

Cockrill Bend Development

Nashville, Tennessee

Consolidated Master Plan

SBC Project No. 529/017-01-2016

Prepared for the State of Tennessee Department of General Services

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Thanks to

The planning team acknowledges the following groups for their contribution to the planning effort.

Tennessee Department of General Services (DGS)

State of Tennessee Real Estate Asset Management (STREAM)

Tennessee Department of Correction (TDOC)

Tennessee Department of Safety & Homeland Security (TDOS)

Tennessee Bureau of Investigation (TBI)

Tennessee Law Enforcement Training Academy (TLETA)

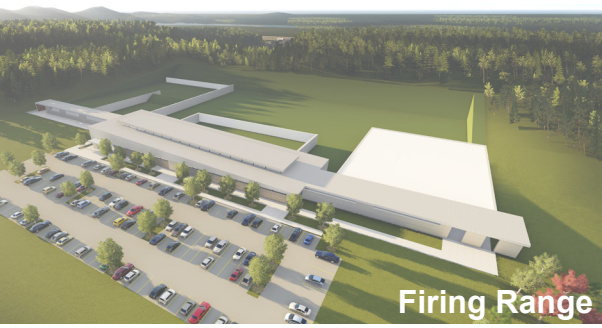
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Training Academy



Firing Range



EVOC Track



TDOC & TDOS Headquarters Building



Service Center

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- A. Traffic Impact Analysis
- B. Geotechnical Data Review
- C. Preliminary Geotechnical Study Report
- D. Historical Overview
- E. Archaeological Reconnaissance
- F. Waters of the United States Delineation Report
- G. Flora and Fauna Survey
- H. Assessment of Environmental Noise
- I. Bat Study

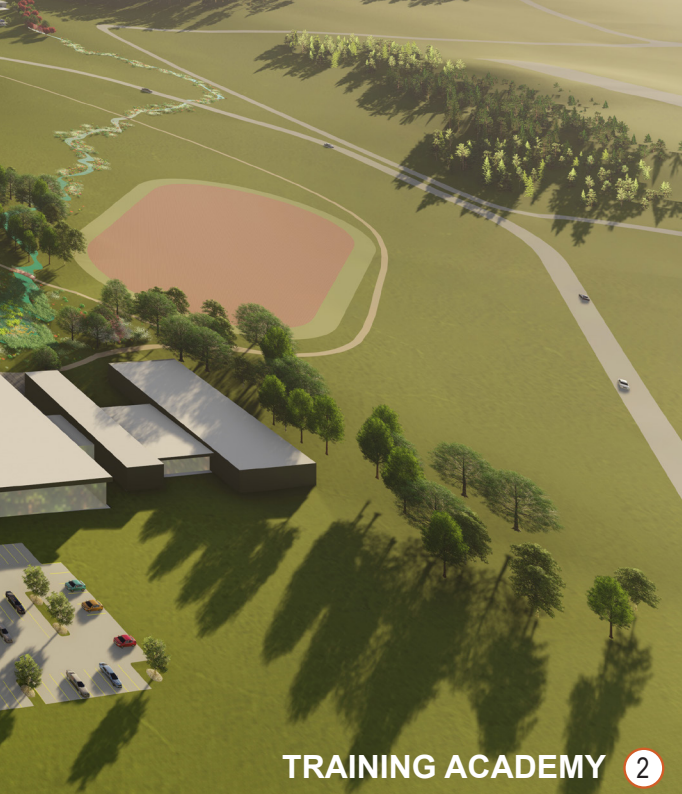
Aerial View: Cockrill Bend Development



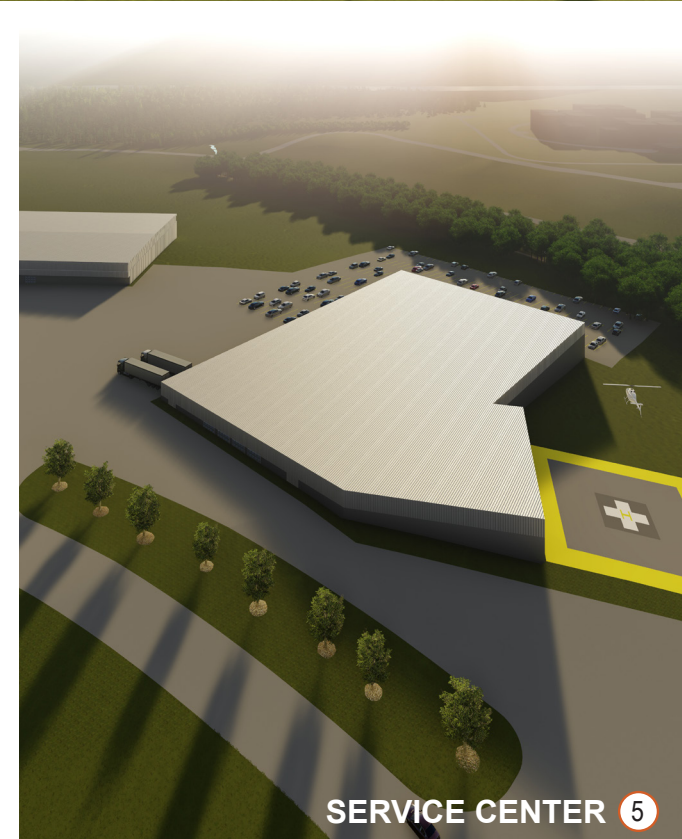
TDOC & TDOS Headquarters Building

EVOC Track

Firing Range



TRAINING ACADEMY 2



SERVICE CENTER 5



SITE PLAN

Tab F

Program

Program

The Design Team has developed detailed programs for all departments, agencies, functions and stakeholders currently planned to be located at the Cockrill Bend site. The Design Team has completed over 42 separate, group and individual data gathering meetings to determine specific needs of all stakeholders for this site. Also potential savings in space and functions by combining the three major criminal justice training agencies have been incorporated, along with TBI and TCI. During the programming process, the Design Team researched a number of similar facilities for additional input.

40 Based upon our conversations with these facilities, the Design Team feels that the State should anticipate that numerous additional State and local agencies will be requesting use of the Cockrill Bend training facilities resulting in a very high demand. The Design Team has built-in some growth and has included a 15 year projection of space requirements. TDOS gave us specific growth for their headquarters' requirements.

Square Footage Requirements

The Design Team initially reviewed recently completed program studies prepared for the TDOC, TDOS, and TCA. The Design Team then developed very detailed square footage requirements based on previous programs, meeting with users and department planning staff, and

analyzing historical data and the State of Tennessee's space requirements. Once net square footages were determined a multiplier from 15% to 66% was applied to create a gross building square footage required. These multipliers came from historical data and the previous programs. Also, KSA recently completed a detailed program and construction of the TDOT Region 2 Headquarters which had very similar buildings in its eight different building types.

Growth Projections

Growth projections are notoriously incorrect. Potential growth was discussed with every group going to the Cockrill Bend site. Their projections for the future ranged from extreme growth, like 100%, to shrinking. One group stated that they had shrunk in the past few years. CGL is one of our Team members and a nationally recognized programming consultant for these type projects. They project Tennessee with a 25% growth in law enforcement by 2032. The Design Team has integrated these varying opinions and made what is felt to be relatively conservative projections.

Following is a detailed list of proposed programmed space for each agency, department or function, along with comments, and in some cases, our logic and our proposed solutions. Parking

requirements at each site have been included. As individual designers are selected for each of the development elements, they will need to revisit these programs with each department or agency who will use these facilities.

Please note that both of these departments can be greatly impacted by changes in legislation and laws requiring unexpected addition of staff to meet the new requirements.

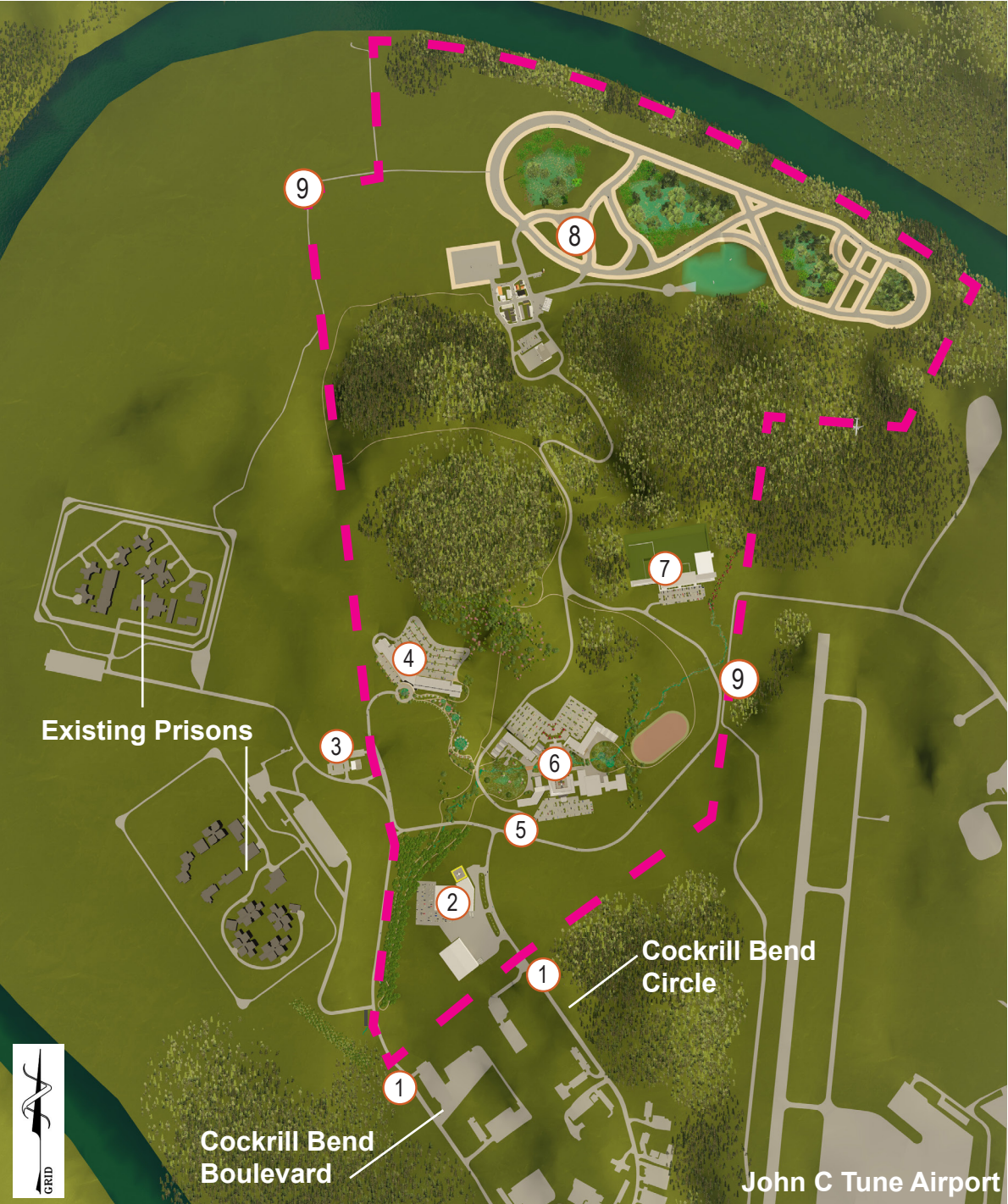
Program Note:

Following are detailed programs. The final numbers have been rounded to the nearest 100. Specific Designers will need to revisit the program with each user group.

Site Development Key Plan

Key Plan

- 1. Site Access
- 2. Service Center Complex
 - TDOC Service Center
 - THP Multi-Purpose Service Center
 - Helipad
 - Fleet Storage For THP Vehicles
- 3. Prison Access and THP District Office
- 4. TDOS & TDOC Administrative Headquarters Building
- 5. Training Academy Controlled Access
- 6. Training Academy Facility
 - Cadet Housing
 - Dining Hall / Cafeteria
 - In-Service Housing
 - Sport Field & Track
 - POST & TCI
 - Gym, Training Pool, Mock Detention Pod and support
 - Hiking & Jogging Trails / ATV Trails
 - Kennel
 - Forensic Training Facilities
- 7. Firing Range
 - Outdoor Rifle Range
 - Outdoor Shot Gun Range
 - Outdoor Pistol Range
 - Indoor Pistol Range
 - Firing Range Support Building
- 8. EVOC Track
 - Scenario Village
 - Obstacle Course
 - Shoot House
 - Vehicle Garage & Classrooms
 - Training Pond
 - Observation / Rappelling Tower
- 9. Proposed Development area Perimeter



EVOC Track

location on site



Plan Key

- 1. EVOC Pursuit Track
- 2. Scenario Village
- 3. Obstacle Course
- 4. Shoot House
- 5. Maintenance Garage Building with Classrooms
- 6. Observation Tower / Rappelling Wall
- 7. Training Pond
- 8. Skid Pad



The Design Team has researched numerous state EVOC tracks including those in Oregon, Arizona, North Carolina, and Georgia (GPSTC) federal tracks in Brunswick, Georgia. While there are shorter tracks, it appears that a 1.75 mile track is the most common. THP has requested a 3/4 mile straightaway and has specific needs for their officers to train at an excess of 100 mph.

As we looked at other facilities, we realized that a 1.75 to 2-mile pursuit track was more the norm than the exception. We talked to a couple of facilities with shorter tracks and found that they did not train for high speed pursuits, and some limited the speeds on their track to 40-mph. None of Tennessee's academies have a pursuit track and their requests varied. We proceeded with our programming based on a 1.75-mile track with all necessary support/maintenance facilities, vehicle obstacle courses, wet pads, etc. and found that it required approximately 114 acres.

Early on, both the Design Team and the State assumed that the 540 acres on the southeast side of the available 1,300 acres would be adequate for the entire Cockrill Bend development. However, it was soon discovered that attempting to fit the 114 acre track complex into the 540 acres would create severe space issues, security concerns, significant regrading and rock removal, unwelcome

noise for other site users and user access limitations. The Design Team then prepared several track location options for the State to review. The State and Design Team agreed that the north flood plain was, by far, the best option.

The Design Team has further researched track design requirements, studying six similar tracks, talking with two EVOC track managers at similar facilities, and consulting with TDOT to determine the State highway design criteria. The track manager at GPSTC stated that their track is 1.74 miles long and they train at 110 and 115 mph. He also indicated that their ±200' shoulder and DOT barriers were adequate and that they have only had a few new trainees hit the barriers (with no injuries).

TDOT's design guidelines for two lane local roads only allows for a ten degree grade at 55 mph and a maximum of five degree grade on interstates at 70 mph in mountainous terrain. The track will require significant shoulder space for safety purposes. If you lose control of your vehicle at 100 mph, you need a lot of space to avoid hitting anything.

In addition to a 1.75-mile pursuit track, the EVOC track needs to include a Traffic Incident Management System (TIMS) course, wet skid pad, obstacle testing pad, incident simulation intersection, an on-and off-ramp and a scenario village. All

training academies also agreed that the Shoot House needs to be located at the track. Thus, the footprint for this function area is very large and in many ways uncompromising in its requirements.

The Design Team worked with the State and analyzed four possible locations for the track complex. Each site was studied for its potential to support all program requirements including classrooms, maintenance building, shoot house, observation/climb tower, training pond, etc.

The Design Team is working with TDEC and USACE (Corps of Engineers) to gain approval for the north flood plain location for the track. Although this is, by far, the best location, potential wetland mitigation will be a major obstacle to overcome. It will take the better part of a year to get approval for this location through TDEC and the USACE.

The Design Team is in ongoing conversation with USACE regarding the Track Design, Wetland and Species Mitigation. This process will continue following the submittal of the Master Plan. The design team will issue future appendices to update the Owner and User groups through this process.

EVOC Track



**Georgia Public Safety Training Center (GPSTC)
Forsyth, GA**



- Track Area = approximately 153 Acres
- 1.74 mile track
- 0.25 mile straightaway
- Skid pad
- Obstacle pad
- Multiple obstacle scenarios
- 200 +/- shoulder at outside curve
- Training takes place on this track at speeds in excess of 110 mph

**Oregon Department of Public Safety Standards and Training
Salem, OR**



- Track Area = approximately 101 Acres
- 1.5 mile track
- 0.5 mile straightaway
- Obstacle pad

**Federal Law Enforcement Training Center
Brunswick, GA (Course 1)**



- Track Area = approximately 67 Acres
- 1.75 mile track
- 0.5 mile straightaway
- Multiple obstacle scenarios
- Obstacle Pad

**Joint Emergency Services Training Center
Zachary, LA:**



- Track Area = approximately 139 Acres
- 1.75 mile track
- 0.45 mile straightaway
- Skid pad
- Obstacle pad
- Multiple obstacle scenarios

**Federal Law Enforcement Training Center
Brunswick, GA: (Course 2)**



- Track Area = approximately 88 Acres
- 1.75 mile track
- 0.25 mile straightaway
- Obstacle Pad

**FVTC / Public Safety Training Center
Madison, WI**



- Track Area = approximately 42 Acres
- 0.75 mile track
- 0.18 mile straightaway
- Skid pad
- Obstacle pad
- In conversation with Facility Director, the track training speed is limited to 40 mph. The length of the track was short due to limited dollars. They would prefer a much longer pursuit track.

EVOC Track Program Summary

EVOC TRACK (Support Building = 6,500 sq. ft.)

- A 1.75 Mile Pursuit Track With Straight-Away (125 Mph)
- B Skid Pad (Wet) With On/Off Of 25' X 200'
- C Obstacle Pad
- D Vehicle Maintenance Building With Five Bays And Tire Storage, One Classroom For 60, Two Offices,
- E Parking for 20 Test Vehicles
- F Shooting Simulation House
- G City Grid and Scenario Village
- H Observation Tower and Rappelling Wall
- I One-Quarter Mile Dirt Track
- J Motorcycle Training Zone
- K Sims Driving Rooms (2)
- L Interstate Simulation Section
- M 3.5 Acre training Pond for Vehicle Submersion
- N TIMS Course = (50,000 Sq. Ft.)
- O Parking for 100 vehicles

Gross Sq. Footage

D Vehicle Maintenance Building With Five Bays And Tire Storage, One Classroom For 60, Two Offices,	8,800
F Shooting Simulation House	20,000

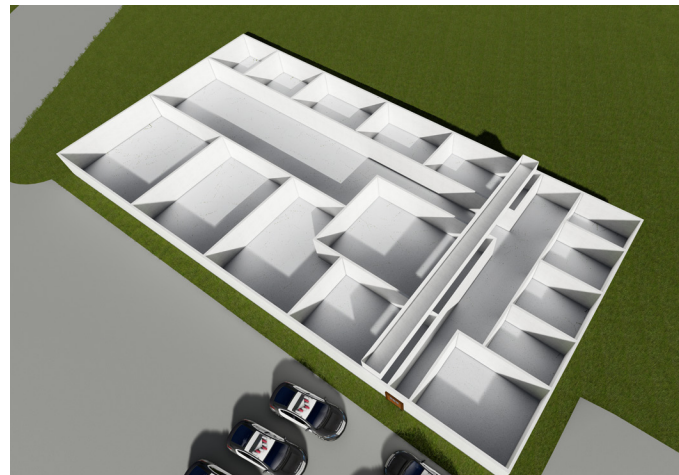
EVOC Track Subtotal

28,800 s.f

135



Scenario Village



Shoot House



Observation / Rappelling Tower

Detailed Program for EVOC Track

Reference No.	Space / Position	Space Type	Projected Need - 2018				Projected Need - 2032				Comments	
			Occ. Per Space	No. of Spaces	Net S.F.	Total Net S.F.	Occ. Per Space	No. of Spaces	Net S.F.	Total Net S.F.		
03.06.01	Obstacle Pad	exterior		1	180,000						300' x 600' for maneuvering obstacles	
03.06.02	Skid Pan (wet)	exterior		1	80,000						200' x 300' with 50'x200' on/off lanes ; consider water recycling system with storage tank	
03.06.03	TIMS Course	exterior									Emergency vehicle	
03.06.04	Scenario Village	exterior									4 city blocks	
03.06.03	Pursuit Track w/ City Grid Simulator Track	exterior		1							<p>Note: Expansion in use should be expected, however actually need to add space for more elements may not be required by 2032.</p>	Approximately 1.75 mile length, 2/4 Lane with on-off ramp & city layout with Intersections, stop lights, etc.
03.06.04	4 x 4 Off-Road Training	exterior		1								Unpaved, dirt/gravel, through rugged areas
03.06.05	Vehicle Maintenance/Tire Storage	closed		1	4,000	4,000						5-Bay with storage, 12 motorcycles, 1 vehicle lift
03.06.06	Classroom	closed	40-60	1	1,500	1,500						Located in Maintenance Building
03.06.07	Track Observation & Climb Tower		6	1	100	100						To view all track areas - equip with cameras - HVAC?
03.06.08	Office	closed	1	2	150	300						Located in maintenance
03.06.09	Restrooms	closed		2	120	240						Located in maintenance
03.06.10	Storage	closed		1	500	500						Located in maintenance
	Driving Simulator	closed	2	1	400	400						Located in maintenance
	Force on Force											Next to EVOC track
	Shoot House (detached)				16,000	16,000					2-story and multiple rooms	
	Pond	exterior		1							3.4 acres inside track	
											Will need railroad crossing; will need 200'+/- safety aprons around tracks	
	SUBTOTAL					23,040						
	Grossing Factor	0.25				5,760						
	Growth Factor	0.1										
	Component Total					28,800						

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EVOC Track Studies

Due to the size and safety requirements of the EVOC track and firing range, the placement of these elements will impact and determine much of the placement of the remaining Master Plan elements on the site. Until the locations of these elements are finalized, we cannot proceed with the remaining site layout. Sound is an issue and should be considered when placing these facilities close to the prisons and other Master Plan elements.

TDOC would like to retain as much of their farming operation as possible and maintain separation of the prison and the farming operation from all other Master Plan elements.

The program elements identified by THP and TLETA for the new EVOC track are:

- 1.75 mile track preferred
- Able to reach speeds of 110 mph
- Skid pad
- 200 +/- shoulder
- Scenario Village
- TIMS Course
- Shoot House
- Obstacle Course Pad

The firing range needs to face away from public areas, the airport and flight paths.

Following are four site layouts for potential

EVOC track and firing range locations. We have listed the pros and cons for each layout. For clarity, we have not included other Master Plan elements.

Early in the design process the location of the EVOC track and firing range became a critical issue. Following is an interim

document submitted to all stake holders for this project.

SITE LAYOUT OPTION SCORING MATRIX
(AS SCORED BY THE STATE AND DESIGN TEAM)

Option:	1	2	3	4
Environmental	3	2	0	2
Schedule	1	3	3	2
Future Development	1	3	3	2
Infrastructure	2	2	1	1
EVOC prox. to Prisons	2	3	0	1
Cost	1	3	3	3
Site Utilization	1	3	3	1
Points Scored:	11	19	13	12

Attribute Score:

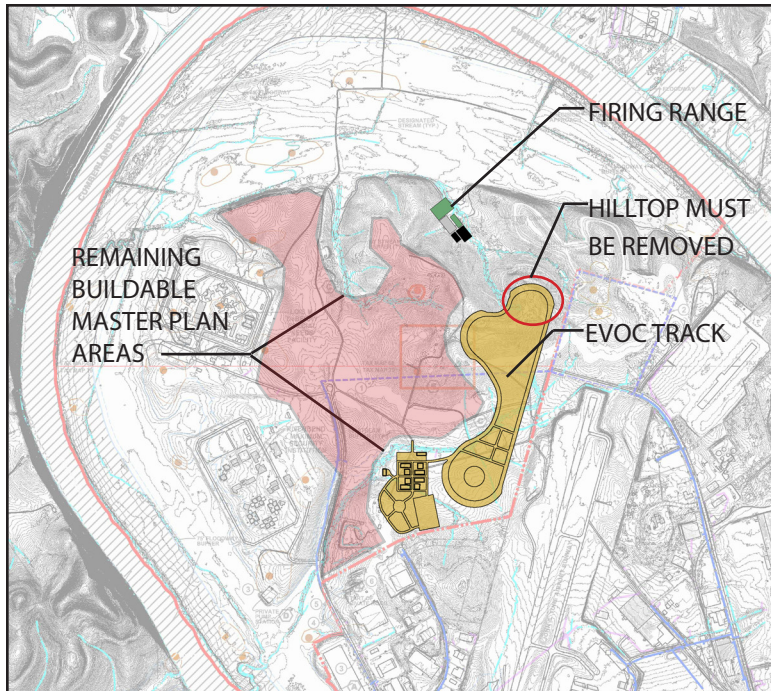
3 Points

2 Points

1 Point

0 Points





Site Layout Option 1

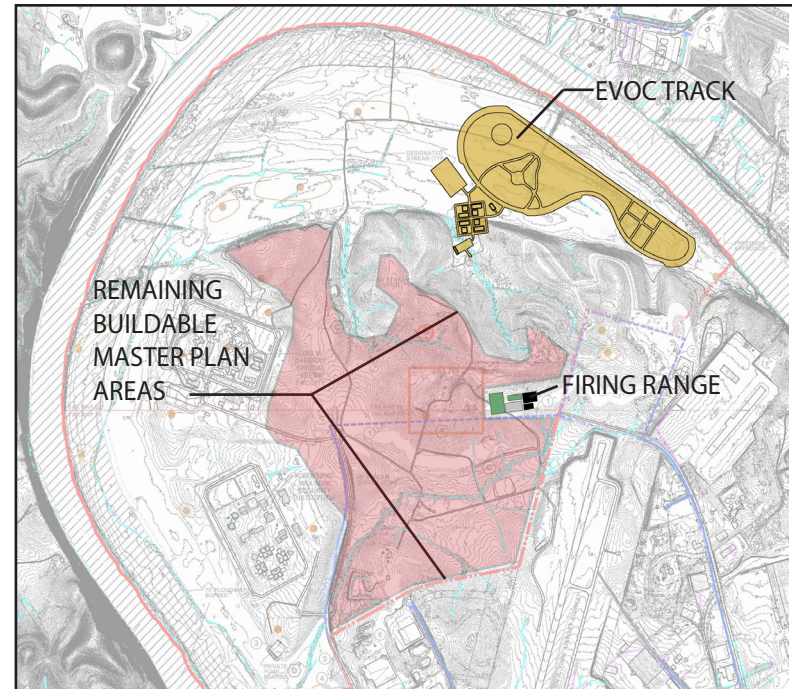
Track Length: 1.62 miles
Straightaway Length: 0.54 mile

Pros:

- Longer straightaway for EVOC track
- Not in flood plain or wetland

Cons:

- Shorter overall EVOC track and no expansion
- Not a lot of buffer space between other program elements
- Firing range is in a less desirable location
- No expansion space for other site components
- To maintain 5% maximum slope, approximately 34 acres of hilltop that rises up to 100' in certain areas must be cut and relocated to fill other low areas of the site
- EVOC track uses prime buildable site area and limits expansion of all other Master Plan components
- EVOC track breaches blue line stream requiring mitigation



Site Layout Option 2

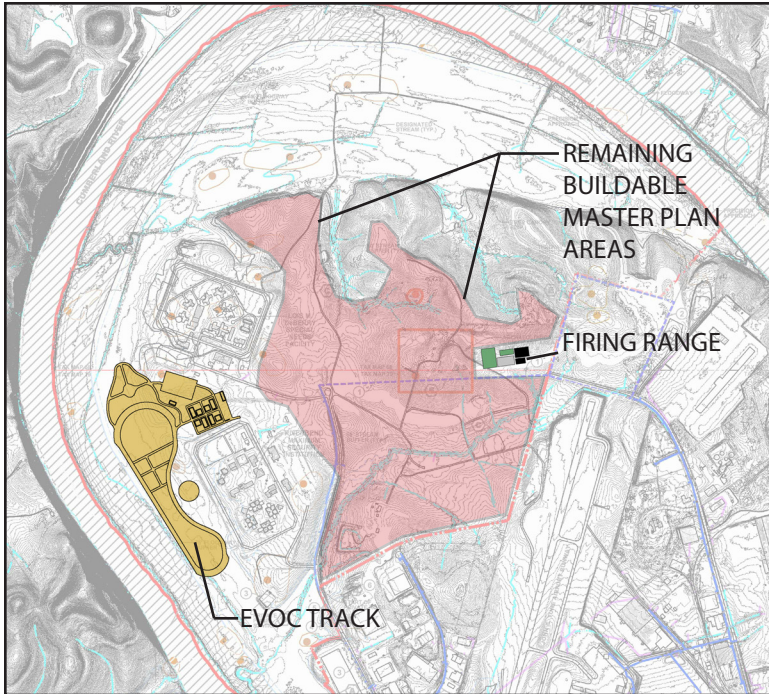
Track Length: 1.75 miles
Straightaway Length: 0.61 mile

Pros:

- Sound from EVOC track should not affect other Master Plan components
- Allows for a longer straightaway at EVOC track
- EVOC track does not affect current farmed area
- Maximum safety and shoulder space from EVOC track
- Gives Master Plan development maximum site availability and allows for requested expansion space

Cons:

- EVOC track in flood plain and low level wetland
- Proximity of EVOC track to other program elements
- EVOC track location impacts future farm area
- Wetland mitigation at this EVOC track location will take time
- EVOC track will need to be raised above 50 year flood elevation, but may still experience very limited flooding.



Site Layout Option 3

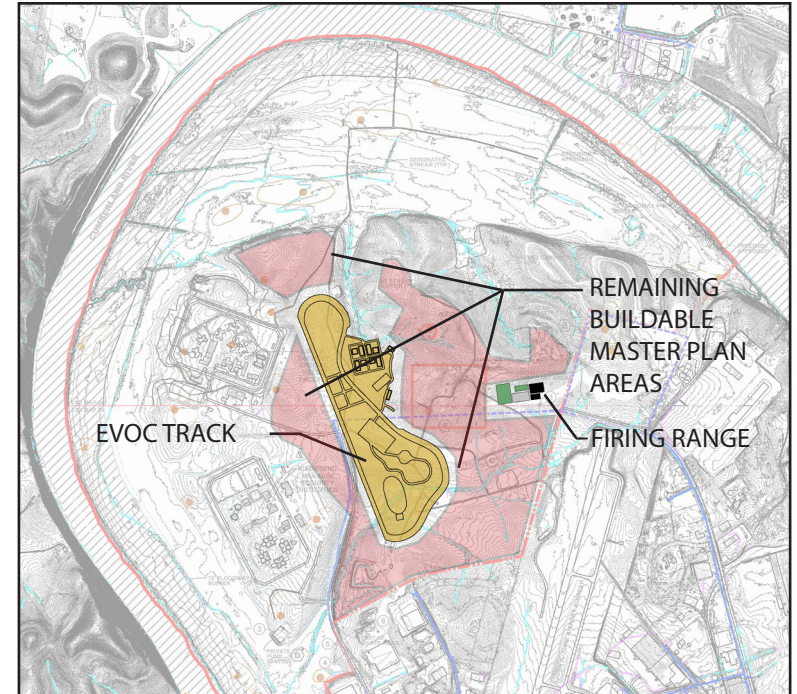
Track Length: 1.25 miles
 Straightaway Length: 0.41 mile

Pros:

- Frees up site for other program elements

Cons:

- EVOC track in flood plain and wetlands
- Track is 29% shorter than recommended length. Maximum training speed will be significantly reduced.
- Not much room for EVOC track straightaway
- EVOC track is far away from other program elements
- Mixes training with prison and inmate work. No good separation
- Noise impact on prison facilities from EVOC track
- No room for track expansion
- EVOC track will need to be raised above 50-year flood elevation, but may still experience very limited flooding. South end of track will be below 50 year flood due to proximity to floodway.
- Stream mitigation exceeds 300' requiring Corp approval and mitigation
- Wetland mitigation will take time



Site Layout Option 4

Track Length: 1.75 miles
 Straightaway Length: 0.65 mile

Pros:

- Longer straightaway for EVOC track
- No site elements in flood plain and small wetland area

Cons:

- EVOC track greatly reduces available site
- EVOC track close to all site elements
- EVOC track adjacent to prisons creating security concerns with fog or security breach
- EVOC track noise will affect all areas of the site
- EVOC track location uses prime buildable property
- Limits the expansion of all other Master Plan components
- EVOC track breaches blue line stream, requiring mitigation
- Mixes training with prison and inmate work, no good separation.

