

Rathdrum Prairie Area Transportation Study
Preliminary Level 2 Alternative Evaluation Matrix

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Recommended to retain as an element, meaning the alternative didn't perform well on its own, but parts of it could be combined with another alternative to move on to Level 3 screening.
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			North-South Alternatives							East-West Alternatives					
CATEGORY	CRITERIA	METRIC(S)	B	C	D	F	H	I	K	A	E	J	L	M	N
STEP 1: Performance															
Safety	Opportunity for conflicts at intersections (density of traffic volume and number of intersections)	Intersection cross product density (sum of traffic volumes at each intersection times traffic volume on roadway divided by roadway miles)	29,704,943	23,041,633	8,422,099	440,738	2,119,535	1,975,800	638,306	1,615,090	223,224	897,805	1,512,631	365,091	441,087
	Opportunity for conflicts at driveways (density of traffic volume and driveways)	Driveway density with volume (sum of traffic volume on roadway at each driveway divided by roadway miles)	0	0	13,346	380	2,875	5,585	914	22,479	325	1,220	2,430	2,142	1,263
Congestion	Ability to address congestion throughout the study area (Volume to capacity ratio) (V/C ratio)	Number of segments on key corridors exceeding 0.9 V/C or Level of Service E across both AM and PM peak hours	44 segments	41 segments	29 segments	36 segments	27 segments	44 segments	37 segments	40 segments	27 segments	31 segments	25 segments	24 segments	24 segments
Travel Time	Ability to improve travel times throughout the study area (Total Time Savings)	Average travel time savings compared to No-Build weighted by average corridor traffic volumes	2,200 vehicle-minutes	2,500 vehicle-minutes	2,700 vehicle-minutes	1,600 vehicle-minutes	1,900 vehicle-minutes	4,100 vehicle-minutes	1,100 vehicle-minutes	1,900 vehicle-minutes	7,700 vehicle-minutes	3,900 vehicle-minutes	10,400 vehicle-minutes	10,400 vehicle-minutes	10,700 vehicle-minutes
Travel Efficiency	Ability to improve travel efficiency within the study area (Vehicle-miles traveled for the network) (VMT)	Change in VMT from the No-Build across both AM and PM peak hours	2,004 change from no build (1,171,402 VMT)	6,786 change from no build (1,176,184 VMT)	589 change from no build (1,169,987 VMT)	5,132 change from no build (1,174,530 VMT)	7,008 change from no build (1,176,406 VMT)	10,887 change from no build (1,180,285 VMT)	8,476 change from no build (1,177,874 VMT)	1,390 change from no build (1,170,788 VMT)	-5,640 change from no build (1,163,758 VMT)	3,195 change from no build (1,172,593 VMT)	3,001 change from no build (1,172,399 VMT)	-442 change from no build (1,168,956 VMT)	-78 change from no build (1,169,320 VMT)
	Ability to improve travel efficiency within the study area (Vehicle-hours traveled for the network) (VHT)	Change in VHT from the No-Build across both AM and PM peak hours	-1,281 change from no build (49,472 VHT)	-1,970 change from no build (48,783 VHT)	-2,043 change from no build (48,710 VHT)	-1,032 change from no build (49,721 VHT)	-2,203 change from no build (48,550 VHT)	-1,705 change from no build (49,048 VHT)	-915 change from no build (49,838 VHT)	-1,498 change from no build (49,255 VHT)	-3,870 change from no build (46,883 VHT)	-3,524 change from no build (47,229 VHT)	-6,031 change from no build (44,722 VHT)	-5,925 change from no build (44,828 VHT)	-6,070 change from no build (44,683 VHT)
Network Redundancy	Ability to address congestion during a major incident (V/C ratio during detour event)	Number of segments on key corridors exceeding 0.9 V/C or Level of Service E	196 segments	190 segments	147 segments	185 segments	121 segments	191 segments	181 segments	202 segments	148 segments	166 segments	139 segments	141 segments	134 segments
Multimodal Considerations	Ability to increase safety, mobility, and connections for bicycle and pedestrian users (Consideration of integrating existing and planned bicycle and pedestrian facilities)	Assess how improvements can benefit or impact existing or future use of bicycle and pedestrian facilities	Additional at-grade conflicts (more lanes and additional traffic)	Maintains connections, grade separated crossings, but wider corridor to cross	New corridor and multiuse paths, local bicycle and pedestrian connections maintained.	Existing Corridor: Bike off of mainline	New corridor with bike or pedestrian facilities	Some crossings require navigating interchange where none exists today	New corridor with bike or pedestrian facilities	Shoulder with more lanes/traffic	Existing Corridor: Bike off of mainline	New corridor with bike or pedestrian facilities, but disrupts local system.	New corridor with bike or pedestrian facilities	New corridor with bike or pedestrian facilities	New corridor with bike or pedestrian facilities
	Ability to increase safety mobility and connections for transit users based on transit service in mixed traffic (V/C ratio)	Number of segments on key corridors exceeding 0.9 V/C or Level of Service E across both AM and PM peak hours	44 segments	41 segments	29 segments	36 segments	27 segments	44 segments	37 segments	40 segments	27 segments	31 segments	25 segments	24 segments	24 segments
Step 1 Results			Retain as Element	Retain as Element	Carry forward	Not recommended	Carry forward	Retain as Element	Not recommended	Not recommended	Carry forward	Carry forward	Carry forward	Carry forward	Carry forward

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			North-South Alternatives						East-West Alternatives						
CATEGORY	CRITERIA	METRIC(S)	B	C	D	F	H	I	K	A	E	J	L	M	N
Step 1 Results			Retain as Element	Retain as Element	Carry forward	Not recommended	Carry forward	Retain as Element	Not recommended	Not recommended	Carry forward	Carry forward	Carry forward	Carry forward	Carry forward
Rationale			Doesn't address study area congestion metric as a standalone alternative. However, benefits travel time for ITD facility (US-95) (See travel time and V/C ratio figures). Design considerations needed for to address intersection conflicts and multimodal performance .	Doesn't address study area congestion and redundancy as well as other north-south alternatives (D,H), as a standalone alternative. However, benefits travel time for ITD Facility (US-95) (See travel time and V/C ratio figures). Design considerations needed to address emergency vehicle access and incident response, as well as intersection conflicts.	Addresses study area congestion, efficiency and redundancy better than other alternatives (B, C, F, I, K). Provides new multimodal corridor. Design considerations needed to address intersection conflicts.	Doesn't address study area congestion and redundancy better than other north-south alternatives (D, H). Doesn't benefit ITD facility (SH-41) to the same extent as Alternatives D and H (See travel time and V/C ratio figures).	Addresses study area congestion and redundancy better than other north-south alternatives (B, C, F, I, K). Design considerations needed to address intersection conflicts.	Doesn't address study area congestion or travel efficiency as a standalone alternative. However, benefits travel time for ITD facility (US-95) (See travel time and V/C ratio figures). Design considerations needed for multimodal considerations.	Doesn't address study area congestion, travel time, travel efficiency, or network redundancy better than other north-south alternatives (D, H). Doesn't benefit ITD facility (SH-41) to the same extent as Alternatives D and H (See travel time and V/C ratio figures).	Doesn't address study area congestion, travel time and network redundancy better than other east-west alternatives (E, J, L, M, N). Doesn't benefit SH-53 to the same extent as Alternatives E, L, M, and N (See travel time and V/C ratio figures).	Generally addresses study area performance criteria relative to other east-west alternatives.	Generally addresses study area performance criteria relative to other east-west alternatives.	Generally addresses study area performance criteria relative to other east-west alternatives.	Generally addresses study area performance criteria relative to other east-west alternatives.	Generally addresses study area performance criteria relative to other east-west alternatives.

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CATEGORY	CRITERIA	METRIC(S)	B	C	D	F	H	I	K	A	E	J	L	M	N
STEP 2: Impacts and Benefits															
Community Impacts and Planning	Estimated requirements for right-of-way acquisition (Number of properties impacted)	Alternative footprint overlayed with parcel data	0 properties impacted	33 properties impacted	56 properties impacted	325 properties impacted	111 properties impacted	359 properties impacted	152 properties impacted	230 properties impacted	358 properties impacted	433 properties impacted	478 properties impacted	276 properties impacted	326 properties impacted
	Estimated requirements for right-of-way acquisition (Number of acres impacted)	Alternative footprint overlayed with parcel data	0 acres impacted	2 acres impacted	107 acres impacted	422 acres impacted	304 acres impacted	111 acres impacted	428 acres impacted	84 acres impacted	479 acres impacted	629 acres impacted	553 acres impacted	603 acres impacted	731 acres impacted
	Estimated residential right-of-way requirements (Acres of residential zoned areas, including Ag-Suburban and Rural)	Based on acres of potentially impacted residential areas	0 acres impacted	0 acres impacted	35 acres impacted	278 acres impacted	82 acres impacted	12 acres impacted	29 acres impacted	71 acres impacted	345 acres impacted	214 acres impacted	107acres impacted	121 acres impacted	66 acres impacted
	Estimated commercial right-of-way requirements (Acres of commercial zoned areas)	Based on acres of potentially impacted commercial areas	0 acres impacted	1 acres impacted	5 acres impacted	52 acres impacted	17 acres impacted	75 acres impacted	50 acres impacted	4 acres impacted	36 acres impacted	14 acres impacted	30 acres impacted	19 acres impacted	17 acres impacted
	Use of existing highway or roadway corridors (Amount and existing corridors utilized)	Assessment based on how much of existing corridors and other corridors are utilized using the evaluation scale	Primarily uses existing corridor	Primarily uses existing corridor	Requires some new alignment	Requires some new alignment	Requires some new alignment	Primarily uses existing corridor but requires expansion	Requires new alignment from SH-41 to US-95	Requires some new alignment	Requires some new alignment	Requires new corridor	Primarily utilized existing corridors with new alignments connecting them	Primarily utilized existing corridors with new alignments connecting them	Primarily utilized existing corridors with new alignments connecting them
	How does the alternative effect local access (Based on adding more or less local access overall)	Assessment based on an in-crease, no change, or decrease in access using existing conditions as a baseline	Maintains access	Maintains access from US-95 to local destination. However, bypass lanes have limited access, especially for emergency response.	New access to I-90 and local areas	Access control means less access	New access to I-90, interchanges generally at existing local roadways	Access control means less access with closer spaced existing access	Less access in Post Falls, New access near Rathdrum and Hayden	Maintains access	Access control means less access	New access to I-90, although existing access to I-90 exists	New access to I-90, New access near Rathdrum and Hayden	New access to I-90, New access near Post Falls, Rathdrum and Hayden	New access to I-90, New access near Post Falls, Rathdrum and Hayden
	Does the alternative divide or further divide existing communities (based on location of alternatives within existing communities)	Assessment based on existing community barriers with consid-eration of proposed alternatives using the evaluation scale	Additional lanes adds to crossing distance	Addition of grade-separated lanes for length of facility adding crossing distance and adding to perceived barrier in developed area.	Minimal change, intermittent development	Bypass Rathdrum but still splitting lighter developed areas	Addition of lanes, upgrade of facility type in intermittent development and developed areas.	Addition of lanes, upgrade of facility type in developed area for length of facility adding crossing distance and adding to barrier.	Addition of lanes, upgrade of facility type in developed area in Post Falls	Bypass Rathdrum	Bypass Rathdrum but still splitting lighter developed areas	Adds new corridor to developed area	Bypass Rathdrum but still splitting lighter developed areas	Bypass Rathdrum	Bypass Rathdrum
	Compatibility with local and regional planning efforts (based on compatibility assessment provided to local governments)	Assessment based on coordi-nation with local jurisdictions intersecting with alternatives, and them agreeing with a Low, Medium, or High rating for each alternative	Hayden (Low), Coeur d'Alene (High)	Hayden (Low), Coeur d'Alene (Low)	Coeur d'Alene (High), Post Falls (High), Hayden (Medium), Rathdrum (High)	Rathdrum (Low), Post Falls (Medium/ Concerns)	Hayden (High), Coeur d'Alene (Medium/ Concerns), Post Falls (High), Rathdrum (High)	Hayden (Low), Coeur d'Alene (Low)	Rathdrum (Medium/ Concerns), Post Falls (Medium/ Concerns)	Rathdrum (Medium/ Concerns), Hauser (Medium)	Hauser (Low), Rathdrum (Low/ Concerns), Post Falls (Medium/ Concerns)	Post Falls (Low), Rathdrum (Low/ Concerns)	Rathdrum (Low), Hayden (Low), Hauser (High)	Rathdrum (Medium/ Concerns), Hauser (High), Post Falls (Medium), Hayden (Low)	Rathdrum (Medium/ Concerns), Hauser (High), Post Falls (Low), Hayden (Low)

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CATEGORY	CRITERIA	METRIC(S)	B	C	D	F	H	I	K	A	E	J	L	M	N
STEP 2: Impacts and Benefits															
Environmental Resources	New acres of impervious surfaces	Estimated approximate area of new impervious surface	24 acres of impervious surface	37 acres of impervious surface	73 acres of impervious surface	115 acres of impervious surface	86 acres of impervious surface	30 acres of impervious surface	101 acres of impervious surface	75 acres of impervious surface	175 acres of impervious surface	180 acres of impervious surface	179 acres of impervious surface	187 acres of impervious surface	198 acres of impervious surface
	Floodplain Impacts	Impacts from alternative footprint overlays with resource spatial data	0 acres of FEMA floodplains	0 acres of FEMA floodplains	0 acres of FEMA floodplains	12 acres of FEMA floodplains	0 acres of FEMA floodplains	0 acres of FEMA floodplains	0 acres of FEMA floodplains	1 acre of FEMA floodplains	14 acres of FEMA floodplains	0 acres of FEMA floodplains	6 acres of FEMA floodplains	6 acres of FEMA floodplains	6 acres of FEMA floodplains
	Wetlands and Waters of the U.S. Impacts	Impacts from alternative footprint overlays with resource spatial data	0.0 acres	0.0 acres	1.5 acres	2.9 acres	2.7 acres	0.0 acres	0.6 acres	3.7 acres	8.1 acres	0.2 acres	4.3 acres	3.6 acres	3.8 acres
Social and Built Environment	Potential Impacts to Community Resources and Parks and Recreation	Impacts from alternative footprint overlays or approximately 50-foot proximity from proposed alignment with desktop resource spatial data	13 properties	13 properties	2 properties	1 property	2 properties	14 properties	1 property	3 properties	3 properties	1 Property	8 properties	7 properties	7 properties
	Impacts to Hazardous Materials sites	Number of hazardous materials sites intersected by footprint	15 sites	0 sites	1 sites	9 sites	1 sites	19 sites	8 sites	6 sites	10 sites	5 sites	10 sites	7 sites	9 sites
	Impacts to Historic Sites	Number of historic sites intersected by footprint	2 sites	1 sites	3 sites	26 sites	4 sites	7 sites	16 sites	11 sites	16 sites	9 sites	21 sites	16 sites	19 sites
	Properties with potential residential noise receptors	Residential land use properties within 500 ft of alternative	1,474 properties	839 properties	417 properties	1,289 properties	591 properties	2,675 properties	1,272 properties	639 properties	874 properties	1,710 properties	1,903 properties	1,400 properties	1,442 properties
Step 2 Results			Retain as Element	Not recommended	Carry forward	Not recommended in Step 1	Carry forward	Not recommended	Not recommended in Step 1	Not recommended in Step 1	Not recommended	Not recommended	Not recommended	Carry forward	Carry forward
Rationale			Smaller footprint with fewer right-of-way requirements and environmental impacts. Design considerations needed to minimize impacts to community resources.	Similar right-of-way impacts as Alternative B; however, further divides corridor with new grade-separated lanes. Limited access on bypass lanes is safety concern.	Neutral/medium and better/good level of right-of-way impacts. New access to I-90. Environmental and social impacts relatively low.		Neutral/medium and Poor/negative level of overall right-of-way impacts. New access to I-90. Environmental and social impacts relatively low.	Highest number of total properties impacted for north-south alternatives. Less access to/ from US-95. Further divides corridor for most of length of corridor with widened typical section and potentially limited crossing opportunities.			Highest amount of residential right-of-way impacts. Less direct access to SH-53 due to access control. Highest level of floodplain and wetland impacts.	High number of parcels and acres of total right-of-way impacted and high level of residential impacts. Further divides Post Falls by widening barrier (currently freight rail corridor). High level of potential sensitive noise receptors.	Highest number of total properties impacted and high residential impacts. Higher commercial impacts than other east-west alternatives (M, N). Highest number of potential historic resources impacts.	Lower total right-of-way parcels impacted compared to Alternatives E, J, L and N. Higher residential property impacts than Alternatives L and M. Lower commercial property impacts than Alternative L. Similar environmental impacts for Alternatives L, M, and N.	Highest level of total right-of-way acres required, but lower level of impact to residential and commercial properties than other east-west alternatives (E, L, M). Similar environmental impacts for Alternatives L, M, and N.

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CATEGORY	CRITERIA	METRIC(S)	B	C	D	F	H	I	K	A	E	J	L	M	N
STEP 3: Implementation															
Implementation	Conceptual construction costs (Magnitude in cost in comparison to other alternatives, including assumptions for structures and ROW)	Based on conceptual construction costs	\$	\$	\$	\$\$\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$	\$\$\$\$\$	\$\$\$\$	\$\$\$\$\$	\$\$\$\$\$	\$\$\$\$\$
	Ability to proceed with phased implementation, reducing number of typical ITD construction packages per alternative	Based on number of construction packages	3 packages	4 packages	3 packages	10 packages	6 packages	5 packages	6 packages	3 packages	10 packages	10 packages	10 packages	10 packages	10 packages
	Ability to proceed with phased implementation, minimizing traffic impacts	Qualitative: Impacts to the traveling public during construction	Can mostly maintain existing number of through lanes in each direction during construction. Frequent access work and adjacent traffic not efficient and more disruptive to traveling public.	Grade separated crossings would be challenging to phase without temporary impacts to traffic. Frequent access work and adjacent traffic not efficient and more disruptive to traveling public.	Can mostly maintain existing number of through lanes in each direction during construction. Frequent access work and adjacent traffic not efficient and more disruptive to traveling public.	Grade separated interchanges would be challenging to phase without temporary impacts to traffic. If building the frontage road first, then detouring SH-41 onto the detour, you can then phase the interchanges. However this temporarily decreases number of travel lanes.	Mostly offline construction and can be constructed around Huetter Road's lower volume of traffic with phased intersections and interchanges.	Grade separated interchanges would be challenging to phase without temporary impacts to traffic. Reduced number of travel lanes during construction	Phasing the 3 grade separated interchanges on SH-41 would be impactful to the traveling public. Half of project to the north is offline with fewer traffic impacts. Likely reduced number of temporary travel lanes for the south end.	Typical highway widening. Two major maintenance of traffic phases. Can maintain existing 1-lane of traffic in each direction, may have to temporarily close turn lane.	Grade separated interchanges would be challenging to phase without temporary impacts to traffic. If building the frontage road first, then detouring SH-41 onto the detour, then phase the interchanges. However this temporarily decreases number of travel lanes.	Almost all offline construction, easier to phase. High ROW impacts, but low impact to traffic flow and maintenance of traffic.	Similar maintenance of traffic to Alternative A with the addition of other roadway/ highway online work and interchanges. Could disrupt cross street traffic.	Similar maintenance of traffic to Alternative A with the addition of other roadway/ highway online work and interchanges. Could disrupt cross street traffic.	Similar maintenance of traffic to Alternative A with the addition of other roadway/ highway online work and interchanges. Could disrupt cross street traffic.
Step 3 Results			Retain as Element	Not recommended in Step 2	Carry forward	Not recommended in Step 1	Carry forward	Not recommended in Step 2	Not recommended in Step 1	Not recommended in Step 1	Not recommended in Step 2	Not recommended in Step 2	Not recommended in Step 2	Carry Forward	Carry Forward
Rationale			Lowest cost of all alternatives. Medium implementation with maintenance of traffic and access requirements.		Comparatively low cost. Medium implementation with maintenance of traffic and access requirements.		Medium cost compared to all alternatives. Highest cost for remaining north-south alternatives.							High cost for all alternatives, but similar to other east-west alternatives (E, L, N).	High cost for all alternatives, but similar to other east-west alternatives (E, L, M).