

Attachment A - Comparison of Elements

Element	Current Reality	Administrator's Recommendations	Sheriff's Concept	Issues	Recommendation
Jail bed capacity	332 rated jail beds	428 by adding 96 bed pod at an estimated cost of \$5.7 million	552 by filling in two courtyards with modular steel units at an estimated capital cost of \$8.4 million; staffing needs not yet determined	Sheriff contends that staffing would be phased in as jail beds are needed; <i>If beds are filled quickly /support space is not available. Courtyard B-C & C-D total inmate capacity is approx. 180 inmates. Unknown if Sheriff's proposal accommodates this change</i>	Sheriff needs to budget expansion of all support space
Inmate recreation	Provided within housing units (DOC requirements); Gym not used in three years; 5 Outdoor courtyard areas	Space provided within housing unit; Frees up gym for recreation; Maintains capacity for courtyards to be used for outdoor recreation	Space provided within housing unit; Two outdoor courtyards filled in; <i>Not indicated as to how current population + additional inmates will use only 3 remaining courtyards</i>	Daylight and outdoor recreation requirements may prohibit courtyard enclosure; <i>Needs more definition; Sheriff's proposal reduces outdoor recreation by 10,000 sf</i>	
Asymmetrical Loading of New footings @ Courtyard Perimeter	None Required	None Required	<i>Additional costs needed for engineering; Steel columns & connections to footings + reinforcing could be very expensive; Construction crane required to lift heavy elements over occupied building; Crane costs is \$1800/day x 150 days = \$270,000</i>	<i>Sheriff's proposal would require lifting soil + steel out of courtyard/ concrete and steel being moved over occupied space is hazardous; This will require inmates to be housed offsite during construction; May have to deal with insurance issues</i>	Cost of relocation is 32 inmates @ \$35/day x 210 days = \$235,200
Soil	Clay at courtyards	None	None	<i>Requires engineering of footings to determine additional cost for both proposals</i>	
Structures or portions thereof above adjacent roof will generate additional snow loading on lower structure	None	None	<i>Existing adjacent building is cast in place concrete and impact is not considered</i>	<i>Structure cannot be changed; Unable to determine costs without calculations</i>	Remove + Rebuild sections, budget \$240,000
Michigan barrier free & ADA codes	None	None	3 story building filling in two existing outdoor courtyards	<i>Sheriff's proposal would require an elevator in each courtyard per Michigan Building Code 1104.4</i>	Each elevator would cost approx. \$100,000-making this a \$200,000 addition to the Sheriff's proposal
Height restrictions	None	None	<i>Due to height of infill (three stories) Sheriff's proposal may need a zoning variance due to a previous legal action</i>	<i>Lack of time prevented a resolution of this issue</i>	
Window location	<i>Currently provided from cells to exterior, from living areas into courtyards, and from support services into courtyards</i>	<i>Need more information on location of new pod at the exterior of the building</i>	<i>Would eliminate windows from cell blocks B, C & D and from medical beds to exterior courtyards</i>	<i>Sheriff's proposal fills in windows from medical beds to the outdoor courtyard.</i>	
Site considerations				<i>Sheriff's proposal would require a Crane or tower with boom in order to lift materials into the courtyard areas. This equipment needs to be in a flat staging area to unload and lift to courtyards; Access road may work with some modifications</i>	Budget \$10,000 to prepare site for crane

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Emergency Egress	2 means of Egress, one into courtyard and one through the main building corridor	No impact	By infilling courtyard it reduces the existing means of egress from two to one. There must be two means of egress per International Building Code 1004.2.1	Building additions in the C-D courtyards will require alternate emergency egress from the new addition and the existing C-D areas. This egress area will need to be secure and most likely outside the current secure perimeter.	This will require an additional courtyard space and secure passage from the multiple levels via secure fire escapes, roof passage across the existing structure, or other means of egress
Projected jail bed need	April 2005 average daily population was 350 inmates, plus as many as 44 inmates boarded in other counties	415 (2010 ADP Projection)	415 (2010 ADP Projection)	Sheriff has indicated concurrence with these projections. As with all projections, these may need to be modified over time	
30-year master plan	None	Incrementally replace 32- bed pods with 96- bed pods as capacity needs increase, for a net increase of 64	Fill in courtyards now to add immediate capacity of 200+. Conduct future expansion as indicated in Administrator's proposal. Does not conform to overall master plan	Sheriff's Proposal needs to conform to master plan in order to maintain orderly growth; Could also develop its own master plan; If you build space the tendency will be to fill it in; Therefore support space becomes very critical	
Housing supervision	Podular remote; J Block and G-2 are direct supervision	Direct supervision for new pod	Modular units would be direct supervision at day and remote at night	Sheriff's plan does not indicate that corrections officer control rooms are included on each floor and in each direct supervision housing unit as required by MDOC's "Construction Handbook for Jails and Lockups" dated September 2001.	
Classification of jail beds	Varies from maximum to minimum	Medium special needs in additional housing unit	Additional housing unit's beds at medium and special needs	If needed, the Sheriff's plan allows for some medium security beds to be returned to max, resulting in 16 fewer jail beds	
Staffing needs	(baseline)	Additional 14.0 FTE; Staffing model based on standards and third party review	None indicated; Sheriff asserts that staffing model would be developed by Michigan Dept. of Corrections	Sheriff indicated that inmate supervision ratio would be similar to Administrator's estimate but believes it is premature to develop a staffing model	
Assessment center	(baseline)	Establishes limited assessment center; additional assessments would occur in new 96- bed unit	Assessments would occur in C-D Courtyard, which would be concentrated with those staying fewer than 72 hours	In Sheriff's proposal C-D Courtyard is being filled in	
Security systems	Key system throughout housing units due to failed central control system	Replace security throughout facility with central control at a cost of \$3.2 million	Continue with key system for current housing units; Install electronic system in new units and current halls at a cost of \$500,000	Key system requires more man hours therefore it is more expensive over time; Data to calculate this was not available	
Intake / Transfer / Release/ Booking	Designed for 215 capacity; 2900 sf inadequate for 560 capacity	Expand into limited Assessment Center to handle up to 560 capacity	Expand into sallyport to handle capacity of 560 at a cost of \$280,000, including expanding inmate property; Unclear how expansion will take place; replacement of garage, where?	Unclear how Sheriff's cost projections were developed; Needs more definition; Cost to relocate this function undetermined	Need an estimated 4640 sf @ \$90/sf= \$417,600 Plus new garage @ \$150,000 for total cost of \$567,600
Inmate medical	Designed for 215 capacity; Inadequate as part is used to house inmates; 6300 sf	Designed to handle capacity of 560	Add one exam area and holding area within existing footprint; Unclear how this will happen; Increase of up to 10,500 sf is needed		Need an estimated 10,000 sf @ \$130/sf = \$1,310,000
Sallyport	1600 sf	Expanded sallyport to handle a capacity of 560	Reduced; Space used for intake		

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Record storage	Stored in commissary and elsewhere	Same as current facility	Improve within existing footprint by handling similar to evidence storage	Capital cost estimates not included in either proposal	Need an estimated 2300 sf @ \$130/sf = \$299,000
Special needs (suicide watch & withdrawal)	Holding cells used as suicide watch	Handle within new 96 bed unit	Handle within 26 direct observation beds		
Public visiting	Designed for 215 inmates; 1560 sf	Same as current facility; None	Design allows for video visiting in new modular units; Is part of a pre-fab package	Sheriff's Proposal could bring about maintenance issues; emotional issues; potential damage to sensitive electrical equipment by inmates, would require ongoing repairs	2500 sf x \$130/ sf = \$325,000
Official visit	Provided near intake area; Designed for 215 inmates	Same as current facility	Provided within unit face-to-face		
Inmate services	Commissary, etc.	No change	No Change		
Building maintenance	Many systems have exceeded useful life	Upgrade facility mechanical systems at a cost of \$4 million; Costs based on detailed analysis	\$2.5 million proposed for mechanical upgrades	Unclear how Sheriff's cost projected cost savings were developed	
Kitchen	Designed for 215 inmates; 2850 sf	Build kitchen to handle 560 capacity	Footprint remains same; replace and expand kitchen equipment (paid for through vendor contract arrangement); Vendor will determine quality and placement of equipment; Subsequent vendors may not agree; Not clear who pays for changes	Sheriff's concept would require change in operations, as more deliveries to jail are required; Vendor cost change undetermined; Expansion by vendor is problematic	Need an estimated 4,700 sf @ \$250/sf = \$1,175,000
Laundry	Designed for 215 inmates; 750 sf	Expand to handle 560 capacity	Footprint remains same; Handle increased demand by stacking dryers (paid for through vendor contract arrangement); Unknown increase by vendor; Needs more infrastructure, existing quarters too tight and crowded for efficient work	Vendor cost change unclear; If this vendor leaves the scheme proposed by the Sheriff may not be acceptable to the new vendor and the county may need to modify the area; Need an estimated 1,250 sf @ \$200/sf = \$250,000. Sheriff's proposed laundry room location is not suitable for drying tumbler's exhaust nor for the washer's 8" dia sanitary drain line. Sheriff's proposed laundry room is not suitable for standard washers which require 12" thick concrete floor slab. Laundry room should be location on ground floor.	Build new laundry area with footprint sized to support 225 inmates. Size equipment for year 2015 inmate projection (due to laundry equipment useful service life of 10 yrs). In 2015, replace existing equipment with new equipment sized for 225 inmates. New laundry area required for 225 inmates estimated to be approx. 1800 sf.
Dayrooms	Baseline	As required per MDOC.	C-D Courtyard Dayroom 3rd Floor: 1800 sf (for 42 inmates)	Sheriff's plan indicated Dayrooms greatly exceeding the minimum requirements (20 sf/inmate) established by MDOC per "Construction Handbook for Jails and Lockups" dated September 2001. 42 inmates x 20 sf / inmate = 840 sf.	Reduce Dayroom size and increase housing capacity in Dormitory.
Inmate programs	Provided in centralized classrooms; Programming space in J Block on-site	Same as current; new pod would provide space on-site within new housing unit	Same as current; New housing units would provide programming space within housing unit	Staffing costs dependent upon management philosophy and types of programs Sheriff's plan locks in current space with no possibility to increase later	

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Orientation program	B-Block	Flexibility for orientation in new housing unit	In C-D courtyard	Sheriff's proposal unclear because it recommends putting this in the C - D Courtyard, which is filled in with new cell block	
Female population	Currently housed in G-Block	Same; flexibility to allow for a different pod for female population	Same; Ability to split units for female population; also increase 12 beds in direct supervision unit (cost is \$25,000)	Sheriff's concept adds 12 dedicated female beds	
Public entry		Secure entry; Orientation to Court and jail	Not addressed	Sheriff's plan is specific to the jail	
14-A District Court	Unsafe facility	Two courtroom facility adjacent to jail	Not addressed	Sheriff's plan is specific to the jail	
Probation residential center	sanction gap identified by CJCC	35- bed facility on same campus as jail	Not addressed	Sheriff's plan is specific to the jail	
Mental health diversion	Sanctioning and programming gap identified by CJCC	Police training; Assertive Community Treatment Team	Not addressed	Sheriff's plan is specific to the jail	
Security	Manual lock-up	Same automatic system for new & existing	Leave existing as is	Need to analyze entire building to determine costs	
Pre-fab cells are epoxy painted	None	None	Cost of continual maintenance to prevent rust including regular inspections & repainting; May also be noisier than traditional construction materials	Unable to resolve issues without further information & calculations	
Maximum security	Inadequate	None	Unable to comment without knowing where expansion will occur		
Central Heating and Cooling Plants	Existing boilers and chillers are approaching 30 years of continuous service. Equipment is near the end of its useful life.	Central heating and cooling plants would be upgraded and/or expanded for each phase of construction	Central heating and cooling plant would not be addressed. New buildings would be stand-alone gas fired rooftop heating and cooling units. Also see "Plumbing - Natural Gas"	Sheriff's concept will: (1) Increase capital cost to replace central system when necessary because it is not incorporated with equipment expansion. (2) Increase mech. equip. maintenance costs due to increased equipment numbers (compressors, condensers, controls, etc. in stand alone equipment)	
Central Cooling Plant	Refrigerant R-22 used in existing chillers is being phased out by the US EPA. In 2010, chemical companies will only be able to manufacture for existing equipment. Cost impact is unknown.	Central cooling plant would be upgraded and new chillers would have new refrigerants.	Central cooling plant would not be addressed.	Changing refrigerant will decrease capacity of existing chillers. Sheriff's concept does not address any future issues with central cooling equipment.	
HVAC - General	Various heating, ventilating and air conditioning (HVAC) equipment will have different operating lives.	Central heating and cooling plants would be upgraded and/or expanded for each phase of construction.	Central heating and cooling plant would not be addressed. New buildings would be stand-alone gas fired rooftop heating and cooling units.	Typical central heating and cooling equipment has an operating life of 30 years. Packaged rooftop heating and cooling equipment has an operating life of 15 to 20 years. Sheriff's concept provides short term plan only and will result in future capital for equipment replacement after 15 to 20 years.	
HVAC	The facility has mixed heating and cooling systems. Central heating and cooling systems for the majority of the facility and stand-alone systems for more recent additions.	Replace: existing steam boilers with new hot water boilers, hot water circulation pumps, existing R-22 chillers with new chillers, chilled water pumps and cooling tower condenser pumps.	Central heating and cooling plant would not be addressed. New buildings would be stand-alone gas fired rooftop heating and cooling units.	Sheriff's concept provides a short-term and independent (where possible) solution for the buildings. Administrator's plan provides for long term planning.	

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Plumbing – Roof Drains	Existing roof drains and interior storm drain system reported to be functional.	As required for new expansion area. Will tie-into existing main outside of existing facility perimeter.	Adequate capacity should exist in storm drains located in the courtyards for buildings (proposed roof area equals ground area).	See Plumbing – Underground Storm Drains	
Plumbing – Underground Storm Drains	Main underground storm water drains run through B-C courtyard.	No impact on the main underground storm water system.	8" and 10" underground storm drains run through B-C courtyard. Lines may need to be relocated for building foundations.	Relocation of underground lines would impact all roof drains for the west half of the housing facility (Dwg 7-2).	
Plumbing – Domestic Water	Existing system has low pressure at certain plumbing fixtures.	Install booster pumps to resolve pressure problems. Hot water system modifications included as required.	Existing city water and hot water mains are not large enough for proposed buildings. Mains would have to be increased in size from mechanical room to proposed buildings (approx. 500 ft.).	Outages of many areas including housing would be necessary to increase city water and hot water main sizes. Separate feeders could be run but would result in parallel water lines through corridor chases.	
Plumbing – Sanitary Sewer	Facility sewer line ties into city sewer system at Hogback St. Possible undersized piping in kitchen and laundry areas.	Additional sewer capacity for expansion as required. Tie-in locations would be to perimeter loop outside of existing facility.	Existing 6" sanitary lines for B, C and D housing areas are not large enough for proposed buildings. Sanitary main for proposed buildings would have to be routed under existing building.	Sheriff's concept would require boring under existing housing area to get sanitary line to perimeter main. Sanitary main appears to be adequate for expansion.	
Plumbing- Natural Gas	Existing mechanical room has 6" natural gas main (low pressure) for central boilers and associated mechanical equipment.	Will packaged rooftop units be installed or air handlers connected to the central heating and cooling water systems???	Proposed buildings will utilize gas fired packaged HVAC equipment. New gas main would be required from the mechanical room to the new equipment (est. 600 lineal ft. of 6" pipe at low pressure).	Sheriff's concept would require engineering evaluation to verify capacity is available from natural gas main to site and meter/regulator is adequately sized for additional load. Routing of gas line may be required across roof of existing facility.	
Fire Protection- Suppression System	Part of the existing facility has wet sprinkler system. The remainder has hose cabinets, dry pipe and a Siamese fitting for fire department connection.	Provides for wet sprinkler system throughout the existing facility and new expansion, per International Fire Code.	Proposed buildings would have sprinkler system. Existing mains in building are not large enough for proposed buildings. New fire water mains required to support proposed structures.	Sheriff's concept should include sizing of mains for both proposed buildings and future requirements to minimize long-term costs. Verify costs are included. Water flow tests should be performed to determine if sufficient water supply capacity is available on site.	
Electrical - General	Sheriff's concept and Administrator's proposal have same electrical cost even though number of net beds added are 225 and 64 respectively.	Estimated electrical cost on a per bed basis is \$350K / 96 beds or \$3,650/bed. Estimated electrical cost based on net beds added is \$350K / 64 beds or \$5,470/bed.	On a prorated basis for 225 beds, estimated electrical cost would be \$821K to \$1,231K. Assuming 25% savings for centralized location and other factors, estimated electrical increase would be \$266K to \$573K.	Sheriff's proposal should include additional cost for electrical. Also see "Electrical – Service".	Estimate an additional \$300,000 to \$600,000 required in electrical costs for Sheriff's proposal due to additional beds.
Electrical – Service	DTE has limited the facility to 522 kW (maximum). Current operation is at approximately 475 kW, or 91% of total system capacity. On a per bed basis, electrical consumption is 475 kW / 332 beds or 1.43 kW/bed.	Upgrade would provide net increase of 64 beds. Assuming an 80% diversity, electrical consumption increase would be 73 kW. Demand load after upgrade is estimated to be 550 kW.	Upgrade would provide net increase of 225 beds. Assuming an 80% diversity, electrical consumption increase would be 257 kW. Demand load after upgrade is estimated to be 732 kW.	Sheriff's proposal would require a substantial upgrade of the electrical service including additional transformer, switchgear and distribution system. May also require service upgrade from DTE. Additional engineering required to evaluate total impact.	
Electrical – Panelboards	Existing panelboards are in good condition, but lack spare circuit breaker space and future expansion.	Upgrade as required for proposed expansion.	Secured electrical room will need to be provided in each building for electrical panelboards and distribution equipment. None shown on conceptual drawings.	Sheriff's concept would result in increased electrical cost (225 beds vs. 96 beds with Administrator's concept). Also see "Electrical – General"	

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Electrical – Emergency Power	<i>From 12-02-03 report, generator operates at approx. half of the 450 kW capacity. Some life-safety systems are not currently connected.</i>	<i>Estimated generator capacity required per bed based on existing conditions is 225 kW / 332 beds or 0.68 kW/bed.</i>	<i>On a prorated basis, estimated increase of generator demand is 225 beds x 0.68 kW/bed or 153 kW or a total demand of 378 kW</i>	<i>It appears that the generator may have adequate capacity for either expansion. A detailed engineering evaluation of connected loads would be required to verify generator can start at estimated loads.</i>	
Fire Protection – Alarm System	<i>Current system is addressable with limited expansion capability.</i>	<i>Upgrade existing facility to fully sprinkled and integrate with new expansion area to meet IFC 2003.</i>	<i>Unknown.</i>	<i>Sheriff's proposal has same cost for life safety, but likely larger expansion footprint due to 225 inmates vs. 96 inmates in Administrator's proposal.</i>	
Construction	<i>Egress for construction workers</i>	<i>No impact as proposed construction is outside most secured areas.</i>	<i>All construction is within the secured space and near existing housing units.</i>	<i>Sheriff's plan would require detailed construction plan for worker access and security. Plan could require closing of some existing housing areas during construction.</i>	
Construction			<i>Demolished materials, dumpster and spoils will have to be lifted out of courtyard with crane. Construction equipment and tools will also have to be lifted in and out.</i>	<i>Not sure additional cost was considered.</i>	
Construction			<i>The access drive will be an essential part of construction and will be blocked for long periods of time.</i>	<i>Not sure if access road egress is an issue.</i>	
Construction			<i>Modular steel cells must be lifted by crane over existing in-use housing areas. This will require evacuation of areas over which the modules are lifted to ensure safety.</i>	<i>Sheriff's concept will temporarily decrease the capacity of the jail facility during this phase of construction.</i>	

***Note:** Under the Sheriff's proposal, any expansion of existing support space will disrupt current services and displace some other departments and groups. The displaced group will need new construction attached in some manner to the existing facility. None of this is planned, outlined, or accounted for in the cost of the Sheriff's proposal.