Huntington Tri-State Airport Parking Study

KYOVA
KENTUCKY • OHIO • WEST VIRGINIA
INTERSTATE PLANNING COMMISSION

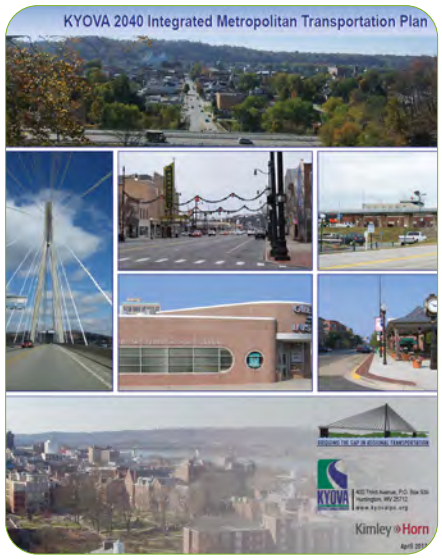
NOVEMBER 2021 | DRAFT

Introduction

The Huntington Tri-State Airport is planning for continued service expansions, resulting in increased enplanements. This study was conducted to address parking management and assess the need for alternative parking options to accommodate continued growth at the airport. This study determines parking needs by analyzing capacity and access to the airport terminal for both employees and travelers. This study included a review of previous planning efforts, parking occupancy data collection, and recommendations for improving parking at the airport.

PREVIOUS PLAN REVIEW

Prior to this study, the KYOVA Interstate Planning Commission and Huntington Tri-State Airport have completed several planning processes, including the 2014 Airport Master Plan, the 2040 Metropolitan Transportation Plan, and the Tri-State Airport Access Road Study. Both the Airport Master Plan and the MTP point to the need for the expansion of parking facilities at the airport to include accommodation for 650 to 800 spaces. This study collects and analyzes existing parking data to reinforce the need for a parking expansion, while taking into consideration future enhancements such as the construction of a secondary access road.



Existing Conditions

EXISTING PARKING INVENTORY AND CONFIGURATION

An understanding of the existing parking supply and operations is a critical foundation to determining the overall parking demand. To assess parking occupancy on a typical weekday, hourly parking occupancy data was collected on Wednesday, June 30, 2021 between 8 AM and 8 PM for the Main Lot, Overflow Lot, and both the Northwest and Southwest Employee Lots. Map 1 below shows the existing parking facilities and the associated number of parking spaces provided in each. There are approximately 415 paved parking spaces provided at the Huntington Tri-State Airport. The Northwest Employee Lot and Overflow Lot are unpaved and accommodate approximately 115 additional vehicles. The pages that follow highlight the parking occupancy data and observations.

OPERATIONAL CHALLENGES

There are several operational challenges to access and parking at the Huntington Tri-State Airport. As evidenced in the data collection and aerial imagery from July 2021, the main terminal public parking lot is regularly 100% utilized and cars park in along the perimeter of the facility, hindering the circulation of the parking lot. The overflow lot is an unpaved and unmarked gravel lot. The grade of the overflow lot access road is between 9%-10% and has no sidewalks or pedestrian accommodations, leaving members of the public to traverse both steep and rough terrain to reach the terminal area.

The Airport Access Road and Terminal Access Loop Road pose challenges to the safe and efficient operations. The Airport Access Road has a profile slope of 8.0%+, active slope failures, and becomes unusable during certain weather events. Additionally, the Airport Access Road does not have any pedestrian facilities from the Overflow Lot to the terminal, leaving passengers to walk in the roadway travel lanes. The Terminal Access Loop Road is a single lane and frequently blocked by arrival waiting cars. On-street parking along the Terminal Access Loop Road also poses safety and security risks.

PARKING OCCUPANCY DATA

Parking occupancy data sampling provides insight into peak parking demands during the data collection period and aids in identifying underutilized parking facilities and parking facilities that operate at capacity. Also, this data may highlight trends in parking behaviors in the study area. A comprehensive database was created with the data collected to map and analyze the utilization of the parking facilities. The following sections describe and graphically display existing conditions of parking occupancy.

The occupancy data presented in this section are expressed in a range of percent occupancy and are color-coded. The occupancy ranges used, associated color, and respective descriptions are shown below in Table 1.

Table 1: Parking Occupancy Ranges and Descriptions

	OCCUPANCY	DESCRIPTION OF FACILITY OPERATIONS
	Less than 50%	Under Capacity
	50% to 75%	Well-Utilized
	75% to 90%	Approaching Capacity
	Greater than 90%	Perceived to Be Over Capacity

Typically, a parking system is considered at capacity when occupancy approaches 85% to 90% of capacity. The 10% to 15% excess supply keeps the time required to find a parking space within reason and promotes a perception of adequate parking. When parking occupancy exceeds these levels, there may be significant delay and frustration in finding a parking space.

Figures 2-5 show the parking occupancy for the morning (8 AM to 11 AM), midday (11 AM to 2 PM), afternoon (2 PM to 5 PM), and evening (5 PM to 8 PM).

The inventory and occupancy data collection efforts yield the following general observations about existing conditions of the parking operations in the study area: the main lot is over capacity at all times of the day, the Southwest Employee lot fills first in the early morning, and as shift change occurs the Northwest Employee lot fills due to overlap in staff hours, the overflow lot is consistently approaching capacity at all times of the day.

Figure 1: Aerial image of Huntington Tri-State Airport | July 2021

Figure 2: AM Parking Occupancy

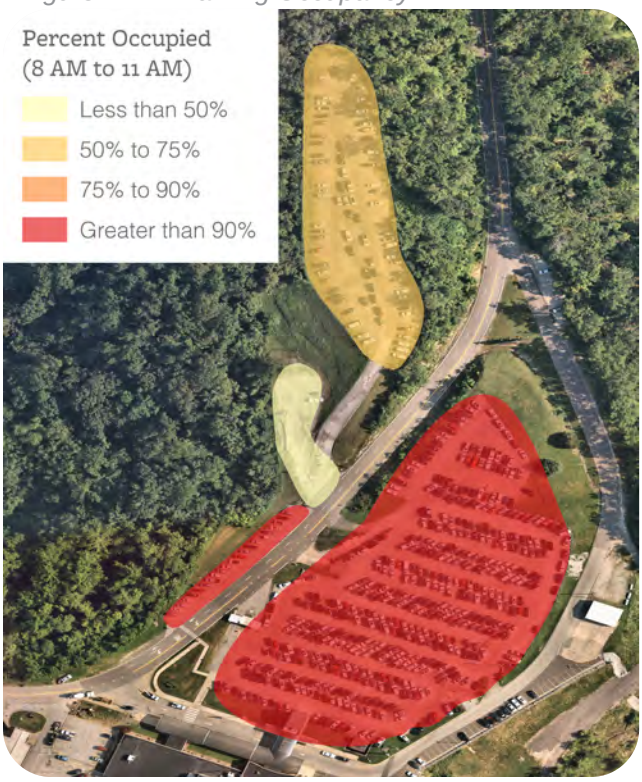


Figure 3: Midday Parking Occupancy

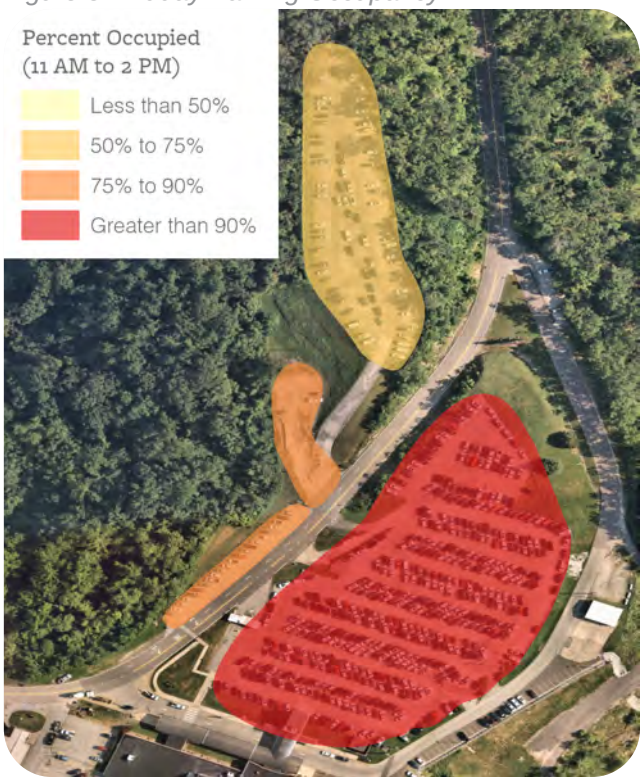


Figure 4: Afternoon Parking Occupancy

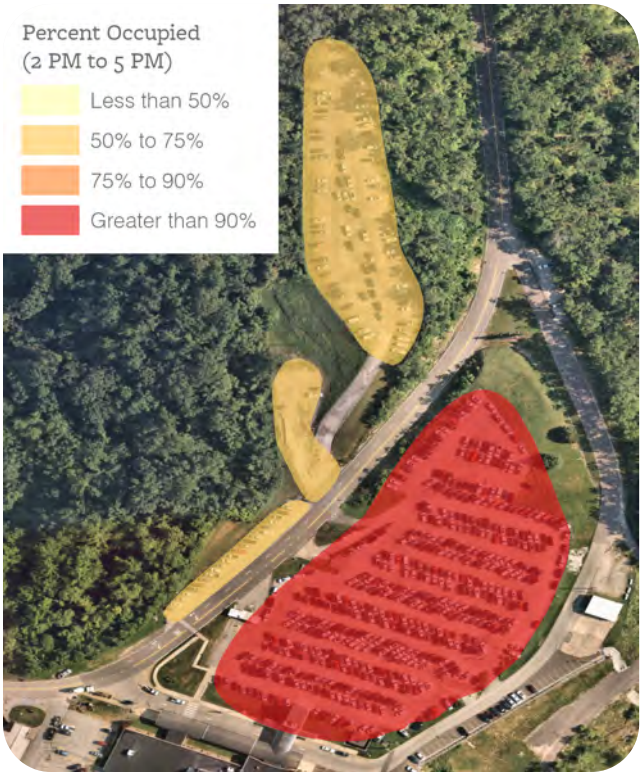
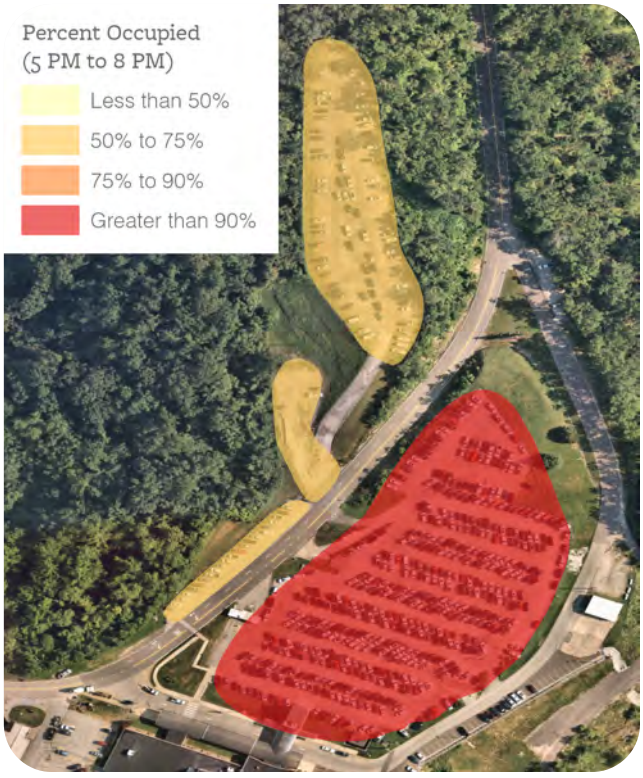


Figure 5: PM Parking Occupancy



>90%

Occupancy

The Main Lot at Huntington Tri-State Airport is greater than 90% occupied throughout the day.

General Observations

The inventory and occupancy data collection efforts yield the following general observations about existing conditions of the parking operations in the study area:

- **The Main Terminal Public Parking Lot is approaching or over capacity at all hours of the data collection period.**
- **The Southwest Employee Lot fills first as employees arrive in the morning.**
- **The Northwest Employee Lot is most utilized during midday shift changes when the overlap of staff arrival and departures yields the Southwest Employee Lot still at capacity.**
- **The Overflow lot is consistently occupied throughout the day.**

The Future of HTS Airport

Due to increasing passenger and air-cargo activity, airline flight schedules and aging infrastructure, need for the planned intermodal public parking structure at HTS is becoming increasingly critical to meet public demand and maintain acceptable levels of customer service and safety. With the Airport being a key link to the global transportation network for both people and freight, these improvements will enable the Airport to effectively serve the transportation, business and economic development needs of the tri-state region.

The planned structure will be located in the main public parking lot adjacent to the passenger terminal, entirely within airport property. As currently envisioned, the facility will include a single cast- in-place supported level of approximately 300 spaces. The structure will increase the total amount of parking available as well the number of spaces close to the terminal. It will also provide covered parking for inclement weather which increases both safety and customer convenience. In conjunction with the separately planned loop road/access road/overflow parking improvements, improved circulation to and about the facility will reduce roadway congestion along the entrance road and terminal curbfront.

The facility will be designed to accommodate an additional curbfront lane and segregated shuttle and bus loading and unloading thus further reducing congestion along the curbfront. The existing elevator has been located and designed for ease of integration into the intermodal facility. The existing entry and exit plazas will need to be relocated to allow for construction of the garage, provide easy access to/from the terminal roadways, and provide secured separation of parking products (Garage/Surface). During design of the facility, the feasibility of providing a structural shade/rain cover to the upper deck, possibly including solar panels, will also be explored.

This design project will entail the 100% design and preparation of construction documents for the planned intermodal structure. Additional elements to be included in the overall facility design effort are: geotechnical and utility investigations, coordination with the FAA, coordination with the loop road/access road/overflow parking improvement project, FAA required airspace obstacle analysis, evaluation of sustainable infrastructure feasibility (e.g. solar panels, electric vehicle charging stations), developing opinions of probable cost, and preparation of 100% design plans, specifications and construction documents.

Design would take approximately 12-18 months to complete, depending on final project scope. Construction phasing will have to be coordinated with the loop road/access road/overflow parking improvements as the overflow lot will be needed to accommodate public parking displaced during construction of the intermodal facility.

COST ESTIMATES AND SCHEMATIC DESIGN

The Engineer's Rough Order Magnitude (ROM) Opinion of Probable Costs (OPC) is derived from quantified schematic design layouts and grading schemes. Schematic design was provided under a separate contract for the Huntington Tri-State (HTS) Airport. Pay items provided are based upon similar projects experienced and are not inclusive of all items that may be required upon a more detailed design investigation. The project was broken out into the following phases:

- Phase 1 – Preliminary Grading and Overflow Lot Expansion
- Phase 2 – Access Road Reconfiguration and Parking Deck Site Prep
- Phase 3 – Parking Deck Construction

The phases have overlapping boundaries, and these were considered when quantifying items. It was assumed that all utilities would be placed in Phase 1 except for stormwater pipe and inlets, which are included in Phase 2. Also, all civil site work within the footprint of the parking deck was included in Phase 3.

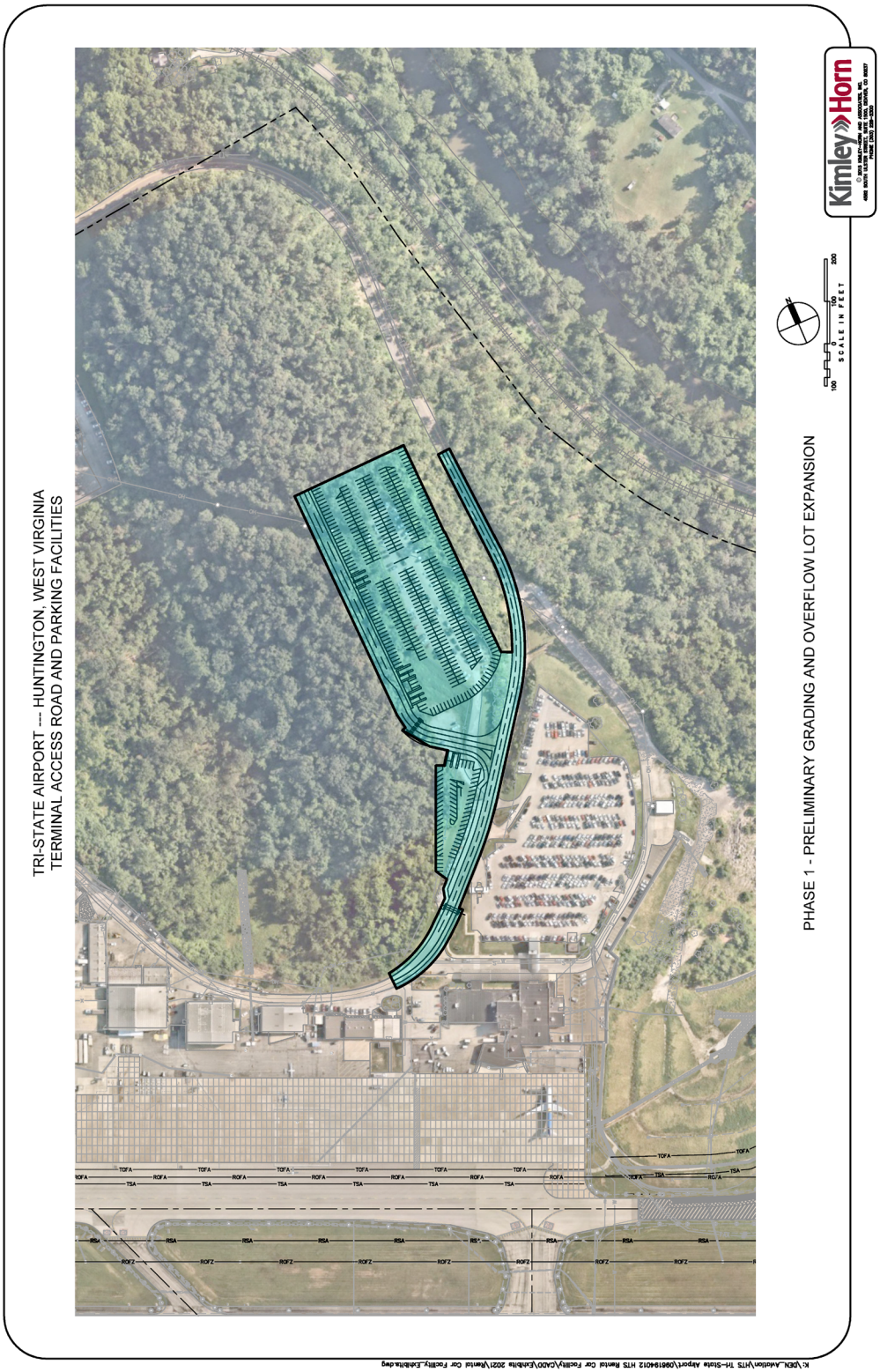
Unit prices were gathered through bid summaries and tabulations of similar projects completed and ongoing at the Huntington Tri-State Airport. These projects include earthwork, retaining walls, paving, grading, drainage, and utilities. The West Virginia Department of Transportation (WVDOT) average unit bid prices were utilized for items not found in bid tabulations. The New Asphalt Pavement Section (6" AC on 6" ABC) item includes subgrade preparation, crushed aggregate base course placement, tack coat, and asphalt paving. All items were converted to a unit price per square yard and consolidated.

A construction contingency of 20 percent was factored into the final probable construction cost for each phase. Twelve (12) percent of the probable construction cost was assumed for the engineering design and construction administration fee.

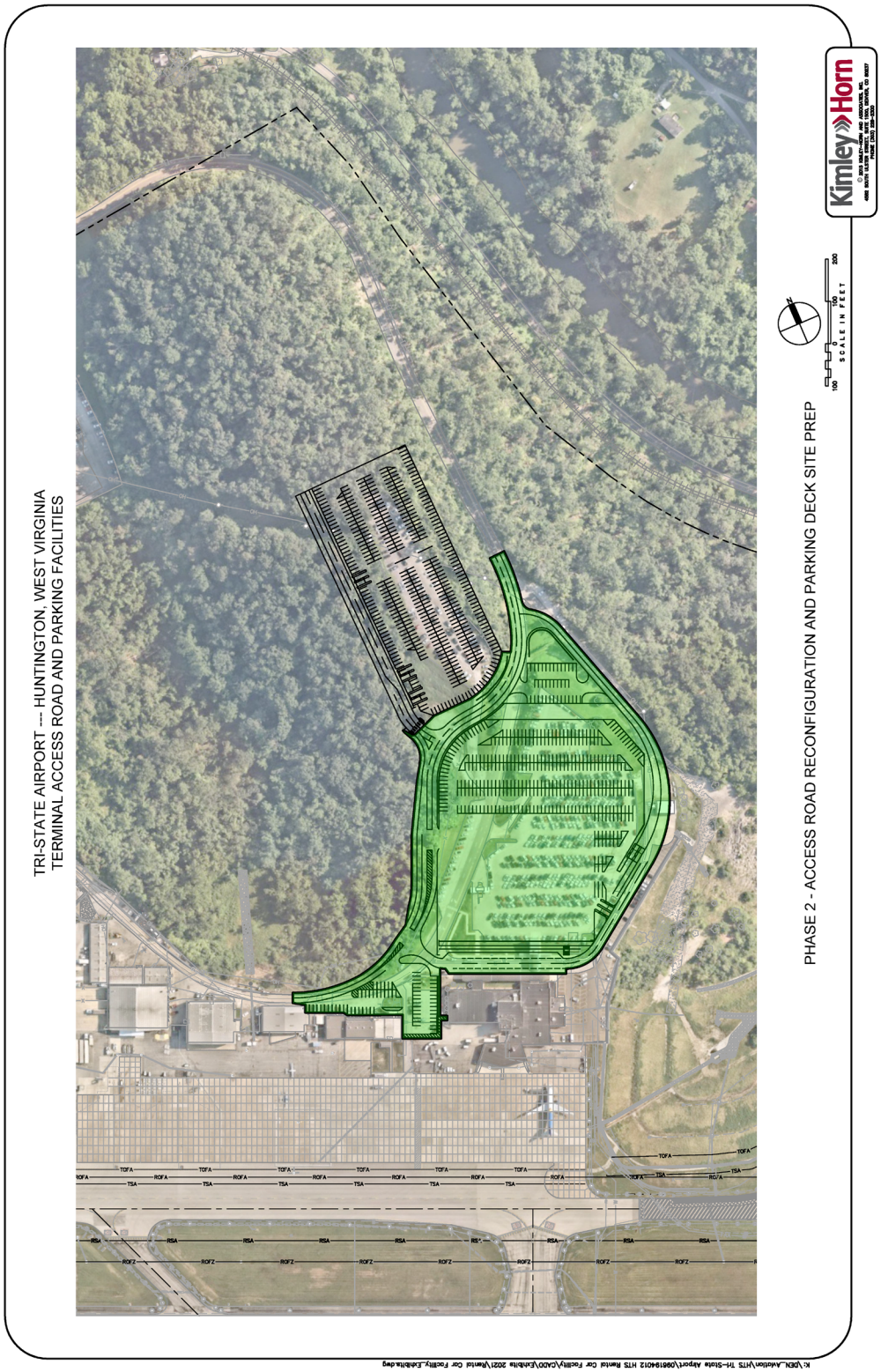
The scope of services included in the Rough Order of Magnitude Opinion of Probable Cost includes:

- Preliminary Design Study
- Final Design
  - » Functional Design
  - » Design Development Documents
  - » 50% Construction Documents
  - » 90% Construction Documents
  - » Certification Set
- Bidding and Permit
- Construction Administration

PHASE 1 - PRELIMINARY GRADING AND OVERFLOW LOT EXPANSION



PHASE 2 - ACCESS ROAD RECONFIGURATION AND PARKING DECK SITE PREP



PHASE 3 - PARKING DECK CONSTRUCTION

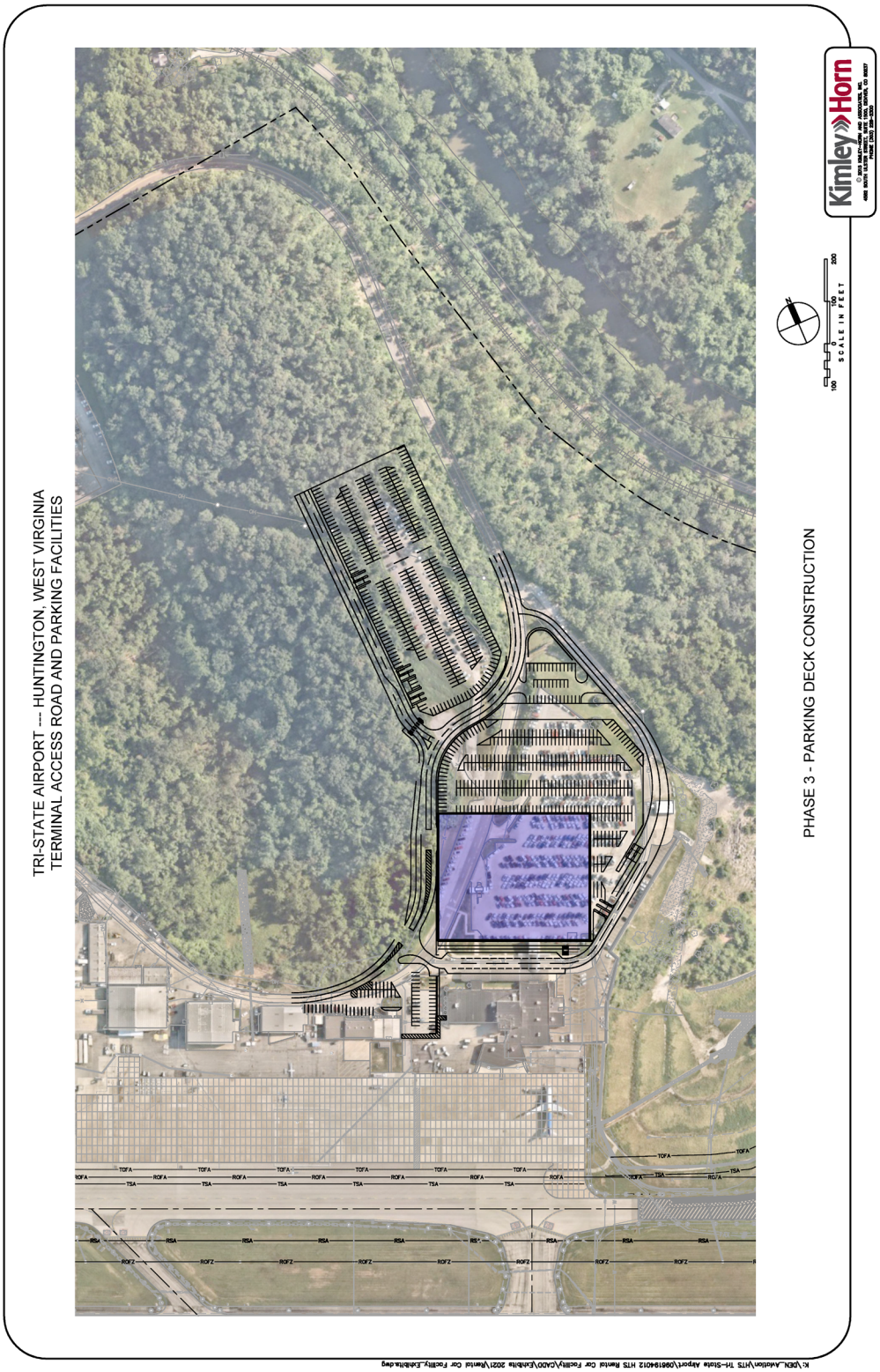


Table 2: Cost Summary Table of Rough Order of Magnitude (ROM) Opinion of Probable Costs (OPC)

PHASE	DESCRIPTION	PROBABLE CONSTRUCTION COST	ENGINEERING DESIGN AND CONSTRUCTION ADMINISTRATION	PHASE TOTAL
1	Preliminary Grading and Overflow Lot Expansion	$ 8,316,000	$ 998,000	$ 9,400,000
2	Access Road Reconfiguration and Parking Deck Site Prep	$ 4,876,000	$ 586,000	$ 5,500,000
3	Parking Deck Construction	$ 31,200,000	$ 3,800,000	$ 35,000,000
	Project Total	**$ 44,392,000**	**$ 5,384,000**	**$ 49,900,000**

Appendix

- Detailed Rough Order of Magnitude Opinions of Probable Costs
- Parking Occupancy Raw Data Counts

DETAILED ROUGH ORDER OF MAGNITUDE OPINIONS OF PROBABLE COSTS

Huntington Tri-State Airport
HTS KYOVA Parking Study - Rough Order Magnitude (ROM) Opinion of Probable Costs (OPC)

2021-11 Revision

PHASE 1 - Preliminary Grading and Overflow Lot Expansion - KYOVA Funding					
Area	Item Description	Quantity	Unit	Unit Price	Sub-Total
1 - Preliminary Grading and Overflow Lot Expansion	Bituminous Pavement Milling (Full Depth Removal)	1,716	SY	$9.50	$16,302.00
	New Asphalt Pavement Section (6" AC on 6" ABC)	22,225	SY	$72	$1,600,200.00
	Clearing and Grubbing	7	AC	$2,000	$14,000.00
	Proposed Topsoil (6")	6.8	AC	$13,750	$93,500.00
	Earthwork Cut	300,000	CY	$8	$2,250,000.00
	Retaining Walls (15 ft. tall)-Steel Pile	133	LF	$945	$125,685.00
	Sidewalk	7,720	SF	$5	$38,600.00
	Curb and Gutter	6,495	LF	$100	$649,500.00
	West Sediment Pond	1	LS	$25,000	$25,000.00
	Pavement Markings	7,100	SF	$2	$10,650.00
	Remove Right-Of-Way Fence, Chain Link	1,701	LF	$16	$27,216.00
	Install Right-Of-Way Fence, Chain Link	5,000	LF	$44	$220,000.00
	Removal of Overhead Power Lines	1,950	LF	$25	$48,750.00
	Removal of Overhead Telephone Lines	1,950	LF	$10	$19,500.00
	New Conduit (Underground Power)	2,700	LF	$40	$108,000.00
	New Conduit (Underground Telephone)	2,310	LF	$30	$69,300.00
	Water Line	2,000	LF	$55	$110,000.00
	Fire Line	2,780	LF	$55	$152,900.00
	Natural Gas	2,260	LF	$55	$124,300.00
	Power Line Manholes	6	EA	$8,000	$48,000.00
	Transformers	4	EA	$8,000	$32,000.00
	Telephone Line Manholes	2	EA	$8,000	$16,000.00
	Power Line Poles	2	EA	$10,000	$20,000.00
	Telephone Line Poles	2	EA	$10,000	$20,000.00
	Light Poles	46	EA	$15,000	$690,000.00
	Fire Hydrant	2	EA	$4,100	$8,200.00
	Removal of Sanitary Sewer	810	LF	$5	$4,050.00
	Sanitary Sewer	2,523	LF	$55	$138,765.00
	Sanitary Sewer Lift Stations	1	EA	$25,000	$25,000.00
	Sanitary Sewer Manhole	8	EA	$8,000	$64,000.00
	Access Control System	4	LS	$40,000	$160,000.00
	Construction Contingency (20%)				$1,386,000.00
	Probable Construction Cost				**$8,316,000.00**
	Engineering Design and Construction Administration (12%)				**$998,000.00**
	Project Phase Total				**$9,400,000.00**

PHASE 2 - Access Road Reconfiguration and Parking Deck Site Prep - KYOVA Funding					
Area	Item Description	Quantity	Unit	Unit Price	Sub-Total
2 - Access Road Reconfiguration and Parking Deck Site Prep	Bituminous Pavement Milling (Full Depth Removal)	16,000	SY	$9.50	$152,000.00
	New Asphalt Pavement (12")	26,689	SY	$72	$1,921,608.00
	Clearing and Grubbing	1.5	AC	$2,000	$3,000.00
	Proposed Topsoil (6")	2	AC	$13,750	$27,500.00
	Earthwork Cut/Fill	30,000	CY	$8	$225,000.00
	Retaining Walls (15 ft. tall)-Steel Pile	781	LF	$945	$738,045.00
	Sidewalk	13,202	SF	$5	$66,010.00
	Underground Water Detention	1	LS	$100,000	$100,000.00
	Pavement Markings	11,350	SF	$1.50	$17,025.00
	Guard Rail	1,400	LF	$50	$70,000.00
	Remove Right-Of-Way Fence, Chain Link	1,178	LF	$30	$35,340.00
	Install Right-Of-Way Fence, Chain Link	2,000	LF	$30	$60,000.00
	Stormwater 24" RCP	2,765	LF	$150	$414,750.00
	Inlets	15	EA	$3,500	$52,500.00
	Existing Building Demolition	1	LS	$20,000	$20,000.00
	Revenue Control System Relocation	1	LS	$20,000	$20,000.00
	Access Control System	3	LS	$40,000	$120,000.00
	Advertisement 360 Slow Relocation	1	LS	$20,000	$20,000.00
	Construction Contingency (20%)				$813,000.00
	Probable Construction Cost				**$4,876,000.00**
	Engineering Design and Construction Administration (12%)				**$586,000.00**
	Project Phase Total				**$5,500,000.00**

PHASE 3 - Parking Deck Construction					
Area	Item Description	Quantity	Unit	Unit Price	Sub-Total
3 - Parking Deck Construction	Garage (600 Stalls, Cast-in-Place, Spread foundations, Typical precast architectural façade, steel stairs, reuse of existing elevator for pedestrian circulation)	1	LS	$16,100,000	$16,100,000.00
	Canopy (Flat steel roof canopy with membrane roof and wrapped with metal panel parapet)	1	LS	$7,300,000	$7,300,000.00
	Site Walls (Assume need for walls on roadway approaches - 500 LF per approach average of 5 ft exposed)	1	LS	$700,000	$700,000.00
	Civil (Pavement, Roadways)	1	LS	$1,700,000	$1,700,000.00
	Utilities (Storm, Sanitary, Water)	1	LS	$200,000	$200,000.00
	Construction Contingency (20%)				$5,200,000.00
	Probable Construction Cost				**$31,200,000.00**
	Engineering Design and Construction Administration (12%)				**$3,800,000.00**
	Project Phase Total				**$35,000,000.00**

PARKING OCCUPANCY RAW DATA COUNTS

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Hunting Tri State Airport Parking Occupany Study

DATE	SAMPLE BETWEEN TIME		PARKING SPACES				
	START	END	MAIN	EMP - SW	EMP - NW	OVERFLOW	TOTAL
Wednesday, June 30, 2021	8:00 AM	9:00 AM	388	22	2	64	476
	9:00 AM	10:00 AM	385	23	4	63	475
	10:00 AM	11:00 AM	375	23	9	65	472
	11:00 AM	12:00 AM	382	21	13	63	479
	12:00 AM	1:00 PM	389	23	13	62	487
	1:00 PM	2:00 PM	400	17	10	64	491
	2:00 PM	3:00 PM	382	16	10	65	473
	3:00 PM	4:00 PM	379	13	9	63	464
	4:00 PM	5:00 PM	390	21	8	64	483
	5:00 PM	6:00 PM	400	19	7	63	489
	6:00 PM	7:00 PM	407	18	8	64	497
	7:00 PM	8:00 PM	405	14	8	62	489