each of 5 equal layers of soil in a 1/30 cubic foot mold, which represents a compaction effort of 56,250 foot pounds per cubic foot. The moisture content is then raised, and this procedure is repeated. A moisture density curve is then plotted, with the density on the ordinate axis and the moisture content on the abscissa axis. The moisture content at which the maximum density requirement can be achieved with a minimum compactive effort is designated as the optimum moisture content (O.M.C.). The Standard Proctor test is performed in accordance with ASTM D698-70. This test is similar to the Modified Proctor test and is performed by dropping a 5.5 pound hammer 25 times from a height of 12 inches on 3 equal layers of soil in a 1/30 cubic foot mold, which represents a compaction effort of 12,375 foot pounds per cubic foot. This test gives proportionately lower results than the Modified Proctor test.

## FIELD CLASSIFICATION SYSTEM FOR ROCK EXPLORATION

**Saprolite**

A transitional material between soil and rock retains the relic structure of the parent rock and exhibits penetration resistance between 60 blows per foot and 100 blows/2 inches of penetration.

**R.Q.D.**

Rock Quality Designation; Ratio of the core lengths greater than four inches to the total length of the core run.

<u>Description</u>	<u>Percentage Core Recovered</u>	<u>RQD Rock Quality Description</u>	<u>Description of Rock Quality</u>
Incompetent	Less than 40	0 - 25	very poor
Competent	40 - 70	25 - 50	poor
Fairly Competent	70 - 80	50 - 75	fair
Fairly Continuous	80 - 90	75 - 90	good
Continuous	90 - 100	90 - 100	excellent

**FIELD HARDNESS:**

(A measure of resistance to scratching or abrasion)

Very Hard	Cannot be scratched with knife or sharp pick, breaking of hand specimens requires several hard blows of geologist's pick.
Hard	Can be scratched with knife or pick only with difficulty. Hard blow of a hammer required to detach hand specimen.
Moderately Hard	Can be scratched with knife or pick. Gouges or grooves to ¼ inch deep can be excavated by hard blow of point of a geologist's pick. Hand specimens can be detached by moderate blow.
Medium	Can be grooved or gouged 1/16 inch deep by firm pressure on knife or pick point. Can be excavated in small chips to pieces about 1 inch maximum size by hard blows of the point of a geologist's pick.
Soft	Can be gouged or grooved readily with knife or pick point. Can be excavated in chips and pieces several inches in size by moderate blows of a pick point. Small thin pieces can be broken by finger pressure.
Very soft	Can be carved with knife. Can be excavated with point of pick. Pieces 1 inch or more in thickness can be broken with finger pressure. Can be scratched readily by fingernail.

**WEATHERING:** (The action of the elements in altering the color, texture, and composition of the rock)

Very slightly	Rock generally fresh, joints stained, some joints may contain thin clay coatings, crystals in broken face show bright. Rock rings under hammer if crystalline.
Slightly	Rock generally fresh, joints stained, and discoloration extends into rock up to 1 inch. Joints may contain clay. In granitoid rocks some occasional feldspar crystals are dull and discolored. Crystalline rocks ring under hammer. Significant portions of rock show discoloration and weathering effects. In granitoid rocks, most feldspars are dull and discolored; some may be decomposed to clay. Rock as dull sound under hammer and has a significant loss of strength compared with fresh rock.
Moderately	All rock except quartz discolored or stained. Rock "fabric" clear and evident but reduced in strength to strong soil. In granitoid rocks all feldspars kaolinized to some extent. Some fragments of strong rock usually left.
Severely	All rock except quartz discolored or stained. Rock "fabric" discernible, but mass effectively reduces to "soil" with only fragments of strong rock usually left.
Very severely	All rock completely altered to soil-like material.
Completely	

**ROCK FRACTURE**

**FREQUENCY:** (Any break in a rock whether or not it has undergone relative displacement.)

<u>Description</u>	<u>Spacing Between Fractures</u>
Extremely fractured	Less than 1 inch
Moderately fractured	1 inch to 4 inches
Slightly fractured	4 inches to 8 inches
Sound	More than 8 inches

**Note:** Fracture frequency terms are generalized to described the average condition of the rock obtained from the core run. Portions of the rock within the run described may vary from the generalized descriptions. Where a core break appears to be due to drilling and not to natural causes, it has not been considered as a break for accessing fracture frequency. Frequency shown on Record of Soil Exploration represents condition of core as removed from the core barrel.

**JOINTS BEDDING, AND FOLIATION:**

<u>Joints</u>	<u>Bedding &amp; Foliation</u>	<u>Spacing</u>
Very close	Very thin	Less than 2 inches
Close	Thin	2 inches - 1 foot
Moderately close	Medium	1 foot - 3 feet
Wide	Thick	3 feet - 10 feet
Very wide	Very Thick	More than 10 feet

**Notes:** Refers to perpendicular distance between discontinuities

<u>Attitude</u>	<u>Angle (degrees)</u>
Horizontal	0 to 5
Shallow to low angle	5 to 35
Moderately dipping	35 to 55
Steep or high angle	55 to 85
Vertical	85 to 90

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**BORING LOG**

CLIENT: Miami County Commissioners		REPORT NO.: 31563-001		BORING NO.: KBJW-1					
PROJECT: Incarceration Facility Project		DATE STD.: 11/25/24		DATE FINISHED: 11/25/24					
LOCATION: 2042 N. County Road 25A, Troy, Ohio		DRILLERS: EnviroCore, Inc.		GROUND ELEV.: --					
		METHOD: HSA							
SCALE, FT.	STRATUM DEPTH, FT.	CLASSIFICATION OF MATERIAL		SAMPLE NUMBER & SAMPLE TYPE	DEPTH OF SAMPLE, FT.		BLOWS ON SAMPLER PER SPT (6" INTER-VAL)	SPT "N", OR RECOVERY (IN. FOR SHELBY TUBES, % FOR ROCK CORE)	
		Major Soil Components: Gravel Sand	Silt Clay		Minor Component Term Trace 1-10% Some 11-35% And 36-50%	FROM			TO
0.0	0.0	TOPSOIL							
	4"	ORIGINAL, medium dense, brown, SAND and GRAVEL (moist)		1A	1	2.5	22-30-38	68	
2.0				2A	3.5	5.0	17-28-33	61	
4.0									
6.0				3A	6.0	7.5	7-9-6	15	
8.0									
10.0				4A	8.5	10.0	4-7-9	16	
12.0									
14.0				5A	13.5	15.0	10-9-11	20	
16.0									
18.0									
20.0				6A	18.5	20.0	18-34-38	72	
		BOTTOM OF BORING AT 20.0 FEET							
22.0									
24.0									
26.0									
28.0									
30.0									
32.0									
34.0									
36.0									
38.0									
WATER LEVEL OBSERVATIONS		BORING METHOD		TYPE SAMPLE		*These Shelby Tube			
Noted on rods 19.5 ft.		HSA	Hollow Stem Auger	MD	Mud Drilling	A - Split Spoon	Samples Obtained In An		
At completion 19.5 ft.		CFA	Continuous Flight Auger	RC	Rock Coring	B - Rock Core	Auxiliary Boring Drilled A		
After -- hours -- ft.		DC	Driven Casing	CA	Casing Advancer	C - Shelby Tube	Few Feet From This Boring		
						D - Other			

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**BORING LOG**

SCALE, FT.		STRATUM DEPTH, FT.	CLASSIFICATION OF MATERIAL		SAMPLE NUMBER & SAMPLE TYPE	DEPTH OF SAMPLE, FT.		BLOWS ON SAMPLER PER SPT (6" INTER-VAL)	SPT "N", OR RECOVERY (IN. FOR SHELBY TUBES, % FOR ROCK CORE)
			Major Soil Components:	Minor Component Term		FROM	TO		
CLIENT: Miami County Commissioners			REPORT NO.: 31563-001		BORING NO.: KBJW-2				
PROJECT: Incarceration Facility Project			DATE STD.: 11/25/24		DATE FINISHED: 11/25/24		GROUND ELEV.: --		
LOCATION: 2042 N. County Road 25A, Troy, Ohio			DRILLERS: EnviroCore, Inc.		METHOD: HSA				
0.0	0.0		TOPSOIL						
2.0	6"		ORIGINAL, stiff, brown, sandy CLAY, some gravel (moist)		1A	1	2.5	4-6-11	17
4.0	3.5		Medium dense, brown, SAND and GRAVEL (moist)		2A	3.5	5.0	14-23-36	59
6.0					3A	6.0	7.5	13-18-13	31
8.0					4A	8.5	10.0	7-11-13	24
10.0									
12.0									
14.0					5A	13.5	15.0	3-6-9	15
16.0									
18.0									
20.0					6A	18.5	20.0	8-10-11	21
22.0			BOTTOM OF BORING AT 20.0 FEET						
24.0									
26.0									
28.0									
30.0									
32.0									
34.0									
36.0									
38.0									
<u>WATER LEVEL OBSERVATIONS</u>			<u>BORING METHOD</u>			<u>TYPE SAMPLE</u>		<u>*These Shelby Tube</u>	
Noted on rods <u>19.0</u> ft.			HSA	Hollow Stem Auger	MD	Mud Drilling	A - Split Spoon	Samples Obtained In An	
At completion <u>19.0</u> ft.			CFA	Continuous Flight Auger	RC	Rock Coring	B - Rock Core	Auxiliary Boring Drilled A	
After <u>--</u> hours <u>--</u> ft.			DC	Driven Casing	CA	Casing Advancer	C - Shelby Tube	Few Feet From This Boring	
							D - Other		





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**BORING LOG**

SCALE, FT.		STRATUM DEPTH, FT.	CLASSIFICATION OF MATERIAL		SAMPLE NUMBER & SAMPLE TYPE	DEPTH OF SAMPLE, FT.		BLOWS ON SAMPLER PER SPT (6" INTER-VAL)	SPT "N", OR RECOVERY (IN. FOR SHELBY TUBES, % FOR ROCK CORE)		
		Major Soil Components:		Minor Component Term		FROM	TO				
		0.0	TOPSOIL								
		4"	ORIGINAL, medium stiff, brown, sandy CLAY, some gravel (moist)		1A	1	2.5	2-3-5	8		
		2.0	Dense, brown, SAND and GRAVEL (moist)								
		3.5			2A	3.5	5.0	7-17-22	39		
		4.0									
		6.0			3A	6.0	7.5	15-32-34	66		
		8.0									
		10.0			4A	8.5	10.0	10-22-20	42		
		12.0									
		14.0			5A	13.5	15.0	9-17-18	35		
		16.0									
		18.0									
		20.0			6A	18.5	20.0	12-26-28	54		
		22.0			BOTTOM OF BORING AT 20.0 FEET						
		24.0									
		26.0									
		28.0									
		30.0									
		32.0									
		34.0									
		36.0									
		38.0									
<u>WATER LEVEL OBSERVATIONS</u>			<u>BORING METHOD</u>			<u>TYPE SAMPLE</u>		<u>*These Shelby Tube</u>			
Noted on rods 18.5 ft.			HSA	Hollow Stem Auger	MD	Mud Drilling	A - Split Spoon	Samples Obtained In An			
At completion 18.5 ft.			CFA	Continuous Flight Auger	RC	Rock Coring	B - Rock Core	Auxiliary Boring Drilled A			
After -- hours -- ft.			DC	Driven Casing	CA	Casing Advancer	C - Shelby Tube	Few Feet From This Boring			
							D - Other				



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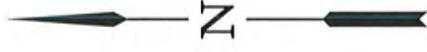
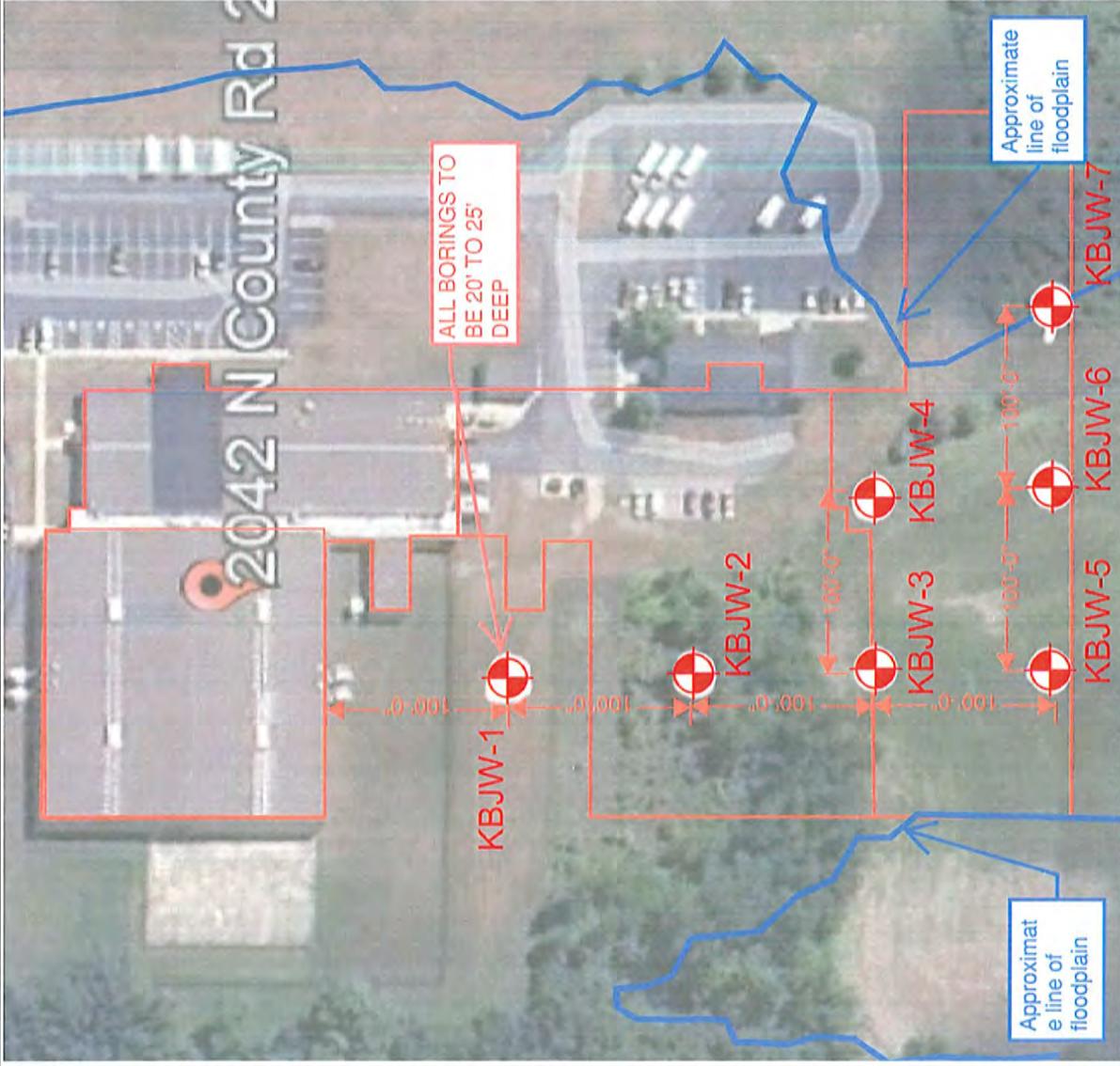
**BORING LOG**

CLIENT: Miami County Commissioners			REPORT NO.: 31563-001	BORING NO.: KBJW-7				
PROJECT: Incarceration Facility Project			DATE STD.: 11/25/24	DATE FINISHED: 11/25/24				
LOCATION: 2042 N. County Road 25A, Troy, Ohio			DRILLERS: EnviroCore, Inc.	GROUND ELEV.: --				
			METHOD: HSA					
SCALE, FT.	STRATUM DEPTH, FT.	CLASSIFICATION OF MATERIAL		SAMPLE NUMBER & SAMPLE TYPE	DEPTH OF SAMPLE, FT.		BLOWS ON SAMPLER PER SPT (6" INTER-VAL)	SPT "N", OR RECOVERY (IN. FOR SHELBY TUBES, % FOR ROCK CORE)
		Major Soil Components: Gravel Sand	Silt Clay		Minor Component Term Trace 1-10% Some 11-35% And 36-50%	FROM		
0.0	0.0	TOPSOIL						
	5"	FILL, medium stiff, brown, sandy CLAY, some gravel (moist)		1A	1	2.5	2-3-3	6
2.0				2A	3.5	5.0	3-5-5	10
4.0								
	5.0	ORIGINAL, medium dense, brown, SAND and GRAVEL (moist)						
6.0				3A	6.0	7.5	3-23-30	53
8.0								
				4A	8.5	10.0	9-12-9	21
10.0								
12.0								
14.0				5A	13.5	15.0	16-13-7	20
16.0								
18.0								
20.0				6A	18.5	20.0	13-20-19	39
22.0		BOTTOM OF BORING AT 20.0 FEET						
24.0								
26.0								
28.0								
30.0								
32.0								
34.0								
36.0								
38.0								
WATER LEVEL OBSERVATIONS			BORING METHOD		TYPE SAMPLE		*These Shelby Tube	
Noted on rods 14.0 ft.			HSA	Hollow Stem Auger	MD	Mud Drilling	A - Split Spoon	Samples Obtained In An
At completion 14.0 ft.			CFA	Continuous Flight Auger	RC	Rock Coring	B - Rock Core	Auxiliary Boring Drilled A
After -- hours -- ft.			DC	Driven Casing	CA	Casing Advancer	C - Shelby Tube	Few Feet From This Boring
						D - Other		

TABLE 1

RESULTS OF NATURAL MOISTURE CONTENT TESTS (ASTM D-4643)

BORING NO.	DEPTH INCREMENT, (FT.)	NATURAL MOISTURE CONTENT, %
<b>KBJW-2</b>	1.0 – 2.5	16.7
<b>KBJW-3</b>	1.0 – 2.5	23.8
<b>KBJW-4</b>	1.0 – 2.5	32.5
<b>KBJW-5</b>	1.0 – 2.5	17.7
<b>KBJW-6</b>	1.0 – 2.5	20.1



**LEGEND**

KBJW-1 = BORING LOCATION

**BORING LOCATION PLAN**  
 GEOTECHNICAL ENGINEERING INVESTIGATION  
 FOR THE PROPOSED MIAMI COUNTY INCARCERATION FACILITY PROJECT  
 AT 2042 NORTH COUNTY ROAD 25A,  
 TROY, OHIO

Project No.	31563-001
Scale	1"=100'
Date:	12/2/24



Formerly CBC Engineers

Figure No.

2



# VICINITY MAP

GEOTECHNICAL ENGINEERING INVESTIGATION  
 FOR THE PROPOSED MIAMI COUNTY  
 INCARCERATION FACILITY PROJECT  
 AT 2042 NORTH COUNTY ROAD 25A,  
 TROY, OHIO

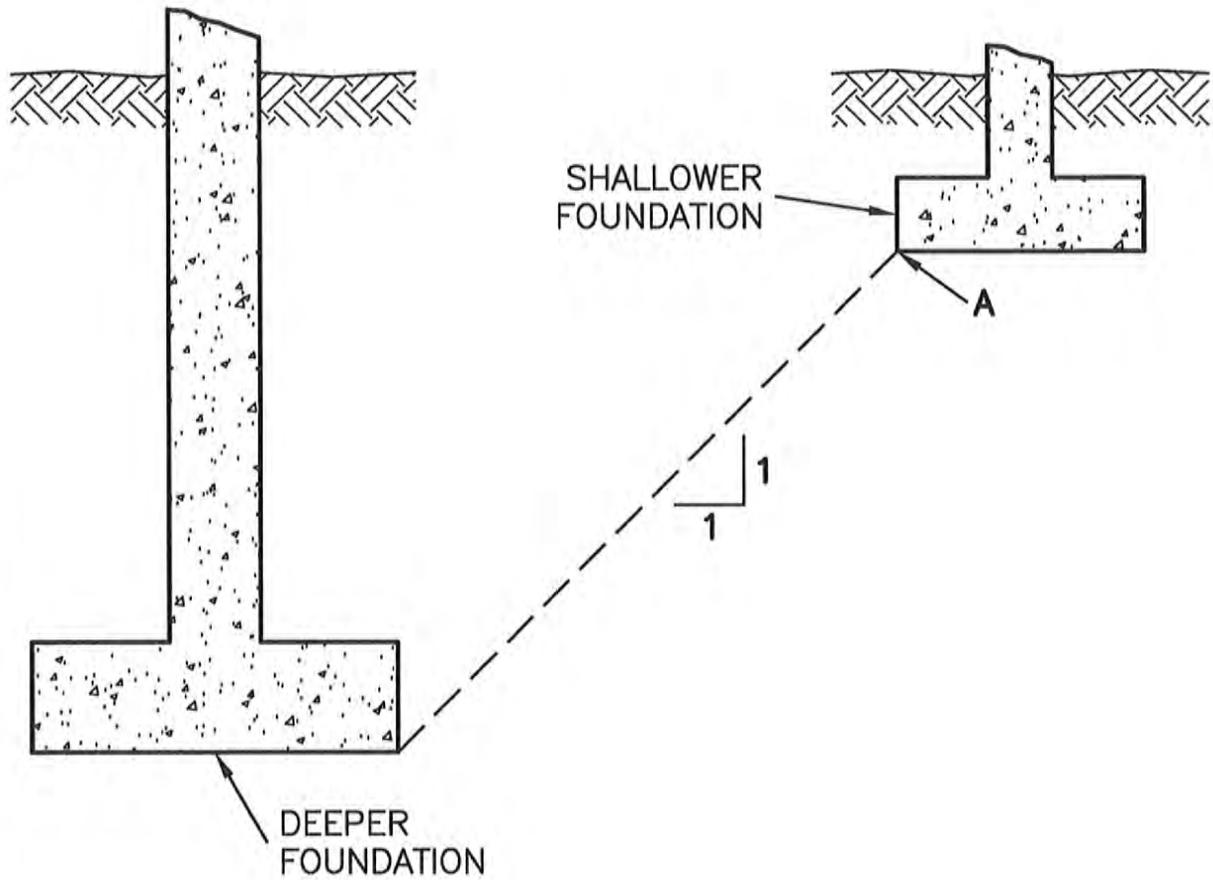
Project No.  
 31563-001

Scale  
 1" = 1/2 MILE

Date:  
 12/2/24



Figure No.  
 1



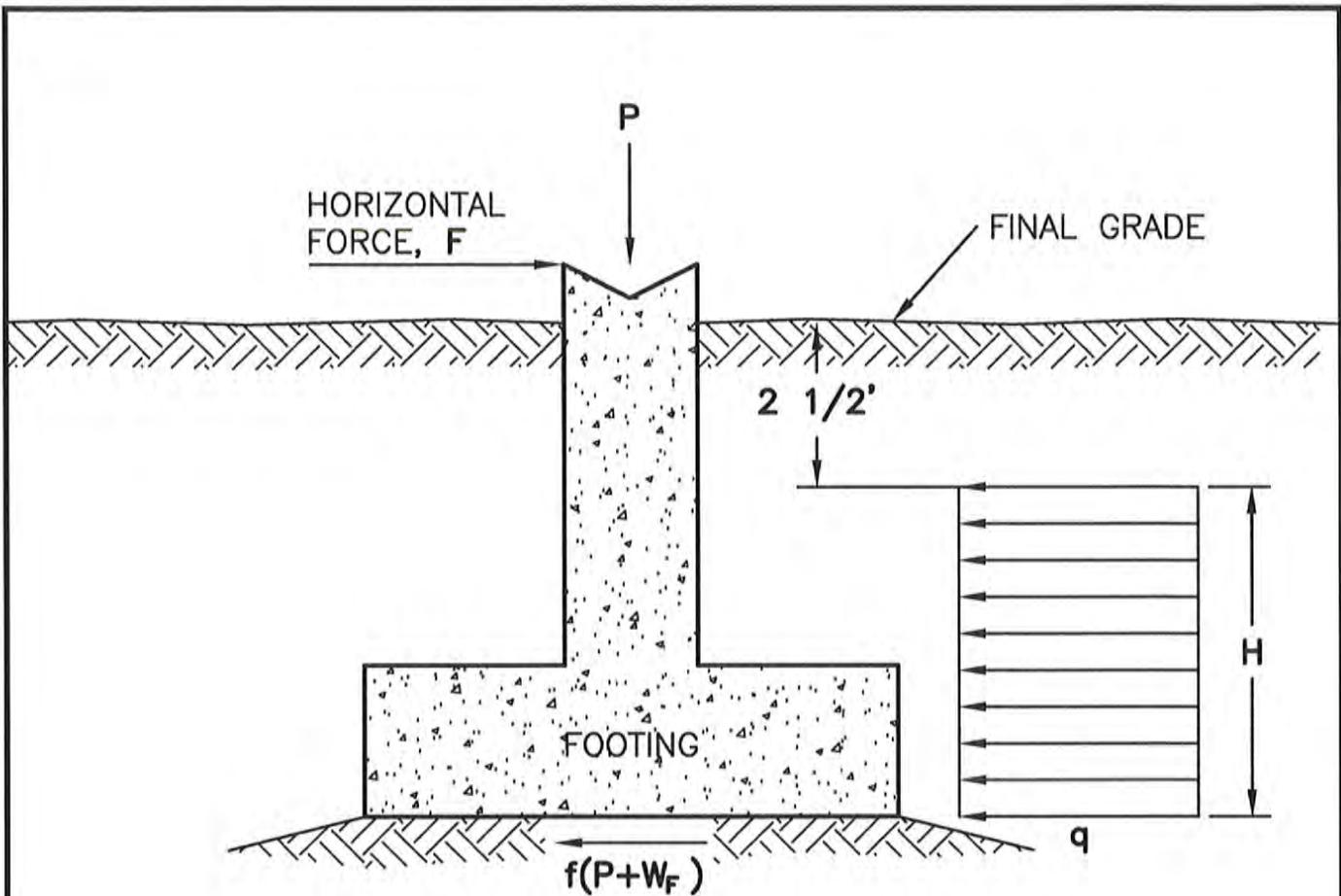
NOTE: POINT "A" OF SHALLOWER FOOTING MUST BE SITUATED BELOW THE DASHED LINE SHOWING THE FOOTING LOCATION LIMIT.

**DESIGN ILLUSTRATION:**

ADJACENT FOOTINGS



PROJECT NO. .	SCALE NONE	FIGURE NO. 3
------------------	---------------	-----------------



**LEGEND:**

**P** = MINIMUM DOWNWARD LOAD

**f** = COEFFICIENT OF FRICTION  
AT CONCRETE/SOIL INTERFACE

**F** = MAXIMUM HORIZONTAL FORCE

**W<sub>F</sub>** = WEIGHT OF FOOTING BELOW FINAL GRADE

**q** = RESISTING PASSIVE PRESSURE

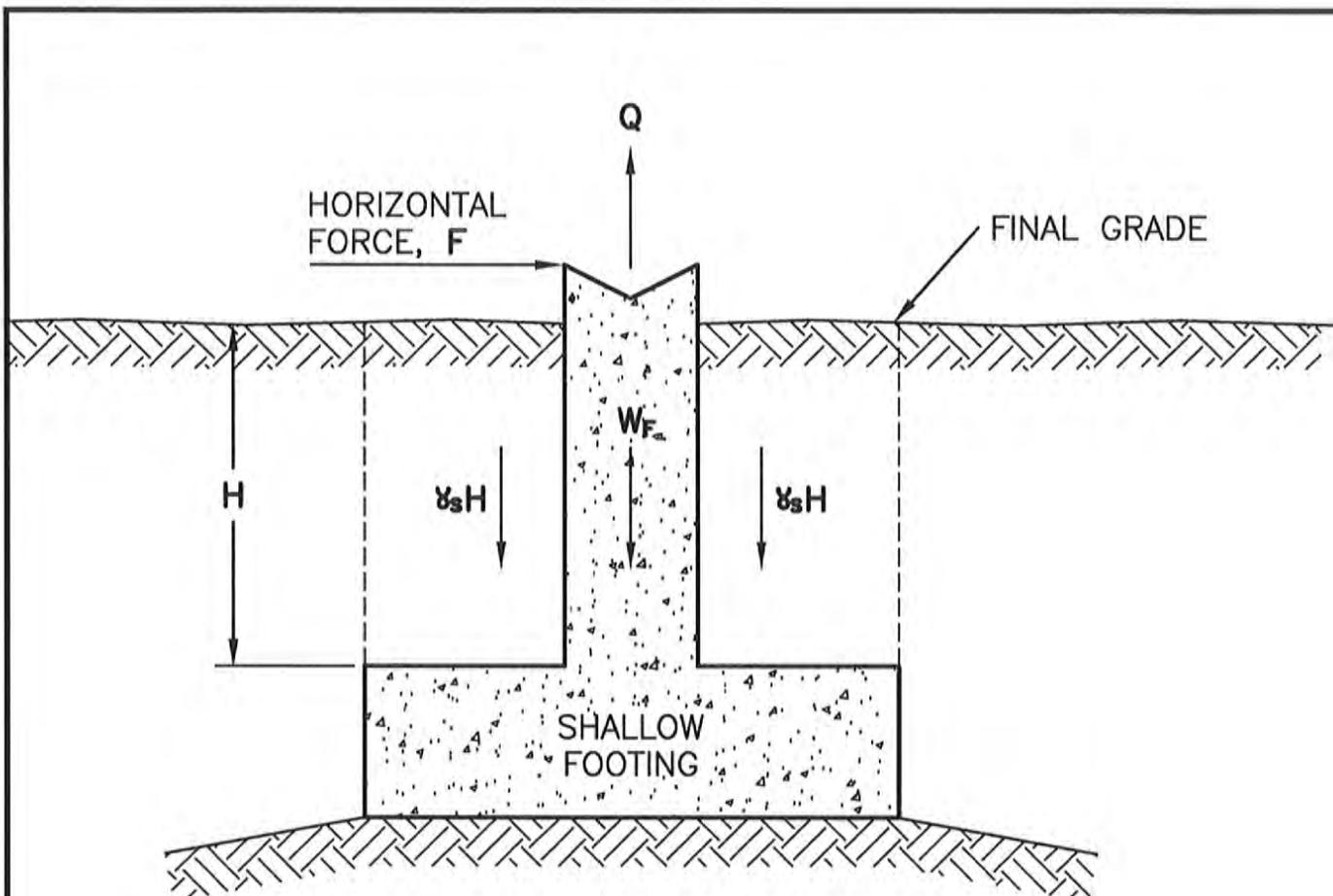
**DESIGN ILLUSTRATION:**

RESISTING LATERAL FORCES FOR  
SHALLOW FOOTINGS



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PROJECT NO.	SCALE	FIGURE NO.
.	NONE	4



**LEGEND:**

**Q** = MAXIMUM UPLIFT LOAD

**γ<sub>s</sub>** = TOTAL SOIL UNIT WEIGHT

**W<sub>f</sub>** = WEIGHT OF FOOTING BELOW FINAL GRADE

**DESIGN ILLUSTRATION:**

RESISTING UPLIFT FORCES FOR  
SHALLOW FOOTINGS



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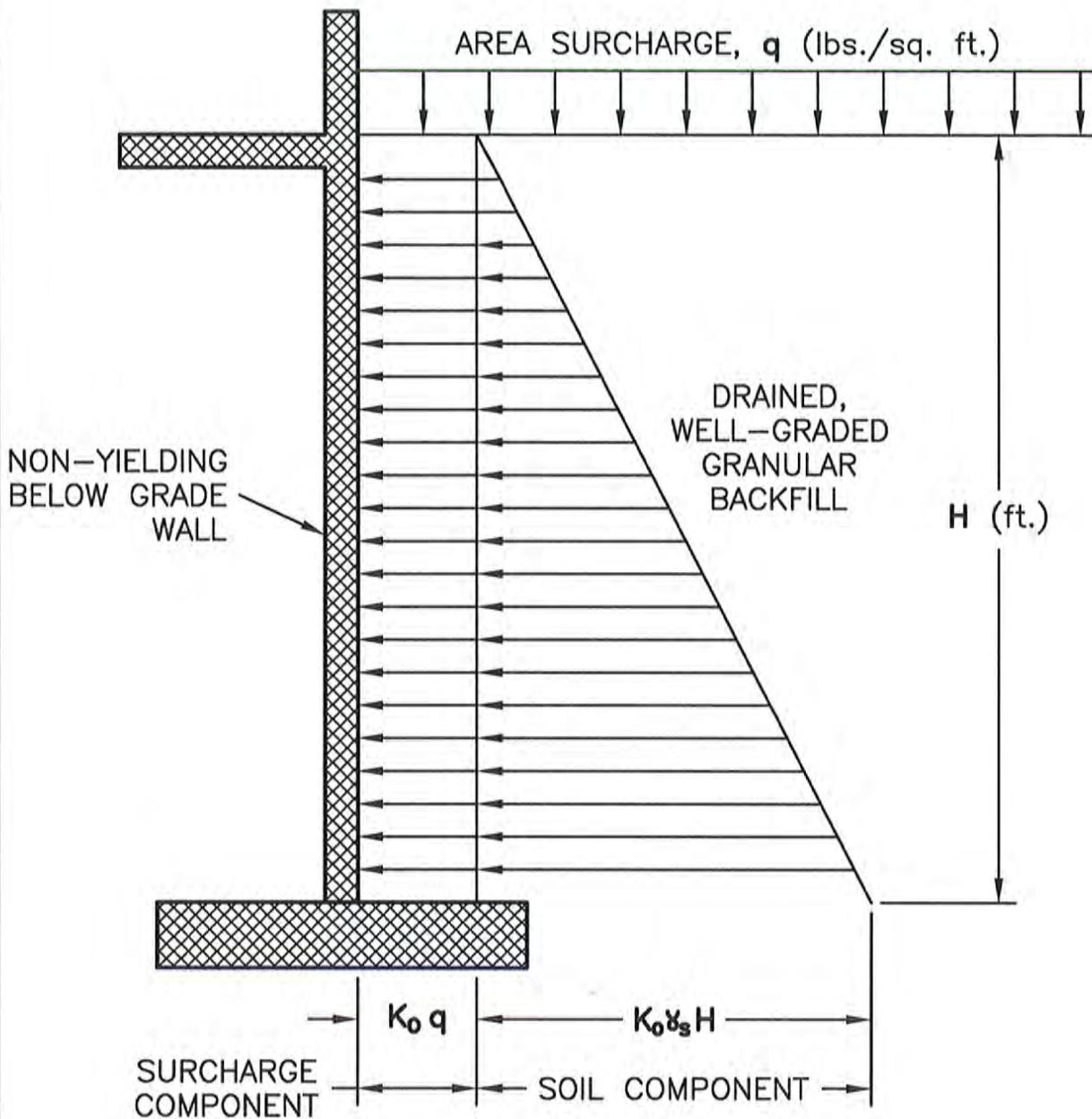
PROJECT NO.

SCALE:

NONE

FIGURE NO.

5



**LEGEND:**

$\gamma_s$  = TOTAL SOIL UNIT WEIGHT, (lbs./cu. ft.)

$K_0$  = AT REST EARTH PRESSURE COEFFICIENT

**DESIGN ILLUSTRATION:**

LATERAL EARTH PRESSURE AGAINST NON-YIELDING BELOW-GRADE WALL ASSUMING DRAINED BACKFILL WITH NON-HYDROSTATIC PRESSURE



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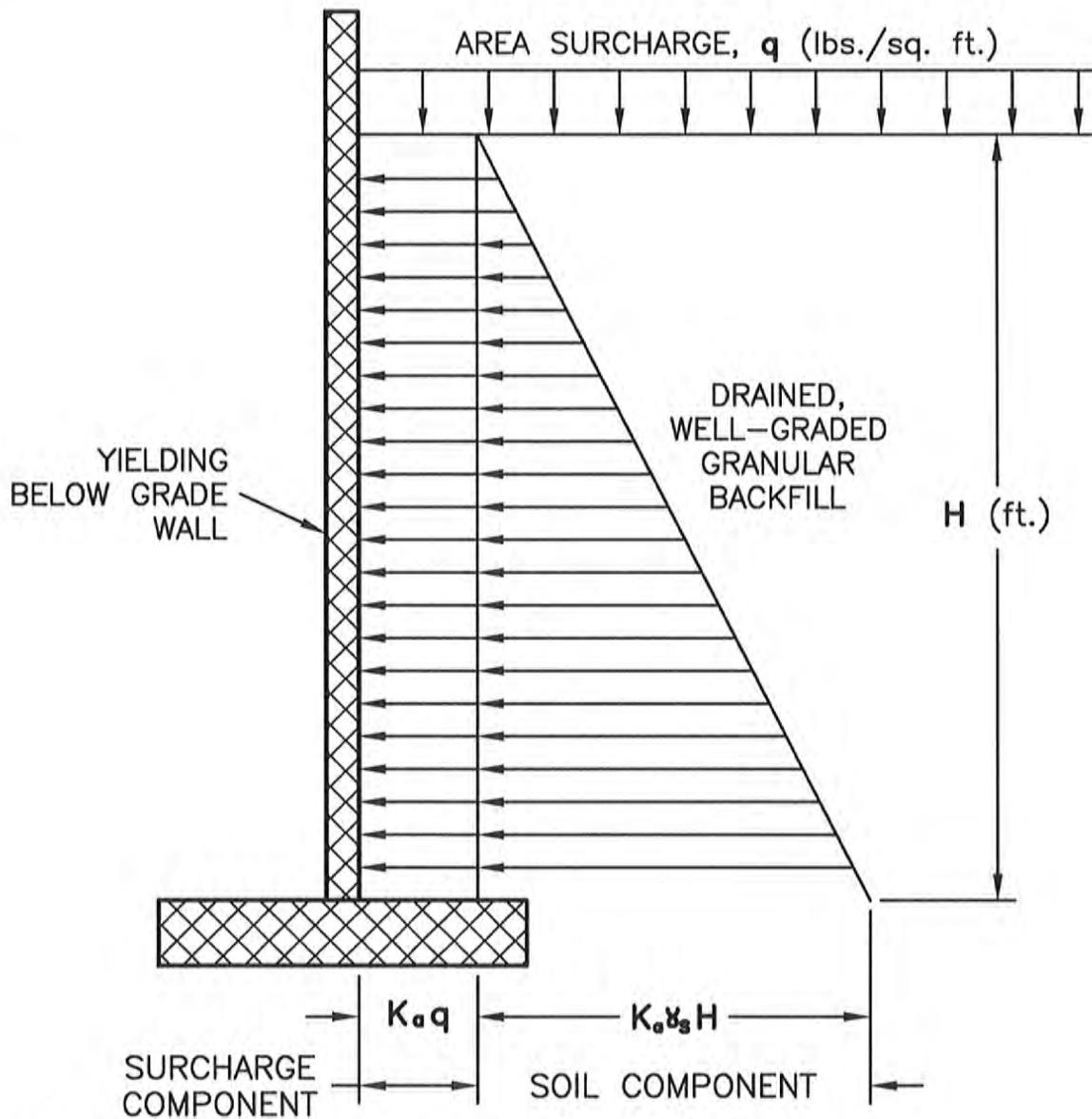
PROJECT NO.:

SCALE:

FIGURE NO.

NONE

6



**LEGEND:**

$K_a$  = ACTIVE EARTH PRESSURE COEFFICIENT

$\gamma_s$  = TOTAL SOIL UNIT WEIGHT, (lbs./cu. ft.)

**DESIGN ILLUSTRATION:**

LATERAL EARTH PRESSURE AGAINST YIELDING BELOW-GRADE WALL ASSUMING DRAINED BACKFILL WITH NO HYDROSTATIC PRESSURE



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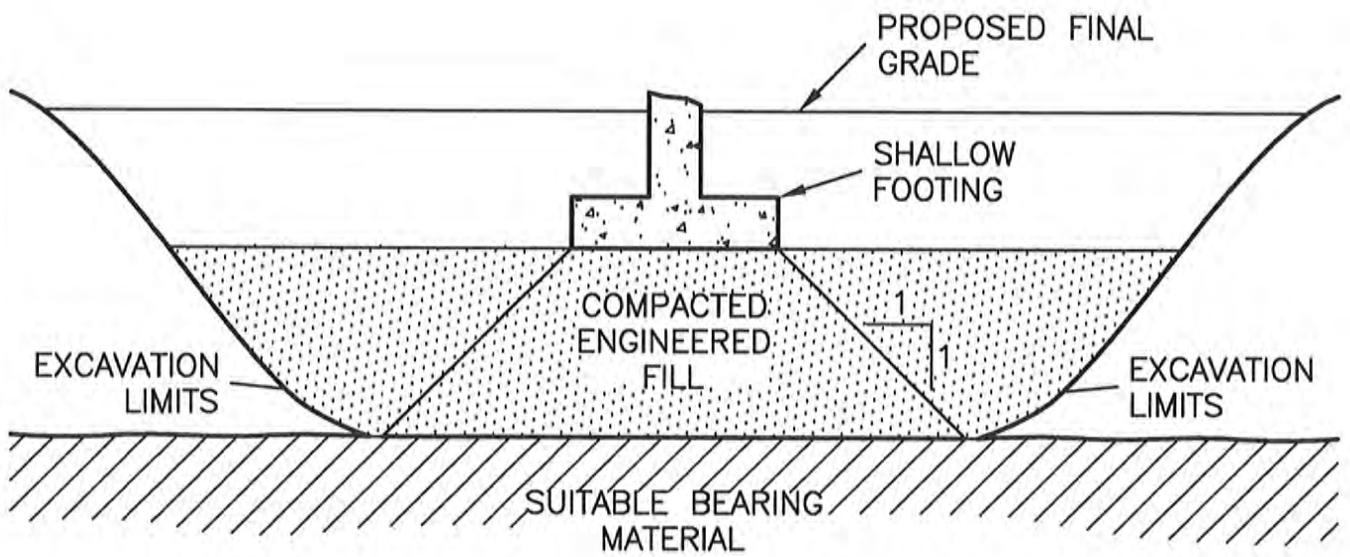
PROJECT NO. .

SCALE:

NONE

FIGURE NO.

6A



**DESIGN ILLUSTRATION:**

SHALLOW FOOTINGS IN AN UNDERCUT AREA



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JOHNSON  
WILLIAMS**

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PROJECT NO.

SCALE

FIGURE NO.

NONE

7



**Henningson, Durham, & Richardson, Inc.**  
**Levin Porter Architects**  
**Kleinfelder**  
**Danis-Granger JV**  
**MJ Martin, Inc.**

We practice increased use of sustainable materials and reduction of material use.

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