Dewey Road Corridor Plan

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CERTIFICATION

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a professional engineer licensed to practice as such, is affixed below.

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ACRONYMS

ADT	Average Daily Traffic volumes
BLM	Bureau of Land Management
COMPASS	Community Planning Association of Southwest Idaho
ITD	Idaho Transportation Department
LHTAC	Local Highway Technical Assistance Council
LOS	Level of Service
ROW	Right-of-Way
SH	State Highway

1. INTRODUCTION

The extension of Dewey Road is identified in the Gem County Master Transportation Plan, 2002 as a new arterial connection from State Highway (SH) 52 west to Black Canyon Interchange (Exit 13) on Interstate 84 (I-84). The corridor passes through Gem and Payette Counties and is identified in the Community Planning Association of Southwest Idaho (COMPASS) Regional Long Range Transportation Plan, *Communities in Motion* adopted in August 2006. The Dewey Road Extension will provide a regional connection from Emmett and western Gem County to I-84 to promote economic development in Gem and Payette Counties.

The Gem County Commissioners, in cooperation with Payette and Canyon Counties and the Local Highway Technical Assistance Council (LHTAC) initiated the Dewey Road Corridor Study. The purpose of the study is to examine potential use and, if significant, evaluate feasible alignments and select an alignment for future preservation. The study evaluates environmental effects, identifies design strategies and identifies future bridge structure requirements at the Dewey Road crossing of the Black Canyon Canal. The Dewey Road Corridor Study is consistent with the Idaho Transportation Department (ITD) Corridor Planning Guidebook.

The study boundary is approximately six and a half miles long and includes SH 52 and SH 30 to the north and El Paso and Oasis Roads to the south. See Figure 1 for the study boundary.

The Dewey Road Corridor Study includes an environmental scan and analysis, development of a travel forecast model, traffic study, conceptual roadway and bridge options, and identification of design constraints. An important feature of this study is public involvement and early coordination with key stakeholders, to include adjacent land owners, the Bureau of Land Management (BLM) and public agencies in Gem, Canyon and Payette Counties.

2. BACKGROUND DATA

The study area for the Dewey Road Corridor is characterized by farmland in the east half of the corridor (the valley portion) and an arid rolling hills plateau in the west half. Most of the west half of the study area is BLM land with pockets of private land with irrigated agriculture. The study area lies mostly in Gem and Payette Counties, with the southernmost portion touching Canyon County.

There are two gas pipelines traversing the area. A number of irrigation canals and drainage ditches exist in the study area, including the Black Canyon Canal with numerous laterals. The valley portion is composed of small farm sites and residential lots with a series of narrow county roads interspersed.

A summary report of the Inventory of Existing Conditions is included in Appendix A.

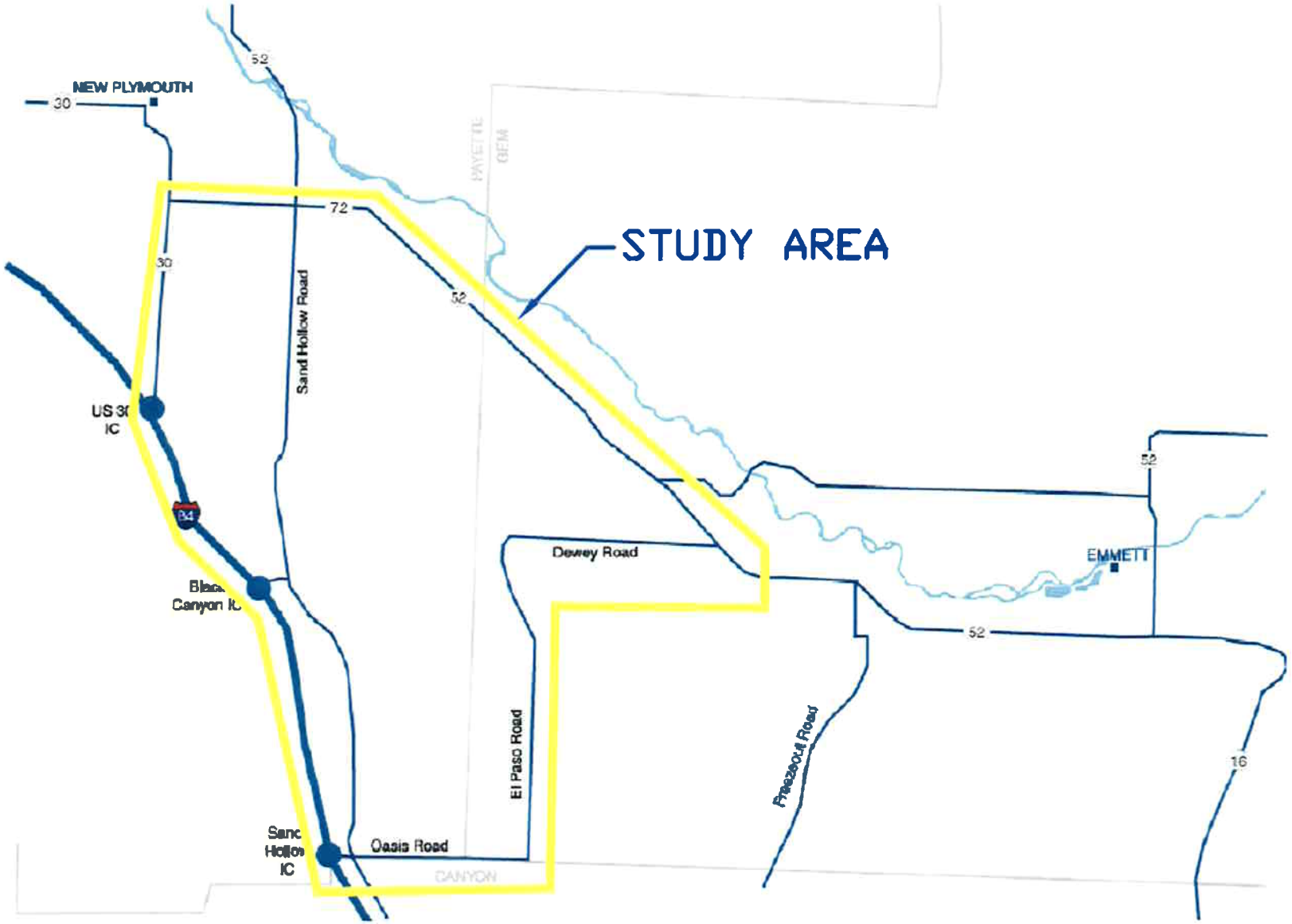

Figure 1. Study Boundary

3. ENVIRONMENTAL SCAN

An Environmental Scan was conducted for the Dewey Road Corridor Study. The environmental inventory conducted early in the process was used as a basis to evaluate the alignment alternatives developed for the study. The environmental analysis was used to select and refine a recommended alignment. A map of the environmental features identified in the scan is shown in Figure 2. The Technical Memorandum documenting the findings of the environmental scan is available at the Payette and Gem County offices for review. Copies can also be obtained by contacting Parametrix at 5561 N. Glenwood, Suite B, Boise, ID 83714 or by phone at (208) 898-0012.

4. MODELING AND TRAFFIC ANALYSIS

The single most important aspect in evaluating the feasibility of the proposed Dewey Road Extension was the traffic analysis supported by the application of a travel forecast model. For the extension to have merit, the traffic analysis would have to show a reasonable improvement in travel time when compared to existing routes. The Technical Memorandum documenting the Traffic Analysis is contained in Appendix B.

The conclusions from the traffic analysis are that the Dewey Road Extension is the better choice when compared with options to improve existing roadways. Because the Dewey Road Extension is a direct connection to I-84 to the west, its central location benefits those traveling to and through the study area. The travel forecast model estimates a base year demand of 6,300 vehicles per day. In forecast year 2030, the demand is estimated to be 11,500 vehicles per day.

4.1 TRAVEL DEMAND FORECAST MODEL

A travel demand forecast model was adapted for the study area by the Community Planning Association of Southwest Idaho (COMPASS), to estimate future traffic volumes for the study. The COMPASS model is fully developed for Canyon and Ada Counties, and some preliminary work had been done to extend it into Gem, Payette and other counties. COMPASS staff generated a preliminary, project specific expansion of the model into Gem and Payette Counties under a subcontract. The results of the modeling process are shown in Appendix B.

4.2 GROWTH ASSUMPTIONS

Gem and Payette Counties provided existing and future land use assumptions to drive the travel forecast model. Residential growth is expected to nearly quadruple in Payette County and double in Gem County from 2002 to 2030 in the area surrounding the Dewey Road Corridor. Figure 3 summarizes the growth assumptions in the area surrounding the Dewey Road Corridor. Appendix B includes additional detail about the growth assumptions used for the study.

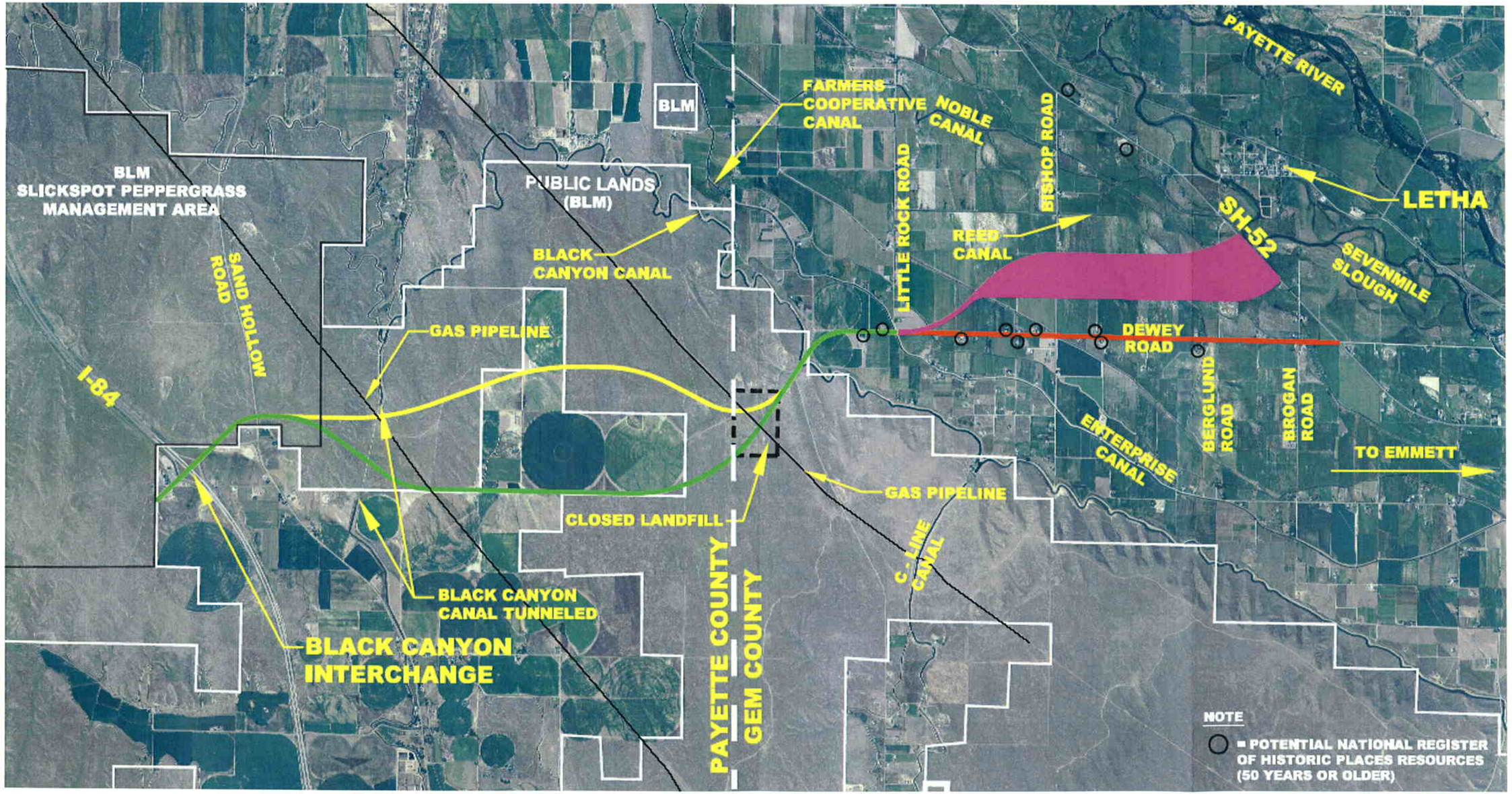

Figure 2. Environmental Features

	2002	2030	% Increase
Payette County Portion			
Dwellings	5,381	20,477	280%
Population*	14,993	56,973	280%
All jobs	2,511	4,301	71%
Gem County Portion			
Dwellings	5,900	11,801	100%
Population*	16,440	32,882	100%
All jobs	2,797	6,127	119%
Total			
Dwellings	11,281	32,278	186%
Population*	31,433	89,855	186%
All jobs	5,308	10,428	96%

*Assumes 2.79 people per dwelling

Figure 3. Growth Assumptions – Summary by County

5. SUMMARY OF STAKEHOLDER PROCESSES

Stakeholder involvement was critical to reaching agreement on a recommended alignment for the study. The project's public involvement goals were to:

- Actively gather input, including the needs and concerns, from stakeholders by providing meaningful opportunities to participate in the corridor decision-making process
- Include stakeholder concerns and needs in developing and evaluating the range of alignment alternatives
- Communicate complete, accurate, and current information including the recommendations and preferred alignment to the public throughout the project
- Inform the public about how their input was used in the project's decision-making process

An innovative and cost effective approach was used to meet these goals that included stakeholder interviews held early in the study and a public open house meeting. Stakeholders for this project included:

- Property owners
- Gem and Payette County residents
- Federal and State agencies
- Local Government agencies and elected officials
- Businesses

5.1 STAKEHOLDER INTERVIEWS

Stakeholder Interviews were conducted throughout August and September, 2006. A representative from Gem County and Parametrix (the consultant for the study) conducted a total of 17 interviews with 58 people. Included in the interviews were three evening meetings which involved a total of 36 residents along the corridor. The results of the stakeholder interviews allowed the study team to focus on the issues and minimize obvious conflicts. Appendix C lists the stakeholders interviewed, the questions asked, and a summary of the interviews.

5.2 STEERING COMMITTEE

In order to effectively manage the project, a Dewey Road Steering Committee was created. This committee was formed to provide guidance to the project's overall direction, review and accept products of the study, prepare for the public meeting, and develop study recommendations for adoption by local agencies. The membership of the committee included key decision makers in the study area. Refer to Appendix D for a list of the Dewey Road Steering Committee members. The steering committee met five times through the course of the study, and actively participated in the development, analysis and ultimate selection of the recommended alignment. The local government agencies represented on the steering committee will be asked to adopt the final Dewey Road Corridor Plan.

5.3 PUBLIC OPEN HOUSE MEETING

Innovative approaches to planning the February 1, 2007 public open house meeting resulted in about 200 citizens attending. Of those commenting, over 60% supported the project. Methods for notifying the public of the meeting included press releases, individual invitations to the stakeholders interviewed earlier in the process, direct mail outs to 1,700 households, posting on Gem County's web site, and two 8 foot by 8 foot signs posted in the area of the project. Refer to Appendix E for the list of attendees, the comment form provided, and a summary of the comments received.

6. SCREENING PROCESS

6.1 STAKEHOLDER INPUT

Input received from the stakeholder outreach meetings produced a number of alignment alternatives to consider for corridor preservation in the study area. The alignment alternatives included nine combinations of alignments to connect SH 52 to Black Canyon Interchange on I-84, mostly new alignments, and two alignments that would use existing roads. A no-build option was also considered.

The stakeholders also identified values that should be considered in selecting a final alignment. Based on this input, and the goals for the study, criteria were developed by the Steering Committee for screening the eleven different alternatives, in addition to the no-build scenario.

6.2 PRE-SCREEN

The first level of screening dropped those alignments that did not meet the project's goals, or had extraordinarily high impacts to adjacent residents. Of the eleven alignment alternatives identified, five were discarded as part of the pre-screen. Appendix F identifies the five alignments that were discarded and the basis for discarding them.

6.3 DECISION MATRIX

The alignment alternatives that passed the pre-screen are shown in Figure 4 and described in Figure 5.

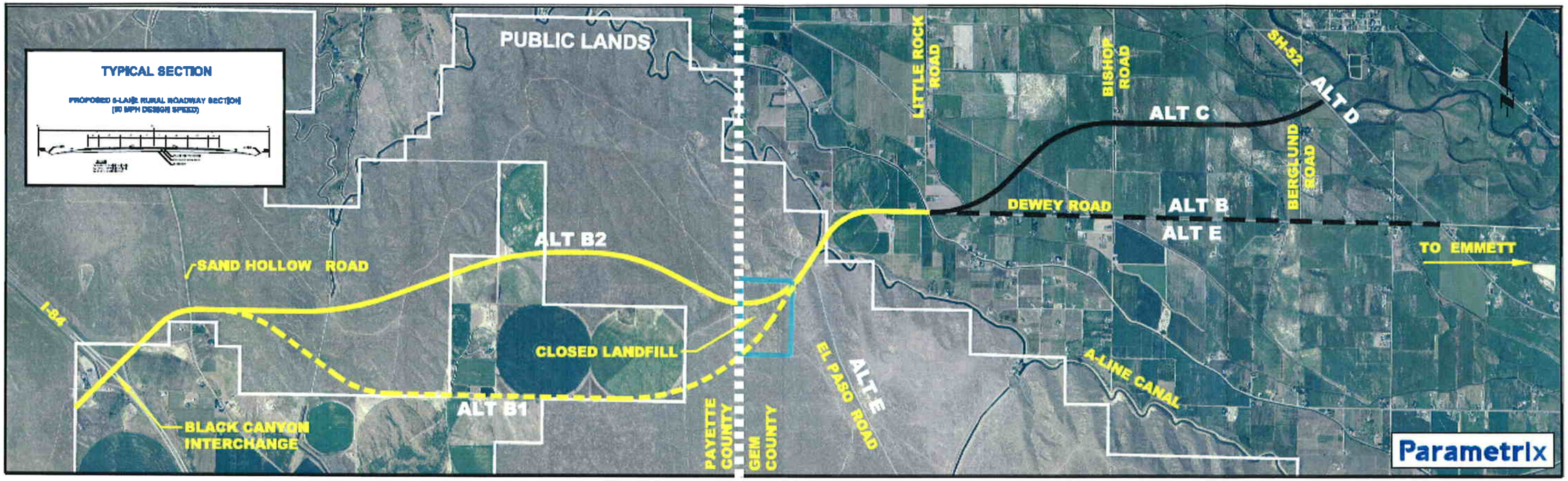

Figure 4. Alignment Alternatives Map

6.3.1 Alignment Alternatives

No-Build	
Alternative A	This is the no-build alternative and uses existing streets with no improvements.
East End of Corridor	
Alternative B	Reconstructs and widens the existing Dewey Road from SH 52 west to the bridge crossing at the Black Canyon Canal. Many of the parcels along Dewey Road are residential, with a small number of agricultural lands. The corridor would not split any existing parcels. There would be impacts to existing private residences. Additionally, developing the corridor along Dewey Road would impact existing irrigation facilities, requiring their relocation.
Alternative C	Connects to SH 52 north of Dewey Road, and heads to the west, ending at the bridge crossing the Black Canyon canal. This alignment would require to the need to purchase additional ROW compared to the Dewey Road option (Alt B). Impacts to residents' homes would be less prevalent that the Dewey Road option, however impacts to agricultural lands would be greater. This alignment would require a number of properties to be split by the corridor.
West End of Corridor	
Alternative B1	Heads to the southwest, once past the bridge at the Black Canyon Canal. This alignment runs along the border of private agriculture land and BLM land, giving more flexibility in the future. The alignment then heads to the northwest before connecting to the Black Canyon Interchange at I-84. Impacts to agricultural land are similar to those of the northern alignment. This alignment runs directly through the closed landfill, having a greater impact on it. This alignment has less of an impact on the BLM land.
Alternative B2	Heads to the northwest beyond the bridge at the Black Canyon Canal. By heading to the north, the alignment attempts to minimize impacts to agricultural lands. The alignment then connects to the Blank Canyon Interchange at I-84. This alignment had less direct impact on the closed landfill. Impacts to private lands are similar between both alignments. This alignment would have a greater impact on BLM lands.
Existing Roads	
Alternative D	Utilizes the existing SH 52 north and west to US 30 and continues south to I-84 at Exit 9. This alternative is longer and more out of direction. It traverses farmland along the route and avoids any impacts to BLM land. This alignment requires out of direction travel for those heading south.
Alternative E	Reconstructs and widens the existing Dewey Road from SH 52 to the bridge crossing at the Black Canyon Canal. The alignment then would require reconstruction and widening of El Paso Road to Oasis Road and I-84. This alignment is out of direction for trips to the north, and touches BLM land. Many of the parcels along Dewey Road are residential, with a small number of agricultural lands. The corridor would not split any existing parcels. There would be impacts to existing private residences and irrigation ditches.

Figure 5. Alignment Alternatives

6.3.2 Evaluation Criteria

These criteria were developed by the Dewey Road Steering Committee based on the goals for the study, and input from the stakeholders. The criteria were used to develop the decision matrix in Section 6.3.3 and shown in Figure 6.

Goal: Maintain acceptable travel time for agriculture, commerce, residential, and other traffic

Criteria 1. Average travel time through corridor

Discussion: A primary goal behind the study was to improve the movement of agricultural goods and services. Travel time for truck traffic moving agricultural goods to and from the area must be a primary consideration for route selection. The measure of 'travel time through the corridor' also works for capturing benefits to other segments of the traveling public. Lower travel time received a better score.

Goal: Supports economic development

Criteria 2. Average Daily Traffic volumes (ADT) at Outlets

Discussion: Higher traffic volumes correlate to more support for economic development opportunities. Higher volumes receiveda better score.

Goal: Provide transportation improvements at a reasonable cost

Criteria 3. Cost Estimate

Discussion: Effective use of public funds is an important factor. The lower the cost, the more likely the project is to be funded and become a reality. Lower costs received a better score.

Goal: Minimize impacts to existing structures

Criteria 4. Number of structures within 500 feet of the proposed corridor

Discussion: This measure was changed from 'number of structures removed' to capture a broader range of impacts beyond just removal of the structure. Other proximity impacts must be considered adjacent to a higher speed, higher volume facility. Research suggests that structures further than 500 feet from a high speed facility do not suffer from noise and related impacts. Fewer structures impacted received a better score.

Goal: Minimize divisions of private agricultural land

Criteria 5a. Acres of land removed from agricultural production

Discussion: One measure for minimizing impacts to agricultural land is the *acreage* of Right-of-Way (ROW) that is taken from private agricultural land, plus all acreage that is deemed not to be farmable due to the size of any remnant parcels. This measure was changed from 'the length of road segments that split or are adjacent to existing agricultural land.' Under the proposed measure, fewer acres removed received a better score.

Criteria 5b. Number of field splits

Discussion: Another possible measure for minimizing impacts to agricultural land is the number of field splits caused by each alternative road alignment. A field split is defined as having the road run through the field, dividing into two separate parcels, as opposed to running along the existing property line. This may be a more direct measure of goal of minimizing divisions. Fewer field splits received a better score.

Goal: Minimize impacts to BLM land

Criteria 6. Length of road segments on BLM land

Discussion: Preliminary discussions suggest that the less BLM land used for the road, the better. BLM requires consideration of an option that minimizes or eliminates the use of BLM land. Under this measure, the shorter lengths of road on BLM lands received a better score.

Criteria 7. Number of Grazing Allotments split

Discussion: Existing grazing allotments that are used for livestock may be split by some or all of the options. A grazing allotment split would be defined as having the road run through the allotment area, dividing into two separate grazing areas, as opposed to running along the existing boundary. Fewer split grazing allotments received a better score. This measure assumes that the grazing allotment information is readily available from BLM.

Goal: Minimize Environmental Impacts

Criteria 8. Historical: Number of historic elements impacted

Discussion: Historic structures can include buildings, canals, and other elements. Fewer impacts to historic resources will receive a better score.

Criteria 9. Endangered Species: Presence of threatened or endangered species habitat

Discussion: The proposed study area may include habitat for threatened and endangered species, including the Southern Idaho Ground Squirrel, the Long-billed Curlew, and Slickspot Peppergrass. Absence of such habitat will receive a better score.

Criteria 10. Hazardous Waste: Presence of hazardous waste impacts

Discussion: This measure is intended to capture impacts related to the landfill site. Avoidance of potential hazardous waste impacts will receive a better score.

6.3.3 Decision Matrix

The alignment alternatives were evaluated against the ten criteria identified above. A map of the alignment alternatives that were presented at the Public meeting held February 1, 2007 is shown in Figure 4. An analysis of the remaining alignment alternatives was performed using a Decision Matrix that included the evaluation criteria described above. The Decision Matrix was grouped into two tiers.

Tier 1 screen included the criteria that would be essential to meet project goals for a cost effective solution, and without which, the project would not be feasible. The criteria included travel time, traffic levels, and cost. Those alignment alternatives that did not improve travel times, or increase traffic in the corridor were eliminated, as was the alternative that cost nearly twice what the other alignments did. The alternatives that did not pass the Tier 1 screening were:

- Alternative A, Do Nothing (low volume, long travel time)
- Alternative D, SH 52 and US 30 (low volume, long travel time)
- Alternative E, Dewey Road and El Paso Road (high cost, long travel time)

See Figure 6 for the Decision Matrix used for evaluating the alignment alternatives.

Tier 2 screen included the remainder of the evaluation criteria. The remaining alignment alternatives were analyzed using these criteria. Figure 6 summarizes the results of the Tier 2 screen. The Dewey Road Steering Committee reviewed the Decision Matrix for the Tier 2 Screen and voted unanimously to recommend Alignment B in the east end of the Corridor, and Alignment B2 in the west end of the corridor. The Steering Committee requested an analysis be done to refine the alignment around the landfill site and at the west end of the corridor at its connection with Sand Hollow Road. See Chapter 7 for a description of the recommended alignment and documentation of the refinements requested by the Steering Committee.

	Tier 1 Screen	Alt A	Alternate B		Alternate C		Alt D	Alt E
		No Build	With B1 Alignment	With B2 Alignment	With B1 Alignment	With B2 Alignment	SH 52, 72 and US 30	Dewey and El Paso
1	Average Travel Time Through Corridor	19.2 min	14.7 min	14.7 min	15.3 min	15.3 min	18.1 min	18.4 min
2	Average Daily Traffic Volume @ Outlets	12800	17400	17400	17300	17300	13400	15600
3	Cost Estimate	na	$24.0 Million	$24.0 Million	$23.0 Million	$23.0 Million	$20.0 Million	$40.0 Million
	Tier 1 Score	**2 (Drop)**	**5**	**5**	**5**	**5**	**1 (Drop)**	**1 (Drop)**
	Tier 2 Screen							
4	Number of Structures Within 500 Feet		24	21	7	4		
5b	Number of field splits		2	3	10+	10+		
5a	Acres Removed From Agriculture		16.6 Ac	10.7 Ac	47.4 Ac	38.5 Ac		
6	Length Of Road Segment On BLM Land		2.0-3.0 Mi	3.7 Mi	2.0-3.0 Mi	3.7 Mi		
7	Number Of Grazing Allotment Splits		2	2	2	2		
8	Number Of Historical Elements Impacted*		10	10	3	3		
10	Presence Of Hazardous Waste Impacts		High	Medium	High	Medium		
	Tier 2 Score		**3**	**4**	**6**	**6**		
	Tally of Public Preferences	1	B=3		C=19		6	1
			B1=3	B2=8	B1=3	B2=8		
	Public Preference Score	**0**	**1**	**2**	**3**	**4**	**0**	**0**
	Total Score, Tier 2 and Public Preferences		**4**	**6**	**9**	**10**		

*Does not include man made canals, laterals or ditches which may be considered eligible under the NHRP.
**Criteria 9 is not included as it was not a factor in selecting an alternative.

High Impact = 0 Points

Medium Impact = 1 Point

Low Impact = 2 Points

Figure 6. Decision Matrix for Evaluation of Alignment Alternatives

7. RECOMMENDED ALIGNMENT

The results of the Decision Matrix of alignment alternatives were presented to the Dewey Road Steering Committee on February 26, 2007. The Steering Committee considered the pros and cons of each alignment alternative. Based on the results of the matrix, the committee recommended the northern alignment (Alternative C) on the east end of the corridor and the southern alignment (Alternative B1) at the west end.

7.1 REFINED ALIGNMENT – SAND HOLLOW ROAD AREA

The Steering Committee asked that a minor refinement to the west end alignment be considered. The committee wanted to investigate the feasibility of shifting the alignment to follow the existing Black Canyon Road between the I-84 interchange and the Sand Hollow intersection. This alignment refinement, Option 2 on Figure 7, was studied and presented to the Steering Committee on June 11, 2007. The advantage of Option 2 alignment is the construction of less roadway length. The disadvantages of the Option 2 alignment are steeper roadway slopes and greater earthwork cuts and fills. For example, Sand Hollow Road would have to be raised ten feet. Additionally, the Option 2 alignment would require the demolition of a number of single family residences. The Steering Committee considered the benefits of both alignments, and chose to keep the original alignment (Option 1) north of Black Canyon Road. See Figure 7 which identifies the refined alignment options at the west end of the corridor.

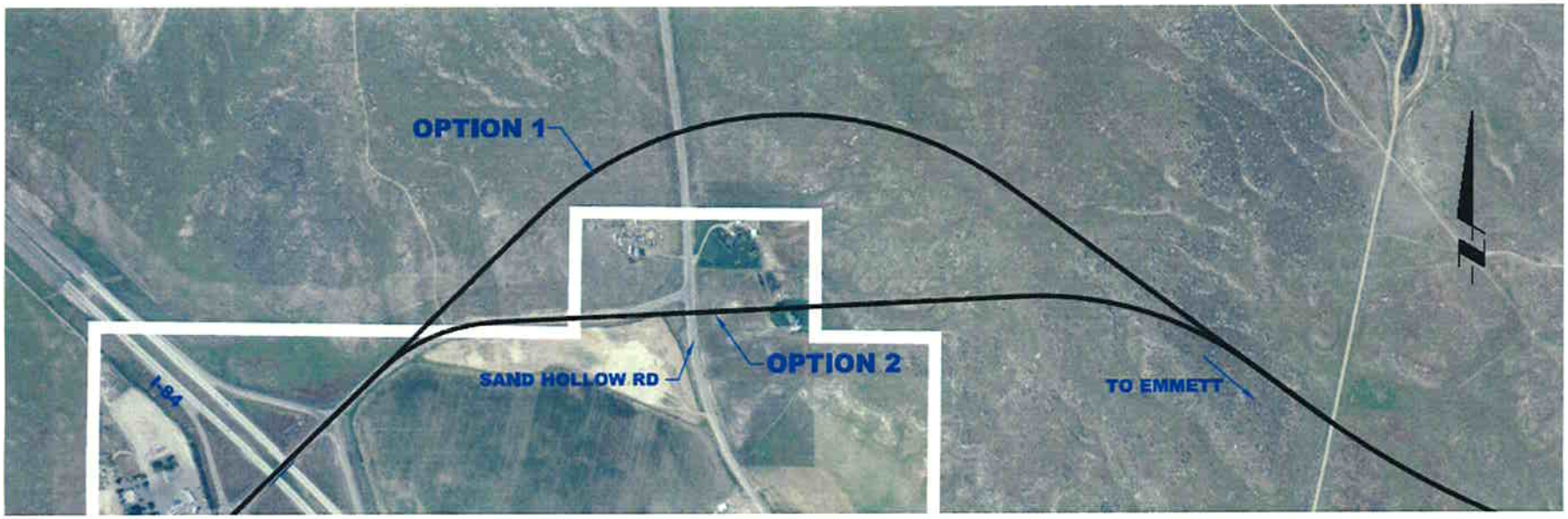

Figure 7. Refined Alignment - Sand Hollow Road Area

7.2 REFINED ALIGNMENT – LANDFILL AREA

Another alignment refinement requested by the Steering Committee was in the area of the landfill. The recommended alignment (Option 1) traveled through the landfill site. Based on a meeting with the Department of Environmental Quality (DEQ), it was determined that having the alignment cut through the landfill could have serious environmental and construction difficulties. Because of the unknowns in cutting into the landfill, Option 1 was eliminated. With the concerns associated with the landfill, an additional alignment, Option 2, which does not impact the landfill, was presented to the Steering Committee on June 11, 2007. Option 2 alignment goes to the south of the landfill. The disadvantage of Option 2 is the construction of a longer roadway. The steering committee decided that the alignment should be refined to avoid the landfill site, and thus accepted the Option 2 alignment. See Figure 8, which identifies the refined alignment options at the landfill site.

7.3 DESCRIPTION OF THE RECOMMENDED ALIGNMENT

The recommended alignment is shown in Appendix G: Starting at SH 52, over ½ mile north of Dewey Road, the recommended alignment travels west on new alignment and turns south to Dewey Road before crossing the Black Canyon Canal at the existing bridge location. The alignment then heads south, to avoid the existing landfill, then west along the boundary between BLM and private property. The alignment then curves to the north, avoiding private property, crosses Sand Hollow Road, and proceeds southwest to connect with the existing Black Canyon interchange with I-84.

Also included in Appendix G are 500 scale strip maps of the recommended alignment that show in more detail the ROW needed for the future Dewey Road Corridor.

7.4 TYPICAL SECTION

Figure 9 identifies the typical section for the future roadway and ROW in the Dewey Road Corridor. The intent is to preserve the ROW needed for the ultimate facility. The ROW width needed is 130 feet which will accommodate a five-lane roadway with a design speed of 60 MPH. In the steeper topography along the recommended alignment, additional ROW or slope easements will be needed to accommodate cuts and fills.

7.5 STRUCTURAL ANALYSIS

Appendix H includes a Bridge Type Study Report that evaluates the structure required to cross the Black Canyon Canal and analyzes several bridge types for the crossing. The report estimated the costs of the various bridge types and recommends a prestressed concrete girder bridge with a concrete deck. The estimated cost of the structure, which will be about 28 feet above the canal, is $2.4 million in 2007 dollars.

7.6 IRRIGATION AND DRAINAGE ANALYSIS

An analysis was completed of drainage and irrigation facilities in the study area. The analysis identifies the existing irrigation and drainage facilities and estimates the cost of crossing these facilities for the recommended alignment. The analysis is included in Appendix I.

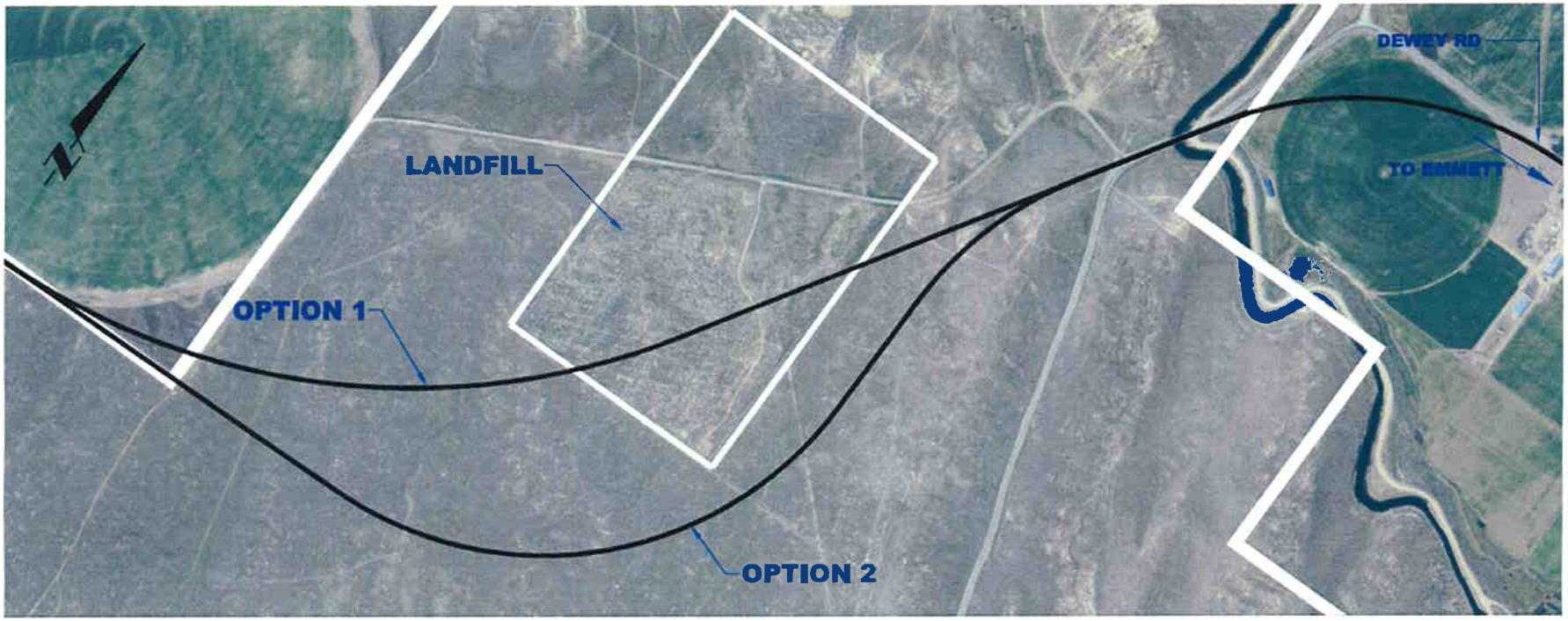

Figure 8. Refined Alignment - Landfill Area