

Section 7 – Selection of Inaugural Airport Landside Access

This section presents the various landside access alternatives developed for the IAP at SSA utilizing the preferred Inaugural Airport airfield concept described in Section 6. The existing roadway network anticipated to serve the future SSA site includes the following major roads.

- Interstate 57 runs in a northeast-southwest direction and is located along the western edge of the SSA site.
- Illinois Route 50 runs parallel to I-57 through the SSA site. It is located approximately 2/3rds of a mile east of the interstate along the west side of the airport site.
- Illinois Route 394 terminates to the northeast of the airport site. It provides a direct connection from Interstates 80 and 94 to the north to its terminus at Illinois Route 1.
- Illinois Route 1 runs in a north-south direction along the east side of the SSA site.

The Chicago Area Transportation Study (CATS) developed traffic projections for 2030 for SSA. The traffic projections developed by CATS incorporated the latest socio-economic information and growth trends for Will County as developed by the Northeastern Illinois Planning Commission (NIPC) based on 2000 U.S. Census data. Traffic for the Inaugural Airport through DBO+5 was developed as a percentage of the year 2030 projected traffic volumes. The 2030 traffic volumes were reduced proportionately based on projected enplanements at the airport at DBO and DBO+5. These adjusted traffic volumes were utilized for a preliminary evaluation analysis of the landside access facilities concepts (see the draft *Demand/Capacity Analysis & Facility Requirements for the Inaugural Airport Program* report for more details).

7.1 Inaugural Airport Landside Access Alternatives

Four basic alternatives were considered and analyzed for surface vehicle access at DBO+5. These alternatives are described below.

- **Alternative 1** – Direct West Airport Access assumes that a new interchange would be constructed on I-57 along with a new west airport access road, which would accommodate airport-related traffic during the IAP (see **Exhibit 7-1**).
- **Alternative 2** – Direct East Airport Access assumes that all airport-related traffic would access the airport from the east, via a new interchange on IL Route 1 with a new east airport access road (see **Exhibit 7-2**).
- **Alternative 3** – Continuous Airport Access assumes that a continuous airport access road would traverse the airport facilitating access from the east and west. This alternative would require interchanges at I-57 and IL Route 1 (see **Exhibit 7-3**).
- **Alternative 4** – Local Roads Access assumes that access to the airport would occur via local roadways during the IAP (see **Exhibit 7-4**). This scenario assumed that:
 - Traffic coming from the north would follow I-57 south, exiting east at the Manhattan-Monee Road interchange, then south on IL Route 50 to

Offner Road. Traffic would then travel east on Offner Road to an airport entrance road.

- Traffic coming from the south would follow I-57 north, exiting east at the Wilmington-Peotone Road interchange, and then north on IL Route 50 turning east on Offner Road to an airport entrance road.
- Traffic coming from the east would follow IL Route 394/IL Route 1 south, turn west on Eagle Lake Road and north on Western Avenue. Airport-bound traffic would then turn west on Offner Road until reaching Central Avenue, then would turn south merging into a west airport entrance road.
- Traffic coming from the west would either use I-80 to I-57 south, then follow the same route as traffic coming from the north, or would use Manhattan-Monee Road or Wilmington-Peotone Road, using the same routes as north and south originating traffic from interchanges with I-57.

Alternative 4 assumed that major infrastructure improvements of the local roads including signalization of major intersections would be required.

7.2 Evaluation of Inaugural Airport Landside Access Alternatives

7.2.1 Inaugural Airport Landside Access Alternatives Evaluation Criteria

The Inaugural Airport landside access alternatives were examined and evaluated based on a number of criteria that are listed and defined in **Table 7-1**. A short description of how each evaluation criteria was used to evaluate the alternatives is provided below.

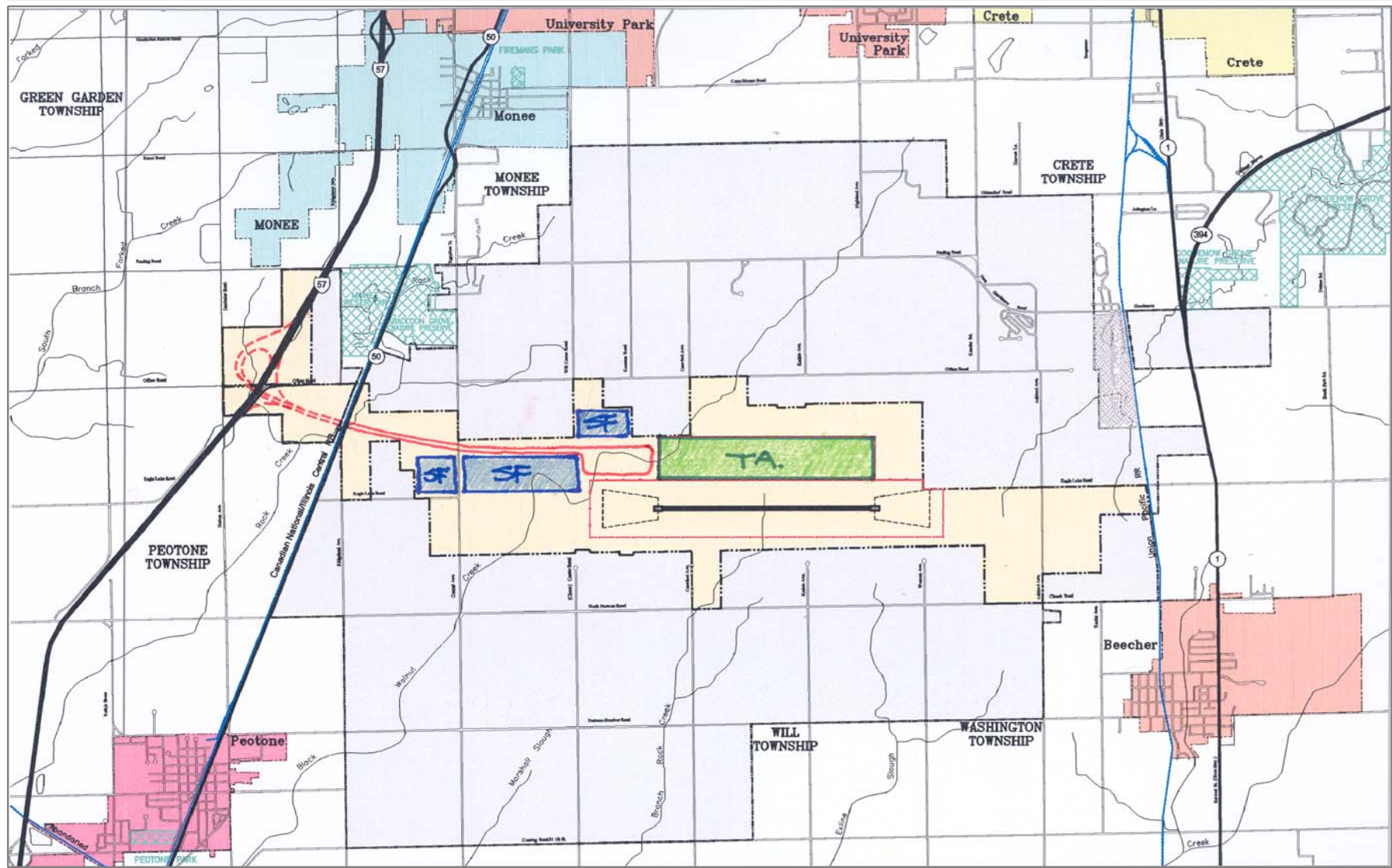
Criteria 1–Capacity – This criterion evaluated the proposed capacity of interchanges with either I-57 or IL-1 in terms of predicted Level of Service (LOS). The local roads access alternative was evaluated based on the current LOS of existing interchanges and projected increases in traffic to those intersections, if new access roads were not constructed.

Criteria 2 – Compatibility with Regional Road System – This criterion assesses the ability of the existing major regional routes (I-57, IL-394 and IL-1) to accommodate the projected airport traffic through DBO+20 without improvements to those existing roads.

Criteria 3 – Convenient Access – This criterion was divided into two sub-criteria to rate different aspects of convenience of the access system. Each sub-criterion was rated separately and then averaged with ratings from the other sub-criteria for each alternative.

Sub-Criteria 3a – Way Finding – Access was evaluated based on free flow traffic capability and the number of decision points. Alternatives with direct access and free flow conditions were judged to have one decision point and were rated higher, while alternatives relying on local roads would incur multiple decision points and were rated lower.

Sub-Criteria 3b – Travel Time – Travel time was measured from the interchange with a major regional route (I-57 or IL-1) to the potential terminal area. Calculations were based on the assumption that average vehicular speed on a free flow direct access road would be 50 mph, while average vehicular speed on local roads would be 30 mph. Signalized intersections would also increase travel time to the airport.



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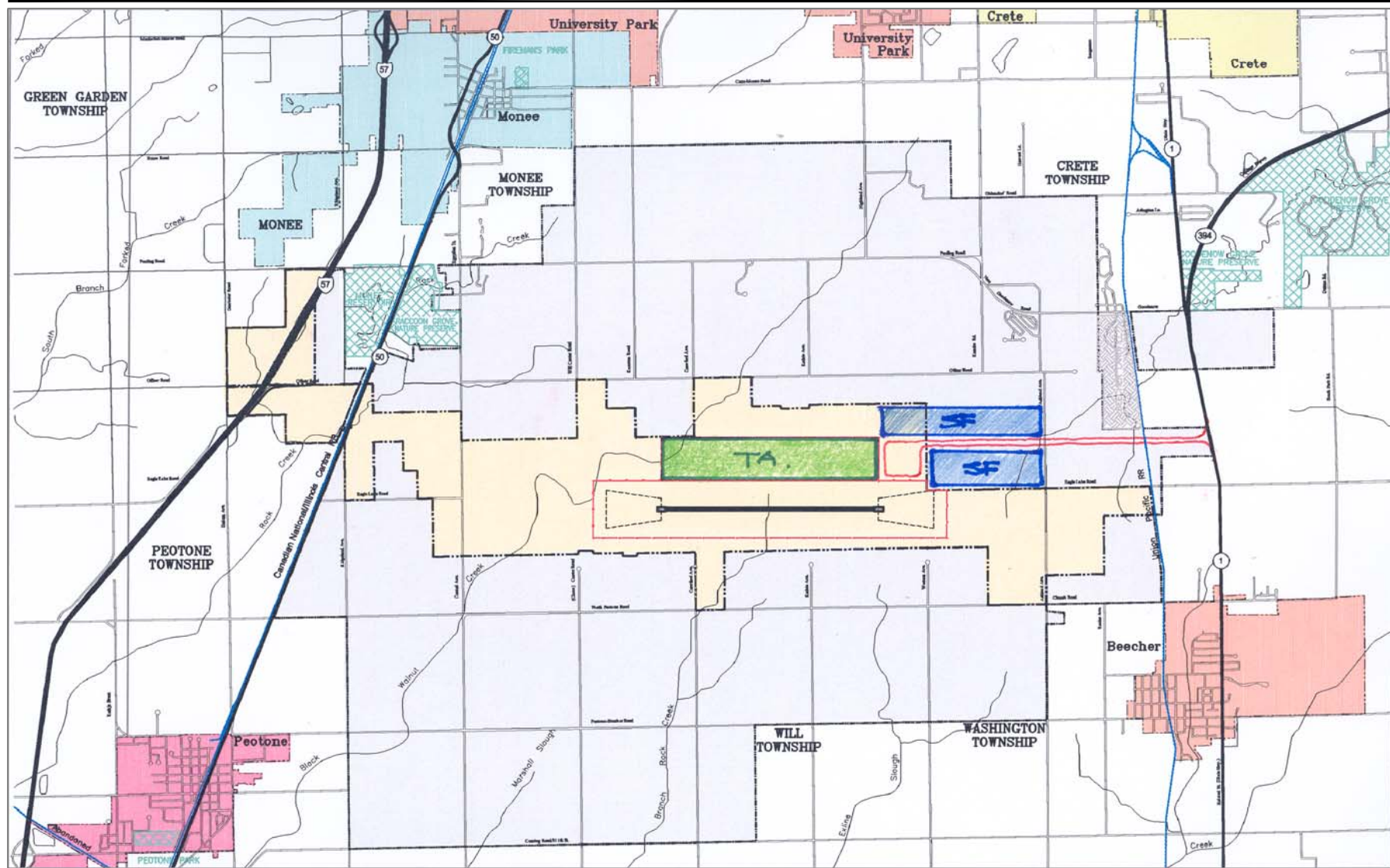


0 3500 7000 ft

Legend			
	PROPOSED AIRPORT BOUNDARY		PARK LAND
	PROPOSED AIRPORT RUNWAY		LANDFILL (CLOSED)
	AIR OPERATION AREA (AOA)		SUPPORT FACILITIES (SF)
			TERMINAL AREA (TA)
			GROUND TRANSPORTATION CENTER (GTC)
			PASSENGER TERMINAL ACCESS ROAD
			UNDER GROUND PEOPLE MOVER
			SUPPORT FACILITIES ACCESS ROAD

Inaugural Airport Access Concept Alternative 1 Direct West Airport Access

Exhibit 7-1



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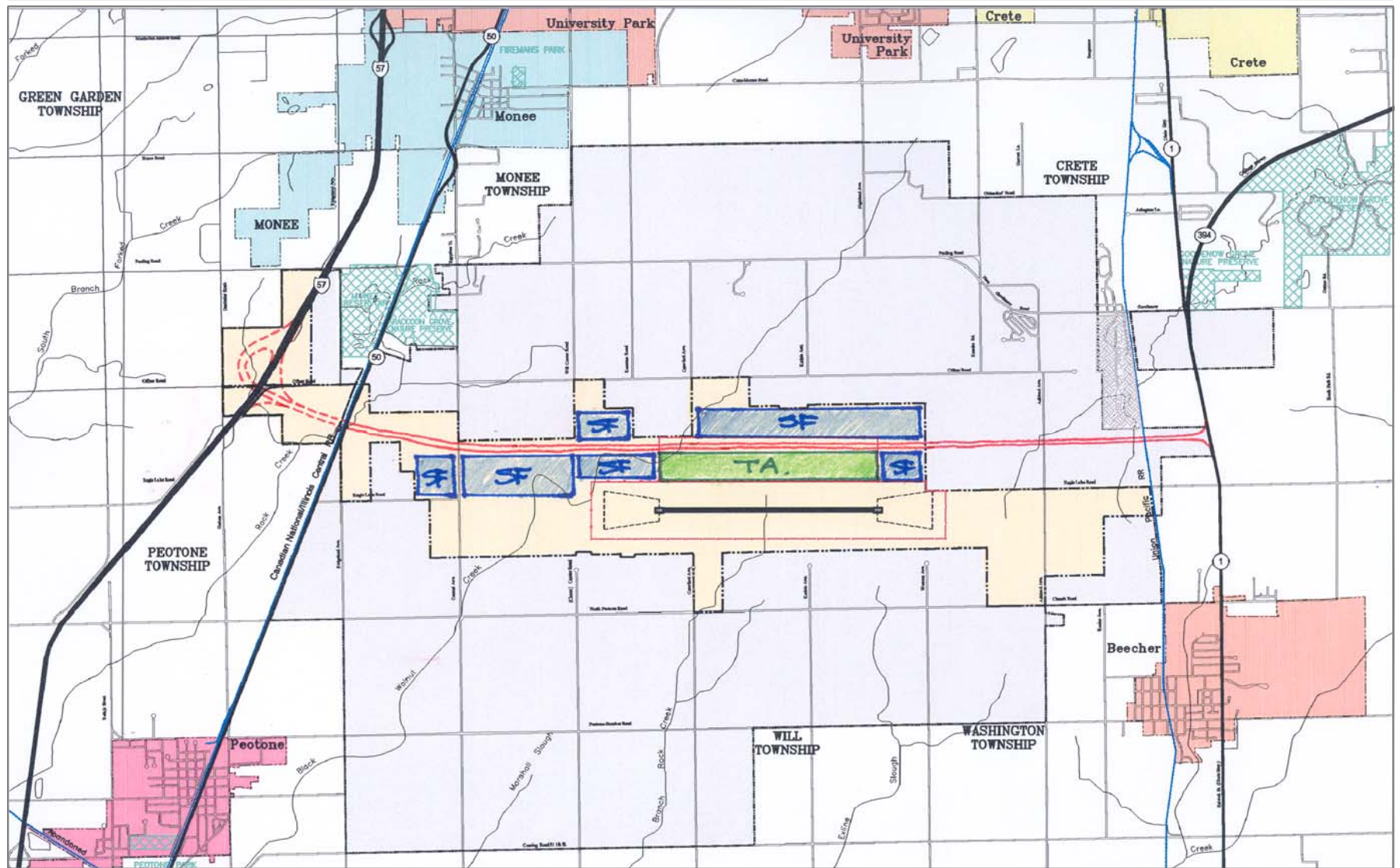


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Legend					
	PROPOSED AIRPORT BOUNDARY		PARK LAND		GROUND TRANSPORTATION CENTER (GTC)
	PROPOSED AIRPORT RUNWAY		LANDFILL (CLOSED)		PASSENGER TERMINAL ACCESS ROAD
	AIR OPERATION AREA (AOA)		SUPPORT FACILITIES (SF)		UNDER GROUND PEOPLE MOVER
	TERMINAL AREA (TA)		SUPPORT FACILITIES ACCESS ROAD		

Inaugural Airport Access Concept Alternative 2 Direct East Airport Access

Exhibit 7-2



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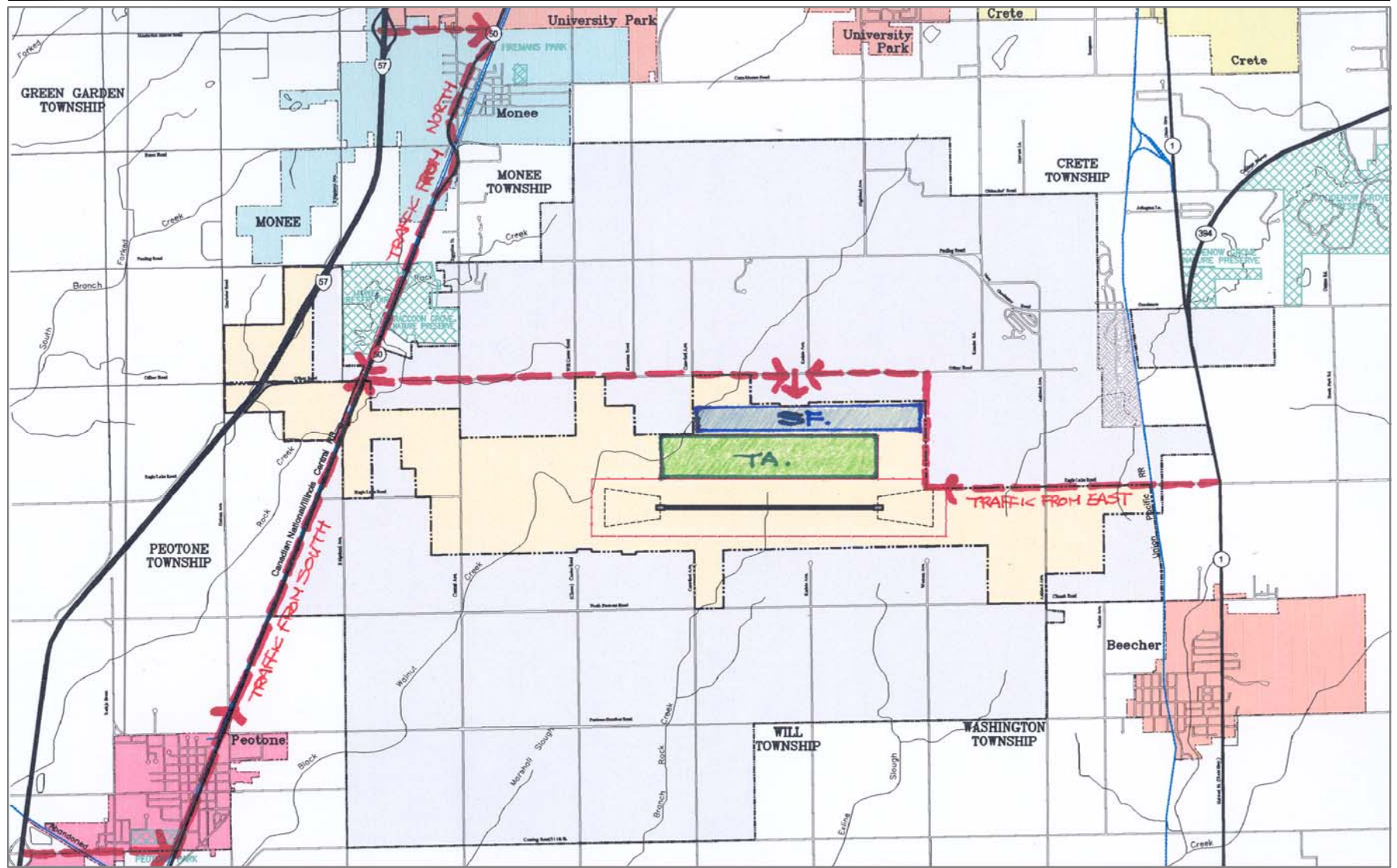
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Legend					
	PROPOSED AIRPORT BOUNDARY		PARK LAND		GROUND TRANSPORTATION CENTER (GTC)
	PROPOSED AIRPORT RUNWAY		LANDFILL (CLOSED)		PASSENGER TERMINAL ACCESS ROAD
	AIR OPERATION AREA (AOA)		SUPPORT FACILITIES (SF)		UNDER GROUND PEOPLE MOVER
			TERMINAL AREA (TA)		SUPPORT FACILITIES ACCESS ROAD

Inaugural Airport Access Concept Alternative 3 Continuous Airport Access

Exhibit 7-3

Section 7 - Selection of Inaugural Airport Landside Access



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Legend					
	PROPOSED AIRPORT BOUNDARY		PARK LAND		GROUND TRANSPORTATION CENTER (GTC)
	PROPOSED AIRPORT RUNWAY		LANDFILL (CLOSED)		PASSENGER TERMINAL ACCESS ROAD
	AIR OPERATION AREA (AOA)		SUPPORT FACILITIES (SF)		UNDER GROUND PEOPLE MOVER
			TERMINAL AREA (TA)		SUPPORT FACILITIES ACCESS ROAD

Inaugural Airport Access Concept Alternative 4 Local Road Airport Access

Exhibit 7-4

Table 7-1 Inaugural Airport Landside Access Concept Alternatives Evaluation Criteria		
No.	Criteria	Definition
1	Ability to provide adequate capacity	The ability of an alternative to satisfy projected traffic demand (through DBO+5)
2	Compatibility with regional roadway system	The ability of the existing major regional roads (I-57, IL-394 & IL-1) to accommodate projected airport traffic without improvements.
3	Ability to provide convenient access	The ability of an alternative to: <ul style="list-style-type: none"> • Provide easy, direct vehicular and transit access to the Passenger Terminal Area • Provide low travel times to the Passenger Terminal Area from existing major regional roads
4	Compatibility with preferred ultimate landside access concept	The inaugural landside access system should be compatible with the preferred ultimate landside access concept
5	Ability to meet security criteria	The ability of an alternative to provide screened or controlled access of vehicles
6	Comparison of relative costs	Comparative relative costs of each concept
7	Ability for future expansion	The ability of an alternative to: <ul style="list-style-type: none"> • Meet future changes in airport-related traffic • Provide for an incremental development plan
8	Delivery schedule	The ability of an alternative to be implemented in the shortest time.
9	Ability to provide access to airport-related land uses	The ability of an alternative to: <ul style="list-style-type: none"> • Provide flexible land-use development potential • Maximize land-use opportunities
10	Ability to avoid and/or minimize adverse land use impacts and community disruption	The ability of an alternative to avoid and/or minimize: <ul style="list-style-type: none"> • Community disruption • Population displacement • Incompatibility with land use plans of the neighboring communities
11	Ability to avoid and/or minimize adverse impacts on natural resources	The ability of an alternative to avoid and/or minimize: <ul style="list-style-type: none"> • Impacts to wetlands • Impacts to floodplains • Impacts to water resources • Impacts to prime farmland

Source: TAMS, an Earth Tech Company, 2004.

Criteria 4 – Compatibility with Preferred Ultimate Landside Access Concept – This criterion examines whether an alternative is compatible with the selected preferred ultimate concept. If it was compatible, it received the highest rating; if the alternative was not compatible, it received the lowest rating.

Criteria 5 – Screened/Controlled Vehicular Access (Security) – This criterion evaluated alternatives based on their ability to restrict vehicles from direct access to the passenger terminal. Those alternatives that were able to provide for controlled access to the passenger terminal (potential screening plaza or other security control) were rated higher than those that did not.

Criteria 6 – Relative Cost Comparison – Compares relative costs of each alternative. The least expensive alternative is resurfacing local roads and building a short airport entrance road. The most expensive alternative is building a continuous airport access road and two interchanges at I-57 and Route 1. Alternatives that are relatively less expensive were rated higher than alternatives that are relatively more expensive.

Criteria 7 – Expansion Potential – Evaluates alternatives based on their ability to expand and meet future traffic demand (through DBO+20). Alternatives that have better expansion potential rated higher than those that have worse expansion potential.

Criteria 8 – Delivery Schedule – Compares relative delivery schedule of each alternative. Alternatives that require less time to implement were rated higher than those alternatives that require longer time to implement.

Criteria 9 – Airport-related Land Use Development Potential – This criterion measured the length of the airport access road in miles to determine the land area potentially accessible for airport-related development along the entrance road(s). Alternatives that provide access to more airport property rated higher than those that provided access to less airport property.

Criteria 10 – Avoid and/or Minimize Land Use Impacts and Community Disruption – This criterion was divided into three sub-criteria to rate different impacts that are of concern to the landowners and communities surrounding the site. Each sub-criterion was rated separately and then averaged with ratings from the other sub-criteria for each alternative.

Sub-Criteria 10a – Community Disruption – This criterion evaluated the impact of increased traffic on local roads and through the existing communities. Those alternatives that diverted airport-related traffic off of local roads and onto airport access roads rated higher than alternatives that relied on local roads.

Sub-Criteria 10b – Population Displacement – Alternatives that minimize impacts to homes and residents were rated higher than those that had greater impacts.

Sub-Criteria 10c – Conflicts with Local Land Use Plans – Each alternative was evaluated against the *Land Use Plan for the Eastern Will County Area* (August 1997) to determine if the alternative would conflict with the plan. Conflicts were defined as access roads being located outside of the previously defined airport boundary (shown on the land use map) or on land planned for other uses by the communities within the airport boundary.

Criteria 11 – Avoid and/or Minimize Natural Resource Impacts – This criterion was divided into four sub-criteria to rate different impacts that are of concern to the Federal and state natural resource agencies, special interest groups and the general public. Each sub-criterion was rated separately and then averaged with ratings from the other sub-criteria for each alternative.

Sub-Criteria 11a – Impacts to Wetlands – Alternatives that would result in fewer impacts to wetlands rated higher than alternatives with greater impacts.

Sub-Criteria 11b – Impacts to Floodplains – Alternatives that would result in fewer impacts to floodplains rated higher than alternatives with greater impacts.

Sub-Criteria 11c – Impacts to Water Resources – Alternatives that would result in fewer impacts to water resources (streams, lakes, etc.) rated higher than alternatives with greater impacts to water resources.

Sub-Criteria 11d – Impacts to Prime Farmland – Alternatives that would result in fewer impacts to prime farmland rated higher than alternatives with greater impacts to prime farmland.

7.2.2 Inaugural Airport Landside Access Alternatives Evaluation Matrix

The same methodology employed in evaluating the ultimate airport landside access alternatives was used for evaluation of the Inaugural Airport landside access alternatives. Each concept was evaluated and ranked by each criteria identified in **Table 7-1**. A rating scale from 1 to 5 was assigned to each criterion to better distinguish differences between each of the alternatives. A score of 5 was considered the best score for a criterion, while a score of 1 was considered the worst.

The alternatives were compared against the eleven major criteria developed for this process. **Table 7-2** depicts the results of applying the criteria and rating scale to each of the landside access concepts. The evaluation worksheet with a more detailed explanation of the rating scale is shown in **Table 7-3**.

7.2.3 Preferred Inaugural Airport Landside Access Alternative

The results in **Table 7-2** show that Alternative 1 (see **Exhibit 7-1**) rated the highest of all Inaugural Airport landside access alternatives examined. This alternative rated well on capacity, compatibility with the regional roadway system, convenient access, compatibility with the preferred ultimate concept, expansion potential and minimization of land use impacts and community disruption. Alternative 2 rated lower on compatibility with the regional roadway system and land use impacts and community disruption. Alternative 3 rated lower on cost, delivery schedule, natural resource impacts, land use impacts and community disruption. Alternative 4 rated lower on ability to provide adequate capacity, compatibility with the regional roadway system, convenient access, future expansion capability and land use impacts and community disruption. Based on these results, Alternative 1 was selected as the preferred Inaugural Airport landside access alternative.

In addition to being selected as the preferred airport access option for the IAP, this alternative also has the flexibility to evolve into a different type of access (i.e., continuous, or east and west, access) in the future, if airport-related traffic conditions dictate a different access concept. The Inaugural Airport access road would be designed to freeway standards and should provide a Level of Service “C” or better. The Inaugural Airport terminal curb front is planned as a free-flow, one-level roadway. The draft *Demand/Capacity Analysis and Facility Requirements for the Inaugural Airport Program* report estimated that the terminal frontage would consist of three-lanes, approximately 500 feet long.

Table 7-2 Inaugural Airport Landside Access Concept Alternatives Evaluation Matrix					
No.	Criteria	Alternative 1 Direct West Airport Access	Alternative 2 Direct East Only Access	Alternative 3 Continuous Airport Access	Alternative 4 Local Roads Access
1	Ability to provide adequate capacity to meet projected traffic demand (through DBO+5)	5	5	5	1
2	Compatibility with regional roadway system	5	2	4	2
3	Ability to provide convenient access	5.0	5.0	5.0	1.0
a	Way finding	5	5	5	1
b	Travel time	5	5	5	1
4	Compatibility with preferred ultimate concept	5	5	5	1
5	Ability to meet security criteria	4	4	4	4
6	Relative cost comparison	2	2	1	3
7	Ability for future expansion (through DBO+20)	5	5	4	1
8	Delivery Schedule	3	3	1	5
9	Ability to provide access to airport-related land uses	1	1	4	5
10	Ability to avoid and/or minimize adverse land use impacts and community disruption	4.7	3.3	3.0	2.7
a	Community disruption	5	4	4	1
b	Population displacement	4	2	1	5
c	Compatibility with land use plans of the neighboring communities	5	3	4	2
11	Ability to avoid and/or minimize adverse impacts on natural resources	3.3	3.3	1.0	5.0
a	Wetlands	4	3	1	5
b	Floodplains	2	4	1	5
c	Water resources	3	4	1	5
d	Prime farmland	3	3	1	5
Total		43.0	38.6	37.0	30.7
Rating		3.9	3.5	3.4	2.8

Source: TAMS, an Earth Tech Company, 2004.

Table 7-3 Inaugural Airport Landside Access Concept Alternatives Evaluation Worksheet																		
Score	Rating	Criterion 1 Capacity to Meet Projected DBO+5 Traffic Demand	Criterion 2 Compatibility with Regional Roadway System	Criterion 3a Way Finding	Criterion 3b Travel Time (min)	Criterion 4 Compatibility with Preferred ultimate access concept	Criterion 5 Security (Screened or Controlled Vehicular Access)	Criterion 6 Relative Cost Comparison	Criterion 7 Expansion Potential	Criterion 8 Delivery Schedule	Criterion 9 Airport-related land use development potential (miles)	Criterion 10a Community Disruption	Criterion 10b Population displacement	Criterion 10c Conflicts with Local Land Use Plans	Criterion 11a Impact on wetlands	Criterion 11b Impact on floodplains	Criterion 11c Impact on water resources	Criterion 11d Impact on prime farmlands
5	Excellent	LOS A	80 - 100% of traffic able to be accommodated on major roadways without improvement	Free-flow, direct access; 1 decision point	4.2	Yes	No direct vehicle access to terminal	Build only an airport entrance road from a secondary local road	Flexibility to evolve into a different landside concept in the future - 80 - 100% potential	The option that requires the least time to implement	Longest access road system	Airport traffic will not utilize roads passing through communities	Lowest population impacted	No conflict	Lowest acreage impacted	Lowest acreage impacted	Lowest stream length impacted	Lowest acreage impacted
4	Good	LOS B	60 - 79%	Free-flow, two decision points	5.6	N/A	Provision for a vehicle screening plaza	Resurfacing existing local roads and construct airport entrance road	60 - 79% potential	20 - 39% longer time	20 - 39% shorter	0 - 25% of traffic will use local roads	20 - 39% greater impact	1 conflict	20 - 39% greater impact	20 - 39% greater impact	20 - 39% greater impact	20 - 39% greater impact
3	Average	LOS C	40 - 59%	3 decision points	6.9	N/A	Design provisions for a secure curbside	Widening & reconstructing existing roads +building a short airport entrance road	40 - 59% potential	40 - 59% longer time	40 - 59% shorter	26 - 50% of traffic will use local roads	40 - 59% greater impact	2 conflicts	40 - 59% greater impact	40 - 59% greater impact	40 - 59% greater impact	40 - 59% greater impact
2	Fair	LOS E	20 - 39%	4 decision points	8.3	N/A	Temporarily restricting vehicle in the vicinity of the terminal	Build an airport access road and one interchange from one direction only	20 - 39% potential	60 - 79% longer time	60 - 79% shorter	51 - 75% traffic will use local roads	60 - 79% greater impact	3 conflicts	60 - 79% greater impact	60 - 79% greater impact	60 - 79% greater impact	60 - 79% greater impact
1	Poor	LOS F	0 - 19%	5 decision points	11	No	No security provisions	Build a continuous airport access road and interchanges at I-57 & IL-1	0 - 19% potential	The option that requires the longest time to implement	Shortest access road system	76 - 100% traffic utilizes roads that pass through communities	Highest population impacted	> 3 conflicts	Highest acreage impacted	Highest acreage impacted	Highest stream length impacted	Highest acreage impacted

Source: TAMS, an Earth Tech Company, 2004.
 N/A = Not Available
 LOS = Level of Service