

Appendix D:

**Draft Environmental Impact Statement
Comments and Responses**

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This appendix contains agency and public comments on the Jackson South Draft Environmental Impact Statement (DEIS) that were received during the 45-day comment period (January 24 to March 9, 2009), including comments received at the public hearing held on February 26, 2009. Agency comments are presented first, followed by public comments. Responses are provided beside each comment.

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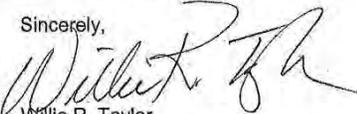
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1a	<p>Comment # 1: Willie R. Taylor, Director, Department of the Interior, Office of Environmental Policy and Compliance</p>  <p>United States Department of the Interior OFFICE OF THE SECRETARY Washington, DC 20240</p>  <p>FEB 27 2009 9043.1 PEP/NRM</p> <p>ER 09/87</p> <p>Mr. Lee Potter, P.E. Project Development/Structures Engineer Federal Highway Administration 2617 East Lincolnway, Suite D Cheyenne, Wyoming 82001-5671</p> <p>Dear Mr. Potter:</p> <p>Thank you for the opportunity to comment on the Draft Environmental Impact Statement and Section 4(f) Evaluation for the Jackson South Project: US-26/89/189/191 Improvements, South of Jackson, Teton County, Wyoming. The Department of the Interior (Department) reviewed the document and submits these comments to you as an indication of our thoughts regarding this project.</p> <p><u>Fish and Wildlife Resources</u></p> <p>The U.S. Fish and Wildlife Service (FWS) advised that they provided comments on an earlier draft of this document in July 2008. Their comments focused on Canada lynx, gray wolf, bald eagle, migratory birds, and wetlands. A Biological Assessment (BA) will be prepared for the final EIS and FWS will review the BA and participate in Section 7 consultation with the Federal Highway Administration, as appropriate.</p> <p><u>Section 4(f) Evaluation</u></p> <p>The Department appreciates your consideration for impacts to cultural resources and other subject properties in accordance with Section 4(f) of the Department of Transportation Act. We concur that all measures will be taken to minimize harm to these resources. We acknowledge your consultation with the Wyoming State Historic Preservation Office, as well as your preparation of a Memorandum of Agreement to minimize adverse effects to historic properties.</p>	<p>Comment #1a Response: Thank you for your comments. FHWA submitted a Biological Assessment (BA) to the USFWS for review on September 21, 2009. The BA determined that the proposed project will have no effect on Canada lynx or critical lynx habitat, will not jeopardize the continued existence of the gray wolf, and is not likely to adversely affect the grizzly bear. The BA was amended on November 4, 2009 to reflect relisting of the grizzly bear. The USFWS concurred in their Biological Opinion dated April 9, 2010 (see Appendix A).</p>

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	<p>We appreciate the opportunity to review this document. If you have any questions concerning fish and wildlife resources, please contact Scott Hicks, U.S. Fish and Wildlife Service, telephone (307) 772-2374 x231. For questions concerning Section 4(f) comments, please contact Roxanne Runkel, NPS, at (303) 969-2377.</p> <p style="text-align: center;">Sincerely,  Willie R. Taylor Director, Office of Environmental Policy and Compliance</p> <p>cc: ✓ Mr. Timothy Stark Environmental Services Wyoming Department of Transportation P.O. Box 1708 Cheyenne, Wyoming 82003-1708</p>	

Comment No.	Comment	Response
	<p>Comment # 2: Franz Camenzind, Executive Director, Jackson Hole Conservation Alliance</p> <div style="text-align: center;">  <p><i>Jackson Hole Conservation Alliance</i> 685 S. Cache St., P.O. Box 2728, Jackson, WY 83001</p> </div> <p>March 3, 2009</p> <p>Timothy Stark, PE Environmental Services Wyoming Department of Transportation 5300 Bishop Boulevard Cheyenne, WY 82009-3340</p> <p>cc: Hobackcomments@dot.state.wy.us</p> <p>Dear Mr. Stark,</p> <p>The Jackson Hole Conservation Alliance (Conservation Alliance) has been a member of the ID team for the Wyoming Department of Transportation and Federal Highway Administration environmental impact statement for U.S. Highway 26/89 and U.S. Highway 189/191 south and north of Hoback Junction since the inception of this study. We take this opportunity to reiterate our concerns and suggestions for the Draft Environmental Impact Statement (DEIS) on this highway from Hoback Junction north to MP 148.6.</p> <p>The purpose of this project is to resolve existing roadway deficiencies while safely and efficiently accommodating current and future traffic volumes and improving system linkage. The assumptions made are:</p> <ul style="list-style-type: none"> ➤ the current highway is inadequate for the volume of traffic currently utilizing this road and will see greater volumes in the near future, ➤ the inconsistent width of the road and appearance are difficult for drivers to respond to leading to unsafe speeds and operations, ➤ the road needs to maintain consistency with land use planning, ➤ the current system lacks alternative transportation modes for bicycles and pedestrians, ➤ the road deficiencies: <ul style="list-style-type: none"> ○ inadequate shoulder width, ○ inadequate clear recovery area width, ○ steep roadway grades, ○ numerous local access points, ○ inadequate passing and turning lanes, ○ substandard roadway alignment, ○ deficient pavement, ○ deficient bridges and culverts <p>are negatively impacting the safety of drivers, resulting in an above state average crash rate.</p>	<p>Comment #2 Response: Thank you for your considered comments on the Jackson South Draft Environmental Impact Statement. Responses to your specific comments are provided on the following pages.</p>

Comment No.	Comment	Response
2a	<p>The Conservation Alliance believes that the proposed five-lane rural highway or the combination alternative are excessive “solutions” for these problems and will have considerable negative impacts on our wildlife and community character. The DEIS uses assumptions throughout that are not supported by any documentation. The road width of these proposals goes beyond the alternatives necessary to solve the above needs, is based upon faulty growth and development projections, and exacerbates the potential for increased wildlife/vehicle collisions. We believe that a single lane north bound and south bound with a center left turn lane and right turn pullouts at each access point, with underpasses or overpasses for wildlife, will satisfy the purpose and need for this proposal, and are more consistent with the community’s character and desire to hold wildlife as our greatest value in the region. Unfortunately, this alternative was dismissed at the secondary screening step of the DEIS process.</p>	<p>Comment #2a Response: The Combination Alternative was selected as the Preferred Alternative because it will best meet the project’s purpose and need to resolve existing roadway deficiencies while safely and efficiently accommodating current and future traffic volumes and improving system linkage. As stated in Section 1.5.1 of the FEIS, traffic volumes in the Study Corridor are projected to increase an average of 37 percent over the next 20 years, with considerable increases occurring during the peak summer season. The current Study Corridor level of service (LOS) of LOS C and D is forecasted to deteriorate to LOS D and E in year 2026 (refer to Section 1.5.2 of the FEIS for LOS definitions and analysis). Analysis shows that the Preferred Alternative would operate at LOS A-C in year 2026. American Association of State Highway and Transportation Officials (AASHTO) guidelines call for this type of highway to be designed to at least LOS C, with LOS B preferred. The Preferred Alternative will improve LOS, adequately reduce the number of crashes that currently occur on the roadway, and provide access and through turning movements to and from land uses along the highway. For additional information, please refer to Sections 1.5.1, 3.8, and 4.8 of the FEIS.</p>
2b	<p>The first claim for this decision is that the Level of Service would decline to a D in 2026. This decline was identified as a 15 second increase in travel time for vehicles during a 10-minute total travel time. This put the LOS right at the break between level C (acceptable) and level D (unacceptable) and was considered “an inability to accommodate growing travel demand.” Other reasons stated that this alternative would not meet the turning needs of drivers nor would it reduce crash numbers. Neither of those claims are substantiated by this document nor supporting scientific information. A 3-lane road would provide a center left turn lane and right turns would be accommodated by pullout lanes at each access point rather than a continuous far right lane. The number of crashes would easily be reduced by removing slower, turning vehicles from the main traffic flow. In addition, animals would find it easier to negotiate a 3-lane road rather than a 5-lane road and would decrease the number of wildlife/vehicle collisions, which account for almost half of the crashes on this stretch of road.</p>	<p>The information contained in the FEIS is based on data obtained and analysis performed in accordance with industry standards. As stated in Section 1.5.1 of the DEIS, traffic forecasts were made based on available socioeconomic and demographic information. Teton County planning documents provided population, employment, and traffic projections. WYDOT traffic data and U.S. Census information also were used in preparing the forecasts. It should be noted that Teton County’s growth projection is 3%; the County hopes to reduce this to 2% by implementing growth strategies contained in the Comprehensive Plan currently under revision. WYDOT used a 2% growth rate in its analysis, which is consistent with the County’s target growth rate of 2%. WYDOT’s traffic forecasts were quite conservative and on the low end of the reasonable range of future scenarios. Refer to Sections 1.5.1 and 3.8 of the FEIS for more information.</p>
2c	<p>The DEIS repeatedly and throughout the document alludes to</p> <ul style="list-style-type: none"> ➤ “substantial growth within the area”, ➤ “would not accommodate growing travel demand”, ➤ “greater amounts of residential development occurring in the county than in the town over the next 20 years”, ➤ “from 1990 to 2000, Teton County grew approximately 63 percent and Jackson grew approximately 93 percent. These trends are expected to continue in the future”, ➤ “(Bondurant) will experience considerable growth by 2020”, ➤ “Trends are moving southward with decreased residential density”, ➤ “Traffic volumes increased 179% between 1985 and 2006” and infers that increase will continue at that rate. <p>The Conservation Alliance believes that using these assumptions on future growth and densities is an inappropriate means to justify a 5-lane highway rather than a 3-lane. These comments are inconsistent with the current findings in the Comprehensive Plan revision and illustrate the problem of basing any development assumptions on a plan that is undergoing critical updating. Teton County is in the middle of revising its local land use goals and objectives. Importantly, these future objectives may drastically shift the trends of development patterns and intensities that appear to be the basis of evaluating the capacity of various alternatives to meet the purpose and need of the project. Specifically, key attributing factors to travel demand, such as the amount of development proposed in rural areas and the amount of permitted commercial development in</p>	<p>FHWA and WYDOT will provide wildlife crossings at five locations within the Study Corridor: Game Creek, Flat Creek, South Park Bridge over the Snake River in the north and Snake River Bridge, and Horse Creek. In addition, a wildlife crossing will be considered in the area south of Horse Creek Wildlife fencing will be used to guide animals to these crossings. Fish passage structures for Horse Creek and Game Creek will be provided where the highway crosses these waterways. The exact design of wildlife crossing structures, wildlife fencing, and game trail benches adjacent to bridge abutments will be determined during final design. FHWA and WYDOT will continue to work with the ID Team members, Wyoming Game and Fish Department, Bridger-Teton National Forest, and other interested parties to find ways to minimize wildlife-vehicle collisions. Please refer to Section 4.18.5 of the FEIS for more information.</p> <p>In response to your concerns regarding impacts to the Study Corridor’s character, please note that WYDOT must balance differing needs and interests in providing safe and efficient transportation infrastructure. WYDOT is responsible for providing roadways to accommodate existing and future travel demand, while meeting established operational and safety standards. The Combination Alternative was selected as the Preferred</p>

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		<p>Alternative because it would provide the best balance between meeting identified transportation needs and minimizing impacts, including to community character. These transportation needs include improving system linkage, accommodating travel demand, correcting roadway deficiencies, and improving traffic safety. FHWA and WYDOT are mindful of the concerns voiced by some area residents about the impact of a five-lane roadway on the Study Corridor’s character. Environmental resources related to community character (land use, social conditions, and visual conditions) were fully considered and evaluated in Sections 4.1, 4.3, and 4.22 of the FEIS, respectively. The assessment of cumulative impacts to community character is presented in Section 4.25.8, Community Character. Those sections present impacts associated with the Preferred Alternative and measures that FHWA and WYDOT will implement to mitigate those impacts. For example, the FEIS contains commitments to protect wildlife and minimize visual impacts by minimizing vegetative clearing and use of retaining wall colors and textures that conform to the natural landscape..</p> <p>A three-lane section consisting of a center turn lane plus a lane in each direction, as suggested in your comment, would be unsafe and function poorly as a higher speed facility such as the current highway. The safety issue becomes apparent when a driver in one direction is storing in the left-turn lane to turn left and an impatient driver from the opposite direction that cannot pass a slow vehicle uses the left-turn lane and crashes into the left turner. The other problem is that the three-lane section would provide no passing opportunities. In the Study Corridor, the best LOS that a three-lane section would ever obtain is D and would fall to LOS E or F with future volumes.</p> <p>As described in Section 2.3.2 of the DEIS, the 3-Lane Rural alternative was eliminated in the secondary screening because it did not meet the project’s purpose and need. This is because it would operate at a LOS D in 2026, and therefore not accommodate growing travel demand. Also, it would not meet the need to provide access and through turning movements to and from land uses along the roadway, and it would not adequately reduce the number of crashes that currently occur on the roadway.</p> <p>Comment #2b Response: The source of the LOS data cited in your comment appears to be FHU’s analysis of Teton County’s proposed alternative. WYDOT has evaluated FHU’s analysis and determined the analysis and design to be based on incorrect assumptions. . Please refer to Section 2.6 in the FEIS that describes the Teton County Alternative and the results of WYDOT’s analysis. Also refer to Comment #2a response concerning deficiencies associated with a three-lane highway with center turn lane, as suggested in your comment. Refer to Comment #2a that discusses LOS.</p> <p>In response to your comment that a three-lane highway would be easier for animals to cross and would have fewer wildlife collisions, data regarding wildlife-vehicle collisions and traffic volumes, speed, and type of roadway are complex and often counter-intuitive. For example, data from the Highway Safety Information System (based on data from nine states across the U.S.) show that almost half the wildlife-vehicle collisions occur on low-volume roadways [i.e., less than 5,000 average daily traffic (ADT)], and decreases</p>

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		<p>with increasing traffic volume until approximately 30,000 ADT. Data from the National Automotive Sampling System’s General Estimates System (GES – data based on a nationally representative sample of police reported motor vehicle crashes of all types, from minor to fatal) show over half the wildlife-vehicle collisions occur on roadways posted at 55 mph, and decrease with higher speeds. Furthermore, this data show that the majority of wildlife-vehicle collisions occur on two-lane roadways, with decreasing collisions as the number of lanes increase. One must carefully interpret this data, however, since this high number of wildlife-vehicle collisions on low volume, two-lane, 55 mph roadways is likely a result of higher populations of wildlife on rural two-lane roadways. These data are summarized in FHWA’s 2007 <i>Wildlife Vehicle Collision Reduction Study</i>.</p> <p>It is possible that wildlife-vehicle collisions would decrease with improved roadway design (such as wider shoulders and a clear recovery area) because drivers would have more room to react to an animal on the highway. Drivers would also have more options to avoid wildlife on a wider roadway with more lanes (by having the option to change lanes). However, improved roadway design alone is not likely to reduce wildlife-vehicle collisions due to the setting of the highway in a high wildlife use area. Therefore, FHWA and WYDOT are focused on mitigation measures to help wildlife safely cross the highway (refer to Section 4.18.5 of the FEIS for more information).</p> <p>Comment #2c Response: WYDOT’s traffic forecasts include not only local growth, but also tourist traffic for Grand Teton National Park, Yellowstone National Park, the town of Jackson, and the commuting work force for Jackson. WYDOT is aware that the Jackson/Teton County Comprehensive Plan is currently under revision, and a notation to that effect has been added to Sections 3.1.4 and 3.1.5 of the FEIS. The comprehensive plan updates currently available on Teton County’s web site were reviewed, and its stated goals to manage future growth and development in Jackson and Teton County, and strategies to achieve those goals, were noted. However, until the new comprehensive plan is adopted by Teton County, the current plan is the legally-binding document the NEPA analysis needs to consider.</p> <p>That being said, it should be noted that Teton County’s growth projection is 3%; the County hopes to reduce this to 2%. WYDOT used a 2% growth rate in its analysis, which is consistent with the County’s target growth rate, and, therefore, provided a conservative estimate of future traffic volumes. Also refer to Comment #2a response for more information about data used in the DEIS analysis.</p> <p>The current economic downturn has slowed the rate of development. However, these changes are expected to be short-term relative to the study’s year 2026 planning horizon. These economic slowdowns can cause short-term annual variances in traffic forecasting, the effects of which are minor when averaged over many years. Therefore, they should not affect long term growth projections.</p>

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<p>2d</p> <p>2e</p>	<p>the Town of Jackson and Teton County, are likely to shift. Generally, these assumptions are also clearly at odds with the current nationwide economic downturn with little chance of full recovery in the near future. Both of these factors can easily modify or reverse any recent patterns of growth and development in Teton County and neighboring counties.</p> <p>In surveys conducted in conjunction with our community’s current comprehensive plan update process, residents of Teton County have recently reconfirmed the primary value of wildlife to our community. Above and beyond all other elements in Jackson Hole we stressed the need to protect our wildlife and its habitat. The DEIS states that land adjacent to the roadway is private, but within a half mile the land is publicly owned and “important habitat for elk, mule deer, bald eagles, and other wildlife species native to the area.” A 5-lane highway through elk and mule deer habitat does not meet the standards that our community envisions to protect our natural resources, including our unique scenic vistas and landscapes. In any alternative chosen, the impact on habitat fragmentation and the reduction in habitat connectivity must be adequately addressed. The DEIS mentions awaiting Wyoming Game and Fish suggestions before determining the feasibility of mitigation for wildlife crossing on this 7 mile stretch of road. There are also statements that describe the possibility of using game crossings underneath two bridges that will be replaced in this project and the need for elk proof fencing to direct animals to those crossings. Numbers for the years 1995-2004 show 202 documented crashes with 2 fatalities. Of those crashes 93 involved animals. The remaining crashes are related to road deficiencies that can be eliminated with a 3-lane alternative as easily as the proposed 5-lane proposed. The claim that the 2001-2004 crash rate for this section of road is 1.64 per million vehicle miles (MVM) and exceeds the state average of 1.28 MVM must take the high number of animal collisions into account. If road improvements are intended to provide safer conditions for drivers, then analysis of specific measures in each alternative to decrease collisions with wildlife needs to be done now, not put off to the design phase.</p> <p>The wildlife, scenic resources and rural nature of Jackson Hole are the basis of our economy and our community character. Our Comprehensive Plan states that future mobility must meet the needs of residents and tourists within the context of community character. We suggest that a 5-lane “rural” highway does not meet those values. The Conservation Alliance requests that a 3-lane road, one lane each north and south bound with a center turn lane, and discontinuous right turn lanes at access points, with under or overpasses for wildlife, and accompanying speed reductions, will be most in line with our needs and community wishes.</p> <p>Thank you for your consideration.</p> <p>Sincerely,</p> <p>Franz Camenzind Executive Director</p> <p>Louise Lasley Public Lands Director</p>	<p>Comment #2d Response: FHWA and WYDOT will provide wildlife crossings at five locations within the Study Corridor (please refer Comment #2a response regarding wildlife crossings for more information).</p> <p>As shown in Figure 3-2 of the FEIS and described in Section 3.1, <u>most</u> of the land adjacent to the highway on one or both sides is privately owned; portions are publicly owned.</p> <p>It should be noted that habitat fragmentation is more of a concern when a highway is constructed on a new alignment where a new roadway is introduced in an area where no roadway previously existed. That is not the case with this project, which proposes to widen an existing highway along its existing alignment. Habitat for wildlife species has already been fragmented in the project area as a result of the initial construction of the existing highway, as well as residential and commercial development. Section 3.18.1 of the FEIS notes that traffic volumes of 4,000 vehicles or more per day are believed to present mortality risk and potential habitat fragmentation for lynx, and that traffic volumes in the project area already meet that 4,000 vehicle per day threshold. Section 4.18.1 discusses wildlife disturbance, displacement, and potential movement barriers as a result of the build alternatives. It notes that wider roadways are generally believed to be more difficult for wildlife to cross. Following construction, the long-term effect of the project is expected to be reduced overall permeability of the roadway to wildlife, except at bridges, designated wildlife crossing structures, or culverts, provided they are compatible to wildlife movement. Mitigation measures discussed in Section 4.18.5 would reduce the wildlife barrier effect.</p> <p>Regarding visual impacts, Section 4.22 of the FEIS presents impacts to the visual character of the study corridor and lists measures that will be implemented to mitigate those impacts. See response to Comment #2b regarding the relationship between wildlife-vehicle collisions, traffic volumes, speed, and type of roadway.</p> <p>Comment #2e Response: As documented in the EIS, FHWA and WYDOT will implement measures under the Preferred Alternative to reduce wildlife-vehicle collision risks (please refer to Section 4.18.5 of the FEIS for more information), and minimize/mitigate impacts to environmental resources in the study corridor, while meeting the project’s purpose and need to resolve existing roadway deficiencies while safely and efficiently accommodating current and future traffic volumes and improving system linkage. There are safety and capacity deficiencies associated with a three-lane highway with center turn lane as suggested in your comment (please refer to Comment #2a response for more information).</p> <p>Regarding speed reductions suggested in your comment: speed limits are intended to do two things: enhance safety and provide the basis for enforcement. Speed limits enhance safety by reducing the risk caused by drivers’ speed choices. Speed as it relates to causing accidents is primarily related to speed differentials – vehicles traveling at different speeds complicate the driving task and necessitate sudden braking, multiple</p>

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		<p>lane changes, and other compensating driving maneuvers. The accident rate is less when the majority of vehicles are traveling at about the same speed. To determine an appropriate speed limit, the geometric design of the road is evaluated, including terrain, alignment, lane and shoulder width, and pavement type and condition. Also considered are parking, commercial and residential development, and the number, width, and types of entrances, exits, and intersecting streets. Prevailing vehicle speeds, traffic volumes, and crash experience are also analyzed. A common misconception is that reducing the speed limit will automatically slow the speed of traffic. Speed studies show that reducing a speed limit will not cause speeding motorists to slow down. There are no significant changes in vehicle speeds after speed limits are changed, and no significant change in accident rates occurs after speed limits are increased or decreased. National studies also show that it is generally at the upper boundary of a speed range where crash involvement rates are lowest (<i>Managing Speed – Review of Current Practice for Setting and Enforcing Speed Limits, Transportation Research Board Special Report 254, Transportation Research Board National Research Council, National Academy of Sciences, copyright 1998</i>). Speed limits must be realistic to gain compliance. Research indicates that about 85 percent of all drivers travel at reasonably safe speeds for the road conditions, regardless of speed limit signs. Posting proper speed limits smoothes traffic flow and aids effective law enforcement. Unrealistically low speed limits invite violation by responsible drivers. Enforcing unreasonably low speed limits creates the perception of a “speed trap,” which results in poor public relations. There is no question, however, that speed plays a role in accident severity. Once an accident has begun to occur, the degree of damage to a vehicle and its occupants is directly related to the speed at which the vehicle is traveling.</p>
	<p>Comment # 3: Hank Phibbs, Chairman, Teton County Board of Commissioners</p>	<p>Thank you for your considered comments on the Jackson South Draft Environmental Impact Statement. Responses to your specific comments are provided below. Copies of referenced correspondence regarding the Teton County Alternative can be found in Appendix E. In addition, please refer to Section 2.6 in the FEIS that describes the Teton County Alternative and the results of WYDOT’s analysis.</p>

Comment No.	Comment	Response
<p>3a</p>	<div style="text-align: center; background-color: #2c4e64; color: white; padding: 5px; font-weight: bold; font-size: 1.2em;">BOARD OF COMMISSIONERS</div> <div style="text-align: center; margin-top: 10px;">  <p>TETON COUNTY WYOMING</p> <p>www.tetonwyo.org</p> <p><u>Commissioners</u></p> <p>Hank Phibbs, Chairman Ben Ellis, Vice Chair Andy Schwartz Leland Christensen Paul Vogelheim</p> <p><u>County Administrator</u></p> <p>Jan Friedlund</p> <p>Post Office Box 3594 Jackson, Wyoming 83001</p> <p>Tel: (307) 733-8094 Fax: (307) 733-4451</p> <p>Email: commissioners@tetonwyo.org</p> </div> <p>March 4, 2009</p> <p>Transmitted via email to hobackcomments@dot.state.wy.us</p> <p>Mr. Lee Potter, P.E. Federal Highway Administration 2617 E. Lincoln Way, Suite D Cheyenne, WY 82001-5662</p> <p>RE: Comment on Jackson South Draft Environmental Impact Statement (FHWA Project: FHWA-DEIS-08-01)</p> <p>Dear Mr. Potter:</p> <p>On behalf of the Teton County Board of Commissioners, thank you and staff from the Wyoming Department of Transportation (WYDOT) for meeting with us on February 26 to discuss the alternatives contained in the Jackson South Draft Environmental Impact Statement (DEIS) and the County's preferred alternative.</p> <p>The Board believed the County's alternative had been submitted in an appropriate manner when it was delivered to John Eddins in December 2006. To now be told that it was not "formally" submitted is a surprise and a disappointment. At no time were we informed that a specific submission process was required. We relied on WYDOT, as the lead agency, to advise us on procedural matters and to incorporate our input in the appropriate manner. Additionally, at no time was the alternative vetted through the Interdisciplinary Team or the Core Team, as was the case with all other alternatives proposed for consideration. For these reasons we believe the County's alternative did not receive the consideration it was due two years ago.</p> <p>As you recommended, please consider this letter a formal request for consideration of the County's alternative as a third option for reconstruction of the highway. The analysis of the alternative prepared by Felsburg Holt and Ullevig (FHU) is included, as are WYDOT's response, a follow-up response from FHU, and the FHU presentation made during the February 26 meeting (Attachments 1-4).</p>	<p>Comment #3a Response: The Teton County Alternative, documented in FHU's memo dated August 29, 2006, was submitted by Andy Schwartz, Paula Stevens, and Craig Jackson (Teton County) to John Eddins (WYDOT) in the Fall of 2006. At that time, Teton County requested that WYDOT not make the document public or take it to the Interdisciplinary (ID) Team. Teton County's alternative was fully evaluated by WYDOT and FHWA upon receipt, as evidenced in WYDOT's January 10, 2007 memo attached to your comment letter. That memo documented several areas where WYDOT identified incorrect assumptions in FHU's analysis. The January 18, 2007 transmittal letter to Paula Stevens (Teton County) (also attached to your comment letter) that accompanied the January 10, 2007 memo stated that the flaws in FHU's analysis needed to be addressed before the alternative can be called valid. FHU's response a year later did not correct the flaws identified in their analysis, as illustrated in their February 12, 2008 memo attached to your comment letter.</p> <p>On January 14, 2008, in a joint meeting that included WYDOT and FHWA, the County Commissioners made clear they were going to review the project alternatives and provide their preference and opinions. On March 7, 2008, Teton County staff indicated to FHWA and WYDOT to expect a County response regarding the alternatives in coming weeks, but WYDOT never received such a response. During this time, the County never requested that WYDOT consider its new alternative as part of the EIS process, nor did the County bring it to the ID Team. The issue of FHU's traffic report resurfaced in early 2009, which led to another joint meeting between WYDOT and Teton County that was held in February 2009. Only at that time did the County propose that their new alternative concept be brought to the ID Team and considered as part of the EIS process. By that time, the Draft EIS already had been distributed (on January 23, 2009) for public and agency review and comment.</p> <p>FHWA and WYDOT respectfully disagree with your suggestion that (1) WYDOT did not consider the Teton County Alternative, and (2) WYDOT was somehow remiss in not guiding the County on correct procedures for submitting comments.</p> <p>Upon receipt of Teton County's comment letter on the DEIS in March 2009, WYDOT and FHWA re-evaluated the alternative and presented the results of their analysis during the August 5, 2009 ID Team meeting, which was attended by Gordon Gray, Andy Schwartz, and Paul Stevens of Teton County.</p>

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<p>3b</p> <p>3c</p> <p>3d</p> <p>3e</p>	<p>Mr. Lee Potter, P.E. March 4, 2009 Page 2 of 6</p> <p>Because we have been asked to comment on the DEIS, we view the County's alternative as a critique of the build alternatives contained in the document. It is the opinion of the Board that the draft inadequately represents the options that should be considered and that our alternative demonstrates this.</p> <p>As I stated during our meeting, there is much that we agree on regarding the content of the DEIS (Attachment 5). Central to this is the Board's concurrence that the road is in need of reconstruction to improve safety and provide additional capacity. Other areas of agreement were enumerated during our meeting and include:</p> <ul style="list-style-type: none"> • Three-lane cross-section immediately north of Hoback Junction. • Four-lane cross-section through the Horse Creek area. • Five-lane cross-section through the Hog Island area. • Construction of a pathway facility. • Wildlife crossing facilities. • Implementation of the mitigation measures suggested in the United States Forest Service White Paper on the Snake River Wild and Scenic River Eligibility Analysis. • Use of Best Management Practices to protect water quality, aquatic habitats, and fisheries resources during construction. • Acknowledgement that visual impacts must be mitigated. • Avoidance and minimization of impacts to waters of the U.S. and wetlands. • Coordination with the Teton County Floodplain Administrator to ensure compliance with floodplain regulations. <p>Safety and Capacity The principal area of disagreement is the extent to which safety and capacity needs warrant a five-lane highway from Horse Creek to the existing five-lane section at South Park Loop Road. It is the opinion of the Board that neither the accident data nor the capacity analysis support six miles of five-lane highway, and that the DEIS has not provided sufficient empirical analysis to justify this cross-section.</p> <p>The secondary screening criteria contained within the DEIS include two safety related indicators, one of which is "potential to reduce crashes". The Board agrees that widening to five lanes has the potential to reduce crashes. However, we contend that a lesser cross-section meets this criterion through the provision of 12-foot travel lanes, construction of adequate roadway shoulders, correction of horizontal and vertical alignment deficiencies, adequate clear zone areas, removal of / protection from exposed hazards and pavement drop-offs, wildlife crossings, alternating passing lanes and a five-lane passing section. To date, WYDOT has not provided an analysis that clearly and empirically demonstrates otherwise. In fact the</p>	<p>Comment #3b Response: As a member of the ID Team, Teton County fully participated in the alternatives development and screening process from the project's inception in 2000, and therefore should know of the full range of reasonable alternatives that were developed, evaluated, and screened in the EIS process; this is documented in Chapter 2 of the DEIS.</p> <p>Comment #3c Response: Your concurrence for these project elements has been noted.</p> <p>Comment #3d Response: The Combination Alternative was selected as the Preferred Alternative because it was determined to best meet the project's purpose and need while minimizing impacts. It would resolve existing roadway deficiencies while safely and efficiently accommodating current and future traffic volumes and improving system linkage. As stated in Section 1.5.1 of the FEIS, traffic volumes in the Study Corridor are projected to increase an average of 37 percent over the next 20 years, with considerable increases occurring during the peak summer season. The current Study Corridor level of service (LOS) of LOS C and D is forecasted to deteriorate to LOS D and E in year 2026 (refer to Section 1.5.2 of the FEIS for LOS definitions and analysis). Analysis shows that the Preferred Alternative would operate at LOS A-C in year 2026. American Association of State Highway and Transportation Officials (AASHTO) guidelines call for this classification of highway to be designed to at least LOS C. The Preferred Alternative addresses the identified transportation needs, such as improve system linkage, accommodate travel demand, correct roadway and bridge deficiencies, and improve traffic safety. It provides the needed passing opportunities, provides turn lanes, and improves roadway capacity and operation. It will also include measures to reduce the risk of wildlife-vehicle collisions, which is an existing safety issue within the Study Corridor. For additional information, please refer to Sections 1.5.1, 3.8, and 4.8 of the FEIS.</p> <p>The information contained in the FEIS is based on data obtained and analysis performed in accordance with industry standards. As stated in Section 1.5.1 of the DEIS, traffic forecasts were made based on available socioeconomic and demographic information. Teton County planning documents provided population, employment, and traffic projections. WYDOT traffic data and U.S. Census information also were used in preparing the forecasts. It should be noted that Teton County's growth projection is 3%; the County hopes to reduce this to 2% by implementing growth strategies contained in the Comprehensive Plan currently under revision. WYDOT used a 2% growth rate in its analysis, which is consistent with the County's target growth rate of 2%. WYDOT's traffic forecasts were quite conservative and on the low end of the reasonable range of future scenarios. Refer to Sections 1.5.1 and 3.8 of the FEIS for more information.</p> <p>WYDOT evaluated Teton County's alternative against the Preferred Alternative (Combination Alternative). In considering WYDOT's analysis results presented below, the following should be noted:</p> <ul style="list-style-type: none"> • Teton County's current population growth rate is 3% but hopes to reduce this to 2%. WYDOT's two percent annual growth rate for traffic volumes used in their

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		<p>analysis is consistent with Teton County’s target growth rate of two percent, and, therefore provides a conservative estimate for future traffic volumes.</p> <ul style="list-style-type: none"> • FHU’s analysis of Teton County’s alternative was conducted at the planning level, whereas WYDOT’s evaluation and re-evaluation were conducted at the design level, which is a more precise and detailed level of analysis. • FHU’s analysis assumed a 65 mph speed limit. WYDOT conducted traffic modeling based upon a 55 mph design speed, which is an appropriate design speed for this roadway because it is a principal arterial, has numerous access points, and has areas frequently crossed by wildlife. <p>Differences between the Teton County Alternative and the Preferred Alternative centered around: 1) safety issues; and 2) travel demand, capacity, and level of service (LOS) considerations. The analysis focused on these two elements of the project’s Purpose and Need. The results are summarized below.</p> <p>Safety deficiencies:</p> <ul style="list-style-type: none"> • A highway’s design must include areas between different cross-sections that allow for a gradual transition from one cross-section to another to provide for safe and efficient operation. The different cross-sections included in the Teton County Alternative would result in numerous transition areas, such that the length of a transition area would “eat into” the next cross-section. As a result, a driver would spend almost as much time driving in the transition areas as the different cross-sections themselves. Further, these variable cross-sections and design inconsistencies would violate driver expectations. Drivers would need to constantly maneuver to simply stay in one lane, which would become a safety issue, especially at higher speeds. This problem would worsen in snowy conditions when lane markings are less visible. By comparison, the Preferred Alternative would provide a consistent cross-section for approximately 6.1 miles, from MP 148.6 to MP 142.5, where it would begin transitioning into narrower cross-sections as it approaches Hoback Junction. The fewer transition areas under the Preferred Alternative would provide a consistent highway design that would meet driver expectations and provide a safe and efficient highway operation. • A well-designed roadway allows drivers of vehicles traveling at higher/lower speeds to instinctively separate (or “sort”) themselves from each other, so that slower-moving vehicles do not impede the movement of vehicles moving at a higher speed. The numerous transition areas between the different cross-sections, combined with the reduced laneage compared to the Combination Alternative, would not allow safe “sorting” of vehicles to occur. • Currently, the highway has 4.0 miles of no passing zones in the southbound direction; the Teton County Alternative would provide 4.6 miles of no passing zones in the southbound direction. The highway has about 4.0 miles of no passing zones in the northbound direction, while the Teton County Alternative would provide 2.6 miles of no passing zones northbound. Lane configurations under the Teton County Alternative would favor northbound movement into Jackson, but would result in delays for the corresponding southbound movement. Two segments

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		<p>of the Teton County Alternative that would not allow for passing are located between MP 141.5 and MP 144.1 and between MP 146.6 and MP 148.6. The limited passing opportunities provided under the Teton County Alternative could induce impatient drivers to attempt unsafe passing maneuvers that would create a potential head-on collision situation. Further, traffic modeling indicates that the Teton County Alternative would operate at LOS D.</p> <p>Travel demand/capacity/LOS deficiencies:</p> <ul style="list-style-type: none"> • The numerous transitions from one cross-section to another “eat up” the roadway, as described under “Safety,” above. This results in a substandard LOS for this alternative. • As discussed under “Safety Deficiencies” above, the numerous transition areas would not allow “sorting” of vehicles (vehicles traveling at higher/lower speeds), which reduces the alternative’s capacity and results in a substandard LOS D. • As discussed under “Safety Deficiencies” above, the limited passing opportunities would reduce capacity and result in LOS D. <p>Because of the safety and capacity deficiencies noted above, the Teton County alternative does not meet the project’s purpose and need, and was dismissed from further consideration.</p> <p>Comment #3e Response: Some of the criteria mentioned in your comment would improve safety; however, please refer to Comment #3d response for a list of the safety and capacity deficiencies identified with the Teton County alternative, and information that supports selection of the Combination Alternative as the Preferred Alternative. Also, please refer to Section 2.6 in the FEIS that describes the Teton County Alternative and the results of WYDOT’s analysis.</p>

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<p>3f</p> <p>3g</p> <p>3h</p> <p>3i</p>	<p>Mr. Lee Potter, P.E. March 4, 2009 Page 3 of 6</p> <p>DEIS states that analysis of the crash data indicates that “most crashes could be attributed to roadway deficiencies” such as those enumerated above. To invest taxpayer money for a more expensive and less context sensitive highway absent a comprehensive safety analysis is not an approach the Board can support. The National Environmental Policy Act requires systematic, rigorous evaluation that has not been undertaken in the DEIS with regard to this element of the document.</p> <p>With regard to meeting capacity needs, the DEIS states that the level of service (LOS) C requirement contained in the document is consistent with County plans. In fact, the County established LOS D as the standard to be met on all arterials within Teton County. The DEIS does not acknowledge this nor does it discuss the difference between the LOS goal adopted by the community and that contained in the DEIS. The document should be updated where necessary to reflect this difference.</p> <p>As discussed on February 26th, the FHU analysis demonstrates that the County’s alternative meets the desired level of service LOS C with the exception of a one-hour period in the southbound direction at the peak travel period during the summer. In the year 2026 this translates into an additional 15 seconds of travel time, which we contend is negligible and not worthy of the associated impacts – both financial and environmental. If the broader context of the utility of the highway and its associated logical termini were considered, it would seem reasonable to expand the LOS analysis to the north to encompass the five-lane section, which would raise the LOS to an acceptable level.</p> <p>Environmental Considerations The County’s current Comprehensive Plan and Land Development Regulations reflect an abiding commitment to protection of the valley’s natural resources. This commitment has been re-affirmed and strengthened through comment from the public on the Comprehensive Plan update currently under way. For these reasons, the Board appreciates the attention given to avoidance and minimization of environmental resource impacts in the DEIS.</p> <p>Where the Board believes the DEIS is inadequate on this point is in the absence of a commitment to constructing a wildlife crossing in the northeast portion of the South Park Wildlife Management Area. The DEIS identifies wildlife roadway crossings as a contributing factor in the above average crash rate within the study corridor. Specific reference is made to the one-mile section that encompasses Game Creek (MP 146 to MP 147) where half of all crashes are attributed to collisions with wildlife. Along the entire study corridor, 93 of the 202 total crashes involved animals.</p> <p>It is the contention of the Board that for both traveler safety and environmental reasons the DEIS should include a commitment to the construction of a wildlife crossing within the MP</p>	<p>Comment #3f Response: A “comprehensive safety analysis,” as you suggest, is not necessary, because the safety concerns pointed out in WYDOT’s January 10, 2007 memo and incorporated into the AASHTO standards were based on standards and practices commonly accepted in the traffic engineering practice. Also, please refer to Sections 1.6, 1.7, Chapter 2, 3.8, and 4.8 that discuss traffic safety.</p> <p>Comment #3g Response: Section 4.8.2 of the DEIS states that the 5-Lane Rural Alternative would meet the Jackson/Teton County Plan goals by improving transportation system efficiency and improving safety. This road is a National Highway System (NHS)-designated principal arterial. Its function is to safely and efficiently transport people and goods. Because this is a state highway and not a local road, WYDOT is responsible for the function and acceptable level of service for this highway. According to the Wyoming Attorney General, “Counties may neither restrict nor reduce the future traffic carrying capacity of any State highway. Only the State, through its Department of Transportation has jurisdiction.”</p> <p>Comment #3h Response: WYDOT conducted traffic modeling based upon a 55 mph design speed (as opposed to the 65 mph used in FHU’s analysis). A 55 mph design speed is appropriate for this roadway because it is a principal arterial, has numerous access points, and has areas frequently crossed by wildlife. Changing that one parameter, it was found that the Teton County Alternative would operate at LOS D at best, not LOS C, and is a fatal flaw of the alternative. LOS D would also result in a longer travel time than shown in the FHU analysis. Please refer to Comment #3d response for additional responses concerning LOS. Logical termini for project development are defined as (1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts. MP 148.6 was determined to be a logical northern terminus because at that location, the existing highway transitions from a two-lane to a five-lane highway north toward Jackson. MP 141.4 was determined to be a logical southern terminus because at that location planned highway improvements under the Hoback Junction project begin. The project termini were determined at the onset of the project to be logical and define rational end points for developing alternatives, analyzing transportation improvements, and considering environmental issues.</p> <p>Comment #3i Response: FHWA and WYDOT will implement measures under the Preferred Alternative to reduce the risk of wildlife-vehicle collisions. FHWA and WYDOT will provide wildlife crossings at five locations within the Study Corridor: Game Creek, Flat Creek, South Park Bridge over the Snake River in the north and Snake River Bridge, and Horse Creek. In addition, a wildlife crossing will be considered in the area south of Horse Creek Wildlife fencing will be used to guide animals to these crossings. WYDOT will provide fish passage structures for Horse Creek and Game Creek where the highway crosses these waterways. The exact design of wildlife crossing structures, wildlife fencing, and game trail benches adjacent to bridge abutments will be determined during final design. FHWA and WYDOT will continue to work with the ID Team members, Wyoming Game and Fish Department, Bridger-Teton National Forest, and other interested parties to find ways to minimize wildlife/vehicle collisions. Please refer to Section 4.18.5 of the FEIS for more information.</p>

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<p>3j</p> <p>3k</p> <p>3l</p> <p>3m</p> <p>3n</p>	<p>Mr. Lee Potter, P.E. March 4, 2009 Page 4 of 6</p> <p>146 to MP 147 section of highway. As currently written, the DEIS states that a crossing is “being considered” in this area. The Board is not comfortable with this language or the representation that construction of a crossing is dependent on “technical and financial feasibility”, as stated by WYDOT staff on February 26th. There are many studies that document the technical feasibility of constructing wildlife crossings. Further, if safety of the traveling public is the primary consideration for WYDOT (as stated by John Eddins on February 26), financial feasibility should not be the guiding factor in determining feasibility.</p> <p>Multi-modal Transportation The County’s Comprehensive Plan has a strong multi-modal theme, as reflected in Chapter 8. Central to this theme is our bus system (START), which continues to expand and achieve ever higher ridership levels that meaningfully offset vehicle trips. The DEIS includes a discussion of the importance of transit to the community and the various studies that have been conducted regarding transit service. The DIES also describes the commuter bus service from Star Valley to Jackson. What is missing is a discussion of potential roadway facility modifications that would support or promote bus ridership within the corridor.</p> <p>The inclusion of a separate pathway system is enthusiastically supported by the Board. The construction of a pathway through this section continues the logical connection of the existing pathway to areas of the community in the southern end of the valley. More specifically, the Board has the following comments on the proposed pathway facility:</p> <ol style="list-style-type: none"> County recommended alternative. We support the provision of a pathway along the full length of the corridor, including between Game Creek and Horse Creek, due to the significant populations that would be served by the pathway in the Evans Trailer Park, Hog Island, Riverfront, and other neighborhoods and destinations along this section. This meets the goals of improving system linkage, providing system continuity, and accommodating non-motorized transportation modes stated in the project purpose and need. A pathway adjacent to the highway would be the most direct connection between Hoback Junction and Jackson, and would thereby be more likely to shift trips to non-motorized modes. The fact that the majority of the residential density between Game Creek and Horse Creek is located on the east side of the highway could favor an east-side pathway alignment in this section, which the Board asks WYDOT to consider. <p>If Henry’s Road is determined to be the primary north/south access for the pathway system between Game Creek and Horse Creek, we recommend making significant improvements to the infrastructure. This could include pathway paving, retaining wall stabilization, and protection from periodic landslides.</p> <ol style="list-style-type: none"> Separated grade crossings. The Board supports the provision of separated grade crossings at Game Creek Road and Horse Creek because of the significant existing and expected non-motorized traffic volumes crossing at these locations. Game Creek is a 	<p>Comment #3j Response: (continuation of Comment 3i – refer to Comment 3i response.)</p> <p>Comment #3k Response: Although promoting transit ridership in the study corridor is not part of the project’s purpose and need, the Preferred Alternative would not preclude creation of future bus stops along the study corridor. WYDOT is currently completing agreements to build a transit facility adjacent to Hoback Market in Hoback Junction, although that is not a part of this project.</p> <p>Comment #3l Response: Two pathway options were considered in the DEIS: Pathway Option 1 provides a separated path along the west side of the highway from Hoback Junction north to the existing Von Gontard Trail. Pathway Option 2 follows the same alignment as Option 1, except it veers from the highway alignment and runs along Henry’s Road, crossing the highway via underpasses at the Henry’s Road connections. Pathway Option 1 was identified as the preferred pathway option based on comments received from Teton County, citizens, and stakeholder groups, who voiced a preference for the pathway to be located adjacent to the highway throughout the Study Corridor. Option 1 would better serve the populations located along the highway and provide a more direct route than Pathway Option 2. As such, it is anticipated that Pathway Option 1 would experience a higher level of use and better serve the community than Pathway Option 2. Pathway Option 1 would also provide access to the South Park boat launch area and the environmental justice community along the Study Corridor. For these reasons, Pathway Option 1 best meets the Purpose and Need of the project. WYDOT will coordinate with Teton County, Friends of Pathways, and other organizations during final design of the project.</p> <p>WYDOT commits to build the trail in the roadway template. If others are willing to fund separating the trail, WYDOT will work with them on this issue, assuming the design advisory committee concedes to this trail alignment. The design advisory committee would include representatives from WYDOT, FHWA, Teton County, Bridger-Teton National Forest, Wyoming Game and Fish Department, Conservation Alliance, business representatives, and possibly others as well. It should be noted that keeping the pathway in the roadway template would address Wyoming Game and Fish Department concerns that pathways should not promote human access to crucial wildlife habitats.</p> <p>Comment #3m Response: Refer to Comment 3l response. Pathway Option 1, in which the path would be located adjacent to the highway throughout the study corridor, has been identified as the preferred pathway option. Therefore, no improvements to Henry’s Road are proposed. WYDOT plans to transfer ownership and maintenance of Henry’s Road to Teton County.</p> <p>Comment #3n Response: Refer to Comment #3l response concerning pathway location and highway crossings.</p>

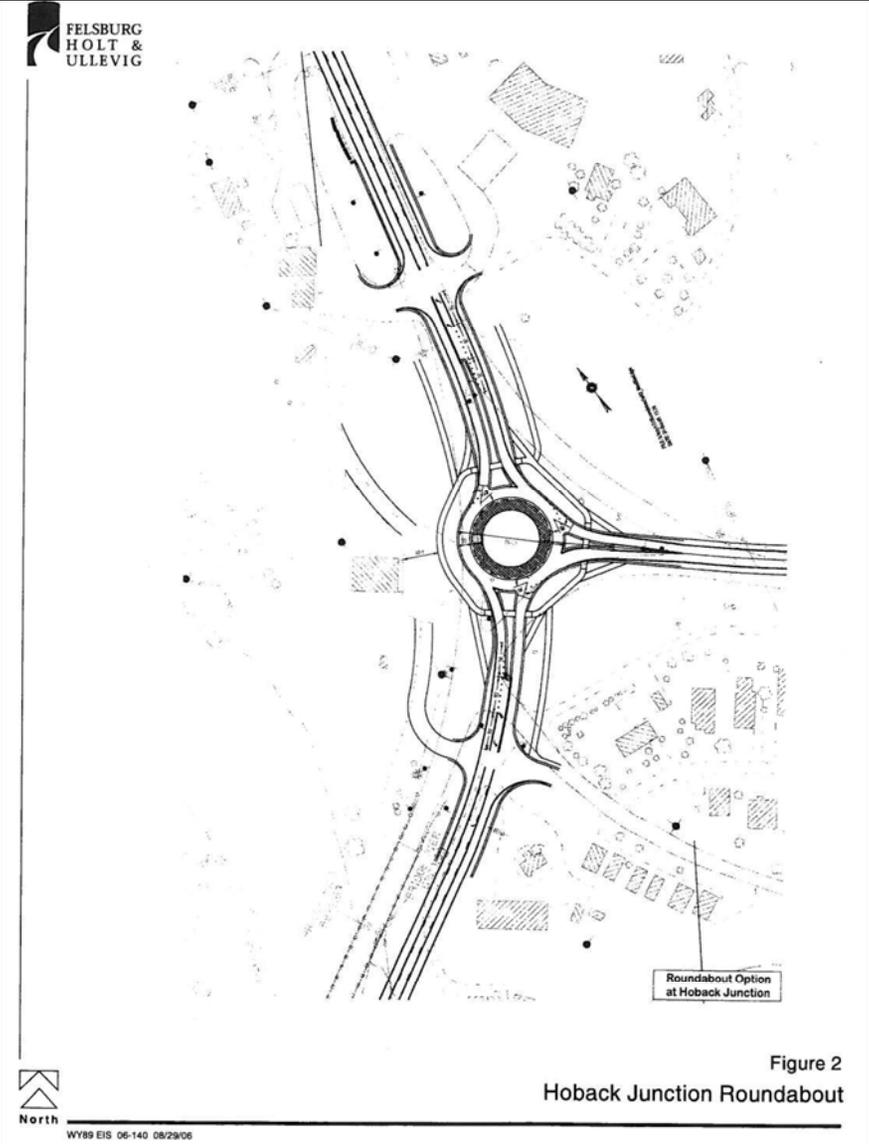
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<p>3o</p> <p>3p</p> <p>3q</p> <p>3r</p> <p>3s</p> <p>3t</p>	<p>Mr. Lee Potter, P.E. March 4, 2009 Page 5 of 6</p> <p>popular non-motorized recreation destination, and many cyclists currently utilize the Von Gontard pathway to access Game Creek. Similarly, Henry's Road is a popular destination for recreational horseback riding, biking, and walking. Pathway users accessing Henry's Road from Hoback Junction will need a safe crossing at Horse Creek (or some other location near the south terminus of Henry's Road). With a pathway connection on the west side of the highway between South Park and Hoback Junction, the number of people crossing at both Game Creek and Horse Creek will increase, as will the need for safe, preferably separated grade, crossings.</p> <p>3. Pathway width. The Board is opposed to narrowing the proposed pathway from 10' to 8' in certain portions of the project. This is inconsistent with published guidelines for this type of facility, including the 1999 AASHTO Guide for Development of Bicycle Facilities. One potential option to provide the recommended pathway width is to eliminate one (1) foot of shoulder from each side of the highway where environmental resources issues take precedence. This would require narrowing the overall paved roadway section by only 2.6% versus narrowing the desired pathway width by 20%. The reduction in shoulder width would not deviate from acceptable design guidelines and would not affect the roadway alignment or perceived roadway width nearly as much as reducing the pathway width by the same amount.</p> <p>4. Raised bridge walkways. The DEIS proposes that non-motorized users utilize the 8' bridge shoulder when crossing bridges within the corridor. Given the anticipated vehicular traffic volume and non-motorized user volume, this is dangerous, especially for contra flow (northbound) non-motorized users. Forcing bikers and pedestrians into contra flow travel on the roadway could force them to violate state statutes, including 31-5-201, 31-5-704 (a), and 31-5-605 (b), a situation that could be avoided by providing a separated multi-use facility. The Board recommends that a 10' wide raised, shared walkway with appropriate barriers be included on the west side of the bridges to facilitate non-motorized modes.</p> <p>5. Road / pathway horizontal separation. To maximize non-motorized user safety and experience, as well as minimize pathway sweeping issues, the final design should allow for the maximum amount of separation between the roadway and pathway. There is a substantial difference in user perception and safety between a 10' separation and a 20' separation, not to mention the additional benefit of reduced maintenance by keeping the pathway free of highway debris. For maintenance reasons, vertical separation should also be taken into consideration where maximum horizontal separation distance cannot be maintained.</p> <p>6. Pathway alignment. Where possible, the pathway alignment should slightly meander and provide opportunities for river access. Distancing the path from the road, and providing a more interesting bike/pedestrian experience will increase the use of the facility for recreation.</p> <p>7. Interpretive and natural resource access opportunities. At the south end of the corridor between Horse Creek and Hoback Junction, the Board supports providing opportunities</p>	<p>Comment #3o Response: (Actually part of Comment 3n – see response to Comment 3n above.)</p> <p>Comment #3p Response: As stated in the DEIS, WYDOT is committed to providing a ten-foot path unless terrain or environmental factors require narrowing to eight feet (for example, in the landslide area at the southern end of the Study Corridor). This is consistent with AASHTO's <i>Guide for the Development of Bicycle Facilities</i> (Chapter 2- Design, Width and Clearance subsection), 1999. The Preferred Alternative typical section calls for eight- to ten-foot shoulders, which will address safety deficiencies and provide pull-off areas and improve clear zone. During final design, WYDOT will evaluate the trade-offs of narrowing roadway shoulder versus pathway in constrained areas.</p> <p>Comment #3q Response: Pathway crossings on bridges would be separated from traffic flow by a barrier, alleviating the concerns mentioned in your comment regarding contra flow for pathway users.</p> <p>Comment #3r Response: WYDOT agrees that more separation between the pathway and highway is preferable. WYDOT will provide a minimum separation of five feet, with additional separation where feasible (considering terrain and environmentally-sensitive areas); however, it is too early in the design process to commit to a set 20' distance. Also refer to Comment #3l response.</p> <p>Comment #3s Response: Please refer to Comment #3l and #3r responses.</p> <p>Comment #3t response: Please refer to Comment #3l response.</p>

Comment No.	Comment	Response
<p>3u</p>	<p>Mr. Lee Potter, P.E. March 4, 2009 Page 6 of 6</p> <p>for appropriate non-motorized access to the Snake River and other natural resources. There are several publicly owned parcels where the pathway could be routed to increase separation from the roadway and provide interpretive and scenic opportunities, or access to the Snake River. Appropriate closure periods must be established and enforced to minimize impacts to wildlife.</p> <p>South Park River Access The Bureau of Land Management (BLM) owns parcels on each side of the highway and a new boat ramp facility is being planned on the south side of the Snake River. The BLM retained OTAK, a Colorado consulting firm, to prepare a conceptual site plan for these parcels in 2004 (Attachment 6). The BLM plan depicts modifications to the highway necessary to support safe ingress and egress. The plan also includes a new underpass south of the bridge, which would create a separated grade crossing for vehicular and non-motorized traffic.</p> <p>The Board recommends the inclusion of a roadway cross-section that supports the creation of this recreational facility. Additionally, accommodations should be made to provide a non-motorized crossing that would permit users to access the Snake River on both sides of the highway without having to cross the highway at grade.</p> <p>Again, thank you for taking the time to meet with the Board and for considering our comments on this critically important project.</p> <p>Sincerely,</p>  <p>Hank Phibbs, Chairman Teton County Board of Commissioners</p> <p>Attachments:</p> <ol style="list-style-type: none"> 1. Wyoming Highway 89 Alternative Laneage Analysis (August 29, 2006) 2. US 89 Laneage Analysis (January 18, 2007) 3. Wyoming Highway 89 Alternative Laneage Analysis (February 12, 2008) 4. FHU presentation made during the February 26, 2009 meeting 5. Handout from February 26, 2009 meeting 6. Recreation Project Plan, South Park River Access <p>cc: Tim Stark, P.E., Wyoming Department of Transportation Steve Foster, Teton County/Jackson Parks and Recreation Department Jeff Hermansky, Teton County Engineering Brian Schilling, Jackson Hole Community Pathways Paula Stevens, Teton County Planning & Development Michael Wackerly, Southern Teton Area Rapid Transit (START)</p>	<p>Comment #3u Response: The planned development at South Park was discussed in the DEIS in Sections 3.1.5, 3.7.2, 4.7.2, 4.16.4, and 4.25.4. Although that site development is not part of this WYDOT project, WYDOT will coordinate with the Snake River Fund and the Snake River Taskforce regarding accesses at the site, including the underpass included in the site’s development plan. WYDOT will develop an agreement with Teton County regarding County’s maintenance of the path.</p>

Comment No.	Comment	Response
<p>3v</p> <p>3w</p> <p>3x</p>	 <p><i>engineering paths to transportation solutions</i></p> <p>MEMORANDUM</p> <p>TO: Ms. Paula Stevens, Teton County Planning Department</p> <p>FROM: Jeff Ream, P.E., PTOE, Felsburg, Holt & Ullevig</p> <p>DATE: August 29, 2006</p> <p>SUBJECT: Wyoming Highway 89 Alternative Laneage Analysis FHU Reference No. 06-140</p> <hr/> <p>FHU has prepared this memorandum summarizing the results of the transportation analysis conducted for Teton County's alternative roadway laneage concept for Wyoming State Highway 89 (WY 89). The Wyoming Department of Transportation is in the process of conducting an Environmental Impact Statement (EIS) for an approximately eight mile stretch of WY 89 from South Park Road on the south end of the town of Jackson to just beyond the intersection of WY 189 at Hoback Junction. It also includes improvements to approximately 1.5 miles of WY 189 east of WY 89, but that section is not a part of this analysis.</p> <p>BACKGROUND</p> <p>The WY 89 EIS explored several potential roadway laneage options, including: improving but not widening the existing two lane road; constructing a rural three-lane road with alternating passing lanes; constructing a four lane road with no center turn lane; constructing a five lane road; and maintaining a two lane road but accommodating demand with expanded START commuter bus service. The EIS analysis concluded that the only option that would provide satisfactory levels of service and safety along the corridor (LOS C or better) was the five lane option, and carried forth a preferred alternative that extended the existing five lane cross section at South Park Road further south to just north of Horse Creek Road, transitioned to a four lane cross section for a half mile, then transitioned to a three lane cross section through Hoback Junction (Figure 1). The existing three WY 89/WY 189 intersections would then be replaced by a roundabout (Figure 2).</p> <p>Teton County residents have already expressed concerns that the existing five-lane section north of South Park Loop Road is inconsistent with the rural nature of that part of the county, and would like to avoid extending that type of roadway cross-section further south, if possible. After reviewing the preferred alternative, Teton County staff felt that while it certainly addressed safety and capacity issues for the highway, it may not be an acceptable answer to residents concerns, and developed an alternative laneage concept that limits the five lane cross section to a much shorter segment in the middle of the study area. Figure 3 shows the Teton County alternative.</p> <hr/> <p>6300 South Syracuse Way, Suite 600 Centennial, CO 80111 tel 303.721.1440 fax 303.721.0832 www.fhueng.com info@fhueng.com</p>	<p>In addition to responses below, please refer to WYDOT's memo dated January 10, 2007 (which follows this memo) that outlines the inaccurate assumptions that WYDOT identified in FHU's analysis presented in their August 29, 2006 memorandum.</p> <p>Comment #3v response: The Hoback Junction EIS was initiated in 2000, and in 2007 was split into three separate NEPA studies. The Jackson South EIS only includes improvements to a seven-mile stretch of US 26/89/189/191 from MP 148.6 in the north to MP 141.4 to the south; it does not include improvements to Hoback Junction or US 189/191 east of Hoback Junction.</p> <p>Comment #3w response: It should be noted that this comment memo is dated 2006; the Jackson South Draft EIS (DEIS) was completed in January 2009. Corrections to statements contained in Comment #3w follow.</p> <p>Seven alternatives were developed and screened (see Chapter 2 of the Draft and Final EIS for detailed descriptions of each) and include:</p> <ul style="list-style-type: none"> • 2-Lane Rural • 3-Lane Rural • 4-Lane Undivided • 5-Lane Rural • 4-Lane Divided • Combination (developed during the screening process) • No-Action <p>An expanded START commuter bus service was not a component of the alternatives (expanding transit service in the Study Corridor was not part of the project's purpose and need).</p> <p>Two build alternatives emerged from the screening process as best meeting the project's purpose and need: the 5-Lane Rural Alternative and the Combination Alternative. Those two build alternatives, along with the No-Build Alternative, were fully evaluated in the Draft EIS. The Draft EIS did not identify a preferred alternative.</p> <p>Comment #3x response: In response to your concerns regarding impacts to the Study Corridor's character, please note that WYDOT must balance differing needs and interests in providing safe and efficient transportation infrastructure. WYDOT is responsible for providing roadways to accommodate existing and future travel demand, while meeting established operational and safety standards. The Combination Alternative was selected as the Preferred Alternative because it would provide the best balance between meeting identified transportation needs and minimizing impacts, including to community character. These transportation needs include improving system linkage, accommodating travel demand, correcting roadway deficiencies, and improving traffic safety. FHWA and WYDOT are mindful of the concerns voiced by some area residents about the impact of a five-lane roadway on the Study Corridor's character.</p>

Comment No.	Comment	Response
		<p>Environmental resources related to community character (land use, social conditions, and visual conditions) were fully considered and evaluated in Sections 4.1, 4.3, and 4.22 of the FEIS, respectively. The assessment of cumulative impacts to community character is presented in Section 4.25.8, Community Character. Those sections present impacts associated with the Preferred Alternative and measures that FHWA and WYDOT will implement to mitigate those impacts. For example, the FEIS contains commitments to protect wildlife and minimize visual impacts by minimizing vegetative clearing and use of retaining wall colors and textures that conform to the natural landscape.</p>

Comment No.	Comment	Response
	<p style="text-align: right;">Figure 1 WY 189 Preferred Alternative</p>	

Comment No.	Comment	Response
	 <p>Figure 2 Hoback Junction Roundabout</p>	

Comment No.	Comment	Response
	<p> FELSBURG HOLT & ULLEVIG Figure 3 Teton County Alternative <small>WY89 EIS 06-140 08/23/06</small> </p>	

Comment No.	Comment	Response																																										
	<p>August 29, 2006 Memorandum to Ms. Paula Stevens Page 5</p> <p>As the figure indicates, the alternative would provide one southbound and two northbound lanes plus left turn lanes at each intersection from the end of the current five lane section to Game Creek Road, two lanes in each direction from Game Creek Road to the south side of the first Snake River Bridge (no left turn lanes would provided because only three low volume access points are located along this section), two lanes in each direction plus a center two way left turn lane from the bridge to just north of the Ross Gravel Pit Road, one lane in each direction plus a center two way left turn lane from there to just south of Horse Creek Road, and the Preferred Alternative three lane cross section from there through Hoback Junction (two northbound lanes and one southbound lane north of Hoback Junction, and one lane in each direction plus a center two way left turn lane through Hoback Junction to the intersection with WY 189).</p> <p>ANALYSIS</p> <p>Level of Service</p> <p>The methodologies outlined in <u>Chapter 20 - Two Lane Highways</u> of the <i>Highway Capacity Manual</i> (HCM), were used to analyze the Teton County alternative for WY 89. The analysis examines levels of service in each direction of a two lane facility, and includes adjustments to account for the presence of passing lanes. To properly account for these adjustments, the northbound analysis was broken into two segments, one extending from Hoback Junction to Ross Gravel Pit Road to analyze the southernmost passing lane, the other from Horse Creek Road to South Park Road to analyze the northernmost passing lane. The two segments overlap by approximately one mile because each was selected to cover the entire two lane section before and after the passing lane in order to capture the vehicle interaction prior to the lane (where the most vehicle platooning would occur) and after the lane (where platooning is initially minimized but increases as the road approaches the next passing lane). The southbound direction was analyzed as one segment because it consists of only one passing lane. Figure 4 shows the locations of the passing lanes, as well as the segments used in the analysis.</p> <p>The traffic volumes used in the analysis were taken from the 2026 traffic forecasts in the EIS. Because the EIS developed forecasts for five segments (Table 1) that did not match up with the passing lane segments, the analysis selected volumes that were representative of the traffic conditions in the middle of the passing lane segment (Table 2).</p> <p>Table 1. 2026 EIS Traffic Forecasts</p> <table border="1" data-bbox="268 1062 1094 1208"> <thead> <tr> <th>EIS Segment</th> <th>From</th> <th>To</th> <th>Distance</th> <th>Peak Direction¹</th> <th>Off-peak Direction¹</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Hoback Junction South</td> <td>Fall Creek</td> <td>Hoback Junction</td> <td>0.84 mi.</td> <td>626</td> <td>418</td> <td>1,044</td> </tr> <tr> <td>Hoback Junction North</td> <td>Hoback Junction</td> <td>WYDOT</td> <td>4.34 mi.</td> <td>878</td> <td>586</td> <td>1,464</td> </tr> <tr> <td>Munger Mountain</td> <td>WYDOT</td> <td>Horsethief Canyon</td> <td>1.59 mi.</td> <td>958</td> <td>639</td> <td>1,597</td> </tr> <tr> <td>Horse Thief Canyon</td> <td>Horsethief Canyon</td> <td>Horsethief Canyon II</td> <td>0.07 mi.</td> <td>1014</td> <td>676</td> <td>1,690</td> </tr> <tr> <td>South Park Road</td> <td>Horsethief Canyon II</td> <td>South Park Road</td> <td>1.30 mi.</td> <td>1142</td> <td>762</td> <td>1,904</td> </tr> </tbody> </table> <p>¹. Assumes a 60/40 peak/off-peak directional split, with the northbound peak occurring in the morning and the southbound peak occurring in the afternoon.</p>	EIS Segment	From	To	Distance	Peak Direction ¹	Off-peak Direction ¹	Total	Hoback Junction South	Fall Creek	Hoback Junction	0.84 mi.	626	418	1,044	Hoback Junction North	Hoback Junction	WYDOT	4.34 mi.	878	586	1,464	Munger Mountain	WYDOT	Horsethief Canyon	1.59 mi.	958	639	1,597	Horse Thief Canyon	Horsethief Canyon	Horsethief Canyon II	0.07 mi.	1014	676	1,690	South Park Road	Horsethief Canyon II	South Park Road	1.30 mi.	1142	762	1,904	<p>Please refer to WYDOT’s memo dated January 10, 2007 (which follows this memo) that responds to this memo and discusses WYDOT’s concerns with FHU’s analysis. You may also refer to Comment #3d responses and Section 2.6 of the FEIS that describes the Teton County Alternative and the results of WYDOT’s analysis.</p>
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Comment No.	Comment	Response																																																
	<p data-bbox="310 280 588 337">August 29, 2006 Memorandum to Ms. Paula Stevens Page 7</p> <p data-bbox="310 378 892 399">Table 2. Traffic Volumes Used in Passing Lane Segment Analysis</p> <table border="1" data-bbox="268 415 1094 521"> <thead> <tr> <th>Passing Lane Segment</th> <th>From</th> <th>To</th> <th>Distance</th> <th>Peak Direction</th> <th>Off-peak Direction</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>NB South Passing Lane</td> <td>WY 189</td> <td>Ross Gravel Pit Road</td> <td>3.5 mi.</td> <td>878</td> <td>586</td> <td>1,464</td> </tr> <tr> <td>NB North Passing Lane</td> <td>Horse Creek Road</td> <td>South Park Road</td> <td>5.5 mi.</td> <td>958</td> <td>639</td> <td>1,597</td> </tr> <tr> <td>SB Passing Lane</td> <td>South Park Road</td> <td>WY 189</td> <td>7.5 mi.</td> <td>878</td> <td>586</td> <td>1,464</td> </tr> </tbody> </table> <p data-bbox="310 540 1041 716">Table 3 summarizes the results of the highway level of service analysis. Level of service (LOS) is a qualitative measure of traffic operational conditions, based on roadway capacity and vehicle delay. Levels of service are described by a letter designation ranging from LOS A to LOS F, with LOS A representing the best possible conditions and LOS F representing congested conditions. For two lane highways, levels of service are presented in terms of both average travel speed and percent time spent following for the facility. As the table indicates, both the northbound and southbound laneage would operate at LOS C during the peak directional period (northbound in the morning and southbound in the afternoon). This would meet the minimum acceptable level of service criteria for the roadway as outlined in the EIS (LOS C).</p> <p data-bbox="310 735 743 756">Table 3. WY 89 Peak Direction Levels of Service</p> <table border="1" data-bbox="306 773 1037 898"> <thead> <tr> <th>Direction</th> <th>Average Travel Speed</th> <th>Percent Time Spent Following</th> <th>^A Level of Service</th> </tr> </thead> <tbody> <tr> <td>NB South Passing Lane</td> <td>51.5</td> <td>59.2%</td> <td>LOS C</td> </tr> <tr> <td>NB North Passing Lane</td> <td>51.0</td> <td>59.3%</td> <td>LOS C</td> </tr> <tr> <td>Northbound Total</td> <td>51.2</td> <td>59.2%</td> <td>LOS C</td> </tr> <tr> <td>Southbound Total</td> <td>51.3</td> <td>61.1%</td> <td>LOS C</td> </tr> </tbody> </table> <p data-bbox="310 917 1041 1170">Since the southbound direction is forecast to have a higher percent time spent following value, a sensitivity analysis of that direction was performed using traffic volumes from the next section north (Munger Mountain). These higher volumes cause the section to drop to LOS D with a percent time spent following of 65.7 percent, just over the LOS C/D percent time spent following threshold of 65 percent. Extending the passing from a length of 2.5 miles to 2.8 miles improves the level of service back to LOS C, so Teton County may want to consider adding 0.3 to 0.5 miles to the south end of the passing lane to provide a facility that can better serve higher volumes. It also should be noted that if traffic volume projections for the Horse Thief Canyon segment are used in the southbound analysis, the southbound passing lane would need to be extended to 3.2 miles to meet the LOS C criteria, and if projections for the South Park Road segment are used the lane would need to be extended to 3.8 miles. Extending the passing lane to those lengths is not recommended, however, because it would be based on applying the traffic volume projections for the northernmost 1.4 miles of the roadway to the entire corridor.</p> <p data-bbox="310 1190 1041 1284">The conclusion in the EIS that the roadway would not rise above LOS D even with passing lanes was not able to be replicated in this analysis. In addition, when the EIS alternative is analyzed as a four lane road, the analysis indicates LOS A, but when it is analyzed as a two lane road with continuous passing lanes north of Hoback Junction, the analysis indicates LOS C, with an average travel speed of 53.7 mph northbound and 53.8 mph southbound.</p>	Passing Lane Segment	From	To	Distance	Peak Direction	Off-peak Direction	Total	NB South Passing Lane	WY 189	Ross Gravel Pit Road	3.5 mi.	878	586	1,464	NB North Passing Lane	Horse Creek Road	South Park Road	5.5 mi.	958	639	1,597	SB Passing Lane	South Park Road	WY 189	7.5 mi.	878	586	1,464	Direction	Average Travel Speed	Percent Time Spent Following	^A Level of Service	NB South Passing Lane	51.5	59.2%	LOS C	NB North Passing Lane	51.0	59.3%	LOS C	Northbound Total	51.2	59.2%	LOS C	Southbound Total	51.3	61.1%	LOS C	<p data-bbox="1136 280 1992 386">Please refer to WYDOT's memo dated January 10, 2007 (which follows this memo) that responds to this memo and discusses WYDOT's concerns with FHU's analysis. You may also refer to Comment #3d responses and Section 2.6 of the FEIS that describes the Teton County Alternative and the results of WYDOT's analysis.</p>
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	<p>August 29, 2006 Memorandum to Ms. Paula Stevens Page 8</p> <p>Additional Operational Analyses</p> <p>In addition to the HCM analysis, operational analyses of the facility were conducted using the Synchro and SimTraffic traffic analysis software packages. The first step in the analysis process was to create two scale models of the corridor using Synchro, one with the EIS preferred alternative laneage, the other with the Teton County alternative laneage. Each model included all 59 access points along the highway that are located within the study area.</p> <p>Next, land use information was obtained for each access point, and trips were generated for each using the Institute of Transportation Engineers <u>Trip Generation</u>, Seventh Edition (2003). Starting with the through traffic on WY 89 at the south end of the corridor from the EIS (626 vph southbound, 418 vph northbound) and working north, the volumes were first balanced based on entering and exiting traffic at the roundabout, and then each access points' traffic was added to or subtracted from the WY 89 through volume, using a distribution of 60 percent to/from the north, and 40 percent to/from the south (from the EIS). This assignment resulted in through volumes at the south end of the corridor that were somewhat higher than those estimated in the EIS and volumes at the north end of the corridor that were somewhat lower (Table 4). These differences were a result of a combination of the volume balancing process at the roundabout (which resulted in higher volumes on the south end), and no additional growth assumptions for each of the access points as the corridor progressed northward (which resulted in lower volumes on the north end). A higher north/south split (65/35 or 70/30) may have also helped balance north end volumes, but it was decided to adhere to the EIS assumptions as best as possible.</p> <p>Table 4. 2026 Synchro Volumes versus EIS Traffic Forecasts</p> <table border="1" data-bbox="275 951 1094 1117"> <thead> <tr> <th rowspan="2">EIS Segment</th> <th colspan="3">EIS</th> <th colspan="3">Synchro</th> </tr> <tr> <th>Southbound</th> <th>Northbound</th> <th>Total</th> <th>Southbound</th> <th>Northbound</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Hoback Junction South</td> <td>626</td> <td>418</td> <td>1,044</td> <td>834</td> <td>688</td> <td>1,522</td> </tr> <tr> <td>Hoback Junction North</td> <td>878</td> <td>586</td> <td>1,464</td> <td>874</td> <td>710</td> <td>1,584</td> </tr> <tr> <td>Munger Mountain</td> <td>958</td> <td>639</td> <td>1,597</td> <td>901</td> <td>734</td> <td>1,635</td> </tr> <tr> <td>Horse Thief Canyon</td> <td>1,014</td> <td>676</td> <td>1,690</td> <td>903</td> <td>734</td> <td>1,637</td> </tr> <tr> <td>South Park Road</td> <td>1,142</td> <td>762</td> <td>1,904</td> <td>935</td> <td>792</td> <td>1,727</td> </tr> </tbody> </table> <p>Next, the volumes were input into the two Synchro networks and arterial Measures of Effectiveness (MOE) analyses was performed on each. Table 5 shows a comparison of the results. As the table indicates, the EIS preferred alternative offers slightly better travel times, speeds and overall performance, while the Teton County alternative provides slightly better fuel economy. These results are to be expected, as the EIS alternative offers much longer passing lanes that allow vehicles to move at higher speeds throughout the corridor, but these higher speeds come at the expense of fuel economy. Nevertheless, overall the Teton County alternative appears to offer reasonable performance compared to the EIS alternative.</p>	EIS Segment	EIS			Synchro			Southbound	Northbound	Total	Southbound	Northbound	Total	Hoback Junction South	626	418	1,044	834	688	1,522	Hoback Junction North	878	586	1,464	874	710	1,584	Munger Mountain	958	639	1,597	901	734	1,635	Horse Thief Canyon	1,014	676	1,690	903	734	1,637	South Park Road	1,142	762	1,904	935	792	1,727	<p>Please refer to WYDOT's memo dated January 10, 2007 (which follows this memo) that responds to this memo and discusses WYDOT's concerns with FHU's analysis. You may also refer to Comment #3d responses and Section 2.6 of the FEIS that describes the Teton County Alternative and the results of WYDOT's analysis.</p>
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	<p>August 29, 2006 Memorandum to Ms. Paula Stevens Page 9</p> <p>Table 5. Synchro Arterial Measures of Effectiveness</p> <table border="1" data-bbox="275 428 1066 719"> <thead> <tr> <th>Measure of Effectiveness</th> <th>EIS Preferred Alternative</th> <th>Teton County Alternative</th> </tr> </thead> <tbody> <tr><td>Total Delay (hours)</td><td>3</td><td>4</td></tr> <tr><td>Stops/Vehicle</td><td>0.03</td><td>0.03</td></tr> <tr><td>Stops (Total)</td><td>2,747</td><td>2,746</td></tr> <tr><td>Average Speed (mph)</td><td>64</td><td>55</td></tr> <tr><td>Total Travel Time (hours)</td><td>204</td><td>234</td></tr> <tr><td>Distance Traveled (miles)</td><td>12,948</td><td>12,948</td></tr> <tr><td>Fuel Consumed (gal)</td><td>526</td><td>500</td></tr> <tr><td>Fuel Economy (mpg)</td><td>24.6</td><td>25.9</td></tr> <tr><td>CO Emissions (kg.)</td><td>36.8</td><td>35.0</td></tr> <tr><td>NOx Emissions (kg.)</td><td>7.2</td><td>6.8</td></tr> <tr><td>VOC Emissions (kg.)</td><td>8.4</td><td>8.1</td></tr> <tr><td>Performance Index</td><td>11.0</td><td>11.4</td></tr> </tbody> </table> <p>Performance Index is a combination of the delays, stops and queuing penalty. The lower the value, the better the performance.</p> <p>Shaded cells indicate the better performance value.</p> <p>The final analysis consisted of corridor operations simulations for both alternatives using the SimTraffic traffic simulation program. Each network was simulated for one hour to determine the average speed and delay for the road system. The results are presented in Table 6. As with the Synchro analysis, the simulation indicated that the EIS alternative would operate with slightly higher speeds and less delay than the Teton County alternative, but both offered reasonable performance overall.</p> <p>Table 6. SimTraffic Arterial Measures of Effectiveness</p> <table border="1" data-bbox="275 1011 1089 1117"> <thead> <tr> <th rowspan="2">Measure of Effectiveness</th> <th colspan="3">EIS Preferred Alternative</th> <th colspan="3">Teton County Alternative</th> </tr> <tr> <th>Northbound</th> <th>Southbound</th> <th>Total</th> <th>Northbound</th> <th>Southbound</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Delay/Vehicle (sec)</td> <td>69.2</td> <td>98.3</td> <td>86.7</td> <td>92.3</td> <td>124.2</td> <td>111.4</td> </tr> <tr> <td>Average Speed (mph)</td> <td>53</td> <td>50</td> <td>51</td> <td>47</td> <td>44</td> <td>45</td> </tr> </tbody> </table> <p>Safety</p> <p>Both the preferred alternative and the Teton County alternative include a center two way left turn lane along the majority of the roadway, improving safety for left turning vehicles at nearly all of the access points. The only difference between the two is that the Teton County alternative does not include a center lane from south of Game Creek Road to the south end of the north Snake River Bridge. This approximately 0.65 mile section includes three low volume accesses; two river accesses and an access to both the river and the National Forest. None of the three are anticipated to generate significant traffic volumes throughout the day, so the impact on safety of not having a center turn lane at each is minimal.</p>	Measure of Effectiveness	EIS Preferred Alternative	Teton County Alternative	Total Delay (hours)	3	4	Stops/Vehicle	0.03	0.03	Stops (Total)	2,747	2,746	Average Speed (mph)	64	55	Total Travel Time (hours)	204	234	Distance Traveled (miles)	12,948	12,948	Fuel Consumed (gal)	526	500	Fuel Economy (mpg)	24.6	25.9	CO Emissions (kg.)	36.8	35.0	NOx Emissions (kg.)	7.2	6.8	VOC Emissions (kg.)	8.4	8.1	Performance Index	11.0	11.4	Measure of Effectiveness	EIS Preferred Alternative			Teton County Alternative			Northbound	Southbound	Total	Northbound	Southbound	Total	Delay/Vehicle (sec)	69.2	98.3	86.7	92.3	124.2	111.4	Average Speed (mph)	53	50	51	47	44	45	<p>Please refer to WYDOT’s memo dated January 10, 2007 (which follows this memo) that responds to this memo and discusses WYDOT’s concerns with FHU’s analysis. You may also refer to Comment #3d responses and Section 2.6 of the FEIS that describes the Teton County Alternative and the results of WYDOT’s analysis.</p>
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	<p>August 29, 2006 Memorandum to Ms. Paula Stevens Page 10</p> <p>CONCLUSIONS AND RECOMMENDATIONS</p> <p>Based on the above analysis, it would appear that the alternative proposed by Teton County would provide reasonable overall performance compared to the preferred alternative outlined in the WY 89 EIS. While the alternative alignment would not operate at as high of travel speeds as that proposed in the EIS, it would operate at LOS C in the peak direction during both the morning and afternoon peak periods, which meets the minimum level of service criteria outlined in the EIS. By way of comparison, the EIS preferred alternative operates at LOS A when analyzed as a four lane road, but LOS C when analyzed as a two lane road with continuous passing lanes north of Hoback Junction, with travel speeds 2.5 mph faster than the Teton County alternative). Further analysis using the Synchro and SimTraffic traffic analysis software packages confirmed that the Teton County alternative offers reasonable overall performance as compared to the EIS alternative; all three analyses indicated it would take somewhere between 30 and 60 seconds longer to travel the eight mile corridor under the Teton County alternative. From a safety standpoint, the only difference between the two alignments is that the Teton County alternative does not include a center lane from south of Game Creek Road to the south end of the north Snake River Bridge; a section that includes only three low volume river and forest access points.</p> <p>Given this, it is recommended that Teton County pursue the revised cross-section concept with WYDOT. The county should consider extending the southbound passing lane an additional 0.3 to 0.5 miles south, however, to ensure that the southbound direction would operate at LOS C under higher traffic conditions.</p> <p>I trust the above information is sufficient for you to make an informed decision on the alternative cross section. If you have any questions or need further clarification, please give me a call at (303) 721-1440.</p>	<p>Please refer to WYDOT's memo dated January 10, 2007 (which follows this memo) that responds to this memo and discusses WYDOT's concerns with FHU's analysis. You may also refer to Comment #3d responses and Section 2.6 of the FEIS that describes the Teton County Alternative and the results of WYDOT's analysis.</p>

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	<p>HCS+: Two-Lane Highways Release 5.2</p> <p>Felsburg Holt & Ullevig 6300 S. Syracuse Way Suite 600 Centennial CO 80222 Phone: (303) 721-1440 Fax: (303) 721-0832 E-Mail:</p> <p>_____ Directional Two-Lane Highway Segment Analysis _____</p> <p>Analyst JMR Agency/Co. FHU Date Performed 6/28/2006 Analysis Time Period PM Peak Highway WY 89 From/To Hoback/Ross Gravel Pit Road Jurisdiction Teton County Analysis Year 2026 Description 2026 PM Peak Teton County Section - NB South Passing Lane AM</p> <p>_____ Input Data _____</p> <table border="0"> <tr> <td>Highway class</td> <td>Class 1</td> <td>Peak-hour factor, PHF</td> <td>0.95</td> <td></td> </tr> <tr> <td>Shoulder width</td> <td>8.0 ft</td> <td>% Trucks and buses</td> <td>7</td> <td>%</td> </tr> <tr> <td>Lane width</td> <td>12.0 ft</td> <td>% Trucks crawling</td> <td>0.0</td> <td>%</td> </tr> <tr> <td>Segment length</td> <td>3.5 mi</td> <td>Truck crawl speed</td> <td>0.0</td> <td>mi/hr</td> </tr> <tr> <td>Terrain type</td> <td>Level</td> <td>% Recreational vehicles</td> <td>0</td> <td>%</td> </tr> <tr> <td>Grade: Length</td> <td>mi</td> <td>% No-passing zones</td> <td>100</td> <td>%</td> </tr> <tr> <td>Up/down</td> <td>%</td> <td>Access points/mi</td> <td>10</td> <td>/mi</td> </tr> </table> <p>Analysis direction volume, Vd 878 veh/h Opposing direction volume, Vo 586 veh/h</p> <p>_____ Average Travel Speed _____</p> <table border="0"> <tr> <td>Direction</td> <td>Analysis(d)</td> <td>Opposing (o)</td> <td></td> </tr> <tr> <td>PCE for trucks, ET</td> <td>1.1</td> <td>1.1</td> <td></td> </tr> <tr> <td>PCE for RVs, ER</td> <td>1.0</td> <td>1.0</td> <td></td> </tr> <tr> <td>Heavy-vehicle adj. factor, (note-5) fHV</td> <td>0.993</td> <td>0.993</td> <td></td> </tr> <tr> <td>Grade adj. factor, (note-1) fG</td> <td>1.00</td> <td>1.00</td> <td></td> </tr> <tr> <td>Directional flow rate, (note-2) vi</td> <td>931 pc/h</td> <td>621 pc/h</td> <td></td> </tr> </table> <p>Free-Flow Speed from Field Measurement: Field measured speed, (note-3) S FM - mi/h Observed volume, (note-3) Vf - vch/h Estimated Free-Flow Speed: Base free-flow speed, (note-3) BFFS 65.0 mi/h Adj. for lane and shoulder width, (note-3) fLS 0.0 mi/h Adj. for access points, (note-3) fA 2.5 mi/h Free-flow speed, PFSd 62.5 mi/h Adjustment for no-passing zones, fnp 1.9 mi/h Average travel speed, ATSD 48.5 mi/h</p>	Highway class	Class 1	Peak-hour factor, PHF	0.95		Shoulder width	8.0 ft	% Trucks and buses	7	%	Lane width	12.0 ft	% Trucks crawling	0.0	%	Segment length	3.5 mi	Truck crawl speed	0.0	mi/hr	Terrain type	Level	% Recreational vehicles	0	%	Grade: Length	mi	% No-passing zones	100	%	Up/down	%	Access points/mi	10	/mi	Direction	Analysis(d)	Opposing (o)		PCE for trucks, ET	1.1	1.1		PCE for RVs, ER	1.0	1.0		Heavy-vehicle adj. factor, (note-5) fHV	0.993	0.993		Grade adj. factor, (note-1) fG	1.00	1.00		Directional flow rate, (note-2) vi	931 pc/h	621 pc/h		
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If the highway is extended segment (level) or rolling terrain, fG = 1.0 2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F. 3. For the analysis direction only. 4. Exhibit 20-21 provides factors a and b. 5. Use alternative Equation 20-14 if some trucks operate at crawl speeds on a specific downgrade. <p style="text-align: center;">Passing Lane Analysis</p> <table border="0"> <tr> <td>Total length of analysis segment, Lt</td> <td>3.5</td> <td>mi</td> <td></td> </tr> <tr> <td>Length of two-lane highway upstream of the passing lane, Lu</td> <td>0.2</td> <td>mi</td> <td></td> </tr> <tr> <td>Length of passing lane including tapers, Lpl</td> <td>0.8</td> <td>mi</td> <td></td> </tr> <tr> <td>Average travel speed, ATSD (from above)</td> <td>48.5</td> <td>mi/h</td> <td></td> </tr> <tr> <td>Percent time-spent-following, PTSFD (from above)</td> <td>81.9</td> <td></td> <td></td> </tr> <tr> <td>Level of service, (note-1) LOSd (from above)</td> <td>E</td> <td></td> <td></td> </tr> </table> <p style="text-align: center;">Average Travel Speed</p> <table border="0"> <tr> <td>Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde</td> <td>1.70*</td> <td>mi</td> <td></td> </tr> <tr> <td>Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld</td> <td>0.80</td> <td>mi</td> <td></td> </tr> <tr> <td>Adj. factor for the effect of passing lane on average speed, fpl</td> <td>1.11</td> <td></td> <td></td> </tr> <tr> <td>Average travel speed including passing lane, (note-2) ATSp1</td> <td>51.0</td> <td></td> <td></td> </tr> </table> <p style="text-align: center;">Percent Time-Spent-Following</p> <table border="0"> <tr> <td>Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde</td> <td>4.13</td> <td>mi</td> <td></td> </tr> <tr> <td>Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld</td> <td>-1.63</td> <td>mi</td> <td></td> </tr> <tr> <td>Adj. factor for the effect of passing lane on percent time-spent-following, fpl</td> <td>0.62</td> <td></td> <td></td> </tr> <tr> <td>Percent time-spent-following including passing lane, (note-3) PTSFpl</td> <td>59.3</td> <td>%</td> <td></td> </tr> </table> <p style="text-align: center;">Level of Service and Other Performance Measures (note-4)</p>	Direction	Analysis(d)	Opposing (o)		PCE for trucks, ET	1.0	1.0		PCE for RVs, ER	1.0	1.0		Heavy-vehicle adjustment factor, fHV	1.000	1.000		Grade adjustment factor, (note-1) fG	1.00	1.00		Directional flow rate, (note-2) vi	924 pc/h	617 pc/h		Base percent time-spent-following, (note-4) BPTSFD	71.8	%		Adjustment for no-passing zones, fnp	25.1			Percent time-spent-following, PTSFD	81.9	%		Level of service, LOS	E			Volume to capacity ratio, v/c	0.55			Peak 15-min vehicle-miles of travel, VMT15	809	veh-mi		Peak-hour vehicle-miles of travel, VMT60	3073	veh-mi		Peak 15-min total travel time, TT15	16.7	veh-h		Total length of analysis segment, Lt	3.5	mi		Length of two-lane highway upstream of the passing lane, Lu	0.2	mi		Length of passing lane including tapers, Lpl	0.8	mi		Average travel speed, ATSD (from above)	48.5	mi/h		Percent time-spent-following, PTSFD (from above)	81.9			Level of service, (note-1) LOSd (from above)	E			Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	1.70*	mi		Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	0.80	mi		Adj. factor for the effect of passing lane on average speed, fpl	1.11			Average travel speed including passing lane, (note-2) ATSp1	51.0			Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	4.13	mi		Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-1.63	mi		Adj. factor for the effect of passing lane on percent time-spent-following, fpl	0.62			Percent time-spent-following including passing lane, (note-3) PTSFpl	59.3	%		
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Use alternative Equation 20-14 if some trucks operate at crawl speeds on a specific downgrade. <p>Passing Lane Analysis</p> <table border="0"> <tr> <td>Total length of analysis segment, Lt</td> <td>5.5</td> <td>mi</td> </tr> <tr> <td>Length of two-lane highway upstream of the passing lane, Lu</td> <td>1.5</td> <td>mi</td> </tr> <tr> <td>Length of passing lane including tapers, Lpl</td> <td>3.9</td> <td>mi</td> </tr> <tr> <td>Average travel speed, ATSD (from above)</td> <td>47.6</td> <td>mi/h</td> </tr> <tr> <td>Percent time-spent-following, PTSFD (from above)</td> <td>84.4</td> <td></td> </tr> <tr> <td>Level of service, (note-1) LOSd (from above)</td> <td>E</td> <td></td> </tr> </table> <p>Average Travel Speed</p> <table border="0"> <tr> <td>Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde</td> <td>1.70</td> <td>mi</td> </tr> <tr> <td>Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld</td> <td>-1.60</td> <td>mi</td> </tr> <tr> <td>Adj. factor for the effect of passing lane on average speed, fpl</td> <td>1.11</td> <td></td> </tr> <tr> <td>Average travel speed including passing lane, (note-2) ATSpl</td> <td>51.3</td> <td></td> </tr> </table> <p>Percent Time-Spent-Following</p> <table border="0"> <tr> <td>Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde</td> <td>3.60</td> <td>mi</td> </tr> <tr> <td>Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld</td> <td>-3.50</td> <td>mi</td> </tr> <tr> <td>Adj. factor for the effect of passing lane on percent time-spent-following, fpl</td> <td>0.62</td> <td></td> </tr> <tr> <td>Percent time-spent-following including passing lane, (note-3) PTSFpl</td> <td>61.1</td> <td>%</td> </tr> </table> <p>Level of Service and Other Performance Measures (note-4)</p>	Direction	Analysis (d)	Opposing (o)	PCE for trucks, ET	1.0	1.0	PCE for RVs, ER	1.0	1.0	Heavy-vehicle adjustment factor, fHV	1.000	1.000	Grade adjustment factor, (note-1) fG	1.00	1.00	Directional flow rate, (note-2) vi	1008 pc/h	673 pc/h	Base percent time-spent-following, (note-4) BPTSFD	75.3 %		Adjustment for no-passing zones, fnp	22.8		Percent time-spent-following, PTSFD	84.4 %		Level of service, LOS	E	Volume to capacity ratio, v/c	0.60	Peak 15-min vehicle-miles of travel, VMT15	1387 veh-mi	Peak-hour vehicle-miles of travel, VMT60	5269 veh-mi	Peak 15-min total travel time, TT15	29.1 veh-h	Total length of analysis segment, Lt	5.5	mi	Length of two-lane highway upstream of the passing lane, Lu	1.5	mi	Length of passing lane including tapers, Lpl	3.9	mi	Average travel speed, ATSD (from above)	47.6	mi/h	Percent time-spent-following, PTSFD (from above)	84.4		Level of service, (note-1) LOSd (from above)	E		Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	1.70	mi	Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-1.60	mi	Adj. factor for the effect of passing lane on average speed, fpl	1.11		Average travel speed including passing lane, (note-2) ATSpl	51.3		Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	3.60	mi	Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-3.50	mi	Adj. factor for the effect of passing lane on percent time-spent-following, fpl	0.62		Percent time-spent-following including passing lane, (note-3) PTSFpl	61.1	%	
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	<p style="text-align: center;">HCS+: Two-Lane Highways Release 5.2</p> <p>Felsburg Holt & Ullevig 6300 S. Syracuse Way Suite 600 Centennial CO 80222 Phone: (303) 721-1440 Fax: (303) 721-0832 E-Mail:</p> <p style="text-align: center;">_____Directional Two-Lane Highway Segment Analysis_____</p> <p>Analyst JMR Agency/Co. FHU Date Performed 6/28/2006 Analysis Time Period PM Peak Highway WY 89 From/To South Park/Hoback Jurisdiction Teton County Analysis Year 2026 Description 2026 PM Peak Teton County Section - SB Sensitivity Z-S MILE LANE</p> <p style="text-align: center;">_____Input Data_____</p> <table border="0"> <tr> <td>Highway class</td> <td>Class 1</td> <td>Peak-hour factor, PHF</td> <td>0.95</td> <td></td> </tr> <tr> <td>Shoulder width</td> <td>8.0 ft</td> <td>% Trucks and buses</td> <td>7</td> <td>%</td> </tr> <tr> <td>Lane width</td> <td>12.0 ft</td> <td>% Trucks crawling</td> <td>0.0</td> <td>%</td> </tr> <tr> <td>Segment length</td> <td>7.5 mi</td> <td>Truck crawl speed</td> <td>0.0</td> <td>mi/hr</td> </tr> <tr> <td>Terrain type</td> <td>Level</td> <td>% Recreational vehicles¹</td> <td>0</td> <td>%</td> </tr> <tr> <td>Grade: Length</td> <td>mi</td> <td>% No-passing zones</td> <td>100</td> <td>%</td> </tr> <tr> <td>Up/down</td> <td>%</td> <td>Access points/mi</td> <td>10</td> <td>/mi</td> </tr> </table> <p>Analysis direction volume, Vd 938 veh/h Opposing direction volume, Vo 639 veh/h</p> <p style="text-align: center;">_____Average Travel Speed_____</p> <table border="0"> <thead> <tr> <th>Direction</th> <th>Analysis (d)</th> <th>Opposing (o)</th> </tr> </thead> <tbody> <tr> <td>PCE for trucks, ET</td> <td>1.1</td> <td>1.1</td> </tr> <tr> <td>PCE for RVs, ER</td> <td>1.0</td> <td>1.0</td> </tr> <tr> <td>Heavy-vehicle adj. factor, (note-5) fHV</td> <td>0.993</td> <td>0.993</td> </tr> <tr> <td>Grade adj. factor, (note-1) fG</td> <td>1.00</td> <td>1.00</td> </tr> <tr> <td>Directional flow rate, (note-2) vi</td> <td>994 pc/h</td> <td>677 pc/h</td> </tr> </tbody> </table> <p>Free-Flow Speed from Field Measurement: Field measured speed, (note-3) S FM - mi/h Observed volume, (note-3) Vf - veh/h Estimated Free-Flow Speed: Base free-flow speed, (note-3) BFFS 65.0 mi/h Adj. for lane and shoulder width, (note-3) fLS 0.0 mi/h Adj. for access points, (note-3) fA 2.5 mi/h</p> <p>Free-flow speed, FFSd 62.5 mi/h</p> <p>Adjustment for no-passing zones, fnp 1.8 mi/h Average travel speed, ATSD 47.7 mi/h</p>	Highway class	Class 1	Peak-hour factor, PHF	0.95		Shoulder width	8.0 ft	% Trucks and buses	7	%	Lane width	12.0 ft	% Trucks crawling	0.0	%	Segment length	7.5 mi	Truck crawl speed	0.0	mi/hr	Terrain type	Level	% Recreational vehicles ¹	0	%	Grade: Length	mi	% No-passing zones	100	%	Up/down	%	Access points/mi	10	/mi	Direction	Analysis (d)	Opposing (o)	PCE for trucks, ET	1.1	1.1	PCE for RVs, ER	1.0	1.0	Heavy-vehicle adj. factor, (note-5) fHV	0.993	0.993	Grade adj. factor, (note-1) fG	1.00	1.00	Directional flow rate, (note-2) vi	994 pc/h	677 pc/h	
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	<p>HCS+: Two-Lane Highways Release 5.2</p> <p>Felsburg Holt & Ullevig 6300 S. Syracuse Way Suite 600 Centennial CO 80222 Phone: (303) 721-1440 Fax: (303) 721-0832 E-Mail:</p> <p>_____ Directional Two-Lane Highway Segment Analysis _____</p> <p>Analyst JMR Agency/Co. FHU Date Performed 6/28/2006 Analysis Time Period AM Peak Highway WY 89 From/To Hoback/South Park Road Jurisdiction Teton County Analysis Year 2026 Description 2026 AM Peak EIS Cross Section - Northbound</p> <p>_____ Input Data _____</p> <table border="0"> <tr> <td>Highway class</td> <td>Class 1</td> <td>Peak-hour factor, PHF</td> <td>0.95</td> <td></td> </tr> <tr> <td>Shoulder width</td> <td>8.0 ft</td> <td>% Trucks and buses</td> <td>7</td> <td>%</td> </tr> <tr> <td>Lane width</td> <td>12.0 ft</td> <td>% Trucks crawling</td> <td>0.0</td> <td>%</td> </tr> <tr> <td>Segment length</td> <td>7.5 mi</td> <td>Truck crawl speed</td> <td>0.0</td> <td>mi/hr</td> </tr> <tr> <td>Terrain type</td> <td>Level</td> <td>% Recreational vehicles</td> <td>0</td> <td>%</td> </tr> <tr> <td>Grade: Length</td> <td>mi</td> <td>% No-passing zones</td> <td>100</td> <td>%</td> </tr> <tr> <td>Up/down</td> <td>%</td> <td>Access points/mi</td> <td>10</td> <td>/mi</td> </tr> </table> <p>Analysis direction volume, Vd 878 veh/h Opposing direction volume, Vo 586 veh/h</p> <p>_____ Average Travel Speed _____</p> <table border="0"> <tr> <td>Direction</td> <td>Analysis (d)</td> <td>Opposing (o)</td> </tr> <tr> <td>PCE for trucks, ET</td> <td>1.1</td> <td>1.1</td> </tr> <tr> <td>PCE for RVs, ER</td> <td>1.0</td> <td>1.0</td> </tr> <tr> <td>Heavy-vehicle adj. factor, (note-5) fHV</td> <td>0.993</td> <td>0.993</td> </tr> <tr> <td>Grade adj. factor, (note-1) fG</td> <td>1.00</td> <td>1.00</td> </tr> <tr> <td>Directional flow rate, (note-2) vi</td> <td>931 pc/h</td> <td>621 pc/h</td> </tr> </table> <p>Free-Flow Speed from Field Measurement:</p> <table border="0"> <tr> <td>Field measured speed, (note-3) S FM</td> <td>-</td> <td>mi/h</td> </tr> <tr> <td>Observed volume, (note-3) Vf</td> <td>-</td> <td>veh/h</td> </tr> </table> <p>Estimated Free-Flow Speed:</p> <table border="0"> <tr> <td>Base free-flow speed, (note-3) BFFS</td> <td>65.0</td> <td>mi/h</td> </tr> <tr> <td>Adj. for lane and shoulder width, (note-3) fLS</td> <td>0.0</td> <td>mi/h</td> </tr> <tr> <td>Adj. for access points, (note-3) fA</td> <td>2.5</td> <td>mi/h</td> </tr> </table> <p>Free-flow speed, FFSd 62.5 mi/h</p> <table border="0"> <tr> <td>Adjustment for no-passing zones, fnp</td> <td>1.9</td> <td>mi/h</td> </tr> <tr> <td>Average travel speed, ATSD</td> <td>48.5</td> <td>mi/h</td> </tr> </table>	Highway class	Class 1	Peak-hour factor, PHF	0.95		Shoulder width	8.0 ft	% Trucks and buses	7	%	Lane width	12.0 ft	% Trucks crawling	0.0	%	Segment length	7.5 mi	Truck crawl speed	0.0	mi/hr	Terrain type	Level	% Recreational vehicles	0	%	Grade: Length	mi	% No-passing zones	100	%	Up/down	%	Access points/mi	10	/mi	Direction	Analysis (d)	Opposing (o)	PCE for trucks, ET	1.1	1.1	PCE for RVs, ER	1.0	1.0	Heavy-vehicle adj. factor, (note-5) fHV	0.993	0.993	Grade adj. factor, (note-1) fG	1.00	1.00	Directional flow rate, (note-2) vi	931 pc/h	621 pc/h	Field measured speed, (note-3) S FM	-	mi/h	Observed volume, (note-3) Vf	-	veh/h	Base free-flow speed, (note-3) BFFS	65.0	mi/h	Adj. for lane and shoulder width, (note-3) fLS	0.0	mi/h	Adj. for access points, (note-3) fA	2.5	mi/h	Adjustment for no-passing zones, fnp	1.9	mi/h	Average travel speed, ATSD	48.5	mi/h	
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	 <p>THE STATE OF WYOMING</p> <p style="text-align: right;">Dave Freudenthal, Governor John F. Cox, Director</p> <h2 style="text-align: center;">Department of Transportation</h2> <p style="text-align: center;">P.O. BOX 1260 ROCK SPRINGS, WYOMING 82902</p> <p style="text-align: center;">January 18, 2007</p> <p>Paula Stevens, Planning Director Teton County Planning and Development P.O. Box 1727 Jackson, WY 83001</p> <p style="text-align: right;">RE: US 89 Laneage Analysis Felsburg Holt & Ullevig Teton County</p> <p>Dear Paula:</p> <p>Attached for your review and information is a memorandum from Mike Gostovich, State Traffic Engineer, Wydot to myself which summarizes the results of the Wydot Traffic Programs review of the above noted traffic analysis for the section of US 89 from Hoback Junction to South Park.</p> <p>Also attached for your review and information are two Highway Capacity Software runs that were performed by Wydot Traffic with explanations for the inputs used. I noted that in both cases a level of service D is the result.</p> <p>In summary, there are flaws in FHU's analysis that need to be addressed before the FHU recommended lane alternatives can be called valid.</p> <div style="display: flex; justify-content: space-between; align-items: flex-start; margin-top: 20px;"> <div data-bbox="378 1023 651 1209" style="border: 1px solid black; padding: 5px; width: 150px;"> <p style="text-align: center; color: red;">JAN 22 2007</p> </div> <div data-bbox="693 1055 945 1201" style="text-align: center;"> <p>Respectfully,</p>  <p>John B. Eddins, P.E. District Engineer</p> </div> </div> <p>JBE/jbe</p> <p>pc: Mike Gostovich, P.E., State Traffic Engineer, Wydot, Cheyenne Ted Wells, P.E., District Construction Engineer, Wydot, Rock Springs Tory Thomas, P.E., District Traffic Engineer, Wydot, Rock Springs Pete Hallsten, P.E., Resident Engineer, Wydot, Jackson file</p> <p>attachment: Memo dated 1/10/07 from STE to DE, explanation of HCS runs, HCS runs</p>	

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	<p style="text-align: center;">WYDOT HOBACK CORRIDOR JAN 16 2007</p> <p>MEMORANDUM</p> <p>To: John Eddins, DE</p> <p>From: Mike Gostovich, STE <i>MG</i></p> <p>Subject: Felsburg Holt & Ullevig (FHU) memo to Teton County Planning Aug 29, 2006</p> <p>Date: January 10, 2007</p> <p>Per your request, the WYDOT Traffic Program comments below pertain to the transportation study from FHU for Teton County analyzing the lane needs for the US 89, 191 corridor between Hoback Junction and the five lane section south of Jackson.</p> <p>The report issued to Teton County from FHU contains analysis flaws that were found in the Highway Capacity Software analyses. Since FHU had access to the draft EIS, the consultant had to have seen the writeup for screening out a three lane section consisting of one lane in each direction plus a continuous center left turn lane for a high speed rural section. This section becomes unsafe since passing is not allowed in the left turn lane and one slow vehicle can easily platoon traffic. Impatient drivers will risk hitting left turners by using the left turn lane as a passing lane. This section is useful in low speed urban areas only.</p> <ol style="list-style-type: none"> 1. One flaw in FHU's HCS (Highway Capacity Software) analysis was in using a free flow speed of 65 mph to analyze the lowest volume section immediately north of Hoback Junction. <u>The speed limit is 55 mph and will be used as the free flow speed.</u> Changing this <u>one</u> parameter puts the LOS (level of service) at D or lower for all roadway sections between Hoback Junction and the current 5 lane section south of Jackson in either a two lane analysis or a passing lane analysis and in a north or south direction. Using Figure 3, the lowest volumes on the north section, approximating distances, and even using 65 mph, WYDOT could not get the LOS above D. As per the Green Book (AASHTO's 'A Policy on Geometric Design of Highways and Streets) the LOS for a rural principal arterial should be B and will be designed no lower than LOS C. 2. As noted above, FHU inserted a 3 lane urban section (not sure of the length since mileposts and lengths were not shown in Figure 3) of approximately 2 miles. This is a major design flaw that leads to unsafe operation. This was already screened and dismissed as an option by the interdisciplinary (ID) team. 3. Driver expectations and design consistency are also important design factors. Drivers do not expect a rural high speed road to have different cross sections that require tapers and shifts to stay in the same lane. This becomes worse when snow covers the pavement markings and drivers are unsure of where they need to be on the road. 4. WYDOT does not understand the use of Synchro software to model an unsignalized rural two lane high speed road. Synchro is an urban <u>signalization</u> model. The Highway Capacity Manual (Highway Capacity Software is the computer modeling) is the nationally accepted standard for traffic modeling and LOS, and in this case, is <u>the</u> model to use for a rural high speed roadway. 	

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	<p style="text-align: center;">Explanation of the HCS Runs</p> <p>NB Passing Lane Analysis</p> <ul style="list-style-type: none"> - The NB passing lane is the 3 lane section in the combo alternative just north of Hoback Junction. The segment length includes 1.7 miles for the passing lane length and 1.8 miles for FHU's proposed 3 lane section with a lane in each direction and a center two way left turn lane. - 878 vehicles per hour (vph) in the NB direction, 586 vph in the SB direction. - Free flow speed was left at 65 mph. - Length of upstream two lane highway was entered as 1.5 miles. This is the length through the junction and portions of the highways from Pinedale and Alpine entering the junction. - LOS D. <p>SB Passing Lane Analysis</p> <ul style="list-style-type: none"> - The SB passing lane includes FHU's 4 lane segment (2 lanes in each direction) plus their proposed 5 lane segment. The total length of segment was approximated at 7.1 miles. - 878 vph SB and 586 vph NB. - Free flow speed was left at 65 mph. - Length of the upstream two lane highway was entered as 2.0 miles. This is FHU's approximate length of the 4 lane section (2 lanes NB, continuous left turn lane, 1 lane SB) south of the present 5 lane section and preceding the 2 lanes in each direction 4 lane section. - Length of SB passing lane was 2.1 miles and included the 4 lane (2 lane in each direction) and 5 lane section. - LOS D. 	

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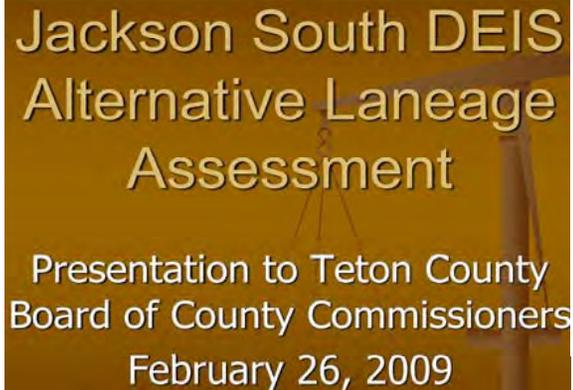
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If the highway is extended segment (level) or rolling terrain, fG = 1.0 2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F. 3. For the analysis direction only. 4. Exhibit 20-21 provides factors a and b. 5. Use alternative Equation 20-14 if some trucks operate at crawl speeds on a specific downgrade. <p style="text-align: center;">Passing Lane Analysis</p> <table border="0"> <tr> <td>Total length of analysis segment, Lt</td> <td>3.5</td> <td>mi</td> </tr> <tr> <td>Length of two-lane highway upstream of the passing lane, Lu</td> <td>1.5</td> <td>mi</td> </tr> <tr> <td>Length of passing lane including tapers, Lpl</td> <td>1.7</td> <td>mi</td> </tr> <tr> <td>Average travel speed, ATSD (from above)</td> <td>48.5</td> <td>mi/h</td> </tr> <tr> <td>Percent time-spent-following, PTSFd (from above)</td> <td>86.9</td> <td></td> </tr> <tr> <td>Level of service, (note-1) LOSd (from above)</td> <td>E</td> <td></td> </tr> </table> <p style="text-align: center;">Average Travel Speed</p> <table border="0"> <tr> <td>Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde</td> <td>1.70</td> <td>mi</td> </tr> <tr> <td>Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld</td> <td>-1.40</td> <td>mi</td> </tr> <tr> <td>Adj. factor for the effect of passing lane on average speed, fpl</td> <td>1.11</td> <td></td> </tr> <tr> <td>Average travel speed including passing lane, (note-2) ATSp1</td> <td>51.4</td> <td></td> </tr> </table> <p style="text-align: center;">Percent Time-Spent-Following</p> <table border="0"> <tr> <td>Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde</td> <td>4.13</td> <td>mi</td> </tr> <tr> <td>Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld</td> <td>-3.83</td> <td>mi</td> </tr> <tr> <td>Adj. factor for the effect of passing lane on percent time-spent-following, fpl</td> <td>0.62</td> <td></td> </tr> <tr> <td>Percent time-spent-following including passing lane, (note-3) PTSFpl</td> <td>68.1</td> <td>%</td> </tr> </table> <p style="text-align: center;">Level of Service and Other Performance Measures (note-4)</p>	Direction	Analysis(d)	Opposing (o)		PCE for trucks, ET	1.0	1.0		PCE for RVs, ER	1.0	1.0		Heavy-vehicle adjustment factor, fHV	1.000	1.000		Grade adjustment factor, (note-1) fG	1.00	1.00		Directional flow rate, (note-2) vi	924 pc/h	617 pc/h		Base percent time-spent-following, (note-4) BPTSFD	71.8 %			Adjustment for no-passing zones, fnp	25.1			Percent time-spent-following, PTSFd	86.9 %			Level of service, LOS	E			Volume to capacity ratio, v/c	0.55			Peak 15-min vehicle-miles of travel, VMT15	809 veh-mi			Peak-hour vehicle-miles of travel, VMT60	3073 veh-mi			Peak 15-min total travel time, TT15	16.7 veh-h			Total length of analysis segment, Lt	3.5	mi	Length of two-lane highway upstream of the passing lane, Lu	1.5	mi	Length of passing lane including tapers, Lpl	1.7	mi	Average travel speed, ATSD (from above)	48.5	mi/h	Percent time-spent-following, PTSFd (from above)	86.9		Level of service, (note-1) LOSd (from above)	E		Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	1.70	mi	Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-1.40	mi	Adj. factor for the effect of passing lane on average speed, fpl	1.11		Average travel speed including passing lane, (note-2) ATSp1	51.4		Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	4.13	mi	Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-3.83	mi	Adj. factor for the effect of passing lane on percent time-spent-following, fpl	0.62		Percent time-spent-following including passing lane, (note-3) PTSFpl	68.1	%	
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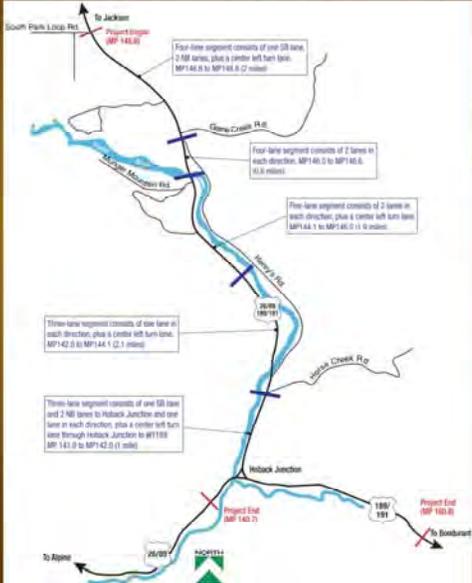
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	<p>Level of service including passing lane., LOSp1 D Peak 15-min total travel time, TT15 15.7 veh-h</p> <p>Notes: 1. If LOSd = F, passing lane analysis cannot be performed. 2. If Ld < 0, use alternative Equation 20-22. 3. If Ld < 0, use alternative Equation 20-20. 4. v/c, VMT15 , and VMT60 are calculated on Directional Two-Lane Highway Segment Worksheet.</p>	

Comment No.	Comment	Response
	 <p>engineering paths to transportation solutions</p> <p>MEMORANDUM</p> <p>TO: Ms. Paula Stevens, Teton County Planning Department</p> <p>FROM: Jeff Ream, P.E., PTOE, Felsburg, Holt & Ullevig</p> <p>DATE: February 12, 2008</p> <p>SUBJECT: Wyoming Highway 89 Alternative Laneage Analysis FHU Reference No. 06-140</p> <hr/> <p>FHU has reviewed the comments provided by the WYDOT Traffic Program on the August 29, 2006 Wyoming Highway 89 (WY 89) Alternative Laneage Analysis memorandum, and offers the following responses.</p> <p><i>The report issued to Teton County from FHU contains analysis flaws that were found in the Highway Capacity Software analyses. Since FHU had access to the draft EIS, the consultant had to have seen the write-up for screening out a three lane section consisting of one lane in each direction plus a continuous center left turn lane for a high speed rural section. This section becomes unsafe since passing is not allowed in the left turn lane and one slow vehicle can easily platoon traffic. Impatient drivers will risk hitting left turners by using the left turn lane as a passing lane. This section is useful in low speed urban areas only.</i></p> <p><i>1. One flaw in FHU's HCS (Highway Capacity Software) analysis was in using a free flow speed of 65 mph to analyze the lowest volume section immediately north of Hoback Junction. The speed limit is 55 mph and will be used as the free flow speed. Changing this one parameter puts the LOS (level of service) at D or lower for all roadway sections between Hoback Junction and the current 5 lane section south of Jackson in either a two lane analysis or a passing lane analysis and in a north or south direction. Using Figure 3, the lowest volumes on the north section, approximating distances, and even using 65 mph, WYDOT could not get the LOS above D. As per the Green Book (AASHTO's A Policy on Geometric Design of Highways and Streets) the LOS for a rural principal arterial should be B and will be designed no lower than LOS C.</i></p> <p>65 mph was selected as the free flow speed because based on field observations it better represented the operating speed of the facility under free flow conditions. The 55 mph speed limit was not selected because, as noted on pg 20-5 of the Highway Capacity Manual, "the design speeds and speed limits for many facilities are not based on current operating conditions."</p> <hr/> <p>6300 South Syracuse Way, Suite 600 Centennial, CO 80111 tel 303.721.1440 fax 303.721.0832 www.fhuenz.com info@fhuenz.com</p>	<p>This February 12, 2008 memo explains the reasons behind the methods used in FHU's analysis, but it does correct the problems identified in WYDOT's January 10, 2007 memo. The findings of WYDOT's analysis of the Teton County Alternative are briefly summarized below. Please refer to Section 2.6 of the FEIS for a detailed explanation and discussion of these analysis results.</p> <p>Differences that WYDOT identified between the Teton County Alternative and the Preferred Alternative centered around: 1) safety issues; and 2) travel demand, capacity, and level of service (LOS) considerations. WYDOT's analysis focused on these two elements of the project's Purpose and Need.</p> <p>Safety deficiencies:</p> <ul style="list-style-type: none"> A highway's design must include areas between different cross-sections that allow for a gradual transition from one cross-section to another to provide for safe and efficient operation. The different cross-sections included in the Teton County Alternative would result in numerous transition areas, such that the length of a transition area would "eat into" the next cross-section. As a result, a driver would spend almost as much time driving in the transition areas as the different cross-sections themselves. Further, these variable cross-sections and design inconsistencies would violate driver expectations. Drivers would need to constantly maneuver to simply stay in one lane, which would become a safety issue, especially at higher speeds. This problem would worsen in snowy conditions when lane markings are less visible. By comparison, the Preferred Alternative would provide a consistent cross-section for approximately 6.1 miles, from MP 148.6 to MP 142.5, where it would begin transitioning into narrower cross-sections as it approaches Hoback Junction. The fewer transition areas under the Preferred Alternative would provide a consistent highway design that would meet driver expectations and provide a safe and efficient highway operation. A well-designed roadway allows drivers of vehicles traveling at higher/lower speeds to instinctively separate (or "sort") themselves from each other, so that slower-moving vehicles do not impede the movement of vehicles moving at a higher speed. The numerous transition areas between the different cross-sections, combined with the reduced laneage compared to the Combination Alternative, would not allow safe "sorting" of vehicles to occur. Currently, the highway has 4.0 miles of no passing zones in the southbound direction; the Teton County Alternative would provide 4.6 miles of no passing zones in the southbound direction. The highway has about 4.0 miles of no passing zones in the northbound direction, while the Teton County Alternative would provide 2.6 miles of no passing zones northbound. Lane configurations under the Teton County Alternative would favor northbound movement into Jackson, but would result in delays for the corresponding southbound movement. Two segments of the Teton County Alternative that would not allow for passing are located between MP 141.5 and MP 144.1 and between MP 146.6 and MP 148.6. The limited passing opportunities provided under the Teton County Alternative could induce impatient drivers to attempt unsafe passing maneuvers that would create a

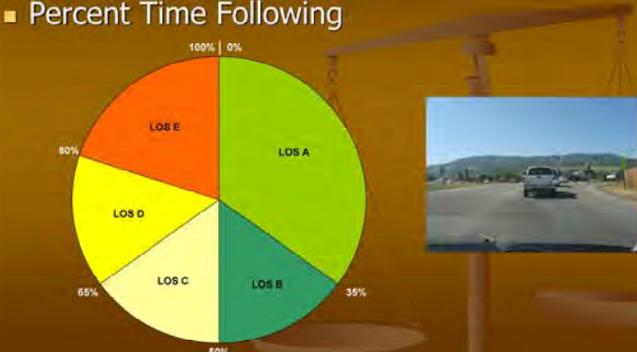
Comment No.	Comment	Response
		<p>potential head-on collision situation. Further, traffic modeling indicates that the Teton County Alternative would operate at LOS D.</p> <p>Travel demand/capacity/LOS deficiencies:</p> <ul style="list-style-type: none"> • The numerous transitions from one cross-section to another “eat up” the roadway, as described under “Safety,” above. This results in a substandard LOS for this alternative. • As discussed under “Safety Deficiencies” above, the numerous transition areas would not allow “sorting” of vehicles (vehicles traveling at higher/lower speeds), which reduces the alternative’s capacity and results in a substandard LOS D. • As discussed under “Safety Deficiencies” above, the limited passing opportunities would reduce capacity and result in LOS D. <p>Because of the safety and capacity deficiencies described in Section 2.6 of the FEIS and summarized above, WYDOT and FHWA determined that the Teton County Alternative would not meet the project’s Purpose and Need and was dismissed from further consideration.</p>

Comment No.	Comment	Response
	<p>February 12, 2008 Memorandum to Ms. Paula Stevens Page 2</p> <p>FHU reviewed the WYDOT southbound HCS+ highway analysis provided in the memo and noted that the total segment length, length of the segment upstream of the passing lane, and length of the passing lane in the WYDOT analysis were different from those used in the FHU analysis. It is unclear as to why those values were changed. FHU also noted that a version of HCS issued in October 2006 was used in the WYDOT analysis (Release 5.21); this version was not issued until after the FHU analysis was complete (Release 5.2). When the FHU analysis was replicated in the newer release, the southbound level of service was reported as LOS D, as opposed to LOS C in the earlier version of the software. To achieve LOS C in the southbound direction the passing lane would need to be increased from 2.5 miles to 3.5 miles, but it is worth noting that while this additional length improves the corridor by one letter grade, it would only increase the travel speed on the corridor by 0.7 mph; to the typical user, this would be a generally imperceptible improvement.</p> <p>FHU also reviewed the WYDOT northbound HCS+ highway analysis in the memo and noted that the length of the segment upstream of the passing lane and the length of the passing lane were different from those used in the FHU analysis. Again, it is unclear as to why those values were changed. FHU also replicated the northbound analysis in the newer release (Release 5.21) and obtained a result of LOS C, consistent with the results documented in the memo.</p> <p><i>2. As noted above, FHU inserted a 3 lane urban section (not sure of the length since mileposts and lengths were not shown in Figure 3) of approximately 2 miles. This is a major design flaw that leads to unsafe operation. This was already screened and dismissed as an option by the interdisciplinary (ID) team.</i></p> <p>The safety reasons cited previously for dismissal of the three lane section, namely driver impatience leading to use of the left turn lane as a passing lane, was interpreted to apply to providing that section exclusively along the 7.5 mile corridor, when both percent time following (80-85 percent) and actual time following (7.5 - 8 minutes of the 9.5 minutes it would take to travel the corridor) would be much higher than under the Teton County alternative. In the worst case scenario for the Teton County alternative (one vehicle begins following another at the end of the southern northbound passing lane), a vehicle would need to wait approximately two minutes until it arrives at the next passing lane, which would alleviate much of the impatience. Next Passing Lane XX Miles signs could also be used on the segment to further discourage aggressive driving behavior.</p> <p><i>3. Driver expectations and design consistency are also important design factors. Drivers do not expect a rural high speed road to have different cross sections that require tapers and shifts to stay in the same lane. This becomes worse when snow covers the pavement markings and drivers are unsure of where they need to be on the road.</i></p> <p>These are valid issues that would be addressed at an appropriate point during the design of the roadway, but are not relevant in a conceptual operational analysis such as that conducted here.</p>	

Comment No.	Comment	Response
	<p>February 12, 2008 Memorandum to Ms. Paula Stevens Page 3</p> <p><i>4. WYDOT does not understand the use of Synchro software to model an unsignalized rural two lane high speed road. Synchro is an urban signalization model. The Highway Capacity Manual (Highway Capacity Software is the computer modeling) is the nationally accepted standard for traffic modeling and LOS, and in this case, is the model to use for a rural high speed roadway.</i></p> <p>The Highway Capacity Manual (HCM) methodology was used as the primary analysis tool for this effort and was presented as such in the memorandum. However, as noted in page 20-1 of the HCM, “some two-lane highways—particularly those that involve interactions among several passing or climbing lanes—are too complex to be addressed with the procedures of this chapter” and suggests the analyst apply simulation modeling for those situations.</p> <p>Synchro provides a relatively easy-to-operate, easy-to-understand tool (SimTraffic) to conduct traffic simulations of roadway corridors using car-following theory (as opposed to HCM methodology) and therefore was selected as an appropriate software application for a supplemental analysis of the corridor. And since they were readily available, Synchro’s arterial analysis results (based on HCM arterial analysis procedures) were presented in the memo as an additional assessment of corridor operations. As the memo notes, the Synchro and SimTraffic results were consistent with the indications of the HCM analysis; namely that the EIS alternative would operate with slightly higher speeds and less delay than the Teton County alternative, but both offered reasonable overall performance.</p> <p>I trust the above information clarifies the decisions and thought processes used during the analysis of the corridor. If you have any questions or need further clarification, please give me a call at (303) 721-1440.</p>	
		<p>For responses to this February 26, 2009 presentation, please refer to Comment #3d responses that discuss the concerns that WYDOT identified in FHU’s analysis of the Teton County Alternative, and information supporting selection of the Combination Alternative as the Preferred Alternative. Also refer to Section 2.6 of the FEIS that describes the Teton County Alternative and the results of WYDOT’s analysis.</p>

Comment No.	Comment	Response
	<p>Teton County Laneage Alternative</p> <ul style="list-style-type: none"> ■ Developed by Teton County Staff in response to residents concerns with a 5-lane section ■ Provides a narrower footprint than the 5-lane and combined alternatives proposed in the Jackson South Draft Environmental Impact Statement ■ Balances traffic flow, safety and community desires 	<p>Please refer to Section 2.6 of the FEIS, which discusses the deficiencies that WYDOT identified with the Teton County Alternative.</p>
	<p>Teton County Laneage Alternative</p>  <p>The map illustrates the proposed laneage alternative along a route from the south to the north. Key features include: <ul style="list-style-type: none"> South Plains Loop Rd: Project Start (MP 143.0) Four-lane segment (MP 143.0 to 143.6): Consists of one SB lane, 2 NB lanes, plus a center left turn lane. Four-lane segment (MP 143.6 to 144.0): Consists of 2 lanes in each direction. Three-lane segment (MP 144.0 to 144.4): Consists of one lane in each direction, plus a center left turn lane. Three-lane segment (MP 144.4 to 145.0): Consists of one SB lane and 2 NB lanes to Hoback Junction and one lane in each direction, plus a center left turn lane through Hoback Junction to MP 145.0. Project End (MP 145.0): Located at Hoback Junction. Other markers: Hoback Junction, Snake Creek Rd, and a Project End (MP 142.7) near the bottom. </p>	

Comment No.	Comment	Response
	<p data-bbox="310 277 1024 326">Other Similar Cross-Sections</p> 	<p data-bbox="1136 310 1982 440">Three of the cross-section examples provided here are located along US 285 in Colorado. Each of these areas were identified by an interdisciplinary NEPA process as requiring transportation improvements and, therefore, do not serve as examples for well functioning highways. To address these transportation needs, each of the three examples has either been reconstructed and improved or are planned to be improved, as follows:</p> <ul data-bbox="1136 472 1982 829" style="list-style-type: none"> • The location with the park-and-ride is Green Valley Ranch (top left). This was recently widened to four lanes undivided (as an interim improvement done under a Categorical Exclusion). The Preferred Alternative includes a divided four-lane section with a grade-separated intersection. Therefore, the highway shown on the photograph no longer exists and was improved due to pressing transportation needs. • The top right photograph shows the Kings Valley area along US 285. The Preferred Alternative there is four lanes divided with a grade-separated intersection. • The bottom left photograph location is Deer Creek. The Preferred Alternative here is also four lanes undivided with two grade-separated intersections. (The one that serves Park Co 43A on the photo is a half diamond for southbound direction and right-in/right-out access for the southbound direction.
	<p data-bbox="279 878 877 919">Teton County Laneage Alternative</p> <ul data-bbox="268 959 814 1105" style="list-style-type: none"> ■ Key Components <ul style="list-style-type: none"> ■ Separate left turn lane addresses safety ■ 4-lane North Snake River bridge ■ 3-lane South Snake River bridge 	
	<p data-bbox="279 1117 877 1157">Traffic Operations: Level of Service</p> <ul data-bbox="268 1198 856 1336" style="list-style-type: none"> ■ Two level of service measures for 2-lane Highways: <ul style="list-style-type: none"> ■ Travel Speed ■ Percent Time Following 	

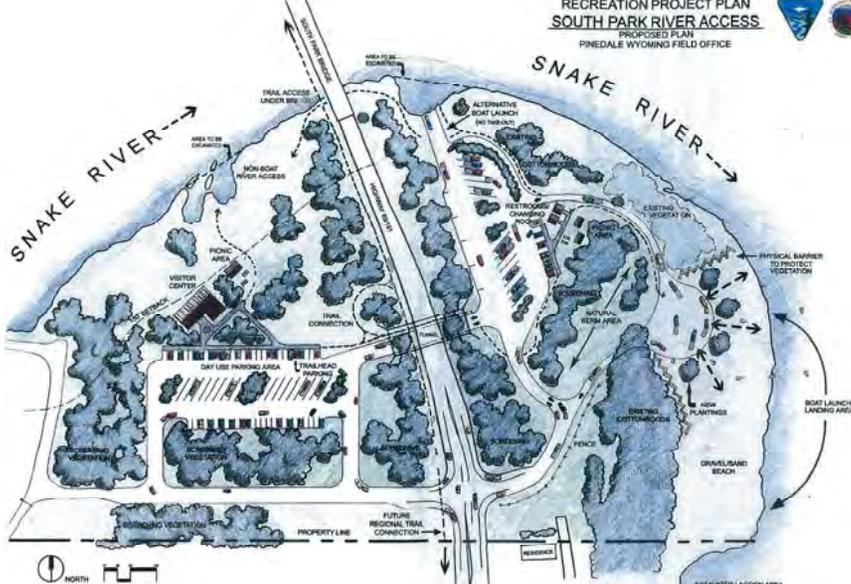
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	<p>Traffic Operations: Level of Service</p> <ul style="list-style-type: none"> Percent Time Following 	<p>Please refer to Section 2.6 of the FEIS that describes the Teton County Alternative and the results of WYDOT’s analysis. Also, “percent time following” is not typically used as a metric for analysis of alternatives. In addition, WYDOT’s engineering analysis indicates that percent time following would be greater than that shown in FHU’s presentation due to the limited passing opportunities provided under the Teton County Alternative.</p>												

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	<p data-bbox="344 277 831 362">How Well Does the County Alternative Work?</p> <ul data-bbox="264 383 743 418" style="list-style-type: none"> Speed –2026 Traffic Conditions <table border="1" data-bbox="275 428 905 776"> <thead> <tr> <th>Level of Service</th> <th>Travel Speed</th> <th>Northbound in the morning</th> <th>Southbound in the afternoon</th> </tr> </thead> <tbody> <tr> <td>LOS A</td> <td>>55 mph</td> <td></td> <td></td> </tr> <tr> <td>LOS B</td> <td>50-55 mph</td> <td>51.0 mph</td> <td>50.8 mph</td> </tr> <tr> <td>LOS C</td> <td>45-50 mph</td> <td></td> <td></td> </tr> <tr> <td>LOS D</td> <td>40-45 mph</td> <td></td> <td></td> </tr> <tr> <td>LOS E</td> <td><40 mph</td> <td></td> <td></td> </tr> </tbody> </table>	Level of Service	Travel Speed	Northbound in the morning	Southbound in the afternoon	LOS A	>55 mph			LOS B	50-55 mph	51.0 mph	50.8 mph	LOS C	45-50 mph			LOS D	40-45 mph			LOS E	<40 mph			
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Speed	Yes LOS B	Yes LOS B									
Time Following	Yes LOS C	1 hour of LOS D									
	<p>Does the County Alternative meet Level of Service Standards?</p> <ul style="list-style-type: none"> ■ Southbound in the afternoon peak hour <ul style="list-style-type: none"> ■ 9 minute travel time ■ 67.3 percent time following = 6:05 ■ LOS C percent time following = 5:50 ■ 15 seconds more than the DEIS LOS Standard 	<p>Please refer to Section 2.6 of the FEIS that describes the Teton County Alternative and the results of WYDOT's analysis</p>									

Comment No.	Comment	Response
	<p>Summary of County Alternative</p> <ul style="list-style-type: none"> ■ Proven concept on similar corridors ■ Provides separate left turn lane to address safety concerns ■ Narrower cross-section reduces bridge costs ■ Balances traffic flow needs with community desires <ul style="list-style-type: none"> ■ Meets Teton County level of service standard ■ Meets 3 of 4 DEIS level of service standards and nearly meets the 4th ■ Merits consideration for the preferred alternative for the corridor 	<p>As stated above, the concepts provided on similar corridors (US 285 examples) have either been improved or are planned to be improved.</p> <p>Please refer to Section 2.6 of the FEIS that outlines the safety deficiencies identified with the Teton County Alternative.</p> <p>The cost of a wider bridge is justified considering the safety and capacity improvements gained.</p> <p>The road is designated as a National Highway System (NHS) principal arterial. Its function is to safely and efficiently transport people and goods. Because this is a state highway, WYDOT is responsible for the highway’s function, and for establishing and maintaining an acceptable level of service. According to the Wyoming Attorney General, “Counties may neither restrict nor reduce the future traffic carrying capacity of any State highway. Only the State, through its Department of Transportation has jurisdiction.” The standard for this highway is LOS C. The Teton County alternative would operate at LOS D, which is a fatal flaw.</p> <p>Because of the safety and capacity deficiencies identified with the Teton County Alternative (see Section 2.6 of the FEIS), WYDOT and FHWA determined that the Teton County Alternative does not meet the project’s Purpose and Need, and was dismissed from further consideration.</p>

Comment No.	Comment	Response
	<p>POINTS OF AGREEMENT:</p> <ol style="list-style-type: none"> 1. Need for reconstruction 2. Hoback Roundabout 3. Highway north from Hoback to Horse Creek – 3 lanes 4. Middle five lane section from Henry’s Road north to South Park Bridge 5. Inclusion of a pathway 6. Use of wildlife crossing improvements and associated fencing 7. Implementation of the mitigation measures suggested in the USFS White Paper on the Snake River Wild and Scenic River Eligibility Analysis. 8. Use of Best Management Practices to protect water quality, aquatic habitats, and fisheries resources during construction. 9. Acknowledgement that visual impacts must be mitigated. 10. Coordination with the Teton County Floodplain Administrator to ensure compliance with floodplain regulations. <p>POINTS OF DISAGREEMENT:</p> <ol style="list-style-type: none"> 1. Horse Creek to Henry’s Road – Teton County proposes three lanes, and WYDOT proposes five 2. South Park Bridge to Game Creek – Teton County proposes four lanes, two in each direction, and WYDOT proposes five 3. Game Creek to South Park Loop – Teton County proposes four lanes, two northbound lanes, one southbound lane and one center left turn lane, and WYDOT proposes five 4. The Teton County proposed alternative was excluded prior to vetting through the Interdisciplinary Team as was the case with all other alternatives proposed. 5. Cost considerations were excluded in the screening criteria. 6. Adherence to Level of Service C or greater (Teton County adopted LOS D in current Comprehensive Plan; Teton County’s LOS goal of D isn’t mentioned in the DEIS document at all). 7. The entire corridor is in either the County’s Scenic or Natural Resources Overlays or both. A wider roadway cross-section imposes greater negative scenic and natural resource impacts than a narrower cross-section. 	

Comment No.	Comment	Response
		
<p>4a</p>	<p>Comment # 4: Leon Chartrand, Ph.D., Executive Director, Jackson Hole Wildlife Foundation</p> <p>RE: Comments for Jackson South Draft EIS: FHWA-DEIS-08-01</p> <p>Dear Mr. Potter,</p> <p>The Jackson Hole Wildlife Foundation works collaboratively with the Wyoming Department of Transportation (WYDOT) to mitigate wildlife/vehicle collisions. It is our mission, therefore, to work with agencies and the community to find ways to prevent or mitigate these types of collisions for the sake of wildlife and for the safety of motorists. With the help of WYDOT personnel, the Wyoming State Highway Patrol, the Teton County Sheriff’s Office, and Biota Research and Consulting Inc, we have collected nearly two decades of roadkill data in Teton County.</p> <p>Our analyses of wildlife mortalities and vehicle accident reports indicate that the site of this proposed development project is already deemed a “roadkill hotspot”—an area where concentrated wildlife/vehicle collisions occur. Additionally, habitat analyses offered by Wyoming Game & Fish Department (WGFD) clearly suggest that the current road already bisects seasonal range and migration routes of several big game and trophy game species. This bisection directly contributes to the</p>	<p>Comment #4 Response: Thank you for your considered comments on the Jackson South Draft Environmental Impact Statement. Responses to your specific comments follow.</p> <ul style="list-style-type: none"> • Comment #4a Response: FHWA and WYDOT will implement measures under the Preferred Alternative to reduce the risk of wildlife-vehicle collisions. WYDOT will provide wildlife crossings at five locations within the Study Corridor: Game Creek, Flat Creek, South Park Bridge over the Snake River in the north and Snake River Bridge, and Horse Creek. In addition, a wildlife crossing will be considered in the area south of Horse Creek Wildlife fencing will be used to guide animals to these crossings. WYDOT will provide fish passage structures for Horse Creek and Game Creek where the highway crosses these waterways. The exact design of wildlife crossing structures, wildlife fencing, and game trail benches adjacent to bridge abutments will be determined during final design. <p>FHWA and WYDOT will continue to work with the ID Team members, Wyoming Game and Fish Department, Bridger-Teton National Forest, and other interested parties to find ways to minimize wildlife-vehicle collisions. Please refer to Section 4.18.5 of the FEIS for more information.</p>