

APPENDIX H

Original Overland Road Connection Evaluation

This Appendix investigates the original investigation of the proposed connection of Overland Road between Ten Mile Road and Black Cat Road from the original draft South Meridian Transportation Study Draft Final Report from August 2007. Two separate alignments were analyzed to determine the impact and assess the feasibility of this connection. Comments updating the information presented are provided in *italic* font.

Features, Constraints, and Activities

The following are the physical features and constraints in the vicinity of the proposed Overland Road connection. The features are listed first and any constraints are described below. The features described are presented in **Figure 3** in the report.

- The existing Overland Road and Ten Mile Road intersection is situated close to the proposed Ten Mile Interchange. This close spacing is expected to present operational issues and limited capacity for traffic traveling on Ten Mile Road.
- The Overland Road and Ten Mile Road intersection is in an area of abruptly changing topography. A natural ridge exists in the vicinity with relatively large elevation changes in a small area. This topography makes constructing new roadway alignments and intersections difficult due to earthwork and right-of-way impacts associated with large cuts and fills.
- The historic Ridenbaugh Canal travels to the south of Overland Road. The canal travels along the top of the ridge and large fills have been placed in certain locations to maintain grade on the canal. The historic nature of the canal and the large elevation changes make crossing the canal difficult and prohibitive.
- Historic buildings currently exist at the old dairy on the northeast quadrant of the Overland Road and Ten Mile Road intersection. The existing farmhouse is situated quite close to the existing intersection.
- A large gravel pit is currently operating south of Overland Road east of Black Cat Road. The pit has extremely steep side slopes. The Ten Mile Interchange Specific Area Plan has met with the owners and determined that the pit will end operations in the next 5-7 years and it will be redeveloped as open space of some kind. The deep depression and steep slopes created by the pit operations present a need for large fills to construct a roadway across the gravel pit.
- The Tassa Subdivision exists northwest of the Overland Road and Ten Mile Road intersection. This subdivision is below the canal and close to the Overland Road and Ten Mile Road intersection. This position makes removing the current access and providing another one very difficult.
- Additional residential development exists west of Ten Mile Road. Impacts from a new adjacent roadway and altered access present challenges to the Overland Road Connection.

Current on-going activities in the Overland Road area include the following:

- I-84 Ten Mile Interchange Design. This project will design a new interchange to access I-84 at Ten Mile Road in Meridian and complete an environmental document. *The environmental document and design have been completed and approved. The interchange is scheduled to begin construction in 2009.*
- The Ten Mile Interchange Specific Area Plan. This land use plan is being conducted by the City of Meridian to determine the preferred land use around the Ten Mile Interchange. This project is estimating the impacts of the preferred land use on the transportation system and how best to serve the resulting traffic. The City of Meridian and ITD recognize the operational concerns with the Ten Mile Interchange and the Overland Road / Ten Mile Road intersection being spaced too closely together. They are working together to determine how best to provide good access and access management near the interchange.
- The South Meridian Comprehensive Plan Amendment. This project involves working with the community to determine what the future land use in this area is preferred. Several public meetings and workshops have been conducted to develop a preferred alternative. An amendment to the City of Meridian Comprehensive Plan is being prepared to implement the preferred alternative. The area south of I-84 near the Ten Mile interchange is included in the Comprehensive Plan Amendment. *The amendment was adopted in March 2008.*

Alternative Alignments

Two separate alignments were analyzed to determine the impact and assess the feasibility of this connection. The first alternative is an essentially straight connection between the existing Overland Road / Ten Mile Road and Overland Road / Black Cat Road intersections.

The second alternative realigns Overland Road $\frac{1}{4}$ mile to the south starting roughly $\frac{1}{2}$ mile east of Ten Mile Road. Overland Road then continues west for about $\frac{3}{4}$ miles and then aligns with the existing Overland Road / Black Cat Road intersection. This second alternative would require a new intersection of Overland Road at Ten Mile Road.

Conceptual alignments are presented in **Figure 3** in the report. This figure also presents the existing elevations at specific points along the alignments and the estimated grade between points.

Impacts

Earthwork and Terrain

Alternative 1-Straight Overland Road Connection Alignment

The terrain in the vicinity of the project is near the edge of a large bluff with the Ridenbaugh Canal tracing out a contour line of near constant elevation along the rim. Along with the necessity of crossing the canal twice with the straight alignment, a large amount of earthwork will be required to accommodate the terrain. **Figure 3** presents the approximate existing profile of the proposed alignment. There are slopes approaching 2:1 with relief of greater than 30 feet in at least four different points across the proposed connection. Smoothing this type of terrain will not only be an expensive undertaking, but will affect the local people, homes, businesses, and environment. **Figure H-1** presents the estimated elevations at the points identified in **Figure 3** in the report. The distance traveled horizontally is found on Column 1. Column 2 presents the estimated elevation for the point in Column 1. Column 3 calculates the difference in elevation from the previous point. Column 4 estimates the grade between the two adjacent points. Column 5 calculates the difference in elevation of each point from the elevation of the existing Overland Road / Ten Mile Road intersection. These elevations are approximate and taken every 0.10 miles for conceptual analysis only. Several slopes in the area are steeper than those calculated in **Figure H-1**.

Figure H-1. Alternative 1 Straight Overland Road Connection Alignment

1	2	3	4	5
Distance from Black Cat Road (miles)	Elevation of Existing Ground (ft)	Change in Elevation from Black Cat Road (ft)	Estimated Grade (%)	Change in Elevation from Overland and Ten Mile (ft)
-0.10	2664	0	0.00%	45
0.00	2672	8	1.52%	53
0.10	2674	2	0.38%	55
0.20	2666	-8	-1.52%	47
0.30	2647	-19	-3.60%	28
0.40	2654	7	1.33%	35
0.50	2661	7	1.33%	42
0.60	2657	-4	-0.76%	38
0.70	2640	-17	-3.22%	21
0.73	2633	-7	-4.42%	14
0.80	2654	21	5.68%	35
0.85	2665	11	4.17%	46
0.90	2659	-6	-2.27%	40
1.00	2619	-40	-7.58%	0
1.10	2618	-1	-0.19%	-1

The existing intersection at Overland Road and Ten Mile Road is almost the lowest point along the entire alignment. The elevation and grade changes are reasonable except for the 0.10 mile segment just west of the existing intersection. The extreme terrain in this area, due to the natural bluff and the Ridenbaugh Canal, calls for a 7.58% grade to connect the existing points. This may become steeper when examined more closely with the vertical curves needed to accomplish this elevation change.

The active gravel pit that exists at the western side of the connection has created a deep depression as a part of its activities. This can be seen in points 0.00 to 0.50. The straight alignment crosses through a portion of this gravel pit and significant work would be required to provide a roadway with a reasonable grade through this area. After the pit is done operating, it will be converted into open space, such as a park. When the pit is reclaimed the extreme terrain relief should be reduced.

Alternative 2-Realigned Overland Road Connection Alignment

Figure H-2 presents the approximate existing profile of the proposed realigned Overland Road. estimated elevations at the points identified in **Figure 3**. The distance traveled horizontally is found on Column 1. Column 2 presents the estimated elevation for the point in Column 1. Column 3 calculates the difference in elevation from the previous point. Column 4 estimates the grade between the two adjacent points. Column 5 calculates the difference in elevation of each point from the elevation of the existing Overland Road / Ten Mile Road intersection. These elevations are approximate and taken every 0.10 mile for conceptual analysis only. Several slopes in the area are steeper than those calculated in **Figure H-2**.

The elevation and grade changes are reasonable and less than 3% for most of the proposed alignment. From Black Cat Road along the rim of the gravel pit the elevations are fairly level and the deep depression can be avoided for the most part.

The last two 0.10 mile segments where the realigned Overland Road crosses the Ridenbaugh Canal and then ties into the existing Overland Road show the most drastic grade changes. The extreme terrain in this area, due to the natural bluff and the Ridenbaugh Canal, calls for a 7.39% grade followed by a 4.17% grade to connect the existing points. Overland Road to the east of Ten Mile Road will have to be elevated as it leaves the existing alignment to reduce the elevation difference as Overland Road travels over the Ridenbaugh Canal. The needed fill and right-of-way will be less than is required by Alternative 1.

Figure H-2. Alternative 2 Realigned Overland Road Connection Alignment

Distance from Black Cat Road (miles)	Elevation of Existing Ground (ft)	Change in Elevation from Black Cat Road (ft)	Estimated Grade (%)	Change in Elevation from Overland and Ten Mile (ft)
-0.10	2664	0	0.00%	45
0.00	2672	8	1.52%	53
0.10	2674	2	0.38%	55
0.20	2674	0	0.00%	55
0.30	2674	0	0.00%	55
0.40	2671	-3	-0.57%	52
0.50	2675	4	0.76%	56
0.60	2667	-8	-1.52%	48
0.70	2664	-3	-0.57%	45
0.80	2657	-7	-1.33%	38
0.85	2662	5	1.89%	43
0.90	2669	7	2.65%	50
1.00	2671	2	0.38%	52
1.10	2668	-3	-0.57%	49
1.20	2665	-3	-0.57%	46
1.30	2650	-15	-2.84%	31
1.40	2611	-39	-7.39%	-8
1.50	2591	-20	-3.79%	-28

The developer of the southeast quadrant of the Ten Mile Road/Overland Road intersection has acquired the land where the realigned Overland Road will leave the existing alignment and travel to Ten Mile Road. The developer has expressed a desire to provide this realigned Overland Road to ACHD and the City of Meridian. His participation will make developing this alignment very attractive by providing the right-of-way and earthwork needed to make this realignment feasible east of Ten Mile Road.

The developer seeking to develop the southeast quadrant of the Ten Mile Road/Overland Road intersection expressed a desire to provide a realigned Overland Road through his property to a new intersection on Ten Mile Road. Developer participation in providing a portion of this second alternative realignment, including the necessary right-of-way and earthwork east of Ten Mile Road, made it feasible when coupled with the potential improvement to traffic operation issues associated with the interchange. This portion of the proposed Overland Road Connection was approved and adopted by the ACHD Commission and the developer has worked with ACHD and the City of Meridian to design and complete the earthwork up to Ten Mile Road. It is anticipated that this roadway will be completed as part of the Ten Mile interchange project construction.

Environmental

There are two historic sites in the vicinity of the project, one including several buildings at the dairy in the northeast quadrant of Ten Mile Road and Overland Road and the other being the Ridenbaugh Canal. There are also several residences in a number of small subdivisions in the area. There is a large, active gravel pit on the east side of Black Cat Road.

Many of the environmental issues identified have been mitigated for or avoided with the design plans for the Ten Mile interchange.

Alternative 1-Straight Overland Road Connection Alignment

Both historic sites will be impacted by the straight alignment for the proposed connection. The dairy will be impacted with the widening of Overland Road and the improved intersection of Ten Mile Road and Overland Road. Current ACHD right-of-way for Overland Road is 50 feet, 25 feet on either side from the center of the roadway. The existing farmhouse sits within 30 feet of the right-of-way line for Overland Road. Widening Overland Road to 5-lanes will require 96 feet of right-of-way, 48 feet on either side from the center of the roadway. This right-of-way would essentially take up all the land between the current Overland Road and the farmhouse in the northeast quadrant of the existing intersection. If additional fill is needed to raise the elevation of Overland Road, as described earlier, this fill would either require the farmhouse to be removed completely or a large retaining wall to be built to keep the elevated roadway fill from physically impacting the farmhouse.

The Ridenbaugh Canal will have to be crossed at least twice and up to five times for a straight alignment. As depicted in **Figure 3** these crossings will be relatively simple to design and construct but difficult to implement due to the historic nature of the canal. Also, the large fills needed to raise Overland Road over the canal and meet design standards for an acceptable grade are not practical.

The impacts to both of these historic sites, the dairy buildings and the Ridenbaugh Canal, will be difficult to mitigate due to the potential section 4(f) designation of these features.

The straight alignment will impact approximately 40 single family homes in the nearby neighborhood. The added noise and emissions will have a significant impact on the neighborhood. The alignment would place the roadway through the existing yards and near the houses of up to 10 residential homes. Several of these would have to be bought and removed to accommodate the roadway.

The straight alignment would also pass through the northern section of the gravel pit. The pit most likely will be reclaimed for another use in the next 5-10 years. Therefore, any potential environmental issues with it are not anticipated.

Alternative 2-Realigned Overland Road Connection Alignment

The dairy will not be impacted with the realigned Overland Road alternative. The intersection of Ten Mile Road and Overland Road will be shifted roughly ¼ mile to the south and away from the dairy.

The Ridenbaugh Canal will have to be crossed only one time to provide the realigned Overland Road connection, as depicted in **Figure 3**. The roadway alignment could be routed to cross the Ridenbaugh Canal at an existing crossing east of Ten Mile Road. This crossing will be relatively easy to design and construct and should be easier to justify as a crossing of the historic canal that exists today.

The realigned Overland Road connection will impact two single family homes in the vicinity. One of these is near the existing Ridenbaugh Canal crossing. Another farm is located west of Ten Mile Road near where the realigned Overland Road would travel. It is assumed that these homes will be removed as part of the redevelopment. The realigned Overland Road will also pass through fields near two homes along Nova Lane. Routing the roadway to the south of the canal moves it away from the remaining existing neighborhoods. Redevelopment of the area will be tied to the realigned Overland Road to provide good access to proposed homes.

The realigned Overland Road Connection would travel along the northern edge of the gravel pit and then pass through the northern section to tie into the existing Black Cat Road / Overland Road intersection. The pit most likely will be reclaimed for another use in the next 5-10 years. Therefore, any potential environmental issues with it are not anticipated.

The Overland Road connection from Ten Mile Road to Black Cat Road will be an entirely new roadway and is not currently included in the CIP. This segment of roadway will require a 5-lane section to accommodate the forecasted traffic volumes from both models at an acceptable LOS D.

Overland Road from McDermott Road to Black Cat Road is not scheduled in the CIP for improvements. However, this segment will require widening if the Overland Road connection both east and west of Ten Mile Road is constructed. The projected volumes require a 5-lane section to operate at LOS D. The segment from Ten Mile Road to Linder Road also requires a 5-lane section. Additionally, detailed traffic studies need to be conducted to determine the appropriate roadway cross-section.

Overland Road does not continue west of McDermott Road. The proposed connection will not extend Overland Road into Canyon County and will only serve local traffic accessing their homes in this area. The proposed interchange at Ten Mile Road will provide access for local residents as well as for regional trips. Franklin Road on the north side of I-84 and Victory Road and Amity Road on the south side connect Canyon County to Ada County and will serve as regional roadways.

Discussions were held with the Nampa Highway District and the City of Nampa Public Works Department to discuss the potential for a future extension of Overland Road from Robinson Road to McDermott Road. Orchard Avenue and Airport Road could both be extended to connect with Overland Road. However, neither the Nampa Highway District nor the City of Nampa has any plans to extend either of these roads to connect with Overland Road at this time.

Airport Road intersects McDermott Road roughly ¼ mile south of the Overland Road and McDermott Road intersection. The City of Nampa does plan to widen Airport Road to 5-lanes in the future as well as eliminate some reverse curves in the alignment. If Overland Road is connected from Ten Mile Road to Black Cat Road a direct connection with Airport Road would provide a regional arterial south of I-84. This may be a feasible project in the future and discussions with the City of Nampa should be conducted if the Overland Road connection both east and west of Ten Mile Road is constructed.

The City of Nampa is planning to conduct an Airport Road Corridor Study in the future. Discussion and coordination with the City of Nampa should be conducted include the Overland Road Connection in this study effort. This work will investigate the potential improvements in more detail and may include recommendations that may replace those included in this study. Airport Road is planned for widening to a 5-lane cross section. If the Overland Road Connection does occur, the Airport Road/Overland Road corridor would travel parallel to I-84 from the City of Nampa through the City of Boise. Therefore it is prudent to plan on maintaining a 5-lane cross section through the proposed connection.

Overland Road Connection Recommendations

The South Meridian Transportation Study recommends the realigned Overland Road connection from Black Cat Road to Ten Mile Road in future transportation plans based on the following reasons:

- The Ten Mile Interchange design and Specific Area Study both recommend the removal or relocation of the Overland Road and Ten Mile Road intersection to provide better traffic signal spacing and access management on Ten Mile.
- The environmental impacts are minimal with this alignment.

- The historic buildings at the dairy will not be disturbed while the Ridenbaugh Canal will only be crossed one time at an existing crossing.
- The topography of the area is fairly consistent from Ten Mile Road to Black Cat Road.
- The steep portion of the realigned Overland Road from Ten Mile Road to the east will be constructed by a developer. The roadway can be designed to make a smoother transition by re-grading the developer's site. Right-of-way will be provided by the developer.

This Overland Road connection from Ten Mile Road to Black Cat Road alignment is included in the arterial network in all of the growth scenarios modeled by COMPASS for the South Meridian Transportation Study.