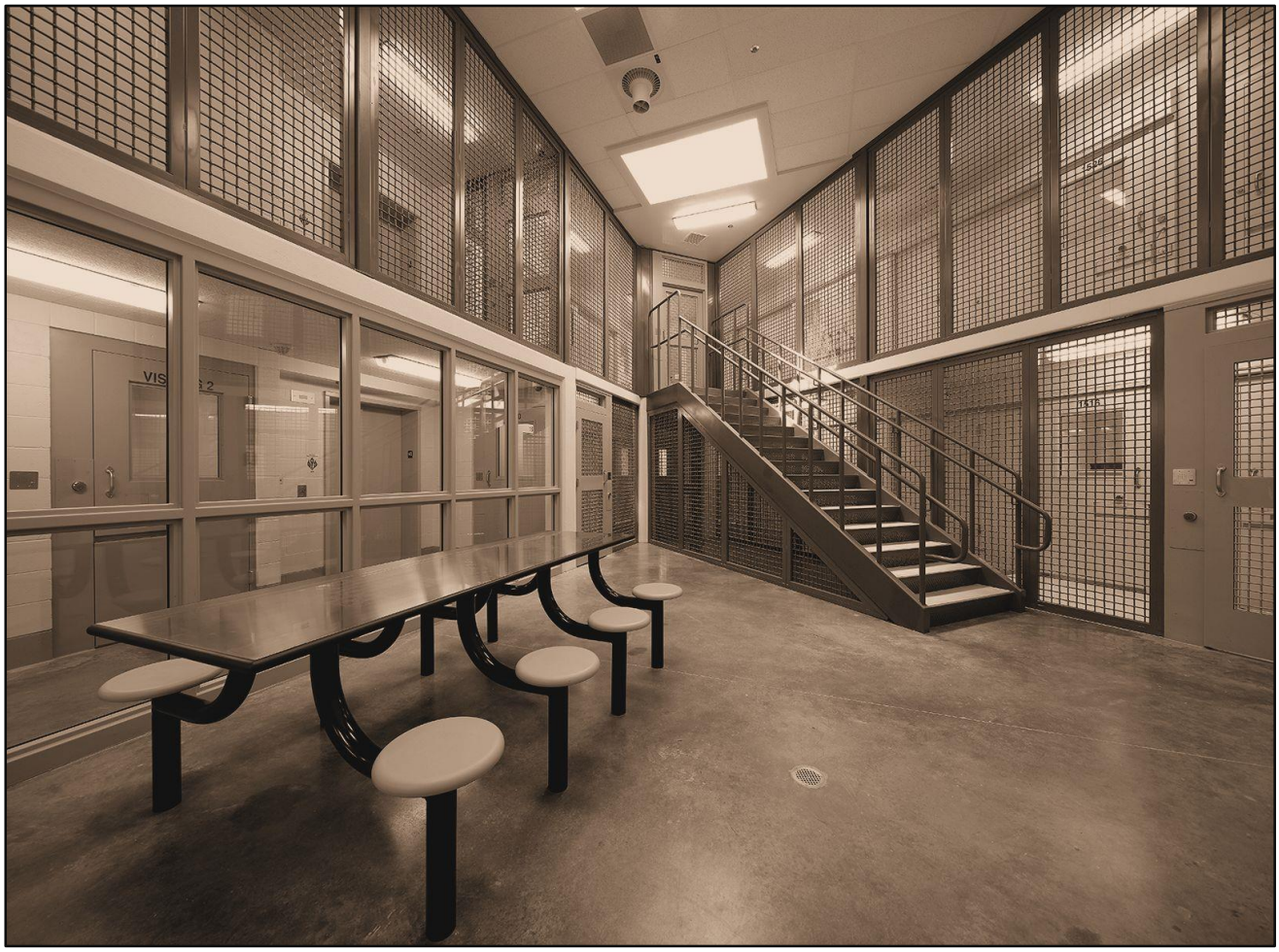
CAPITAL PROJECT SOLUTIONS

Davidson County Sheriff's Office

Master Plan



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Presented By:

Capital Project Solutions, Inc.

CPS
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On behalf of the entire team, we wish to thank the outstanding staff at the Davidson County Sheriff's Office for their cooperation, insight and assistance.

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EXECUTIVE SUMMARY

In 2014, the Metro Council approved $1.5M in funds to develop an extensive long-term Master Plan for the Davidson County Sheriff's Office (DCSO). The clear goal of this plan was to streamline DCSO operations and gain efficiencies.

The CPS team comprised of Project Management, Architectural, Engineering, Construction, and Real Estate consultants was issued this assignment. Extensive research and assessment of the DCSO programs, operations and facilities has provided findings from which we offer our go-forward recommendations and plans.

Since the 1950's, the DCSO jail facilities have evolved from a County Workhouse in East Nashville, the 7th floor of the Historic Courthouse and the Ben West Building.

Today, the DCSO operates from eight (8) facilities scattered between the downtown and the Harding Place area; The Criminal Justice Center, Trial Lawyers Building, Hill Detention Center, Jerry Newson Training Facility, Correctional Development Center – Female, Correctional Development Center – Male, Offender Re-entry Center and an Office/ Warehouse facility.

This study primarily focused on the Criminal Justice Center (CJC), the Trial Lawyers Building, the Hill Detention Center (HDC) and the Jerry Newson Center. These facilities were reviewed for condition and operational efficiencies. The team's assessment of the jail facilities revealed that these buildings are in need of major renovation or replacement.

Inadequate design, overuse and age have contributed to the deterioration, increased staffing requirements and increased risk of these facilities, including:

1. The overuse of certain facilities.
2. The use of parts of the buildings for functions that is different than the design intent.
3. A staff-intensive interior layout of the buildings that causes inefficient operations.
4. A lack of units with cells causing the Sheriff's Office to put inmates in lower security custody housing arrangements.

Our best example of inadequate design, overuse and age is found in the Criminal Justice Center. Currently the CJC houses 788 inmates… twice the capacity of its original design. Studies by industry professionals have shown that the building systems (mechanical, electrical and plumbing) along with various components within CJC have reached end-of-life. Major failure of the plumbing system is imminent and will likely render the building uninhabitable. Renovation or upgrades to this facility would cost in excess of $61M and would require the relocation of inmates during construction at an additional cost of approximately $7M. Renovation would require the facility to meet current guidelines and standards thereby greatly reducing the number of allowable beds.

Another example is the Hill Detention Center. The HDC is a renovated grocery store/warehouse that houses 565 inmates and carries the same physical plant issues of inadequate design, overuse and age. Its design mandates more staff and more inmate movement than other facilities of similar size and purpose. Most of the building systems have reached end-of-life. The cost to renovate HDC is estimated at nearly $15M with an additional cost of approximately $5M to relocate inmates during construction.

The Jerry Newson Training Facility was originally constructed in 1953 as the county workhouse. This facility, after minimal renovation in 1993, was re-purposed as a short-term training center. All systems have reached end-of-life and the almost $11M cost to renovate exceeds the cost to build a new facility of similar size and purpose.

The Trial Lawyers Building was constructed in the mid 1970's, has structural issues in addition to HVAC, Plumbing and Electrical systems which require replacement. The estimated cost to renovate this facility is estimated in excess of $4M. The total itemized costs to renovate all facilities as follows:

CJC renovation cost:	$ 61M
CJC inmate relocation cost:	$ 7M
HDC renovation cost:	$ 15M
HDC inmate relocation cost:	$ 5M
Jerry Newson renovation cost:	$ 11M
Trial Lawyers renovation cost:	$ 4M
	=====
Total DCSO renovation cost:	**$103M**

While the Tennessee Corrections Institute (TCI) has thus far certified the CJC facility, there is no guarantee that this consideration will continue. The rated capacity as established by TCI for the CJC may be reduced substantially which will place increased pressure on the remaining facilities and force more of the inmate population into dormitory housing arrangements.

In determining appropriate options, the team proposed relocating the bed count from the CJC and HDC buildings to a single consolidated housing facility away from the immediate downtown area. This proposed single consolidated housing facility would be more efficient to operate, with fewer staff and other required resources. The trade-off between increased capital costs and decreased operating costs for this consolidated facility will offer a more cost-efficient operation and save money in the long term.

After reviewing the collected data, three Master Plan scenarios were developed as follows:

Scenario One: Maintain Existing Facilities

1. Inefficient building design causes staffing costs to remain high.
2. Metro continues to invest into facilities that are not enduring.
3. No expansion capability.
4. Major system failure could require evacuation of inmates.
5. TCI may revoke bed counts due to no correction of housing area size.

Scenario Two: Renovate/Upgrade Existing Facilities

1. Inefficient building design causes staffing costs to remain high.
2. Metro will invest into facilities that are not enduring.
3. Construction Phasing will cause cost-prohibitive relocation of inmates.

Scenario Three: New Single Consolidated Housing Facility

1. Public safety and security improved with single campus.
2. Annual savings in staffing costs.
3. Reduced operational and utility costs.
4. More efficient processing of inmates.
5. Shared resources (i.e. kitchen, laundry, etc.).
6. Potential for improved utilization of downtown property.

Overall, the outdated and inadequate downtown facilities have placed greater challenges on the efficient distribution of manpower and the effective delivery of programs. It is therefore our recommendation that four downtown facilities (CJC, Trial Lawyers Building, HDC, and Jerry Newson) are replaced by newer, more efficient facilities. These new facilities would serve to consolidate the programs and reduce the DCSO manpower requirements by approximately 35 to 40 positions (which could be readily accomplished through attrition) at a savings of $1.8M to $2.0M per year.

While the Master Plan team concluded that an expansion of existing facilities at Harding Place was the optimum location for the new single consolidated housing facility (scenario three), it was not without comparison. Five additional sites at various locations across Davidson County were studied under this plan. These sites were located on Donelson Pike, Whites Creek Pike, McGavock Pike, Myatt Drive and Stones River Road. To be considered, all sites were required to have access to public utilities and be accessible by public roads with ample road frontage and provide unobstructed surveillance capabilities and secure access. The sites would permit the potential to develop a green energy efficient facility that utilizes modern technology with minimal impact on neighboring properties. Additionally, the sites were required to fall under the CF, CC, or IG zoning or be able to be rezoned. AG and AR2A were permitted by special exception with BZA approval. All sites in our study were for sale and readily available. After careful study of the logistics, access, land cost, cost to connect utilities and area impact, the team selected the 163 (approximate) acre site at Harding Place which is currently owned by Metro and has three other jail facilities on-site.

After extensive programing, development of design criteria and site studies, the DCSO team determined that an expansion of existing facilities at Harding Place to house 1280 inmates would cost an estimated $110M. Going forward, the team recommends the procurement of a qualified Construction Management (CM) company utilizing a design-build delivery model to construct the new facility. Construction duration is estimated to be approximately 28 months.

The expansion of existing facilities at Harding Place would provide newer, more efficient buildings (constructed to LEED Silver standards) resulting in lower utility and maintenance costs per square foot.

The expansion of existing facilities at Harding Place will include a state-of-the-art stand-alone Processing Center which will improve overall booking efficiency and public safety. Instead of sitting in a booking room filling out paperwork, the arresting police officers are able to return to duty approximately one (1) hour sooner. Since there are approximately 30K arrests annually, the Processing Center's program will likely result in 30K additional man hours each year of direct police protection on the streets of Nashville.

CONCLUSIONS

The Davidson County CJC and HDC are well managed and the staff appears to perform in a professional manner despite the bad conditions and poor design of the facilities.

The facility layouts are not conducive to good correctional practice, are staff inefficient and don't support good management practices. The HDC administrative section, the Trial Lawyers building and the Jerry Newson center are also in need of physical improvements and the separated facilities are not conducive to good communications and management procedures.

We believe the most beneficial solution to resolve these issues would be to consolidate the CJC and the HDC into a single facility and to consolidate all administrative functions into a single facility. To maximize the effectiveness of these recommendations, we believe these new facilities should be located at the Harding Place jail complex so that all operations are consolidated.

The expansion of existing facilities at Harding Place makes sense fiscally, operationally, environmentally and improves public safety.

MASTER PLAN OPTIONS

The Davidson County Sheriff's Office undertook this master plan study of their operations and existing facilities with the goals of streamlining operations and gaining efficiencies. The team's assessment of the jail facilities revealed that all buildings are in severe need of maintenance, renovation and/or replacement in the short and long-term.

Several factors have affected the DCSO program, security and facility condition which include:

- The overuse of certain facilities due to the need to accommodate more inmates than building design capacity, thereby taxing the facility infrastructure and shortening the life of the buildings;
- The use of parts of the buildings for functions that is different than their designed intent, which can also cause overuse of building systems and therefore shorten the useful life of the facility.
- A staff intensive interior layout of the buildings that causes inefficient operations.
- A lack of units with cells causing the Sheriff's office to put inmates in low custody housing arrangements. This translates directly into more damage to the physical conditions of the building.
- The jail population demographic and classification mix, which includes the need for higher level security beds.

The team considered three Master Plan scenarios as listed below.

Scenario 1 – Maintain Existing Facilities

Maintain the existing buildings and replace aging systems when needed. Address any code requirements immediately.

Pros

- No immediate capital expenditures for improved facilities. Can budget systems replacement over several years
- No need to acquire additional property.

Cons

- Inefficient building design causes staffing costs to remain high.
- City will invest into a facility that is not enduring. No expansion capability.
- TCI may eventually revoke bed counts due to no correction of housing area sizes.

Scenario 2 – Fix the Existing Buildings

Begin major capital expenditures to immediately replace aging systems, address code requirements, and bring buildings up to TCI and ACA standards.

Pros

- Reuse of existing buildings.
- No need to acquire additional property.

Cons

- Inefficient building design causes staffing costs to remain high.
- City will invest into a facility that cannot be expanded.
- Construction Phasing causes dislocation of inmates – very costly to temporary house inmates elsewhere.

Scenario 3 – New Construction

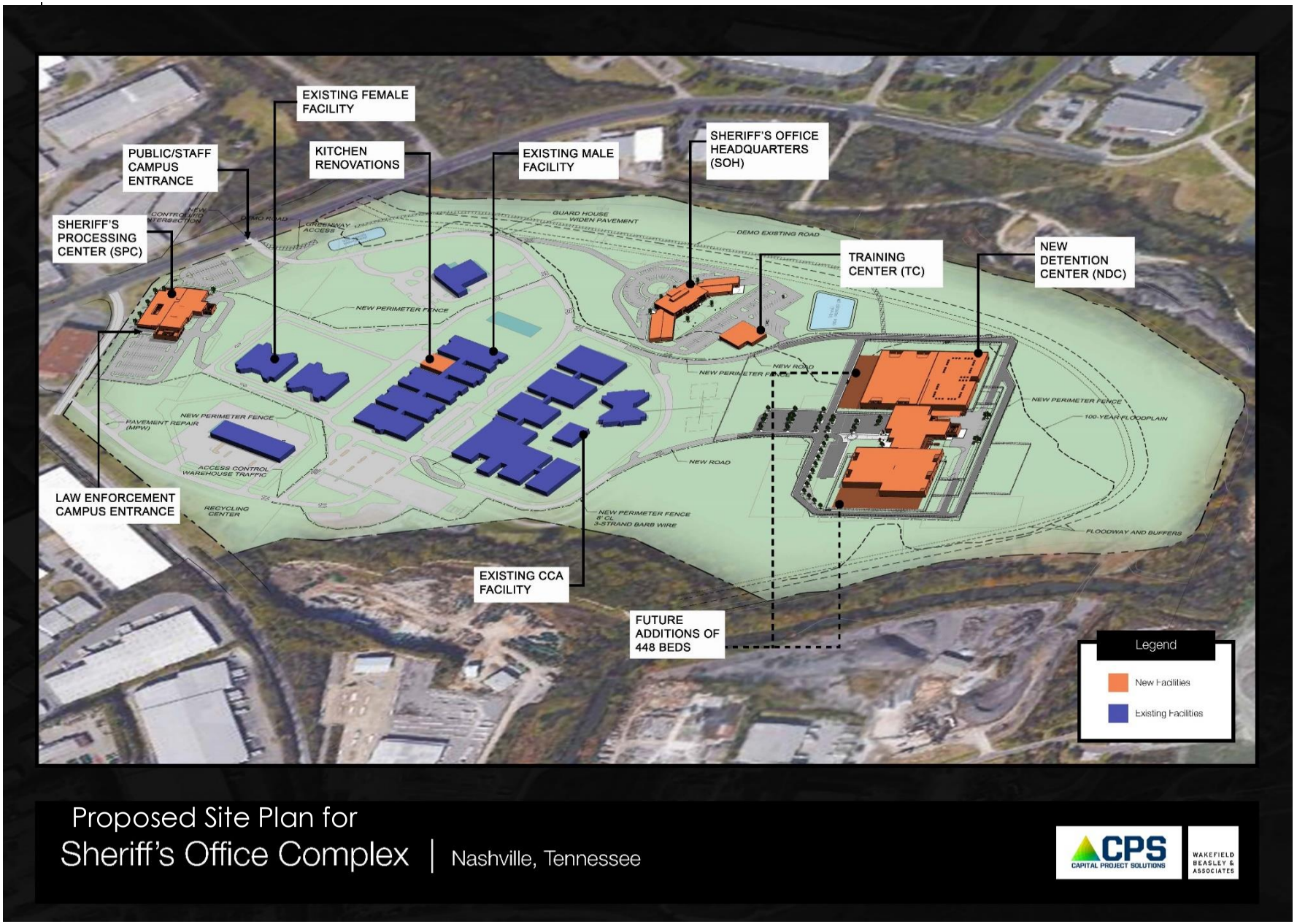
New, staff efficient facility is constructed that meets all current codes and standards. Recommended location is adjacent to the Harding Road jail complex.

Pros

- Public Safety and Security improved with management of a single campus.
- Yearly savings in staffing costs.
- Other operational costs reduced including all utility costs. Also use existing campus resources to maximize operational costs (i.e.: single kitchen for campus).
- Downtown land used for highest and best use.

Cons

- Need Capital Expenditure Plan to fund improvements.



Proposed Site Plan for
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CPS CAPITAL PROJECT SOLUTIONS

WAKEFIELD BEASLEY & ASSOCIATES

FACILITY ASSESSMENT SUMMARY

This report is a summary document representing findings included in detailed construction and engineering assessments prepared in 2014.

During the course of this study, CPS and their consultants had the opportunity to tour and evaluate the existing condition of the Criminal Justice Center, Hill Detention Center, Jerry Newson Training Center, and the Trial Lawyers Building specifically related to the feasibility of renovations to these structures.

In all cases, the ages of these facilities, and current condition of the building infrastructure (particularly Mechanical and Electrical Systems) would require a complete replacement of these components. In addition, inmate capacity, security issues, code issues, and necessary deferred maintenance would require significant renovation to the interiors and building envelopes.

To renovate an aged detention facility is a costly endeavor. On an initial cost basis, renovation is nearly equal to that of new construction. Cost per bed to renovate can actually be more expensive.

Cost aside, the major issue with a renovation is logistics. Interior and building envelope work could potentially be phased to an extent. The majority of the infrastructure work cannot. A renovation would require relocating the inmate population and associated staff during demolition and construction activities. For a building the size of the CJC, a renovation could take a year or longer, necessitating a long term alternative housing solution at a remote location.

In addition, given the constraints of the existing facilities, it may be impossible to renovate these to current codes and standards required by governing and certification authorities.

To summarize, a renovation would likely be equal to or exceed of the initial cost of new construction. Any initial savings, if realized, would be negated in a very short time due to alternative long term housing, and a higher life cycle cost of the renovated facility. Logistically, it may not be feasible at all to renovate if there is no long term alternative housing solution.

METHODOLOGY

The team reviewed the facilities with two key goals/questions: What is the life span and expectancy of the current facilities and provide an operational assessment of the current facilities and provide suggestions for efficiencies. We used the following methodology to answer those questions:

Field investigations - The team did a visual review of the existing facilities. The facilities were reviewed in terms of functional effectiveness, physical conditions and whether the facility can be considered a long term enduring asset.

Review and analysis of operations - We reviewed data supplied by the sheriff's office and cross referenced it with TCI standards, national best practices, existing facility capabilities and recommended improvements.

CRIMINAL JUSTICE CENTER

Operational / Physical Assessment

This facility was originally designed to house inmates with intermittent supervision. This consisted of a single control room on a floor with a floor officer who "roved" around the floor to monitor the inmates. After many years and security level changes, the operations of the CJC had to adjust to needs of the whole inmate population. This changed the role of the CJC to a high security facility. Currently, the facility uses an indirect supervision model (officer stationed outside the unit) to supervise the inmates. Due to poor sightlines, the CJC has become a very staff intensive operation. Typically, high rise jails are very staff intensive but the added poor sightlines makes this facility especially expensive to operate. With all of these drawbacks, the sheriff's office does a good job working with the inefficient design and maintaining a professional environment for the employees. However, as described above, the building is very costly to staff and operate. Also of note is that TCI has allowed a generous exemption for this facility in terms of capacity. The facility operates at a capacity of almost double the original design and any major renovations or improvements will most likely cause TCI to reduce the facility to its' original capacity causing a loss of well over 300 beds. The DCSO needs a modern and efficiently run maximum security facility to safely operate.

We recommend that a facility with single and some 2 man cells be constructed to replace this facility. The new facility will cost much less to operate in terms of manpower and utilities and will also provide a safer environment for the officer and inmate alike.

Originally constructed in 1981, many of the building's components are original, with the exception of a few moderate renovations over the past 33 years. The building is in critical need of significant repairs and upgrades to function properly as a modern detention facility. A summary of building components, and their condition is addressed on the following pages.

Structural Systems

Overall, the structure of the facility is adequate with the exception of repairs and waterproofing provisions needed at the basement level.

Roofing and Exterior Weather Protection

Exterior masonry is adequate only requiring minor repairs.

Windows are aged, and should be replaced for increased weather tight conditions.

Roofing materials are at end of life and need replacement

Interiors

Without addressing reconfiguration of interior spaces that would be required to more efficiently house detainees, the basic finishes within the building are in poor condition and should be redone.

The most significant work required on the interior is replacement of the cell doors. Currently, they are in very poor condition and do not function properly. All cell doors, hardware, and locks should be replaced.

Basic detention furnishings and fixtures are old and in relatively poor condition. These should mostly be replaced.

Conveying Systems

Elevators are old, do not function properly, and are unreliable at best. These should be replaced with new cabs and equipment.

Mechanical and Electrical Systems

Air Handling Systems

The existing air handlers and fans not replaced in the 2004 renovation are past the end of their anticipated 25-30 year life expectancy according to the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE). While these units are currently operating, their replacement should be considered in the near future to prevent outages due to ongoing maintenance issues. Additionally, several of the systems currently operate with thermostatically controlled dampers that allow supply air to completely be shut off to the space served. This arrangement violates the code required ventilation for occupied spaces and needs to be addressed in a future renovation.

The existing duct systems are past their life expectancy as detailed by ASHRAE and the leakage rate may exceed current standards. New duct systems are recommended to provide improved energy efficiency and required temperature control.

Chiller and Chilled Water Pumps

ASHRAE lists the anticipated life expectancy for an end suction or split case pump to be 20 years. Since the chilled water pumps were replaced approximately 10 years ago, these are at approximately 50% of their useful life. The existing chilled water piping may be reused, but should be flushed and chemically cleaned. The chilled water piping insulation should also be checked and repaired as necessary in the mechanical rooms.

Steam and Hot Water Systems

The steam-to-hot water heat exchangers are beyond their anticipated 24 year life expectancy according to ASHRAE and should be replaced in the near term.

ASHRAE lists the anticipated life expectancy for an end suction or split case pump to be 20 years. Due to the age of all four hot water pumps, replacement is necessary. Each new end suction pump should be provided with the associated valves, differential pressure switch, pressure gauges, and variable frequency drive. The existing hot water piping may be reused, but should be flushed and chemically cleaned. The hot water piping insulation should also be checked and repaired as necessary in the mechanical rooms.

Control Systems

The life expectancy for pneumatic controls according to ASHRAE is 20 years. It is recommended that new DDC controls with a computer based building automation system be provided to replace the existing pneumatics. The new building automation system (BAS) will be provided to offer control and monitoring of all new and existing to remain HVAC equipment including air handlers, fans, VAV boxes, re-heat coils, dampers, pumps, etc. New temperature sensors, control valves and dampers (with DDC actuators) should be provided for all equipment.

Plumbing and Fire Protection

Basement Level

The 8" combination Domestic and Fire Protection Water Entrance piping to the RPBPs and from the RPBPs to the Domestic Water Booster Pump and Fire Pump looks like cement lined ductile iron. Some of the fittings look like they could be black steel. If any of the piping or fittings is black steel, they should be replaced with cement lined ductile iron. The 8" combination water piping serving the Fire protection and the Domestic Water System should have been a separate service with separate RPBPs and Double Check Valve Assembly.

The Fire Pump is original to the building in 1980 and is in poor condition. The area around the pump is wet because the pump is leaking more than just the Barings' normally leak. The fire pump needs to be rebuilt or replaced.

The Duel 6" Reduce pressure Backflow Preventers and Gate Valves have been replaced and are in good working order. The Existing 8" water piping is the original to the building as noted above.

The two Steam Domestic Water Heaters are B+ Aerco Water Heaters and were replaced in 2011. The domestic water piping and fittings at the water heaters was replaced with new copper and Press-Fit or Pro-Press compression

copper fittings. The rest of the copper water piping system is original to the building.

The Bronze Domestic Hot Water Recirculation Pump was replaced in 2011 when the water Heaters were replaced and is good working order.

All of the domestic water piping in the building appears to be original and near end of life. The devices in the piping such as valves, check valves or fixture stops in the section of the building from 1980 are in bad condition and do not work properly or will not shut-off due to the corrosion in the water piping. All the devices in the 1980 section of the building needs to be replaced.

The galvanized pipe risers, by-pass assembly, valves and fittings serving the Grundfos Domestic Water Triplex Pumps system should be replaced with and alternate piping material such as Copper, Stainless Steel, Auqatherm PE or Corzan Schedule 80 CPVC piping and fittings.

The system Pressure Reducing Valves serving the lower pressure zone located above the fire pump has been replaced. The insulation needs to be replaced on the existing piping.

The Condensate Sump Pit is in poor condition and repairs.

The original buildings waste and vent piping is 33 years old. Repairs or patch areas have been made. The cast iron is at the end of its life expectancy and needs to be replaced in the next couple of years.

First Floor Level

Typical Holding Cell Stainless Steel Combination water closet and lavatory and floor drain are Stainless Steel and in adequate condition. The faucet controls within the plumbing chase are sticking open or are in need of replacement.

Typical Stainless Steel Combination water closet and lavatory's flush valve is in adequate condition but requires standard maintenance. The faucet controls

need to be serviced or replaced. The cast iron waste and vent stacks are within the 2004 renovation are still in good condition.

The Kitchen waste and vent piping, floor drains, floor sinks and underground piping is original to the building in 1980 and is at the end of the life expectancy. All the waste piping needs to be replaced above grade. The floor drains, floor sinks underground piping needs to be replace or the underground system will continue to have ongoing problems with leaks or blockage within the underground system.

Kitchen Steam Water Heaters are located in the First Floor Mechanical Room. The one Water Heater was installed in 2008 and the other was installed in 2011. The devices in the piping water such as gages, thermometers, valves, check valves in this section of the building were installed in 1980. The devices are in poor condition and do not work properly or will not shut-off due to the corrosion in the water piping. The devices in the water piping in this section of the building needs to be replaced.

Inmate Gang Toilet off the gym area. The Stainless Steel fixtures are in adequate condition but the faucet controls within the plumbing chase needs to be replaced. This area was renovated in 2004. The adjacent inmate showers off the Gym Area are in adequate condition.

Plumbing Piping and Insulation

The copper piping is required for adequate condition. Any piping that is not copper and attached to the copper system should be replaced. Any galvanized piping within the domestic water piping system should be replaced as soon as possible. The insulation through the building had sections of piping without insulation. Some areas had torn insulation as well. All the insulation should be re-installed on the domestic hot, cold and hot water recirculation piping.

The Cast Iron waste and vent piping is at the end of its life expectancy. The Cast Iron piping is older than 30 years old and should be replaced to prevent pipe failure within the waste system.

Electrical Systems

Power Distribution

It is recommended to replace main switchgear, distribution panels, transformers, transfer switches, and branch circuit panels serving lighting, receptacles, etc. due to the age of the equipment and difficulty obtaining parts for the equipment.

Lighting Systems

It is recommended to replace the existing lighting fixtures with new T8 Type fluorescent lay-in fixtures utilizing electronic ballast to meet State of Tennessee energy efficiency guidelines in lieu of repairing and re-lamping existing lighting fixtures. Replace existing lighting fixtures in mechanical/electrical spaces with new fluorescent industrial strips.

Existing exit signage appears to be in working order with battery and original to the facility. It is recommended to replace the existing exit signs with new LED type for longer life and less energy use. Provide additional exit signs in the renovated areas and at the main entrances as needed.

Fire Alarm

Replace the existing fire alarm system with a new addressable fire alarm system with visual and audible notification capabilities to meet current life safety codes and ADA Guidelines. The system will include smoke detectors and heat detectors as required such as elevator equipment rooms, kitchens etc. Duct-mounted smoke detectors will be provided in all air handling supply and return ducts as required by code. Notification appliances will be located according to life safety codes to meet ADA Guidelines in all corridors, conference rooms, mechanical and electrical spaces, restrooms, workroom and areas required by code. New addressable, manual pull stations will be located at ADA mounting heights.

HILL DETENTION CENTER

Operational / Physical Assessment

As a converted structure to house inmates, the HDC has had some improvements over the years to comply with modern codes and to improve operations. The sheriff's office does a good job working with the inefficient design and maintaining a professional environment for the employees. However, the building is very costly to staff and operations are compromised in several areas by a poor facility design. In general, the existing HDC facility is a very staff intense operation due to the need to move inmates for recreation, visitation, meals, clinic and programs. The facility is designed as minimum security facility and medium security inmates are held there. The combination of dormitory housing with medium security inmates and continuous movement of the inmates for services is not safe for staff and inmate alike. This facility only should be used for minimum security inmates is not recommended to be used as currently operated. Since the jail facilities at the Harding Place complex are mostly dorms as well, the ability to classify and separate inmates according to risk level as well according to pretrial and adjudicated is almost non-existent. We recommend that a facility with 2 or 4 man cells be constructed to replace this facility.

Building Assessment

HVAC Systems

Original Building

The new rooftop unit serving the first floor jail cells is nearly new condition and is not in need of replacement.

The three existing rooftop units located on the second floor roof are near the end of their anticipated 15-20 year life expectancy according to the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE). While these units are currently operating, their replacement should be considered in the next 3-5 years to prevent outages and ongoing maintenance issues.

1988 Jail Addition

Two of the existing 11 rooftop units serving the jail addition have been replaced recently and are in nearly new condition. No replacement is recommended at this time.

Nine of the existing 11 rooftop units are approximately 16 years old and are nearing the end of their 15-20 year life expectancy according to ASHRAE. Replacement of these units should be considered in the next 3-5 years to prevent outages and ongoing maintenance issues.

1999 Additions and Renovations

Eight (8) of the existing nine rooftop units serving this portion of the building are approximately 14 years old and are nearing the end of their 15-20 year life expectancy according to ASHRAE. Replacement of these units should be considered in the next 3-5 years to prevent outages and ongoing maintenance issues.

One (1) of the existing rooftop units serving the administrative area is currently not functioning. The building staff indicated that there have been ongoing maintenance and operational issues associated with this unit. Immediate replacement is recommended.

Exhaust and Smoke Control Fans

A combination of down blast and up blast general exhaust fans currently serves the facility. Nearly all fans are past their anticipated service life. Replacement of the fans should be planned in the next 3-5 years.

Eight (8) up blast Jetmaster smoke control fans currently serve the 1999 Jail Addition. These fans are currently 14 years old and are nearing the end of their anticipated service life. Replacement of these fans should be considered in the next 3-5 years.

The 1988 Jail addition currently utilizes two sidewall propeller fans for smoke evacuation. These fans are approximately 26 years old and are past their anticipated service life. Replacement of these fans should be considered in the next 0-2 years.

Duct Systems

It should be noted that the existing duct systems are near the end of their anticipated life expectancy as detailed by ASHRAE and that their leakage rates may exceed current standards. However, a complete change-out of the existing duct systems may be cost prohibitive. Due to the age of the duct systems, at a minimum it is recommended that the medium and low pressure duct systems be cleaned per NADCA and IAQA Standards.

Additionally, the existing ductwork should be resealed by stripping off the existing insulation and applying a new coat of mastic duct sealer. New insulation would then be applied to the duct once it has been cleaned and re-sealed. New supply diffusers, return grilles, and exhaust grilles shall be installed once the new ceiling is in place. Additional low pressure ductwork will be required as necessary to accommodate the installation of new supply and exhaust air devices in the ceiling.

Plumbing

The majority of the Plumbing systems are in adequate condition for current use; however, many have been in place for a considerable time, so ongoing maintenance would be required as well as potential replacement in 5-10 years.

The Cast Iron waste and vent piping in the original is at the end of its life expectancy. The Cast Iron waste and vent piping in the 1989 Day Room Cells & Kitchen building is getting close to the end of its life expectancy. The Cast Iron piping older than 30 years old should be replaced to prevent pipe failure within the waste system.

Electrical

Power Distribution

It is recommended to replace main switchgear and branch circuit panels serving lighting, receptacles, etc. due to the age of the equipment.

Lighting Systems

It is recommended to replace the existing lighting fixtures with new T8 Type fluorescent fixtures utilizing electronic ballast to meet State of Tennessee

energy efficiency guidelines in lieu of repairing and re-lamping existing lighting fixtures.

Replace existing lighting fixtures in mechanical/electrical spaces with new fluorescent industrial strips. This should effectively reduce energy usage by 30% for the entire building while increasing light levels in most areas.

Existing exit signage appears to be in working order with battery back-up and original to the facility. It is recommended to replace the existing exit signs with new LED type for longer life and less energy use. Provide additional exit signs in the renovated areas and at the main entrances as needed to meet life safety codes.

Provide new light fixtures with battery back-up for life safety egress lighting where required to meet codes on un-switched lighting circuits.

Provide automatic and manual lighting control in all rooms utilizing new occupancy sensors and selected switching for additional energy savings. Provide multi-level lighting controls in offices, conference rooms and workrooms for increased energy efficiency.

Fire Alarm

Replace the existing fire alarm system with a new addressable fire alarm system with visual and audible notification capabilities to meet current life safety codes and ADA Guidelines. The system will include smoke detectors and heat detectors as required such as elevator equipment rooms, kitchens etc. Duct-mounted smoke detectors will be provided in all air handling supply and return ducts as required by code. Notification appliances will be located according to life safety codes to meet ADA Guidelines in all corridors, conference rooms, mechanical and electrical spaces, restrooms, workroom and areas required by code. New addressable, manual pull stations will be located at ADA mounting heights.

JERRY NEWSON TRAINING CENTER

The Jerry Newson Training Facility was originally constructed in 1953 as the county workhouse. This facility was slightly renovated in 1993 and re-purposed as a short-term training center. All systems have reached end-of-life and the estimated $11M cost to renovate exceeds the cost to build a new facility of similar size and purpose.

Structural Systems

Overall, the structure of the facility appears adequate for its current use.

Roofing and Exterior Weather Protection

Exterior masonry is relatively poor condition requiring moderate repointing and water proofing provisions.

Windows are aged, and should be replaced for increased weather tight conditions.

Roofing materials are in poor condition and at end of life requiring need replacement

Interiors

The basic finishes within the building are in poor condition and should be redone.

HVAC Systems

Heating and Air Conditioning Equipment

Most of the 10 packaged rooftop units serving the facility are in poor condition and past their anticipated 15-20 year life expectancy according to ASHRAE. Replacement of these units with equipment of like capacity should be considered in the near term to prevent outages and ongoing maintenance issues.

The 10 packaged terminal air conditioning units (PTACs) serving individual spaces throughout the facility are at the end of their anticipated service life and should be considered for replacement in the near term.

Where equipment replacement is recommended, the system type should be changed to a Variable Refrigerant Volume (VRV) system with a dedicated outdoor air system (DOAS). This system type would provide a more energy efficient solution.

Exhaust Fans

A combination of down blast and inline general exhaust fans currently serves the facility. Nearly all fans are past their anticipated service life. Replacement of the fans should be planned in the near term.

Duct Systems

It should be noted that the existing duct systems are near the end of their anticipated life expectancy as detailed by ASHRAE and that their leakage

rates may exceed current standards. A complete replacement of the existing duct systems is recommended.

Vent Fans and Intake Dampers

The ventilation fans (4 total) and intake louvers/damper serving the records and archives wings of the building are in poor condition and should be considered for replacement in the near term.

Plumbing

The Cast Iron waste and vent piping in the original is at the end of its life expectancy. The Cast Iron waste and vent is at the end of its life expectancy. The Cast Iron piping should be replaced to prevent pipe failure within the waste system. Some of the cast iron piping is cracked in the horizontal piping and should be replaced as soon as possible.

Fire Protection

The building does not have a sprinkler. The building should have a sprinkler system installed to protect the occupancy.

Electrical Systems

Power Distribution

It is recommended that the first service entrance 800 amp panel be replaced with a new 800 amp panel that has a single main breaker due to age and safety.

It is recommended that the second service entrance 400 amp panel be replaced and relocated due to age and code violations and safety concerns.

The branch circuit panel boards which are fed from service no.1 and service no.2 should be replaced due to age, being past anticipated useful life.

Lighting Systems

It is recommended to replace the existing lighting fixtures with new T8 Type fluorescent lay-in fixtures utilizing electronic ballast to meet State of Tennessee energy efficiency guidelines in lieu of repairing and re-lamping existing lighting fixtures. Replace existing lighting fixtures in mechanical/electrical spaces with new fluorescent industrial strips.

It is recommended to replace the existing exit signs with new LED type for longer life and less energy use. Provide additional emergency and exit lights on the first floor and second floor classroom.

Fire Alarm

Add and replace smoke detectors. Annunciators to be connected to the existing addressable fire alarm system.

TRIAL LAWYERS BUILDING

The building was constructed circa mid 1970's.

Structural issues are apparent at the exterior wall. Extent of which cannot be confirmed without demolition of certain portions of the wall. Visual inspection appears to require significant remediation measures.

HVAC Systems

The existing air handling units are in excess of 40 years old and well past the end of their anticipated 25-30 life expectancy. Replacement is necessary.

Replacement is recommended with a 50 ton VAV rooftop unit with DX cooling coil to service the building.

VAV boxes are required along with additional, and new ductwork.

Chiller is approximately 30 years old and past the end of its life expectancy. Replacement is necessary.

Boiler is approximately 40 years old and past the end of its life expectancy. Replacement is necessary.

Exhaust fans and building HVAC controls should be replaced with new systems.

Plumbing

Cast iron waste and vent piping is original to the building and at the end its life expectancy. These systems should be replaced.

Fixtures and supply piping are in generally poor condition and should be replaced.

Currently, there is no sprinkler system in the building. A Fire Protection System should be installed.

Electrical

Branch circuitry, power distribution equipment, lighting, and Fire Alarm systems are old, and in poor condition. These systems should be replaced.

HDC / Jerry Newson / Trial Lawyers – Operational Summary

All of these buildings house the administrative and training portions of the sheriff's office. They all are also converted structures that were never designed to the specific operational needs for the DCSO. The inefficiency and management complexity in providing these functions in separate facilities reduces the opportunities for strong communications, consistency of management and team building within the organization. The facilities themselves are a converted grocery store, an old outdated small office building and a converted jail and all are in need of modernization.

ESTIMATES OF PROBABLE COST

Summary of Renovations – 4 Facilities		
CONSTRUCTION		
CRIMINAL JUSTICE CENTER	$	51,592,920
HILL DETENTION CENTER		11,635,125
JERRY NEWSON TRAINING CENTER		8,580,445
TRIAL LAWYERS BUILDING		3,480,173
TOTAL - CONSTRUCTION	**$**	**75,288,663**
SOFT COSTS		
CRIMINAL JUSTICE CENTER	$	5,252,434
HILL DETENTION CENTER		1,355,810
JERRY NEWSON TRAINING CENTER		1,046,436
TRIAL LAWYERS BUILDING		428,414
TOTAL - SOFT COSTS	**$**	**8,083,093**
FF&E AND RELOCATIONS		
FF&E Allowance		
Temporary Inmate Housing (During Renovations)	$	12,000,000
Metro ITS		
CRIMINAL JUSTICE CENTER		350,000
HILL DETENTION CENTER		250,000
JERRY NEWSON TRAINING CENTER		150,000
TRIAL LAWYERS BUILDING		75,000
TOTAL - FF&E and RELOCATIONS	**$**	**12,825,000**
CONTINGENCY FUNDS		
CRIMINAL JUSTICE CENTER	$	4,289,652
HILL DETENTION CENTER		1,324,094
JERRY NEWSON TRAINING CENTER		977,688
TRIAL LAWYERS BUILDING		398,359
DCSO RENOVATIONS - TOTAL	**$**	**103,186,548**

CJC Renovation		
CONSTRUCTION		
DEMOLITION - SELECTIVE	$	2,282,068
STRUCTURAL REMEDIATION		350,000
ROOFING		1,271,298
PARTITIONS & DOORS		7,260,000
FINISHES		3,790,800
CONVEYING SYSTEMS		1,020,000
SPECIAL CONSTRUCTION		2,430,000
MECHANICAL		14,191,200
ELECTRICAL		8,728,560
GEN. COND., OH, BONDS, INS, CM FEES		5,578,730
DESIGN & CONST. CONTINGENCY		4,690,265
TOTAL - CONSTRUCTION	**$**	**51,592,920**
SOFT COSTS		
Design and Management (8% Const.)	$	4,127,434
Metro Costs		300,000
Regulatory Fees & Permits		250,000
Testing & Inspections		150,000
Commissioning		125,000
Other Consultant Cost / Proj. Exp.		300,000
TOTAL - SOFT COSTS	**$**	**5,252,434**
FF&E		
FF&E Allowance	$	-
Metro ITS		350,000
TOTAL - FF&E	**$**	**350,000**
CONTINGENCY FUND (7.5%)		4,289,652
CJC RENNOVATION - TOTAL	**$**	**61,485,006**

Renovation of the existing CJC will require multiple phases of construction. The above conceptual estimates assumes that a minimum of 2 floors of housing can be vacated at a time. The above estimates do not include temporary housing provisions at an off-site location.

Hill Detention Center Renovation		
CONSTRUCTION		
DEMOLITION - SELECTIVE	$	996,000
STRUCTURAL REMEDIATION		
ROOFING & EXTERIOR		988,000
PARTITIONS & DOORS		
INTERIORS		925,000
CONVEYING SYSTEMS		
SPECIAL CONSTRUCTION		518,000
PLUMBING		1,831,500
HVAC		1,073,000
ELECTRICAL		1,762,500
GEN. COND., OH, BONDS, INS, CM FEES		1,214,100
DESIGN & CONST. CONTINGENCY		2,327,025
TOTAL - CONSTRUCTION	**$**	**11,635,125**
SOFT COSTS		
Design and Management (8% Const.)	$	930,810
Metro Costs		100,000
Regulatory Fees & Permits		125,000
Testing & Inspections		75,000
Commissioning		50,000
Other Consultant Cost / Proj. Exp.		75,000
TOTAL - SOFT COSTS	**$**	**1,355,810**
FF&E		
FF&E Allowance	$	-
Metro ITS		250,000
TOTAL - FF&E	**$**	**250,000**
CONTINGENCY FUND (10%)		1,324,094
HILL DETENTION RENNOVATION - TOTAL	**$**	**14,565,029**

Jerry Newson Training Center Renovation		
CONSTRUCTION		
DEMOLITION - SELECTIVE	$	557,190
STRUCTURAL REMEDIATION		
ROOFING & EXTERIOR		806,380
PARTITIONS & DOORS		
INTERIORS		817,080
CONVEYING SYSTEMS		127,500
SPECIAL CONSTRUCTION		606,090
PLUMBING & FIRE PROTECTION		1,104,915
HVAC		649,950
ELECTRICAL		1,299,900
GEN. COND., OH, BONDS, INS, CM FEES		895,351
DESIGN & CONST. CONTINGENCY		1,716,089
TOTAL - CONSTRUCTION	**$**	**8,580,445**
SOFT COSTS		
Design and Management (8% Const.)	$	686,436
Metro Costs		100,000
Regulatory Fees & Permits		125,000
Testing & Inspections		75,000
Commissioning		50,000
Other Consultant Cost / Proj. Exp.		10,000
TOTAL - SOFT COSTS	**$**	**1,046,436**
FF&E		
FF&E Allowance	$	-
Metro ITS		150,000
TOTAL - FF&E	**$**	**150,000**
CONTINGENCY FUND (10%)		977,688
JERRY NEWSON RENNOVATION - TOTAL	**$**	**10,754,568**

Trial Lawyers Building Renovation		
CONSTRUCTION		
DEMOLITION - SELECTIVE	$	176,825
STRUCTURAL REMEDIATION		
ROOFING & EXTERIOR		332,525
PARTITIONS & DOORS		
INTERIORS		279,400
CONVEYING SYSTEMS		152,000
SPECIAL CONSTRUCTION		222,940
PLUMBING & FIRE PROTECTION		581,025
HVAC		231,775
ELECTRICAL		444,500
GEN. COND., OH, BONDS, INS, CM FEES		363,149
DESIGN & CONST. CONTINGENCY		696,035
TOTAL - CONSTRUCTION	**$**	**3,480,173**
SOFT COSTS		
Design and Management (8% Const.)	$	278,414
Metro Costs		50,000
Regulatory Fees & Permits		50,000
Testing & Inspections		25,000
Commissioning		20,000
Other Consultant Cost / Proj. Exp.		5,000
TOTAL - SOFT COSTS	**$**	**428,414**
FF&E		
FF&E Allowance	$	-
Metro ITS		75,000
TOTAL - FF&E	**$**	**75,000**
CONTINGENCY FUND (10%)		398,359
TRIAL LAWYERS BUILDING RENNOVATION - TOTAL	**$**	**4,381,946**