

SECTION 4 **DEVELOPMENT ALTERNATIVES**

4.0 INTRODUCTION

In the previous chapter, facility needs for the twenty-year planning horizon were identified. The next step in the planning process is to identify and evaluate the various ways these facilities can be provided. This section examines alternative methods of providing these facilities required to serve projected levels of demand during the study period. The alternative analysis is broken up into three different development components at the airport: Airside development alternatives, Pinch Valley Road alternatives, and Landside development alternatives. Alternatives for each of these components are presented in text and graphics on the following pages. Advantages and disadvantages associated with each alternative are identified and quantified to the extent possible. Conceptual cost estimates are also included where needed to evaluate alternatives.

Development options must support the airport's role in the aviation system, and be in compliance with applicable FAA airport design standards and other regulations. Development alternatives must also provide flexibility in accommodating facility requirements for the planning period and beyond, should the need arise. This is important since the level of airport activity can vary significantly from forecast demand. The above factors are considered to be the most important elements of facility development, and while not all-inclusive, they do provide a starting point from which to evaluate development alternatives. After the alternatives evaluation process is complete, the airport's preferred concept can be transformed into a realistic development plan.

Based on the facility requirements summarized in the previous chapter, this alternative analysis used factors such as costs, airport development goals, FAA criteria, and impacts to the surrounding community to evaluate each alternative. These criteria were intended to result in the identification and elimination of alternatives that would not be feasible, and to identify alternatives deserving of a more detailed evaluation.

4.1 MEETING THE FACILITY REQUIREMENTS

Each build alternative includes an addition of 1,400 feet to Runway 16-34 to achieve a total usable length of 6,500 feet. As previously stated, the existing runway length of 5,100 feet is currently inadequate for critical aircraft currently using the Airport. During the summer months, the existing critical aircraft cannot operate at 100 percent load factor due to this deficient length. As discussed in the previous chapter, a runway of this length would also accommodate the types of aircraft expected to operate at DMW in the future.

In addition to airfield requirements, the evaluation of each alternative considered the ability to accommodate the recommended landside development. The required apron space for both based and transient aircraft is projected to reach over 53,000 square yards by the end of the 20-year planning period. A total of 20 conventional hangars and 122 T-hangar units are required to meet the future demand. In addition, a public-use terminal facility is also recommended. Landside development and associated layouts and alternatives are discussed separately in this section.

4.2

MEETING FEDERAL AVIATION ADMINISTRATION (FAA) CRITERIA

Placement of runways, taxiways, navigational aids, and landside development components is required to be in accordance with standard criteria included in FAA Advisory Circular 150/5300-13 and Part 77 of the Federal Aviation Regulations. Therefore, each alternative was evaluated on its ability to maintain the following criteria referenced in these documents and previously defined in Section 3:

- Runway Safety Area;
- Runway Object Free Area (ROFA);
- Obstacle Free Zone;
- Runway Protection Zone (RPZ); and
- Imaginary Surfaces – including Primary, Approach, and Transitional Surfaces.

4.3

AIRSIDE DEVELOPMENT ALTERNATIVES

Through a series of Technical Advisory Committee (TAC) meetings, a number of alternatives were presented and analyzed, which included potential Runway 16-34 options, parallel taxiway upgrades, and issues regarding an upgrade to the ARC from C-II to C-III. The TAC evaluated a total of three Build Alternatives, as well as a No-Build Alternative and “Build to Standards” Alternative. These alternatives all had common elements such as a total runway length of 6,500 feet, a parallel taxiway, the installation of a Category I ILS for Runway 16, and associated land acquisition. A common element of all three-build alternatives is an impact to Pinch Valley Road, an unimproved gravel road located off the Runway 16 end. It was decided to first approve an airfield layout option, and then compile different alternatives for Pinch Valley Road specific to the Preferred Airfield Alternative. Therefore, Pinch Valley Road alternatives are described later in this section.

In February 2005, the TAC agreed unanimously that Alternative 3 was the best airfield development plan, in which the goals of the Airport were achieved. The following is a description of the airfield alternatives, as well as the advantages and disadvantages the TAC used to reach its Preferred Alternative decision.

4.3.1

Alternative 1

Alternative 1 would involve the extension of Runway 16 approximately 1,400 feet to the northwest to achieving a total usable length of 6,500 feet for Runway 16-34 (see **Exhibit 4.3-1**). The width of Runway 16-34 would remain at 100 feet. In addition, the parallel taxiway would also be extended the 1,400 feet where a hold apron would be located, tying into the extended Runway 16. The runway-taxiway separation is proposed to remain at 300 feet as part of Alternative 1. This length would provide the required distance for the existing aircraft; however, because the runway-taxiway separation remains at 300 feet, it does not provide the required distance for C-III aircraft, which is 400 feet.

Alternative 1 would also include the rehabilitation of the existing 5,100 feet of Runway 16-34, as the current pavement strength is inadequate for the type of aircraft proposed to utilize the facility in the future. Runway 16-34 is currently rated at 22,000 pounds for single wheel loading. To accommodate the aircraft, that currently operate at, and are forecast to use the airport during the planning period, a pavement-strength of 91,000 pounds dual wheel gear loading is recommended for the runway. This rehabilitation could cause multi-season closures of Runway 16-34 or shortening the runway during the construction period because of the proposed extension along the existing centerline of the runway.

Alternative 1 also includes a precision approach for Runway 16; however, the approach minimums would be restricted to not lower than $\frac{3}{4}$ mile visibility due to the runway-taxiway separation remaining at 300 feet. In order to achieve approach minimums lower than $\frac{3}{4}$ mile visibility, the runway-taxiway separation is required to be 400 feet. In addition, the primary surface for Runway 16-34 also increases in size due to the addition of the instrument approach for Runway 16. The Runway 16 RPZ would also increase in size from approximately 29 acres in size to 78.9 acres in size. This increase would require approximately 38.5 acres of private property to be purchased fee-simple. An additional 2.5 acres would also need to be purchased via fee-simple as part of Alternative 1 for the Runway 34 RPZ and primary surface.

As currently designed, Alternative 1, would also have an adverse impact on Pinch Valley Road. As stated above, Pinch Valley Road alternatives were only analyzed for the Preferred Alternative.

The following are advantages and disadvantages of **Alternative 1**.

Advantages

- The required length of 6,500 feet identified in the facility requirements would be achieved.

Disadvantages

- The runway-taxiway separation would remain at 300 feet, which does not allow the facility to upgrade its ARC from C-II to C-III.
- The proposed precision approach to Runway 16 could not utilize the lowest published minimum of lower than $\frac{3}{4}$ mile, as the required runway-taxiway separation is also required to be at least 400 feet.
- The rehabilitation of the existing 5,100 feet of Runway 16-34 would cause the need to close the runway for up to 185 days or to shorten the runway during construction.
- The larger primary surface, an element of the instrument approach, would encroach upon a series of conventional hangars located approximately 520 feet east of the Runway 16-34 centerline.

- Pinch Valley Road, an unimproved gravel road located off the Runway 16 end, would also be impacted by the Runway 16 extension.

4.3.2 Alternative 2

Alternative 2 provides a new 6,500-foot Runway 16-34 approximately 375 feet to the west of the existing runway, which would be converted to a 50-foot wide taxiway (see **Exhibit 4.3-2**). This entire runway “shift” would give the airfield the required runway-taxiway separation needed to support C-III operations, as well as allowing for the desired minimums for the proposed precision approach to Runway 16. The new runway could be constructed while still maintaining the operation capacity of the existing runway during daytime hours.

Similar to Alternative 1, this alternative would also include a precision approach for Runway 16; however, the desired approach minimums, lower than $\frac{3}{4}$ mile, could be utilized, as the runway-taxiway separation would be at the required 400 feet.

Shifting the runway west would also move the approach surface, requiring the clearing of any penetrations within Runway 16 and 34’s approach surface. This action could limit the height of future buildings within a proposed industrial park southeast of Littlestown Pike. In addition, the Runway 34 RPZ would encompass the Association for Retarded Citizens (ARC) facility located south of Meadow Branch Road. Alternative 2 would require the fee-simple purchase of this facility and the relocation of its occupants. An asphalt plant, located within the ROFA, would also be purchased fee-simple. Approximately 83 acres of private land would be required to be purchased fee-simple for the RPZ for both runways, as well as the larger primary surface.

Alternative 2 would also have an adverse impact on Pinch Valley Road. As stated above, Pinch Valley Road alternatives were only analyzed for the Preferred Alternative, which are described later in this section.

The following are advantages and disadvantages of **Alternative 2**.

Advantages

- The required length of 6,500 feet identified in the facility requirements would be achieved.
- The required runway-taxiway separation of 400 feet would be attained supporting C-III operations.
- The proposed precision approach to Runway 16 could utilize the lowest allowable minimums (lower than $\frac{3}{4}$ mile), as the required runway-taxiway separation would be part of this Alternative.
- The new runway would be constructed while still maintaining the operation capacity of the existing runway during daytime hours; therefore, no long-term closure of existing Runway 16-34 during construction.

Disadvantages

- By shifting Runway 16-34 west, the new approach surface for Runway 34 would limit the height of future buildings within a proposed industrial park southeast of Littlestown Pike. In addition, the Runway 34 RPZ would encompass the Association for Retarded Citizens (ARC) facility located south of Meadow Branch Road.
- An asphalt plant is located within the ROFA and is required to be purchased fee-simple and removed.
- Approximately 83 acres of private land would be required to be purchased fee-simple for the RPZ for both runways, as well as the larger primary surface.
- Pinch Valley Road, an unimproved gravel road located off the Runway 16 end, would also be impacted by the layout of the new Runway 16-34

4.3.3 *Alternative 3 – Preferred Alternative*

As stated in **Section 4.3**, in February 2005, the TAC agreed that Alternative 3 was the best airfield development plan for DMW. Alternative 3 provides a new 6,500-foot Runway 16-34, located 250 feet west of the existing runway. A new parallel taxiway would be constructed 400 feet east of the new Runway 16-34, allowing for the required 400-foot runway-taxiway separation. The new Runway 16-34 would also be shifted 600 feet to the north, which keeps the ARC facility outside of the Runway 34 RPZ; therefore, this facility is not proposed for acquisition as part of Alternative 3 (see **Exhibit 4.3-3**).

Similar to Alternative 2, this alternative provides for the C-III design aircraft and does not require the closure of existing Runway 16-34 during construction. The old runway would be removed after the new runway is open for use. This alternative also includes a precision approach for Runway 16. The best available approach minimums for a Category I ILS with a localizer antenna; glide slope antenna, and the HIRLs include a horizontal visibility of $\frac{3}{4}$ -mile. An approach light system, such as a MALSR could also be installed as part of the ILS, which reduces the visibility minimums to $\frac{1}{2}$ -mile. The precision RPZ would have a width of 1,000 feet, and extend 2,500 feet into the approach, ending at a final width of 1,750 feet, encompassing 79 acres. Approximately 80 acres would be required to be purchased fee simple, 53 acres of which would be for the new Runway 16 precision RPZ.

The implementation of Alternative 3 will have a direct impact on the current alignment of the County-maintained Pinch Valley Road. As stated above, Pinch Valley Road is an unimproved gravel surface road located north of the Runway 16-34 centerline. Alternatives for Pinch Valley Road that would be part of the Alternative 3 – Preferred Alternative are described later in this section.

The following are advantages and disadvantages of **Alternative 3**.

Advantages

- The required length of 6,500 feet identified in the facility requirements would be achieved.

- The required runway-taxiway separation of 400 feet would be attained supporting C-III operations.
- The proposed precision approach to Runway 16 could utilize the lowest allowable minimums (lower than ¼ mile), as the required runway-taxiway separation would be part of this Alternative.
- The new runway would be constructed while still maintaining the operation capacity of the existing runway during daytime hours; therefore, no long-term closure of existing Runway 16-34 during construction.
- The 600-foot shift of Runway 16-34 to the north would avoid the ARC facility being located within the Runway 34 RPZ; therefore, the facility would not have to be purchased and relocated.

Disadvantages

- An asphalt plant is located within the ROFA and is required to be purchased fee-simple and removed.
- Approximately 80 acres would be required to be purchased fee simple, 53 acres of which would be for the new Runway 16 precision RPZ.
- Pinch Valley Road, an unimproved gravel road located off the Runway 16 end, would also be impacted by the layout of the new Runway 16-34

4.3.4 No-Build Alternative

The No-Build Alternative essentially considers keeping the airport in its present condition and not improving existing facilities. However, in most cases, the “No Action” scenario is not considered a prudent alternative. In order to accommodate past growth in aviation activity, continual improvement of the facilities at DMW has been necessary. Since forecasts for the next twenty years project further increases in aviation activity at the airport, additional improvements will be needed. A “No Action” alternative would negate the investment that has already been made in improving the facility, would ultimately reduce the quality of the existing airport facilities, and would produce other undesired results.

4.4 PINCH VALLEY ROAD ALTERNATIVES

The implementation of **Alternative 3**, the sponsor’s preferred alternative, will have a direct impact on the current alignment of the County-maintained Pinch Valley Road. Pinch Valley Road is an unimproved, gravel surface road that intersects Pleasant Valley Road approximately 3,800 feet northeast of the future Runway 16-34 centerline. It also intersects Hughes Shop Road approximately 1.75 miles to the southwest of the future runway centerline. The section of road directly affected by the extension of Runway 16-34, approximately 4,000 feet, currently serves as an access road for eight residential properties. Although the improvements to Runway 16-34 would not directly impact any of these residences on Pinch Valley Road, traffic circulation would be affected by any alteration to Pinch Valley Road.

In order to mitigate for impacts to Pinch Valley Road, a series of relocation/realignment alternatives were identified and evaluated. These include an alternative where the road would no longer serve as a throughway between Pleasant Valley and Hughes Shop Roads, as well as two scenarios where Pinch Valley Road would be realigned around the limits of the proposed runway extension. The following provides a description and a preliminary evaluation of the three Pinch Valley Road mitigation alternatives. Please note that for comparative evaluation purposes, the travel distance and estimated travel times for each alternative was measured from the existing intersection of Indian Valley Trail – Pinch Valley Road to the intersection of Pleasant Valley – Pinch Valley Roads. All three Pinch Valley Road alternatives are depicted on **Exhibit 4.4-1**.

4.4.1 *Alternative 1 – Pinch Valley Road Cul-de-Sac/Detour*

Alternative 1 simply involves removing approximately 4,000 feet of Pinch Valley road and adding cul-de-sacs at both of the closure points. Under this scenario, Pinch Valley Road would no longer serve as a throughway connecting Pleasant Valley Road and Hughes Shop Road. Residents that currently live east of the cul-de-sac would have to travel to Pleasant Valley Road to access the County's major arteries. Residences located on the west side of the cul-de-sac would have to travel west to Hughes Shop Road to access Maryland Route 140. Local residents could also travel along Indian Trail Drive as a detour. Indian Trail Drive connects to Pinch Valley Road west of the impacted portion of Pinch Valley Road and connects to Pleasant Valley Road east of the impacted portion.

Currently, the travel distance from the Indian Valley Trail - Pinch Valley Road intersection to the Pleasant Valley Road - Pinch Valley Road intersection is a distance of 0.82 miles. If Pinch Valley Road is closed as a throughway and vehicles would use Indian Trail Drive as an alternate route, this distance would increase by 1.2 miles. Considering the posted speed limit of 15 miles per hour (mph), the additional 1.2 miles of travel distance would add approximately five minutes to the trip time. The following provides a list of advantages and disadvantages of this alternative.

Advantages

- The cul-de-sac scenario would require no additional property acquisition.
- This alternative is the least expensive (see **Section 4.4.4**).

Disadvantages

- This option could potentially create a disruption to the community connectivity of the existing roadway system.
- This option may cause a disruption to the response time of various emergency services in the County.
- This potentially would disrupt public utilities and county services, such as school bus routes.

4.4.2 *Alternative 2 – Major Realignment/Minor Detour of Pinch Valley Road Traffic*

Alternative 2 provides a partial realignment of Pinch Valley Road, constructing approximately 4,500 linear feet of new roadway, bypassing the extended ROFA (refer back to **Exhibit 4.4-1**) of the extended Runway 16-34. Through conversations with various County Officials, the new portion of the road would be constructed to meet current County standards for a rural county collector road, which includes paving the new portion of the roadway, however, the FAA and MAA would not likely participate in funding the improvements to the road. The FAA and MAA typically only fund “replacement in kind” for relocation of roads therefore, the cost to construct of a new gravel road would be included. For the purposes of cost estimating, it is assumed that the additional costs to pave the new section of roadway would be borne by the County (see **Section 4.4.4**). This scenario would still require the construction of a single cul-de-sac on the east side of the extended runway to allow the dead end portion of Pinch Valley Road to remain accessible to the four residential parcels that exist on the edge of the extended airfield facilities. The realignment would add an additional ½ mile to the overall length of Pinch Valley Road, which would equate to an addition 1.5 minutes in travel time. The following provides a list of advantages and disadvantages of this alternative.

Advantages

- Although the partial detour for this option would lengthen the travel time for residents that reside along the affected portion of Pinch Valley Road, the road would still serve as a through road for traffic between Pleasant Valley and Hughes Shop Roads.
- This option would maintain the community connectivity as it presently exists and would not interrupt or significantly increase response time for emergency services.

Disadvantages

- Implementation of this alternative would require the purchase of an additional 1.5 acres of private property.
- The cost to purchase land, perform site preparation, and construct this alternative would be significantly more than under Alternative 1.
- Costs associated with improving (paving) this road are significant, especially considering that the County will not receive FAA and MAA assistance for funding the paving.

4.4.3 *Alternative 3 – Minor Realignment/Major Detour of Pinch Valley Road Traffic*

The third mitigation alternative for Pinch Valley Road would involve constructing approximately 3,300 linear feet of new roadway that directly connects Indian Valley Trail to Pleasant Valley Road at a point north of the existing Pinch Valley Road intersection. Similar to Alternative 2, this alternative would include the construction of an improved (paved) roadway to meet current Carroll County design standards. Cul-de-sacs would still be constructed, resembling Alternative 1, and traffic would be

routed along Indian Valley Trail prior to accessing the new portion of roadway (refer back to **Exhibit 4.4-1**). Under this scenario, the travel distance from the intersection of Indian Valley Trail - Pinch Valley Road to the intersection of Pleasant Valley Road - Pinch Valley Road would increase by approximately 1 ½ miles. The estimated travel time would increase by 3.5 minutes at the current posted. The following provides a list of advantages and disadvantages of this alternative.

Advantages

- Although the partial detour for this option would lengthen the travel time for residents along the affected portion of Pinch Valley Road, the road would still serve as a through road to traffic between Pleasant Valley and Hughes Shop Roads.
- This option would maintain the community connectivity as presently exists and would not interrupt or significantly increase response time for emergency services.

Disadvantages

- This option would be the most expensive of the three to implement.
- Implementation of this alternative would require the purchase of 3 acres of private property.
- Additional vehicle trips would be generated on Indian Valley Trail and Pleasant Valley Road, which may adversely impact the quality of life of its residents.

4.4.4 Preliminary Cost Estimates

The following table provides a preliminary estimate of the implementation costs of each of the three Pinch Valley Road alternatives. The impacts to Pinch Valley Road would be caused by the runway extension and part of a Federal action and therefore be eligible for funding under the FAA's Airport Improvement Program (AIP); however, the FAA would only fund the replacement of the road "in-kind". This means that because the existing Pinch Valley Road is an unimproved, gravel road, the FAA would only fund the costs to realign a road with a similar surface. Should the County wish to improve (pave) the realigned portions of Pinch Valley Road, as discussed as part of both Alternatives 2 and 3, it is assumed that the County would bear these additional costs. These costs are depicted in **Table 4.4-1**.

**TABLE 4.4.-1
COST ESTIMATES - PINCH VALLEY ROAD ALTERNATIVES**

	Alternative 1	Alternative 2	Alternative 3
TOTAL (In Kind)	\$37,000.00	\$769,500.00	\$886,000.00
FAA Share (95%)	\$35,150.00	\$769,500.00	\$841,700.00
MAA Share (2.5%)	\$925.00	\$20,250.00	\$22,150.00
County Share (2.5%)	\$925.00	\$20,250.00	\$22,150.00
Additional County Costs (Non-FAA/MAA Eligible)	-	*\$400,000.00	*\$304,000.00
TOTAL COST	\$37,000.00	\$1,210,000.00	\$1,190,000.00

*The additional cost reflect the estimate to upgrade Pinch Valley Road to meet Carroll County design standards (should County require upgrade) for width, pavement, and drainage. These costs are not eligible for FAA/MAA funding.

4.5 LANDSIDE ALTERNATIVES

As discussed in **Section 2**, it is expected that DMW will see a substantial increase in aircraft operations over the 20-year planning period. To accommodate the future users of the airport, it is anticipated that development of landside facilities would be completed concurrent with the development of the airside as discussed earlier in this section. The existing landside facilities were discussed in **Section 1**. The facility requirements, including based and transient tiedown apron areas, conventional hangars and T-hangar units, terminal building needs, automobile parking, and fuel storage were discussed at length in **Section 3** and are summarized in **Table 4.5-1**. **In order to meet the facility requirements, a series of landside alternatives were developed in an attempt to maximize revenue at DMW while maintain efficiency and safety.** Three landside alternatives that meet the requirements noted in the table are discussed herein.

**TABLE 4.5-1
FACILITY REQUIREMENTS SUMMARY**

Item	2005	2010	2015	2020	2025
Based Aircraft Apron					
Tiedown Positions Required	17	18	20	20	20
Tiedown Positions Existing	<u>29</u>	<u>29</u>	<u>29</u>	<u>29</u>	<u>29</u>
Deficiency	None	None	None	None	None
Transient Aircraft Apron					
Required (s.y.)	29,400	34,100	39,700	46,500	53,400
Existing (s.y.)	<u>24,700</u>	<u>24,700</u>	<u>24,700</u>	<u>24,700</u>	<u>24,700</u>
Deficiency (s.y.)	4,700	9,400	15,000	21,800	28,700
T-hangars					
Required Units	104	109	113	117	122
Existing Units	<u>42</u>	<u>42</u>	<u>42</u>	<u>42</u>	<u>42</u>
Deficiency	62	67	71	75	80
Conventional Hangars					
Required Number	7	11	13	16	20
Existing Number	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
Deficiency	None	4	6	9	13
Terminal Building					
Required (s.f.)	3,600	4,200	4,800	5,520	6,480
Existing (s.f.)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Deficiency	3,600	4,200	4,800	5,520	6,480
Terminal Auto Parking					
Required Spaces	75	88	100	115	135
Existing Spaces	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Deficiency	75	88	100	115	135
Public Automobile Parking Spaces					
Required Spaces	85	98	114	132	153
Existing Spaces	<u>40</u>	<u>40</u>	<u>40</u>	<u>40</u>	<u>40</u>
Deficiency	45	58	74	92	113

4.5.1 Landside Alternative 1

The first landside alternative provides for a new 6,500-square foot terminal building to the south of the existing Airport Administration / FBO building, in the area of the existing fuel truck parking pad, which would be removed (see **Exhibit 4.5-1**). A new fuel truck parking pad would be constructed to the south of the existing pad and immediately adjacent to existing Hangar 1. The existing Airport Administration / FBO building also would be removed in this alternative and replaced with a new 14,000-square foot FBO facility, including 2,400 square feet reserved for FBO offices and a new 11,600-square foot hangar. The hangar would be on the north side of the proposed facility and abut

the existing 10,000-square foot FBO hangar, thereby providing the FBO with 21,600 square feet of hangar space as outlined in Section 3.

The existing apron would be expanded to the north to provide additional space for transient aircraft. Twenty tiedown spaces would be located on the north side of the apron expansion and reserved for based aircraft. The three southernmost existing T-hangar buildings would be removed. To replace them and provide for future needs, a series of eight buildings consisting of four 12-unit and four 8-unit T-hangar buildings would be constructed on the 14-acre parcel acquired by the County in 2004. The property is located to the northeast of the existing T-hangars. The new T-hangars would be constructed in a northeast-southwest orientation. Conventional hangar needs would be met by construction of five hangars to the north of the existing FBO maintenance hangar, three to the west of the existing T-hangars, four to the west of the existing fuel farm, and three to the extreme north of the existing airfield in the area of the Runway 16 hold apron. Taxilane pavements would be constructed adjacent to all new conventional and T-hangars to provide for movement of aircraft.

Automobile parking would be addressed by constructing parking areas to the northeast of the existing FBO maintenance hangar, to the east of the proposed T-hangars, to the west of the existing fuel farm adjacent to the new conventional hangars, and adjacent to the new conventional hangars to the extreme north of the existing airfield. A total of 248 spaces would be provided within these four new areas to meet the parking needs identified in **Section 3** and **Table 4.5-1**.

It was noted during preparation of all landside alternatives that Airport Drive could no longer be the sole access road to DMW. As such, this alternative includes construction of a new access road and relocation of an existing one. Both would be two-lane roadways and meet current Carroll County roadway design standards. The new access road would connect to Pleasant Valley Road and run approximately 0.30 miles to the new conventional hangars on the north side of the existing airfield. Secondly, approximately 800 feet of existing Old Meadow Branch Road would be relocated and would connect to both the fuel farm area and the proposed conventional hangars located to the west of the fuel farm. A new connection would also be made from this road to the Carroll County Department of Public Works complex. Both roadways would be relatively steep in grade to connect to the new facilities adjacent to the airfield, but would meet standards as noted above. Finally, a small connection would be made off existing Business Park Drive North to provide access to the new T-hangar complex.

To accommodate future fuel storage needs, the fuel farm would be maintained in its existing location and would be expanded to accommodate the new Jet 'A' fuel tank. Airfield maintenance equipment storage would be provided by constructing a new standalone 4,000-square foot maintenance building to the east of the existing Airport Administration / FBO building.

4.5.2

Landside Alternative 2

The second alternative maintains the new terminal building, the new fuel truck parking pad, the new FBO facility, the existing fuel farm, and the new Airport Maintenance Equipment storage building in the same locations as Alternative 1 (see **Exhibit 4.5-2**). The existing apron also would be expanded to the north to provide space for transient aircraft. The existing three T-hangar buildings also would be removed as part of this alternative and eight new T-hangar units would be constructed on the recently acquired County property. This alternative also includes construction of new conventional hangars on the extreme north side of the airfield and to the north of the existing FBO maintenance hangar, along with their associated parking areas, all as discussed in Alternative 1. Finally, the new connector roadway from Pleasant Valley Road and the relocation of a portion of Old Meadow Branch Road also would be provided in the same manner as that proposed in Alternative 1.

There are some slight differences from Alternative 1. As part of Alternative 2, the eight new T-hangar buildings would be aligned parallel to the existing T-hangars. Also, two conventional hangars are proposed to the southeast of the new T-hangars. A new lot adjacent to the conventional hangars would provide automobile parking for these facilities, and a new access road would connect to existing Business Park Drive North. Tiedown spaces for based aircraft would be provided in the area immediately west of the existing three T-hangar buildings that would remain in place. Finally, a significant parking area would be provided to the northeast of the existing FBO maintenance hangar.

4.5.3

Landside Alternative 3

The third landside alternative maintains the new Airport Maintenance Equipment storage building, the three conventional hangars and parking area on the north side of the airfield, the fuel farm, and the apron expansion to the north as discussed in both Alternatives 1 and 2 (see **Exhibit 4.5-3**). The existing three T-hangar buildings also would be removed as part of this alternative and eight new T-hangar units would be constructed on the recently acquired County property. The new connector roadway from Pleasant Valley Road, and the relocation of a portion of Old Meadow Branch Road would also be provided in the same manner as that proposed in Alternatives 1 and 2.

The eight new T-hangar buildings are aligned parallel to the existing T-hangars and two conventional hangars are proposed to the southeast of the new T-hangars. A new lot adjacent to the conventional hangars would provide automobile parking for these facilities, and a new access road would connect to existing Business Park Drive North, all as discussed in Alternative 2.

There are some substantial differences with this alternative as compared to the first two alternatives. As part of Alternative 3, the existing fuel truck parking pad would remain in place, and the new terminal building would be constructed in the extreme southeast corner of the existing apron. The new FBO facility would be constructed to the northeast of the existing facility, and the additional FBO maintenance hangar would abut the existing hangar on the north side, not on the south side as proposed in Alternatives 1 and 2. A new conventional hangar would be constructed on each side of

the new FBO. The existing Airport Administration / FBO building would be removed and a third conventional hangar would be constructed in its place. A row of seven conventional hangars with an associated automobile parking area would be constructed west of the fuel farm and existing T-hangars. A new parking area would also be constructed immediately east of the new T-hangar buildings. Finally, tiedown spaces for based aircraft would be provided to the northwest of the existing conventional hangars.

4.5.4 Preliminary Cost Estimates

The following table provide preliminary estimate of the implementation costs of each of the three landside alternatives. Typically, the FAA does not participate in funding the construction of terminal, hangar, FBO, or maintenance facilities. However, the FAA would consider participation in a portion of the site work costs associated with those facilities. These costs are depicted in **Table 4.5-2**.

**TABLE 4.5.2
COST ESTIMATES – LANDSIDE ALTERNATIVES**

	Alternative 1	Alternative 2	Alternative 3
TOTAL (In Kind)	11,200,000.00	12,400,000.00	14,000,000.00
FAA Share (95%)	10,640,000.00	11,780,000.00	13,300,000.00
MAA Share (2.5%)	280,000.00	310,000.00	350,000.00
County Share (2.5%)	280,000.00	310,000.00	350,000.00
Additional Costs*	35,950,000.00	35,600,000.00	33,735,000.00
TOTAL COST	47,150,000.00	48,000,000.00	47,750,000.00

* The additional costs reflect the costs for construction of the buildings, including hangars, FBO, and maintenance facility. These costs are not eligible for FAA/MAA funding.

4.6 SUMMARY

As stated above, in February 2005 the TAC agreed unanimously that Airside Alternative 3 was the best airfield development plan, in which the goals of the Airport were achieved. Upon review of the Pinch Valley Road and landside development alternatives presented herein by the TAC, the County Commissioners of Carroll County may choose a preferred development scenario. It should be noted, however, that in April 2005 the Commissioners approved the construction of T-hangars as an acceptable use of the recently acquired 14-acre parcel noted in the landside alternatives description above. Upon selection of a preferred alternative encompassing the development of the airside, landside, and Pinch Valley Road relocation, the environmental overview will be finalized and airport plans will be prepared. Finally, a financial plan will be developed to estimate how recommended development may be funded over the 20-year planning period.