Alternatives Evaluation Summary for Intersections

Alternatives Cost Estimates

Alternatives Benefit/Cost Analysis Worksheets

OR 22 (W) Expressway Management Plan Project Management Team Evaluation As of: December 2007

Directly/positively meets intent of criterion

■ Partially meets intent of criterion

O Does not support intent of criterion

N/A Not applicable—neither meets/doesn't meet intent of criterion

		OR 22/OR 51 INTERC	CHANGE ALTERNATIVES		Doa	KS FERRY ROAD ALTERNA	TIVES		GREENWOOD RO	AD ALTERNATIVES	
Evaluation Criteria —Features —Measures	INH-3: Standard Diamond Interchange	INH-4: Tight Diamond Interchange	INH-5: Parclo-B	INH-6: Parclo-B Single Quadrant (WB to SB Loop)	DFR-2: Relocated Access Option— Riggs Street and RI only at DFR	DFR-4: Spring Street Undercrossing Option	DFR-7: Eastbound Access Option center turn refuge; LI/RI/RO	GWR-3: Barrier median; RI/RO only	GWR-4a: Grade separate w/ WB RI/RO	GWR-4b: Grade separate w/o OR 22 access	GWR-6: Offset Dual "T" Intersections
Mobility	•	•	•		•	•	•	•	•	•	•
—improves future flow —OHP standard for volume to capacity ratio	-Would require signalization of the ramp terminals to meet design mobility standards	-Would require signalization of the ramp terminals to meet design mobility standards	-Best accommodates the critical EB and WB left-turn movements at the ramp terminals under unsignalized conditions	-Would require signalization of the EB ramp terminal to meet the design mobility standard	-Does not eliminate the critical EB to NB left-turn which is forecast to operate above capacity through the 2030 horizon year.	-Eliminates need for center turn refuge for EB to left-in access	-Does not eliminate the critical EB to NB left-turn which is forecast to operate above capacity through the 2030 horizon year.	-Satisfies standard.	- Satisfies standard	- Satisfies standard	Creates additional turning movementsSatisfies standard
Access Management	•	•	•	•	1	1	1	•	•	•	1
—fewer conflict points —spacing standards between ramps, public roads, and driveways	-Grade separated interchanges are consistent with the access management policy for Expressways.	-Grade separated interchanges are consistent with the access management policy for Expressways.	-Grade separated interchanges are consistent with the access management policy for Expressways.	-Grade separated interchanges are consistent with the access management policy for Expressways.	-Consistent with access management goals which call for highly controlled public road connections -Meets access spacing standards	-Consistent with access management goals which call for highly controlled public road connections -Meets access spacing standards	-Consistent with access management goals which call for highly controlled public road connections -Meets access spacing standards	-Consistent with access management goals which call for highly controlled public road connections.	-Consistent with access management goals which call for highly controlled public road connections. -Reduces conflict points from 40 to 2	-Goes above and beyond the access management standards by completely eliminating access to OR 22 -Best supports function of expressway.	-Not entirely consistent with access management goals. -Does not reduce conflict points but moves some to a different location.
Connectivity	•	•	•	•	•	•	•	0	•	•	•
—direct, efficient access to industries and businesses —optional routes	-Connection to system of local frontage and backage roads provides access and optional routes	-Connection to system of local frontage and backage roads provides access and optional routes	-Connection to system of local frontage and backage roads provides access and optional routes	-Connection to system of local frontage and backage roads provides access and optional routes	-Eliminates SB to EB left turn, which is a minor move -Provides connection to local system on north side of highway -U-turn lane WB to EB provides optional route	-Provides access to properties on both sides of highway -Provides connections to local system on both sides of highway	-Eliminates SB to EB left turn, which is a minor move -Provides connection to local system on north side of highway -U-turn lane WB to EB provides optional route	-Eliminates north- south connectivity for farm equipment and school buses -Mitigation would be overcrossing at other location or improve informal farm equipment undercrossing at Derry (next to RR)	-Provides an efficient grade separated north/south crossing of OR 22 while still accommodating WB access to/from the highway. Will facilitate OR 22 detour route if there are problems on the highway.	-Provides an efficient grade separated north/south crossing of OR 22, but does not provide direct access to the highway	-Accommodates WB and EB access to/from the highway. Will facilitate OR 22 detour route if there are problems on the highway.

		OR 22/OR 51 INTERC	CHANGE ALTERNATIVES		Doa	KS FERRY ROAD ALTERNA	TIVES		GREENWOOD RO	AD ALTERNATIVES	
Evaluation Criteria —Features —Measures	INH-3: Standard Diamond Interchange	INH-4: Tight Diamond Interchange	INH-5: Parclo-B	INH-6: Parclo-B Single Quadrant (WB to SB Loop)	DFR-2: Relocated Access Option— Riggs Street and RI only at DFR	DFR-4: Spring Street Undercrossing Option	DFR-7: Eastbound Access Option center turn refuge; LI/RI/RO	GWR-3: Barrier median; RI/RO only	GWR-4a: Grade separate w/ WB RI/RO	GWR-4b: Grade separate w/o OR 22 access	GWR-6: Offset Dual "T" Intersections
Safety			•		•	•	•	•	•	•	
—reduces conflict points —minimizes emergency response times	-A grade separated interchange would improve the operational safety concerns of the existing at- grade intersection.	-A grade separated interchange would improve the operational safety concerns of the existing at- grade intersection.	-A grade separated interchange would improve the operational safety concerns of the existing at- grade intersection.	-A grade separated interchange would improve the operational safety concerns of the existing at- grade intersection.	-Relocation to straight segment reduces potential for intersection related crashes but does not fully address the operational and safety problems. -Out of direction travel required for return route for emergency vehicles.	-Eliminates the most difficult EB to NB and SB to WB left-turn movementsProvides fairly direct return route for emergency vehicles.	-The allowance of the EB to NB left-turn movement only partially addresses the operational and safety problems of intersection turning movements. -Out of direction travel required for return route for emergency vehicles.	-A median barrier would restrict the intersection to RI/RO, thereby eliminating the difficult left-turn and crossing movements.	-A grade separated overpass would provide a safe crossing opportunity for farm equipment and school busses.	-A grade separated overpass would provide a safe crossing opportunity for farm equipment and school busses.	-Adds conflict points from turn movements but would relocate some movements to a different location.
Natural Environment	•	•	•	•	•	•	•	•	1	1	•
—Farm, forest, wetlands, wildlife, air quality —minimum impacts to sensitive areas	-McNary Creek in all quadrants to avoid -Floodplain in extreme SE and SW quadrants	-McNary Creek in all quadrants to avoid -Floodplain in extreme SE and SW quadrants -Smallest footprint	-McNary Creek in all quadrants to avoid -Floodplain in extreme SE and SW quadrants -Largest footprint	-McNary Creek in all quadrants to avoid -Floodplain in extreme SE and SW quadrants	-Not anticipated to have any adverse environmental impacts.	-Possible adverse environmental impacts from extensive excavations.	-Not anticipated to have any adverse environmental impacts.	-Not anticipated to have any adverse environmental impacts.	-T&E plant in NW quadrant that would have to be avoided -Floodplain in SW quadrant to avoid -Wetlands in NE quadrant to avoid	-T&E plant in NW quadrant that would have to be avoided -Floodplain in SW quadrant to avoid -Wetlands in NE quadrant to avoid	-T&E plant in NW quadrant that would have to be avoided -Wetlands in NE quadrant to avoid
Built Environment	1	((•	•	•	•	•	•	•	•
—Developable properties, residential parcels, historic properties —Minimum land use, social, historic displacements	-Avoidance of Brunk House -Forest Zone in NE and SW quadrants to avoid -EFU Zone in NW and SW quadrants	-Avoidance of Brunk House -Forest Zone in NE and SW quadrants to avoid -Least land taken from EFU Zone in NW and SW quadrants	-Avoidance of Brunk House -Forest Zone in NE and SW quadrants to avoid -Most land taken from EFU Zone in NW and SW quadrants	-Avoidance of Brunk House -Forest Zone in NE and SW quadrants to avoid -EFU Zone in NW and SW quadrants	-Eliminates SB vehicle access from DFR to Holman Wayside -New roadway could impact existing land use	-Eliminates SB vehicle access from DFR to Holman Wayside -New roadway could impact existing land use	-Continues vehicle access to Holman Wayside -No change to land use		-Minor impacts to farm (EFU) lands -Frontage road impacts to EFU lands.	-Minor impacts to farm (EFU) lands	-Minor impacts to farm (EFU) lands -Frontage road impacts to EFU landsTurn lanes would need to accommodate farm equipment.
Business	((•	1	•	1	•	0	•	•	•
—Parking, access, jobs —Minimum business relocations or eliminations	-Would remove some acreage from producing hazeInut orchard	-Would remove least acreage from producing hazelnut orchard	-Would remove the most acreage from producing hazelnut orchard	-Would remove some acreage from producing hazelnut orchard	U-turn could need more right-of-way	-Possible RV parking lost -Possible excavation impacts	–U-turn could impact weigh station	-Would prevent farm equipment movement across highway	-Supports farm operations and access	-Supports farm operations	-Supports farm operations

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Plan Consistency	•	•		•	•	•	•	•	•	•	•
—land use and transportation plans	-CPA required to incorporate into county and SKATS TSPs	-CPA required to incorporate into county and SKATS TSPs	-CPA required to incorporate into county and SKATS TSPs	-CPA required to incorporate into county and SKATS TSPs	-CPA required to incorporate into county and SKATS TSPs	-CPA required to incorporate into county and SKATS TSPs	-No CPA required to incorporate into county and SKATS TSPs	-CPA required to incorporate into county TSP	-CPA required to incorporate into county TSP -Goal exception	-CPA required to incorporate into county TSP -Goal exception	-CPA required to incorporate into county TSP -Goal exception
Flexibility	•	1	•	•	•	•	•	•	•	•	•
—potential to phase or separate —constrained funding	-Interchange can be built as final phase after local access roads – interchange by itself probably not phaseable	-Interchange can be built as final phase after local access roads – interchange by itself probably not phaseable	-Interchange can be built as final phase after local access roads – interchange by itself probably not phaseable	-Interchange can be built as final phase after local access roads – interchange by itself probably not phaseable	-Component can be a phase of a larger project but not phaseable by itself	-Component can be a phase of a larger project but not phaseable by itself	-Component can be a phase of a larger project and is phaseable by itself	-component can be a phase of a larger project but not phaseable by itself	-component can be a phase of a larger project but not phaseable by itself	-component can be a phase of a larger project but not phaseable by itself	-component can be a phase of a larger project and also phaseable by itself
Cost	-•	-•	-•	-•	-•	_(-•	-•	_(_(-•
multiple funding sourcesbenefit/cost ratiocost effective	-Similar to others	–Similar to others	-Similar to others	-Similar to others	-Low cost -Pavement	-High cost -Excavation	-Low cost -Paint	-Median cost only	-Structure and frontage road costs	-Structure cost	-Provides movement without structure cost but requires frontage road

Directly/positively meets intent of criterion
 Partially meets intent of criterion

O Does not support intent of criterion

N/A Not applicable—neither meets/doesn't meet intent of criterion

	SUMMARY - ORI	CH2M HILL DER-OF-MAG		TIMATE		
PROJECT: OR22/51 Expressway Management Plan North Backage Roads		To the second second	NAME/PHONE		SHEET	
DESIGN L	The second secon	LENGTH (MI.)		DATE	1 of	
	Todaway	CENTO TO (IIII.)	2.08	1/8/2008	1111111	J. Shamrell
NO.	ITEM	UNIT	UNIT COST	QUANTITY		COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	\$543,000	0.00	\$	
2	Bike Boulevard	Mi.	\$102,000	0.00	\$	
3	New Roadway	Lane-Mi.	\$455,000	5.89	\$	2,681,466.67
4	Overlay Existing Roadway	Lane-Mi.	\$66,000	0.00	\$	7.1
5 6	Reconstruct Existing Roadway	Lane-Mi.	\$483,000	0.00	8	
6	Intersection Widening	EA	\$46,000	0.00	\$	莱
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	S	23
8	Interconnect Signal	LS	\$30,000	0.00	\$	- 2
9	New Signal	EA	\$180,000	0.00	5	**
10	Signal Modifications	EA	\$60,000	0.00	S	2
11	Transit Enhancements	EA	\$25,000	0.00	S	
12	Traffic Calming (See note 1)	9%	200	0.0%	\$	3
13	Illumination	Mi.	\$260,000	0.00	S	8
14	Landscaping	Mi,	\$225,000	0.0000000000000000000000000000000000000	\$	89
15	Bridges (See note 2)	SF	\$200	0.00	\$	3
16	Walls	SF	\$50	0.00	\$	90
	SUBTOTA	4L			\$	2,681,466.67

	ADDITIONAL COSTS		RANGE	PERCENTAGE	CC	OST
	Construction Surveying		1.0-2.5%	2.5%	\$	67,000.00
ı	TP & DT		3.0-8.0%	8.0%	\$	215,000.00
	Mobilization		8.0-10.0%	10.0%	\$	268,000.00
	Erosion Control		0.5-2.0%	2.0%	\$	54,000.00
	Contingency		40.0%	40.0%	\$	1,073,000.00
	Escalation (per year) -Current Year		0.5-2.0%	0.0%	\$	-
3	TOTAL CONSTRUCTION COS	T			\$	4,358,466.67
	Design Engineering	13.0%	13.0%	13.0%	\$	567,000.00
	Construction Engineering	10.0%	10.0%	10.0%	\$	436,000.00
Ř	TOTAL PROJECT COST					\$5,361,467

	SUMMARY -	ORDER-OF-MAG	NITUDE EST	TIMATE			
PROJECT: OR22/51 Expressway Management Plan South Backage Roads		REFERENCE	NAME/PHONE		SHEET		
DESIGN LE	The state of the s				1 0	****	
KIND OF W	ORK: Roadway	LENGTH (MI.)	1,77	1/8/2008	NAN	J. Shamrell	
NO.	ITEM	UNIT	UNIT COST	QUANTITY		COST	
1	Curb, Gutter, Sidewalks & Drainag	je Mi.	\$543,000	0.00	\$	+:	
2	Bike Bouleyard	ML	\$102,000	0.00	\$	÷.	
3	New Roadway	Lane-Mi.	\$455,000	5.02	\$	2,281,825.00	
4	Overlay Existing Roadway	Lane-Mi.	\$66,000	0.00	\$	m .m .ez	
5	Reconstruct Existing Roadway	Lane-Mi.	\$483,000	0.00	\$	27	
6	Intersection Widening	EA	\$46,000	0.00	\$	**	
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	S	7.5	
7 8	Interconnect Signal	LS	\$30,000	0.00	\$	2	
9	New Signal	EA	\$180,000	0.00	\$	*5	
10	Signal Modifications	EA	\$60,000	0.00	\$	20	
11	Transit Enhancements	EA	\$25,000	0.00	\$	93	
12	Traffic Calming (See note 1)	96	- 51	0.0%	\$	70.	
13	Illumination	Mi.	\$260,000	0.00	\$	Ş	
14	Landscaping	Mi	\$225,000	0.00	\$	*6	
15	Bridges (See note 2)	SF	\$200	1,700.00	\$	340,000.00	
16	Walls	SF	\$50	0.00	\$		
	SUB	TOTAL	77		\$	2,621,825.00	

ADDITIONAL COSTS		RANGE	PERCENTAGE	CC	OST
Construction Surveying		1.0-2.5%	2.5%	\$	66,000.00
TP & DT		3.0-8.0%	8.0%	\$	210,000.00
Mobilization		8.0-10.0%	10.0%	S	262,000.00
Erosion Control		0.5-2.0%	2.0%	\$	52,000.00
Contingency		40.0%	40.0%	\$	1,049,000.00
Escalation (per year)		0.5-2.0%	0.0%		
-Current Year			0	\$	
TOTAL CONSTRUCTION C	COST			\$	4,260,825.00
Design Engineering	13.0%	13.0%	13.0%	S	554,000.00
Construction Engineering	10.0%	10.0%	10.0%	\$	426,000.00
TOTAL PROJECT C	OST	ir-	77		\$5,240,825

	SUMMARY - ORI	CH2M HILL		TIMATE	
PROJECT	OR22/51 Expressway Management Plan GWR-3		NAME/PHONE		SHEET
DESIGN L	The state of the s				1 of 1
KIND OF V	work: Roadway/Structure	LENGTH (MI.)	0.4	6/1/2007	NAME Geoff Hunsaker
NO.	ITEM	UNIT	UNIT COST	QUANTITY	COST
- 1	Curb, Gutter, Sidewalks & Drainage	Mi.	\$543,000	0.00	\$0
2	Bike Boulevard	Mi.	\$102,000	0.00	\$0
3	New Roadway	Lane-Mi.	\$416,000	0.02	\$8,320
2 3 4 5 6 7	Overlay Existing Roadway	Lane-Mi.	\$66,000	0.00	\$0
5	Reconstruct Existing Roadway	Lane-Mi.	\$445,000	0.00	\$0
6	Intersection Widening	EA	\$46,000	0.00	\$0
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	\$0
8 9	Interconnect Signal	LS	\$30,000	0.00	\$0
9	New Signal	EA	\$180,000	0.00	\$0 \$0
10	Signal Modifications	EA	\$60,000	0.00	\$0
11	Transit Enhancements	EA	\$12,000	2.00	\$24,000
12	Traffic Calming (See note 1)	%	7.5 T. 10.5 T.	0.0%	\$0
13	Illumination	Mi.	\$260,000	0.00	\$0
14	Landscaping	Mi.	\$225,000	0.00	\$0
15	Bridges (See note 2)	SF	\$200	0.00	\$0
16	Walls	SF	\$50	0.00	\$0
	SUBTOTA	1L			\$32,320

	ADDITIONAL COSTS		RANGE	PERCENTAGE	COST
	Construction Surveying		1.0-2.5%	2.5%	\$1,000
	TP & DT		3.0-8.0%	8.0%	\$3,000
	Mobilization		8.0-10.0%	10.0%	\$3,000
1	Erosion Control		0.5-2.0%	2.0%	\$1,000
	Contingency		40.0%	40.0%	\$13,000
	Escalation (per year) -Current Year		0.5-2.0%	0.0%	\$0
	TOTAL CONSTRUCTION	COST			\$53,320
	Design Engineering	13.0%	13.0%	0.0%	\$7,000
	Construction Engineering	10.0%	10.0%	0.0%	\$5,000
	TOTAL PROJECT O	OST			\$65,320

	SUMMARY - ORI	CH2M HILL		TIMATE	
PROJECT	OR22/51 Expressway Management Plan GWR-4a		NAME/PHONE		SHEET
DESIGN L					1 of 1
KIND OF V	work: Roadway/Structure	LENGTH (MI.)	0.4	6/1/2007	NAME Geoff Hunsaker
NO.	ITEM	UNIT	UNIT COST	QUANTITY	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	\$543,000	0.00	\$0
2	Bike Boulevard	Mi.	\$102,000	0.00	\$0
3	New Roadway	Lane-Mi,	\$1,637,000	0.08	\$130,960
4	Overlay Existing Roadway	Lane-Mi.	\$66,000	0.00	\$0
5	Reconstruct Existing Roadway	Lane-Mi.	\$1,665,000	0.72	\$1,198,800
5 6	Intersection Widening	EA	\$46,000	0.00	\$0
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	\$0
8 9	Interconnect Signal	LS	\$30,000	0.00	\$0
9	New Signal	EA	\$180,000	0.00	\$0
10	Signal Modifications	EA	\$60,000	0.00	\$0
11	Transit Enhancements	EA	\$12,000	1.00	\$12,000
12	Traffic Calming (See note 1)	%		0.0%	\$0
13	Illumination	Mi.	\$260,000	0.00	\$0
14	Landscaping	Mi,	\$225,000	0.00	\$0
15	Bridges (See note 2)	SF	\$200	8,000.00	\$1,600,000
16	Walls	SF	\$50	0.00	\$0
	SUBTOTA	AL.			\$2,941,760

	ADDITIONAL COSTS		RANGE	PERCENTAGE	COST
	Construction Surveying		1.0-2.5%	2.5%	\$74,000
ı	TP & DT		3.0-8.0%	8.0%	\$235,000
ı	Mobilization		8.0-10.0%	10.0%	\$294,000
	Erosion Control		0.5-2.0%	2.0%	\$59,000
	Contingency		40.0%	40.0%	\$1,177,000
	Escalation (per year)		0,5-2.0%	0.0%	
	-Current Year			0	\$0
	TOTAL CONSTRUCTION CO	OST			\$4,780,760
	Design Engineering	13.0%	13.0%	0.0%	\$621,000
	Construction Engineering	10.0%	10.0%	0.0%	\$478,000
	TOTAL PROJECT CO	ST			\$5,879,760

	SUMMARY - ORI	CH2M HILL DER-OF-MAG		TIMATE	
PROJECT	Management Plan GWR-4b	REFERENCE	NAME/PHONE		SHEET
DESIGN L	The state of the s				1 of 1
KIND OF V	work: Roadway/Structure	LENGTH (MI.)	0.4	6/1/2007	NAME Geoff Hunsaker
NO.	ITEM	UNIT	UNIT COST	QUANTITY	COST
- 1	Curb, Gutter, Sidewalks & Drainage	Mi,	\$543,000	0.00	\$0
2	Bike Boulevard	Mi.	\$102,000	0.00	\$0
3	New Roadway	Lane-Mi,	\$1,637,000	0.08	\$130,960
4	Overlay Existing Roadway	Lane-Mi.	\$66,000	0.00	\$0
5 6 7	Reconstruct Existing Roadway	Lane-Mi.	\$1,665,000	0.72	\$1,198,800
6	Intersection Widening	EA	\$46,000	0.00	\$0
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	\$0
8 9	Interconnect Signal	LS	\$30,000	0.00	\$0
9	New Signal	EA	\$180,000	0.00	\$0
10	Signal Modifications	EA	\$60,000	0.00	\$0
11	Transit Enhancements	EA	\$12,000	0.00	\$0
12	Traffic Calming (See note 1)	%		0.0%	\$0
13	Illumination	Mi.	\$260,000	0.00	\$0
14	Landscaping	Mi.	\$225,000	0.00	SC
15	Bridges (See note 2)	SF	\$200	8,000.00	\$1,600,000
16	Walls	SF	\$50	0.00	\$0
	SUBTOTA	AL.			\$2,929,760

	ADDITIONAL COSTS		RANGE	PERCENTAGE	COST
	Construction Surveying		1.0-2.5%	2.5%	\$73,000
ı	TP & DT		3.0-8.0%	8.0%	\$234,000
1	Mobilization		8.0-10.0%	10.0%	\$293,000
	Erosion Control		0.5-2.0%	2.0%	\$59,000
L	Contingency		40.0%	40.0%	\$1,172,000
	Escalation (per year) -Current Year		0.5-2,0%	0.0%	\$0
	TOTAL CONSTRUCTION (COST			\$4,760,760
	Design Engineering	13.0%	13.0%	0.0%	\$619,000
	Construction Engineering	10.0%	10.0%	0.0%	\$476,000
9	TOTAL PROJECT C	OST			\$5,855,760

	SUMMARY - ORI	CH2M HILL DER-OF-MAG		TIMATE	
PROJECT		#100 APRIL 000 APR	NAME/PHONE		SHEET
DESIGN L	EVEL: Preliminary			0.04.0000	1 of 1
KIND OF V	work: Roadway/Structure	LENGTH (ML)	ė	DATE 1/8/2008	NAME J. Shamrell
NO.	ITEM	UNIT	UNIT COST	QUANTITY	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	\$543,000	0.00	\$0
2	Bike Boulevard	Mi.	\$102,000	0.00	\$0
3	New Roadway	Lane-Mi.	\$455,000	1.40	\$638,723
4	Overlay Existing Roadway	Lane-Mi.	\$66,000	2.34	\$154,519
5	Reconstruct Existing Roadway	Lane-Mi.	\$483,000	0.00	\$0
6	Intersection Widening	EA	\$46,000	0.00	\$0
5 6 7 8 9	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	\$0
8	Interconnect Signal	LS	\$30,000	0.00	\$0
9	New Signal	EA	\$180,000	0.00	\$0
10	Signal Modifications	EA	\$60,000	0.00	\$0
11	Transit Enhancements	EA	\$12,000	0.00	\$0
12	Traffic Calming (See note 1)	%		0.0%	\$6
13	Illumination	Mi.	\$260,000	0.00	\$0
14	Landscaping	Mi.	\$225,000	0.00	\$0
15	Bridges (See note 2)	SF	\$200	0.00	\$0
16	Walls	SF	\$50	0.00	\$0
0	SUBTOTA	AL.			\$793,242

ADDITIONAL COSTS		RANGE	PERCENTAGE	COST
Construction Surveying		1.0-2.5%	2.5%	\$20,000
TP & DT		3.0-8.0%	8.0%	\$63,000
Mobilization		8.0-10.0%	10.0%	\$79,000
Erosion Control		0.5-2.0%	2.0%	\$16,000
Contingency		40.0%	40.0%	\$317,000
Escalation (per year) -Current Year		0.5-2.0%	0.0%	\$0
TOTAL CONSTRUCTION C	OST		WT	\$1,288,242
Design Engineering	13.0%	13.0%	13.0%	\$167,000
Construction Engineering	10.0%	10.0%	10.0%	\$129,000
TOTAL PROJECT C	OST	10.000	* JUNEAU .*	\$1,584,242

		CH2M HIL	ı		
	SUMMARY - ORI	DER-OF-MA	GNITUDE ES	STIMATE	
PROJECT	OR22/51 Expressway Management Plan INH-3	REFERENCE	NAME/PHONE		SHEET
	evel: Preliminary	1			1 of 1
KIND OF V	vork: Roadway/Structure	LENGTH (MI.	1.52	6/1/2007	NAME Darren Hippenstiel
NO.	ITEM	UNIT	UNIT COST	QUANTITY	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	\$543,000	1.52	\$825,360
2	Bike Boulevard	Mi.	\$102,000	0.00	\$0
3	New Roadway	Lane-Mi.	\$835,000	5.61	\$4,684,350
3 4	Overlay Existing Roadway	Lane-Mi.	\$66,000	0.00	\$0
5 7 8 9	Reconstruct Existing Roadway	Lane-Mi.	\$863,000	0.00	\$0
6	Intersection Widening	EA	\$46,000	0.00	\$0
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	\$0
8	Interconnect Signal	LS	\$30,000	0.00	\$0
9	New Signal	EA	\$180,000	0.00	\$0
10	Signal Modifications	EA	\$60,000	0.00	\$0
11	Transit Enhancements	EA	\$25,000	0.00	\$0
12	Traffic Calming (See note 1)	%	-	0.0%	\$0
13	Illumination	Mi.	\$260,000	1.52	\$395,200
14	Landscaping	Mi.	\$225,000	1.52	\$342,000
15	Bridges (See note 2)	SF	\$200	12,300.00	\$2,460,000
16	Walls	SF	\$50	1,500.00	\$75,000
	SUBTOTAL	4)			\$8,781,910

	ADDITIONAL COSTS		RANGE	PERCENTAGE	COST
	Construction Surveying		1.0-2.5%	2.5%	\$220,000
	TP & DT		3.0-8.0%	8.0%	\$703,000
1	Mobilization		8.0-10.0%	10.0%	\$878,000
	Erosion Control		0.5-2.0%	2.0%	\$176,000
	Contingency		40.0%	40.0%	\$3,513,000
	Escalation (per year) -Current Year		0.5-2.0%	0.0%	\$0
	TOTAL CONSTRUCTION C	OST			\$14,271,910
	Design Engineering	13.0%	13.0%	0.0%	\$1,855,000
	Construction Engineering	10.0%	10.0%	0.0%	\$1,427,000
	TOTAL PROJECT CO	OST	*	1	\$17,553,910

	SUMMARY - ORI	CH2M HIL DER-OF-MA	200	STIMATE	
PROJECT	OR22/51 Expressway Management Plan INH-4		NAME/PHONE		SHEET
	EVEL: Preliminary				1 of 1
KIND OF V	vork: Roadway/Structure	LENGTH (MI.	.23	6/1/2007	NAME Darren Hippenstiel
NO.	ITEM	UNIT	UNIT COST	QUANTITY	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	\$543,000	1.23	\$667,890
2	Bike Boulevard	Mi.	\$102,000	0.00	\$0
3	New Roadway	Lane-Mi.	\$927,000	4.59	\$4,254,930
4	Overlay Existing Roadway	Lane-Mi.	\$66,000	0.00	\$0
5 6	Reconstruct Existing Roadway	Lane-Mi.	\$955,000	0.00	\$0
6	Intersection Widening	EA	\$46,000	0.00	\$0
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	\$0
8 9	Interconnect Signal	LS	\$30,000	0.00	\$0
9	New Signal	EA	\$180,000	0.00	\$0 \$0
10	Signal Modifications	EA	\$60,000	0.00	\$0
11	Transit Enhancements	EA	\$25,000	0.00	\$0
12	Traffic Calming (See note 1)	%	The state of the s	0.0%	\$0
13	Illumination	Mi.	\$260,000	1.23	\$319,800
14	Landscaping	Mi	\$225,000	1.23	\$276,750
15	Bridges (See note 2)	SF	\$200	12,300.00	\$2,460,000
16	Walls	SF	\$50	3,000.00	\$150,000
3	SUBTOTAL				\$8,129,370

г	ADDITIONAL COSTS		RANGE	PERCENTAGE	COST
	Construction Surveying		1.0-2.5%	2.5%	\$203,000
1	TP & DT		3.0-8.0%	8.0%	\$650,000
	Mobilization		8.0-10.0%	10.0%	\$813,000
	Erosion Control		0.5-2.0%	2.0%	\$163,000
	Contingency		40.0%	40.0%	\$3,252,000
	Escalation (per year) -Current Year		0.5-2.0%	0.0%	\$0
	TOTAL CONSTRUCTION CO	OST			\$13,210,370
	Design Engineering	13.0%	13.0%	0.0%	\$1,717,000
	Construction Engineering	10.0%	10.0%	0.0%	\$1,321,000
	TOTAL PROJECT CO	OST			\$16,248,370

	SUMMARY - ORI	CH2M HIL	0.00	STIMATE	
PROJECT	Management Plan INH-5	REFERENCE	NAME/PHONE		SHEET 1 of 1
DESIGN LEVEL: Preliminary KIND OF WORK: Roadway/Structure		LENGTH (MI.)	: .81	6/1/2007	NAME Darren Hippenstiel
NO.	ITEM	UNIT	UNIT COST	QUANTITY	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	\$543,000	1.81	\$982,830
2	Bike Boulevard	Mi.	\$102,000	0.00	SO
3	New Roadway	Lane-Mi.	\$835,000	6.08	\$5,076,800
4	Overlay Existing Roadway	Lane-Mi.	\$66,000	0.00	SO
5 6	Reconstruct Existing Roadway	Lane-Mi.	\$863,000	0.00	SO
6	Intersection Widening	EA	\$46,000	0.00	\$0
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	SO
8	Interconnect Signal	LS	\$30,000	0.00	SO
9	New Signal	EA	\$180,000	0.00	SO
10	Signal Modifications	EA	\$60,000	0.00	\$0
11	Transit Enhancements	EA	\$25,000	0.00	\$0
12	Traffic Calming (See note 1)	%		0.0%	\$0
13	Illumination	Mi.	\$260,000	1.B1	\$470,600
14	Landscaping	Mi.	\$225,000	1.81	\$407,250
15	Bridges (See note 2)	SF	\$200	12,300.00	\$2,460,000
16	Walls	SF	\$50	1,500.00	\$75,000
	SUBTOTAL				\$9,472,480

	ADDITIONAL COSTS		RANGE	PERCENTAGE	COST
	Construction Surveying		1.0-2.5%	2.5%	\$237,000
1	TP & DT		3.0-8.0%	8.0%	\$758,000
1	Mobilization		8.0-10.0%	10.0%	\$947,000
	Erosion Control		0.5-2.0%	2.0%	\$189,000
	Contingency		40.0%	40.0%	\$3,789,000
Í	Escalation (per year)		0.5-2.0%	0.0%	CORECOSE.
	-Current Year			0	\$0
	TOTAL CONSTRUCTION C	OST			\$15,392,480
	Design Engineering	13.0%	13.0%	0.0%	\$2,001,000
	Construction Engineering	10.0%	10.0%	0.0%	\$1,539,000
	TOTAL PROJECT CO	OST	*		\$18,932,480

	SUMMARY - ORI	CH2M HIL		STIMATE	
PROJECT	Management Plan INH-6	REFERENCE	NAME/PHONE	194000000000000000000000000000000000000	SHEET
-	EVEL: Preliminary				1 of 1
KIND OF V	vork: Roadway	LENGTH (MI.)	8	1/9/2008	NAME Darren Hippenstiel
NO.	ITEM	UNIT	UNIT COST	QUANTITY	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	\$543,000	1,68	\$912,240
2	Bike Boulevard	Mi,	\$102,000	0.00	\$0
3	New Roadway	Lane-Mi.	\$836,000	6.06	\$5,066,160
4	Overlay Existing Roadway	Lane-Mi.	\$66,000	0.00	\$0
5	Reconstruct Existing Roadway	Lane-Mi.	\$864,000	0.00	\$0
6	Intersection Widening	EA	\$46,000	0.00	\$0
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	\$0
8	Interconnect Signal	LS	\$30,000	0.00	\$0
9	New Signal	EA	\$180,000	0.00	SO
10	Signal Modifications	EA	\$60,000	0.00	\$0
11	Transit Enhancements	EA	\$25,000	0.00	\$0
12	Traffic Calming (See note 1)	%		0.0%	\$0
13	Illumination	Mi.	\$260,000	1.68	\$436,800
14	Landscaping	Mi.	\$225,000	1.68	\$378,000
15	Bridges (See note 2)	SF	\$200	12,300.00	\$2,460,000
16	Walls	SF	\$50	1,500.00	\$75,000
ā.	SUBTOTAL	S			\$9,328,200

	ADDITIONAL COSTS		RANGE	PERCENTAGE	COST
	Construction Surveying		1.0-2.5%	2.5%	\$233,000
	TP & DT		3.0-8.0%	8.0%	\$746,000
1	Mobilization		8.0-10.0%	10.0%	\$933,000
1	Erosion Control		0.5-2.0%	2.0%	\$187,000
	Contingency		40.0%	40.0%	\$3,731,000
	Escalation (per year)		0.5-2.0%	0.0%	
	-Current Year			0	\$0
1	TOTAL CONSTRUCTION C	OST			\$15,158,200
$\overline{}$	Design Engineering	13.0%	13.0%	0.0%	\$1,971,000
	Construction Engineering	10.0%	10.0%	0.0%	\$1,516,000
	TOTAL PROJECT CO	OST			\$18,645,200

		CH2M HIL	T.				
	SUMMARY - ORI	DER-OF-MA	GNITUDE ES	STIMATE			
PROJECT	 OR22/51 Expressway Management Plan DFR-2 	REFERENCE	NAME/PHONE		SHEE	т	
DESIGN L	EVEL: Preliminary		100000-1000100-001	Healt	1 of	1	
KIND OF WORK: Roadway		LENGTH (MI.)	E.	DATE 1/8/2008	NAME J. Shamrell		
NO.	ITEM	UNIT	UNIT COST	QUANTITY		COST	
1	Curb, Gutter, Sidewalks & Drainage	Mi.	\$543,000	0.00	S		
2	Bike Boulevard	Mi.	\$102,000	0.00	S		
3	New Roadway	Lane-Mi.	\$455,000	1.00	S	455,735.35	
4	Overlay Existing Roadway	Lane-Mi.	\$66,000	2.31	\$	152,712.50	
5	Reconstruct Existing Roadway	Lane-Mi.	\$483,000	0.00	S	CONTRACTOR (1997)	
6	Intersection Widening	EA	\$46,000	0.00	S		
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	S	-	
8	Interconnect Signal	LS	\$30,000	0.00	\$.5	
9	New Signal	EA	\$180,000	0.00	S		
10	Signal Modifications	EA	\$60,000	0.00	\$	-	
11	Transit Enhancements	EA	\$25,000	0.00	\$	*	
12	Traffic Calming (See note 1)	96		0.0%	\$	2	
13	Illumination	Mi.	\$260,000	0.00	\$	*	
14	Landscaping	Mi.	\$225,000	0.00	S		
15	Bridges (See note 2)	SF	\$200	0.00	\$	-	
16	Walls	SF	\$50	0.00	\$	-	
	SUBTOTAL				\$	608,447.85	

$\overline{}$	ADDITIONAL COSTS		RANGE	PERCENTAGE	COS	ST
	Construction Surveying		1.0-2.5%	2.5%	\$	15,000.00
1	TP & DT		3.0-8.0%	8.0%	\$	49,000.00
1	Mobilization		8.0-10.0%	10.0%	\$	61,000.00
	Erosion Control		0.5-2.0%	2.0%	\$	12,000.00
	Contingency		40.0%	40.0%	\$	243,000.00
	Escalation (per year) -Current Year		0.5-2.0%	0.0%	\$	3
	TOTAL CONSTRUCTION CO	OST	-1-	0 0	\$	988,447.85
***************************************	Design Engineering	13.0%	13.0%	13.0%	\$	128,000.00
2	Construction Engineering	10.0%	10.0%	10.0%	\$	99,000.00
	TOTAL PROJECT CO		\$1,215,448			

Created; 6/4/2007 Printed: 1/9/2008

		CH2M HILL					
	SUMMARY - ORI	DER-OF-MAG	NITUDE EST	IMATE			
PROJECT: OR22/51 Expressway Management Plan DFR-4 DESIGN LEVEL: Preliminary KIND OF WORK: Roadway		20022222222	124000000000000				
		REFERENCE	NAME/PHONE		1 of 1 NAME J. Shamrell		
				2122			
		LENGTH (MI.)	5	1/8/2008			
NO.	ITEM	UNIT	UNIT COST	QUANTITY		COST	
1	Curb, Gutter, Sidewalks & Drainage	Mi.	\$543,000	0.00	\$		
2	Bike Boulevard	Mi.	\$102,000	0.00	\$	37	
3	New Roadway	Lane-Mi.	\$715,000	0.39	\$	278,850.00	
4	Overlay Existing Roadway	Lane-Mi.	\$66,000	0.00	\$	120	
5	Reconstruct Existing Roadway	Lane-Mi.	\$743,000	0.00	\$		
6	Intersection Widening	EA	\$46,000	0.00	\$	3.70	
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	\$		
2 3 4 5 6 7 8 9	Interconnect Signal	LS	\$30,000	0.00	\$	1(4)	
9	New Signal	EA	\$180,000	0.00	\$	-	
10	Signal Modifications	EA	\$60,000	0.00	\$		
11	Transit Enhancements	EA	\$25,000	0.00	\$	3.00	
12	Traffic Calming (See note 1)	%		0.0%	\$	3	
13	Illumination	Mi.	\$260,000	0.00	\$	3.90	
14	Landscaping	Mi.	\$225,000	0.00	\$	147	
15	Bridges (See note 2)	SF	\$300	5,650.00	\$	1,695,000.00	
16	Walls	SF	\$50	15,736.00	\$	786,800.00	
	SUBTOTA	AL.			1.5	2,760,650.00	

ADDITIONAL COSTS		RANGE	PERCENTAGE	COST		
Construction Surveying		1.0-2.5%	2.5%	\$	69,000.00	
TP & DT		3.0-8.0%	8.0%	\$	221,000.00	
Mobilization		8.0-10.0%	10.0%	\$	276,000.00	
Erosion Control		0.5-2.0%	2.0%	\$	55,000.00	
Contingency	Contingency				1,104,000.00	
Escalation (per year) -Current Year		0.5-2.0%	0.0%	\$	20	
TOTAL CONSTRUCTION COST				\$	4,485,650.00	
Design Engineering	13.0%	13.0%	13.0%	\$	583,000.00	
Construction Engineering	10.0%	10.0%	10.0%	\$	449,000.00	
TOTAL PROJECT COST						

	SUMMARY - ORI	CH2M HIL	3.75	STIMATE				
PROJECT: OR22/51 Expressway Management Plan DFR-7		1000 CO	NAME/PHONE		SHEE			
	DESIGN LEVEL: Preliminary				1 of			
KIND OF WORK: Roadway		LENGTH (MI.)	#3	1/8/2008	NAME J. Shamrell			
NO.	ITEM	UNIT	UNIT COST	QUANTITY	1	COST		
1	Curb, Gutter, Sidewalks & Drainage	Mi,	\$543,000	0.00	\$	+		
2	Bike Boulevard	Mi.	\$102,000	0.00	\$			
3	New Roadway	Lane-Mi.	\$455,000	0.61	\$	277,641.92		
4	Overlay Existing Roadway	Lane-Mi.	\$66,000	3.49	\$	230,625.00		
3 4 5 6 7	Reconstruct Existing Roadway	Lane-Mi.	\$483,000	0.00	\$	C-Santana Santa		
6	Intersection Widening	EA	\$46,000	0.00	\$			
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	\$	2		
8	Interconnect Signal	LS	\$30,000	0.00	\$	-		
9	New Signal	EA	\$180,000	0.00	\$			
10	Signal Modifications	EA	\$60,000	0.00	\$			
11	Transit Enhancements	EA	\$25,000	0.00	\$	*		
12	Traffic Calming (See note 1)	%		0.0%	\$	2		
13	Illumination	Mi.	\$260,000	0.00	\$	9		
14	Landscaping	Mi.	\$225,000	0.00	5	-		
15	Bridges (See note 2)	SF	\$200	0.00	S	2		
16	Walls	SF	\$50	0.00	\$			
	SUBTOTAL							

	ADDITIONAL COSTS		RANGE	PERCENTAGE	COS	ST
	Construction Surveying		1.0-2.5%	2.5%	5	13,000.00
	TP & DT		3.0-8.0%	8.0%	S	41,000.00
1	Mobilization		8.0-10.0%	10.0%	S	51,000.00
1	Erosion Control		0.5-2.0%	2.0%	S	10,000.00
	Contingency		40.0%	40.0%	\$	203,000.00
	Escalation (per year) -Current Year		0.5-2.0%	0.0%	s	-
	TOTAL CONSTRUCTION C	OST			\$	826,266.92
	Design Engineering	13.0%	13.0%	13.0%	\$	107,000.00
	Construction Engineering	10.0%	10.0%	10.0%	\$	83,000.00
	TOTAL PROJECT CO		\$1,016,267			

Created; 6/4/2007 Printed: 1/9/2008

		CH2M HIL	L			
	SUMMARY - ORD	ER-OF-MA	GNITUDE E	STIMATE		
PROJECT:	OR22/51 Expressway					
	Management Plan DFR-7 Doaks					
	Ferry Left Turn	REFERENCE	NAME/PHONE		SHEET	
DESIGN LE	vel: Preliminary				1 of 1	
KIND OF W	ORK: Roadway	LENGTH (MI.)		DATE	NAME	
		80 88		1/8/2008	J.	. Shamrell
NO.	ITEM	UNIT	UNIT COST	QUANTITY		COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	\$543,000	9000000000000	\$	-
2	Bike Boulevard	Mi.	\$102,000		\$	
3	New Roadway	Lane-Mi.	\$455,000		\$	143,370.96
4	Overlay Existing Roadway	Lane-Mi.	\$66,000	1.75	\$	115,312.50
5	Reconstruct Existing Roadway	Lane-Mi.	\$483,000	0.00	\$	-
6	Intersection Widening	EA	\$46,000	0.00	\$) <u>-</u> 0
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	\$	-
8	Interconnect Signal	LS	\$30,000	0.00	\$	-
9	New Signal	EA	\$180,000	0.00	\$	-
10	Signal Modifications	EA	\$60,000	0.00	\$	-
11	Transit Enhancements	EA	\$25,000	0.00	\$	-
12	Traffic Calming (See note 1)	%	-	0.0%	\$	-
13	Illumination	Mi.	\$260,000	0.00	\$	-
14	Landscaping	Mi.	\$225,000	0.00	\$	5 .
15	Bridges (See note 2)	SF	\$200	0.00	\$	-
16	Walls	SF	\$50	0.00	\$	848
	SUBTOTAL				\$	258,683.46

ADDITIONAL COSTS		RANGE	PERCENTAGE	COST	
Construction Surveying		1.0-2.5%	2.5%	\$	6,000.00
TP & DT		3.0-8.0%	8.0%	\$	21,000.00
Mobilization	Mobilization				26,000.00
Erosion Control		0.5-2.0%	2.0%	\$	5,000.00
Contingency		40.0%	40.0%	\$	103,000.00
Escalation (per year)		0.5-2.0%	0.0%		
-Current Year			0	\$	(-)
TOTAL CONSTRUCTION COST				\$	419,683.46
Design Engineering	13.0%	13.0%	13.0%	\$	55,000.00
Construction Engineering	10.0%	10.0%	10.0%	\$	42,000.00
TOTAL PROJECT COST					\$516,683

	CH2M HILL									
	SUMMARY - ORD	ER-OF-MA	GNITUDE E	STIMATE						
PROJECT:	OR22/51 Expressway	I			I					
Management Plan DFR-7 Weigh					1					
	Station U-Turn	REFERENCE	NAME/PHONE		SHEET	į.				
DESIGN LE	EVEL: Preliminary	1			1 of 1					
KIND OF W	ORK: Roadway	LENGTH (MI.):		DATE	NAME					
				1/8/2008	J	. Shamrell				
NO.	ITEM	UNIT	UNIT COST	QUANTITY		COST				
1	Curb, Gutter, Sidewalks & Drainage	Mi.	\$543,000	0.00	\$	-				
2	Bike Boulevard	Mi.	\$102,000	0.00	\$	-				
3	New Roadway	Lane-Mi.	\$455,000	0.30	\$	134,270.96				
4	Overlay Existing Roadway	Lane-Mi.	\$66,000	1.75	\$	115,312.50				
5	Reconstruct Existing Roadway	Lane-Mi.	\$483,000	0.00	\$	-				
6	Intersection Widening	EA	\$46,000	0.00	\$	-				
7	Restriping Existing Roadway	Lane-Mi.	\$15,000	0.00	\$	-				
8	Interconnect Signal	LS	\$30,000	0.00	\$	-				
9	New Signal	EA	\$180,000	0.00	\$	-				
10	Signal Modifications	EA	\$60,000	0.00	\$	-				
11	Transit Enhancements	EA	\$25,000	0.00	\$	-				
12	Traffic Calming (See note 1)	%	-	0.0%	\$	-				
13	Illumination	Mi.	\$260,000	0.00	\$	-				
14	Landscaping	Mi.	\$225,000	0.00	\$	-				
15	Bridges (See note 2)	SF	\$200	0.00	\$	-				
16	Walls	SF	\$50	0.00	\$	1-				
	SUBTOTAL				\$	249,583.46				

ADDITIONAL COSTS		RANGE	PERCENTAGE	COST	
Construction Surveying		1.0-2.5%	2.5%	\$	6,000.00
TP & DT		3.0-8.0%	8.0%	\$	20,000.00
Mobilization	Mobilization				25,000.00
Erosion Control	Erosion Control				5,000.00
Contingency	Contingency				100,000.00
Escalation (per year)		0.5-2.0%	0.0%		
-Current Year			0	\$	-
TOTAL CONSTRUCTION COST				\$	405,583.46
Design Engineering	13.0%	13.0%	13.0%	\$	53,000.00
Construction Engineering	10.0%	10.0%	10.0%	\$	41,000.00
TOTAL PROJECT COST					\$499,583



Project Name	DFR 2						Region	2	Date:		6/3/07
Project on State High	say										
Route Number:	22	Hwy Name	WILLAMINA	-SALEM			MP From	MP 21.94	100	M	IP 22.14
Road Character	RURAL	Facility Type	OTHER HIG	HWAY		0					
County.	POLK	City	Salem			Crash	Data Flore	8/1/1999	to	71	31/2004
Harris Marie Control	VARIOUS DE LOS DE L		Lube Interested	N. Stein W. St. W.		i Ningala	cate to the second			a and a	52020333
Project Description	Connection to not	rth backage road, de	ecerenation tan	e, and cent		uge for	7/11/15/2003			io isia	no channe
Prepared By	Haregu Nemariam				Title		-	tation Engine	er		
Type of Target Crants	25		FIRE CONNERS CONTRACTORINA ID No.	Number of Target Crashes			Number of Provonstile Crashee	Economyo Value per Crash		Tota	Economic Value
POO Crashes			14	<total p<="" td=""><td>DO Crashe</td><td>15</td><td>7.8</td><td>513,000</td><td></td><td>5</td><td>102.000</td></total>	DO Crashe	15	7.8	513,000		5	102.000
			10 No.	*==\(\(\)\(\)\(\)\(\)	SURFEMITATIONS.		Type of Cras	* Proventor			- Andrews
	Coecrete Median Barrier (D1(2)41	1.0		10%	3.9		ash Types anh Types			
Countermeasure 2 Countermeasure 3			20.0 No		0%	0.0	- MICH	ann Types			
Countemeasure 4			No	-	0%	0.0	_				
Countenneasure 5			No		0%	0.0					
Moderate (Injury B) as	nd Minor Griver Ct. In	Oury Crashes	13	<==Total in	tury BSC C	cashes	83	\$55,000		5	488.000
110000000000000000000000000000000000000	and the terms of the same	ELECTRICAL COST	10 %	-3110/0/5/0	en e sassi a	100001001		t Presenter		-	
Countenneaure 1	Concrete Myden Barrier (D-6 5hy)	1.0		10%	4.2		ash Types			
Countermeasure 2		- 0	20.0		60%	4.2	All Co	ash Types	3		
Countennessure 5			No		0%	0.0					
Countenmeasure 4 Countenmeasure 5			No.		0%	0.0					
COLUMN SANCE S			- NG		Uni	0.0	_				
Patal and Severe (Inj.	uy A) Injury Crashin	F.	107411	<→Total F	Ayri & late	Crasties	Type of Gran	\$1,388,000	*	\$	-
Countermeasure 1			No.		0%	0:0	1,000 10 6010	distriction in			
Countermeasure 2			No.		0%	0.0	-				
Countminusure 3			No		0%	0.0	3.				
Countermeasure 4	8		100		0%	0.0					
Countermeasure 5			No.		0%	0.0					
Comprehe	nelve Economic Value:	per Granti	27	<crashe< td=""><td>s Tot</td><td>tal Cras</td><td>h Value for</td><td>60 Mont</td><td>hir: =</td><td>\$</td><td>560,000</td></crashe<>	s Tot	tal Cras	h Value for	60 Mont	hir: =	\$	560,000
Highway/Street Type	Urban	Runic									
All factities	P00 5	\$13,000		Annual f	Jenelits =	Total	Crash Value		5		112,000
	ucy (1) and Moor (Injur			Great Street			Months / 12	*			1111000
intentate or Freeway	\$39,000	\$51,000					010117510117111				
Other Blate Highway	\$41,000	\$65,000		1990	car specimens o	a new					45.000
Character and Ch	ind Severe (trany A) is	The second name of the second		ES	umated	Pro	ect Cos	t =	\$	1,2	15,000
otestide or Freeway Other Highway	\$694,000 \$689,000	\$1,352,000 \$1,350,000	B/C Ratio		Annual	Benefite	****	vorth Factor (1	0 or 20	увагв)	
							Estimated F	Project Cost			
Uniform Series Preser	t Warm Factor (451)	1	B/C Ratio		\$ 112.	.000		13.59	-		
10 years	20 years	i		5			1,215,000				1,25
TO POST II	ASS PORTE	ł					Sale Sayout				

- 1. Composite crash reductor factor calculated it more than one countermeasure is applied
- 2 Select a PWF for the We of countermeasure. See instructions
- 3 POO value is \$5,500 per cosh adjusted with an under reporting factor of 2.0. National Safety Council, 2006 estimates of value per crush
- 4 Economic costs per crash are calculated using 1996-2000 Oregon crash data and PHWA's Technical Advisory*Motor Vehicle Accident Costs. T 7570.2. October 31, 1994 apdated to 2004 dollars with GOP implicit price deflator.





Project Name	DFR 4						Region	2	Date		6/2/07
Project on State High	way										
Houte Number	22	Hwy Name	WILLAMINA	SALEM			MP From:	21,94	10	_	22.14
Road Character	RURAL	Facility Type	OTHER HIG	HWAY							
Gourty:	MORROW	City	Salem			Crash I	Data From	8/1/1999	50	7.	31/2004
Project Description	New roadway and	d undercrossing at S	pring Street o	onnecting n	orth and s	outh sic	se backage	roads.			
Prepared By	Harogu Nomarian	n			Title		Transpor	tation Engin	cor		
				7150701745				, ii			ACH!
Type of Target Crasho	242		Type Creater, 6. Chaylermonute ID No.	Number of Target Crashes		ů,	Number of Feventions Crashes	Value per Cresh		Tota	i Economic Value
PDO Crasives			14	← Total PE	Crasher	9	9.4	\$13,000	. 2	\$	122,000
Countesmont of	Constitution States	(S.C.Shu)	40 No		+000	42	Tigner of Crust				
	Concrete Median Service	(art, 4-Leg, CodestRane)	7.0		70%	4.7	The second second	ish Types ish Types	41		
Countempeasure 2		rest, wanty, consequential	No.	_	0%	0.0	PR CAS	ian i ypeo:			
Countempeasure 4			No.	-	0%	0.0	_				
Countempessure 5			No.		0%	0.0	-		-		
Moderate (Injury B) or			13	c—Total in	- 0100		10.7	555,000		s	186,000
woonate cirilory or at	id weor (injury C)	ripory distances	mino.	en-reith a.f.	ury sac c	rastres	Time of Class			-	2003/01
Countenmeasure t	Concrete Western Storner	DESM	1.0		10%	5.3	11.000	isti Types			
Countermeasure 2	Lott-Turn Bay, Linsignan,	red, Tilrearsection	9.0		80%	5.3	AE Cri	ish Types			
Countermeasure 3			No.		0%	0.0		7170			
Countimmessure 4			No.		0%	0.0			5		
Countermasure 5			No.		0%	0.0			-:		
Fatal and Severe (Inju	ry A) Youry Crashe	4		<==Total Fa	tot & InjA C	runnen	0.0	\$1,389,000		s	
- The state of the			EE Mar				Typer at Cross	Presented			
Countermeasure 1			No		0%	0.0					
Countermeasure 2			No.		0%	0.0	_				
Countempeasure 3			No.	_	0%	0.0	_				
Countermeasure 4 Countermeasure 5			No.		8%	0.0					
- Committee -	-		140			0.0					
Congretier	may Comonic Value	per Crash	27	<crashe< td=""><td>Total</td><td>al Crest</td><td>Value for</td><td>60 Mont</td><td>215 -</td><td>\$</td><td>706,000</td></crashe<>	Total	al Crest	Value for	60 Mont	215 -	\$	706,000
Fighway Street Type	Littan	Rust									
All facilities	FDO? 513,000	\$13,000		Annual B	ometics -	Tropas I	Srash Value		5		142,000
	ury B) and Minor drug			Armum D		THE COLUMN	donths / 12		-		
Interestate or Freeway	\$39,000	\$51,000				0.5559	CINTEL AUTO				
Other State Highway	\$41,000	\$50,000		-		S 1	2		25		
	nd Severe (Injury A) I			Es	umated	Proj	ect Cost	=	\$	5,5	18,000
interatate or Freeway	5664.000	\$1,352,000	10000000		Mariting	Torres Ed.	M. Thomas areas and	Carl Co. and I	CATALON STATE	and the	
Offier Highway	\$589,000	\$1,358,000	B/C Ratio	-	Annual E	senents	Estimated F	horth Factor (10 or 20	Aente)	
							Commerce !	referen erest			
Uniform Benes Preser	w Worth Factor (4%)		B/C Batto	=	\$ 142,0	000	- V 0	13.59	=		0.05
10 years	20 years	1				5.5	5,518,000				0.35
8.11	73.56	1									

- 1. Composite crash reduction factor carculated # more than one countermeasure is applied.
- 2. Select a PWF for the life of countermeasure. See instructions.
- 3. PDD value is \$8,500 per crash adjusted with an under reporting factor of 2.0. National Safety Gounce, 2000 estimates of value per chash-
- 4 Economic contribute crisis are calculated using 1998-2099 Ovegon crisis cans and FHWA's Technical Advisory "Motor Venicle Accident Cents. T 7570.2, October 51, 1994 updated to 2001 dollars with GOP implicit price deflator.



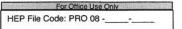
Project Name	DFR 7						Region	2	Date	_ 4	V2/07
Project on State High	way										
Routé Number	22	Hey Name:	WILLAMINA	SALEM			MFFton	21.94	50	_ :	22.14
Road Character	RURAL	Facility Type	OTHER HIGH	HWAY							
	No reservoirs		Tenantial Control	Calden							
County:	MORROW	City	Salem			Craen	Data Figure	8/1/1999	bo	773	1/2004
Project Discription	Realigned right-o	ut connection, paint	ed Island, cen	ter turn refi	ige for left	in at D	FR; WB cen	ter turn refug	ge and L	l-turn t	me at wei
Prepared By:	Haregu Nemarian	n.			Title		Transpor	tation Engine	100		
							7 60 1				WIR
			Total Caseline &	Number			Number of	Economic			
Type of Target Crash	66.5		Coursessmans III tile	Of Target Crasture			Preventable	Value per Crash			Eponomic
Type or Target Crisisin	rs		TH Her	Cinama			Crashes	Chesh			/Mix
PDO Crashes			14	<total p<="" td=""><td>DO Grashe</td><td>s</td><td>9.4</td><td>\$13,000</td><td>-</td><td>5</td><td>122,000</td></total>	DO Grashe	s	9.4	\$13,000	-	5	122,000
			(D.W)				Type of Cons				
	Concrete Median Banks:		1.0		-10%	4.7		uth Types			
	Lift-Turn Bay, Urangruitz	vd.+Log.CurbodRased	7.0		70%	4.7	All Cir	skh Types			
Countenneasure 3			No	-	9%	0.0					
Countempossure 4			No		0%	0.0					
Countermeasure 5			No.	-	0%	0.0					
Moderatir (Injury B) ar	nd Minor (Injury C) II	'yury C≥ashes	13	<total in<="" td=""><td>piry B&C C</td><td>rashes</td><td>1 10.7</td><td>\$55,000</td><td>-</td><td>5</td><td>586,000</td></total>	piry B&C C	rashes	1 10.7	\$55,000	-	5	586,000
TRACK INVASOR CONTRACTORS	New York and American Services	ACRES (CO.)	ID No.			1.001	Type of Crass				
	Contrate Median Signer		1.0	-	10%	5.3		non Types	- 2		
	Left-Tiefs Blog, Shoopney	DE, 1-PRESIDENT	9.0		80%	5.3	All Cri	ash Types	ë		
Countermeasure 3 Countermeasure 4			Np.		0%	0.0					
Countermousure 5			No.		0%	0.0					
Cantennosous 2			- NIS		97%	4.0	_				
Futal and Severe (hij)	iry A) Injury Crashei			<==Total F	atai & InjA (Crawhee		\$1,359,000	=	\$	13
Countermeasure 1	7		No.		0%	0.0	Type of Crise	t-constant.			
Countermeasure 2		- 1	No		0%	0.0	-				
Countermassure 3			No	-	0%	0.0	_				
Countermeasure 4			No.		024	0.0	_				
Countermeasure 5			No.		0%	0.0					
Talance American			***		er there		n a stantanto	NATI VALUE			
THE RESIDENCE OF THE PARTY OF T	III WS Economic Value	A STATE OF THE PARTY OF THE PAR	27	<==Crashe	8 700	al Cras	Value for	60 Mont	115	- 8:	708,000
Highway Street Type	PDD	Flutur									
All facilities	\$13,000	\$13,000		Annual F	Senefits =	Total	Crash Value		5		142,000
	iny 8) and Mnor (mu			S CONTRACT	CONTRACTOR OF THE PARTY OF THE		Months (12		-17-		1,10000
Interstate or Freeway	\$39,000	\$51,000									
Other State Highway	\$41,000	\$55,000		17841	VECKEY ST			200 000	94	negation:	
	ind Severe Onjury A) is			Es	itimatec	Proj	ect Cost	9. 9.	S	1,0	16,000
Ortenzale or Freemay	\$594,000	\$1,352,000	B0000		Annual	Janette	V Concentit	leadin Company 41	I Proper more	Laborate T	
Other Highway	\$689,000	\$1,359,000	B/C Ratio		AUTHURS	senenti	Estimated P	forth Factor (1	0 or 20	Ameria)	
							Catalana and a	roper com			
Unitem Sense Presen	n Worth Factor (4%)	1	B/C Ratio		\$ 1423	000	× ×	8.11			
		1	200	S 12	- 1-67		1,016,000	45.5	5 074	15	1.13
10 years	20 years					- 4	TO LETTO				

- 1. Composite costs reduction factor calculated if more from one countermeasure is applied
- 2. Select a PWF for the life of countermeasure. See instructions
- 3 POO value is \$6,500 per crash adjusted with an under reporting factor of 2.0. Natural Safety Chancé, 2000 estimates of value per crash.
- Economic costs per clash are opcurated using 1996-2000 Oregon crash data and FHWA's Technical Advasory Motor Vehicle Accident Costs, T 7570.2. October 31, 1994 apdated to 2001 dollars with GDP implicit price deflator.



Project Name:	DFR 7 (U-Turn Only)				8	Region:	2	Date:	6/2/07
Project on State High	way									
Route Number:	22	Hwy Name:	WILLAMINA	-SALEM			MP From:	21.94	to	22.14
Road Character:	RURAL	Facility Type:	OTHER HIGH	HWAY						
County:	MORROW	City:	Salem			Crash	Data From:	8/1/1999	to	7/31/2004
Project Description:	WB center turn refu	ige and U-turn land	e at weigh stat	tion.						
Prepared By:	Haregu Nemariam				Title:		Transpor	tation Engine	er	
							A	В		A*B
Type of Target Crashe	es		Total Crashes & Countermeasure ID No.	Number of Target Crashes			Number of Preventable Crashes	Economic Value per Crash		Total Economi Value
PDO Crashes			14 ID No.	<==Total Pl	OO Crashe	es	9.4 Type of Crasi	\$13,000	=	\$ 122,000
Countermeasure 1	Concrete Median Barrier (3-6	S' Shy)	1.0		-10%	4.7		ash Types		
Countermeasure 2	Left-Turn Bay, Unsignalized,	4-Leg, Curbed/Raised	7.0		70%	4.7		ash Types		
Countermeasure 3			No.		0%	0.0				
Countermeasure 4			No.	5500	0%	0.0				
Countermeasure 5			No.		0%	0.0	2016/01/05	digital participation of		
Moderate (Injury B) ar	nd Minor (Injury C) Inju	iry Crashes	13 ID No.	<==Total In	jury B&C C	Crashes	1 10.7 Type of Crasi	\$55,000	=	\$ 586,000
Countermeasure 1	Concrete Median Barrier (3-6	6' Shy)	1.0		10%	5.3		ash Types		
Countermeasure 2	Left-Turn Bay, Unsignalized,	T-Intersection	9.0		80%	5.3	All Cra	ash Types		
Countermeasure 3			No.		0%	0.0				
Countermeasure 4		uun yhteest lin santal	No.		0%	0.0		110		
Countermeasure 5			No.		0%	0.0	el) a glumini			
Fatal and Severe (Inju	ury A) Injury Crashes		ID No.	<==Total Fa	atal & InjA	Crashes	1 0.0 Type of Crass	\$1,359,000	=	\$ -
Countermeasure 1			No.		0%	0.0	Type or Crasi	7 Teverned		
Countermeasure 2			No.		0%	0.0				
Countermeasure 3			No.		0%	0.0				
Countermeasure 4			No.		0%	0.0				
Countermeasure 5			No.		0%	0.0				
Compreher	nsive Economic Value pe	r Crash	27	<==Crashe	s To	tal Cras	h Value for	60 Mont	hs =	\$ 708,000
Highway/Street Type	Urban	Rural								
All facilities	PDO ³ \$13,000	612.000		Annual E	enefits =	Total	Crook Volue	2 222	c	142.000
	jury B) and Minor (Injury (\$13,000		Alliuai D	enents =		Crash Value Months / 12	_ =	\$	142,000
Interstate or Freeway	\$39,000	\$51,000								
Other State Highway	\$41,000	\$55,000		<u>200</u> 0					12	
	and Severe (Injury A) Inju			Es	timated	d Pro	ect Cost	: =	\$	500,000
Interstate or Freeway	\$694,000	\$1,352,000	D/C 7		A	Dan-ti	V Dec	lauth Costs (4	0.00	
Other Highway	\$689,000	\$1,359,000	B/C Ratio	= -	Annual	benetits	Estimated F	orth Factor (1	or 20	years)
Uniform Series Preser	nt Worth Factor (4%)		B/C Ratio	= _	\$ 142,	,000	x ²	8.11	=	2.30
10 years	20 years					\$	500,000			2.50
8.11	13.59									

- Composite crash reduction factor calculated if more than one countermeasure is applied
- 2 Select a PWF for the life of countermeasure. See instructions
- 3 PDO value is \$6,500 per crash adjusted with an under reporting factor of 2.0. National Safety Council, 2000 estimates of value per crash.
- 4 Economic costs per crash are calculated using 1998-2000 Oregon crash data and FHWA's Technical Advisory "Motor Vehicle Accident Costs, T 7570.2, October 31, 1994 updated to 2001 dollars with GDP implicit price deflator.





Project Name:	DFR 7 (Doaks Ferr	ry Left Turn Only)					Region:	2	Date:	6/2/07
Project on State High	way									
Route Number:	22	Hwy Name:	WILLAMINA	-SALEM	T-LIP		MP From:	21.94	to	22.14
Road Character:	RURAL	Facility Type:	OTHER HIG	HWAY				ii ii		
County:	MORROW	City:	Salem		MENT	Crash	Data From:	8/1/1999	to	7/31/2004
Project Description:	Realigned right-or	ut connection, paint	ed island, cen	ter turn ref	uge for lef	t-in at D	FR			
Prepared By:	Haregu Nemariam				Title:		Transpor	tation Engine	eer	
				Nicoshaa			A	В		A*B
			Total Crashes &	Number of Target			Number of Preventable	Economic Value per		Total Economic
Type of Target Crash	es		Countermeasure ID No.	Crashes			Crashes	Crash		Value
PDO Crashes			14	<==Total P	DO Crashe	26	1 9.4	\$13,000	_	\$ 122,000
			ID No.		DO OIGOIIO	.0	Type of Crasi		_	· 122,000
Countermeasure 1	Concrete Median Barrier (3	3-6' Shy)	1.0	100	-10%	4.7	All Cra	ash Types		
Countermeasure 2	Left-Turn Bay, Unsignalize	ed, 4-Leg, Curbed/Raised	7.0	41-35	70%	4.7	All Cra	ash Types		
Countermeasure 3			No.		0%	0.0				
Countermeasure 4			No.	180	0%	0.0				
Countermeasure 5		Add Samuel 1	No.		0%	0.0	Piceline.			
Moderate (Injury B) ar	nd Minor (Injury C) In	jury Crashes	13 ID No.	<==Total Ir	ijury B&C C	Crashes	1 10.7 Type of Crasi	\$55,000	=	\$ 586,000
Countermeasure 1	Concrete Median Barrier (3-6' Shv)	1.0		10%	5.3	350000000000000000000000000000000000000	ash Types		
	Left-Turn Bay, Unsignalize		9.0		80%	5.3		ash Types		
Countermeasure 3			No.		0%	0.0				
Countermeasure 4			No.	12.54	0%	0.0	S. S. Lewis	34 805 - 100b		
Countermeasure 5		人名 為因此	No.		0%	0.0				
Fatal and Severe (Inju	ury A) Injury Crashes	.		<==Total F	atal & InjA	Crashes	1 0.0	\$1,359,000	=	\$ -
			ID No.				Type of Crasi			
Countermeasure 1			No.		0%	0.0	Single Profession			
Countermeasure 2			No.		0%	0.0				
Countermeasure 3			No.		0%	0.0	Wild Dist			
Countermeasure 4			No.		0%	0.0	ner de			
Countermeasure 5			No.		0%	0.0	CARTICLE IN			
Compreher	nsive Economic Value p	per Crash	27	<==Crashe	s To	tal Cras	h Value for	60 Monti	hs =	\$ 708,000
Highway/Street Type	Urban	Rural	-							
Afgers and	PDO ³	940.08 S								
All facilities	\$13,000	\$13,000		Annual E	Benefits =		Crash Value	_ =	\$	142,000
Moderate (In Interstate or Freeway	jury B) and Minor (Injun \$39,000					Total	Months / 12			
Other State Highway	\$41,000	\$51,000 \$55,000								
	and Severe (Injury A) In	00000000000000000000000000000000000000		Es	stimate	d Pro	ect Cost	=	\$	517,000
Interstate or Freeway	\$694,000	\$1,352,000								
Other Highway	\$689,000	\$1,359,000	B/C Ratio	=	Annual	Benefits		orth Factor (1	0 or 20 y	years)
							Estimated P	roject Cost		
Uniform Series Preser	nt Worth Factor (4%)	ĺ	B/C Ratio	=	\$ 142,	,000	x 2	8.11	=	5 5550
10 years	20 years						517,000			2.23
8.11	13.59						.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
0.11	10.00									

- 1 Composite crash reduction factor calculated if more than one countermeasure is applied
- 2 Select a PWF for the life of countermeasure. See instructions
- 3 PDO value is \$6,500 per crash adjusted with an under reporting factor of 2.0. National Safety Council, 2000 estimates of value per crash.
- 4 Economic costs per crash are calculated using 1998-2000 Oregon crash data and FHWA's Technical Advisory "Motor Vehicle Accident Costs, T 7570.2, October 31, 1994 updated to 2001 dollars with GDP implicit price deflator.



Project Name	GWR 3 Install Rei	sed Median (GWR)	nn (GWR Right In/Out) Region 2 Date 6/	6/2/07							
Project on State High	way										
Route Number	22	Hwy Name	WILLAMINA	SALEM			MP From	MP 18.41	to	M	P 18.62
Road Character	RURAL	Facility Type	OTHER HIG	HWAY							
County.	POLK	City	OUT SIDE S	ALEM UBG		Crash	Data From	8/1/1999	to	71	31/2904
		2.025	15.								
Project Description	Install raised med	lian and make Green	IWOOD FIORD IN	ght invous							
Prepared By:	Haregu Nemerlan	n			Title			tation Engine	ner:		
Type of Target Grash	BB .		Total Crisines & Countermeasure Et No.	Number of Target Crashes			A Number of Prevenuese Crashes	Economic Value per Crash			A'e Conomic Value
PBO-Crashes				«—Total P	DO Cranhe	ė	0.0	\$13,000	· · ·	s	345
Countermeasure 1			No.		ries:	0.0	Fype of Cons	it Provinskai'.			
Countermeasure 2			No		0%	0.0	-		-		
Countermeasure 2			No.	-	0%	0.0					
Соилентеврие 4			No.		10%	0.0	_				
Countymeasure 5			No.		0%	0.0					
Moderate (Injury B) as	nd Minor (Injury C) Is	njury Crashes	4	<total in<="" td=""><td>jury BBC C</td><td>rashins.</td><td>0.4 Treat Class</td><td>\$55,000</td><td>=</td><td>8</td><td>22,000</td></total>	jury BBC C	rashins.	0.4 Treat Class	\$55,000	=	8	22,000
Countermeasure 1	Concrete Mexas Name:	SE SW	1.0		10%	0.4	1.00	ash Types			
Countermeasure 2	2		No		0%	0.0	-	***************************************			
Countermeasure 3	1		No		.0%	0.0					
Countermeasure 4	("		No		0%	0.0					
Countermeasure 5	F:		No		0%	0.0					
Fatal and Severe (Inp	ury A) Injury Crasher	9	- 10 No.	< Total F	atal & lopA C	Crashes	Type or Cras	\$1,359,000	*	ä	
Countermeasure 1			No		0%	0.0	747.000				
Countermeasure 2			No.		0%	0.0					
Countenneasure 3			No		.0%	0.0					
Countenmentaliste 4			No.		0%	0.0					
Countennessian 5		- 0	540		0%	0.0					
Comprehe	noive Economic Value	per Crash	4	<crashe< td=""><td>s Tot</td><td>al Cras</td><td>n Value for</td><td>60 Mont</td><td>ne =</td><td>5</td><td>22,000</td></crashe<>	s Tot	al Cras	n Value for	60 Mont	ne =	5	22,000
Highway/Street Type	Umen	Rural									THE PERSON
	PDO*	W40 ***		1400000000	and the second	1985	MARKET STATE OF THE STATE OF TH		26.		1 Cap to built 1
All facilities	\$33,000	\$13,000		Annual E	Senetite =	-0.754-075/5	Cranh Value Months / 12		8:		4,000
mendate or Freeway	S39,000	\$57,000				- Chian	argining / 12				
Other State Highway	\$41.000	\$55,000									
with the first the Section Section 1995 and the section of the section 1995 and the section 1	and Severy (Injury A) b	Accordance to the second		Es	timated	Pro	ect Cos	the :	\$	-3	40,000
Interstate or Freeway	5684,000	51.362.000					en e				
Other Highway	5689.000	\$1,358,000	B/C Flatio	¥ (2	Armuai 5	Becefits		Yorth Factor (1 Project Cost	0 or 20	years)	
					W/F-7		23(1)(1)(1)(1)	100000000000000000000000000000000000000			
Uniform Senesi Prese	-	4	B/C Ratio	, K	5 4,0		X -	13.50	=		1.36
10 years	20 years	1				-	40,000				-1000
8.31	10.59	J									

- 1. Composée crash reduction factor calculated if more than one countinneasure is applied.
- 2: Select a PWF for the itle of countermeasure. See instructions
- 3 PDD value is \$6,580 per crash adjusted with an under reporting factor of 2.0. National Safety Council, 2000 extended of value per crash, are calculated using 1668-2000 Oragon coast data and FHWA's Technical Advancy Motor Vehicle Accident Costs, T 7070.2, October 31, 1994 updated to 2001 dallars with GOP implicit price defailtre.





Project Name	GWR 4a					Region	2	Date	-	V2V07	
Project on State High	way										
Route Number:	22	Hwy Name	WILLAMINA	SALEM			MP From:	MP 18.41	fo:	М	18.62
Road Character	RURAL	Facility Type:	OTHER HIG	HWAY							
County.	POLK	Cay	OUT SIDE S	ALEM UBG		Crash	Data From	8/1/1999	to	7/5	1/2004
Project Description.	Grade Separate v	with weatbound right	In/out access	to OR 22 ov	erpass						
Prepared By	Haregu Nemarian	n			Title		Transpor	tation Engine	100		
				*House Com							4.8
Type of Target Coasts	th:		Total Engineer II. Counterthologen (D No.)	Number of Target Crashes			Number of Necestation Craphes	Value per Crash			Economic Zatary
PDD Crashes			ID No	< Total PI	iO Grasho	10.	Type or Gran	\$13,000	. 5	5	-
Countermansura f	Ŷ(7NO		0%	0.0		With Automatic			
Countermeasure 2			NO.		0%	0.0	ĵ.				
Countermeasure 3			No	-	0%	0.0	-				
Countermeasure 4			No		0%	0.0	_				
Countermeasure 5			No.	-	0%	0.0	_				
Moderate (Injury B) as	nd Minor (Injury C) i	rjury Crashes	# ID No.	<==Total Inj	ury BBC C	Trashes	3.1	\$86,000	. 5	\$	171,000
	Coopeli Midan Bater		1.0		10%	1.6	All Gra	ish Types			
	Coretruit Grade Separat	In .	37.0		750%	1.6	All Cra	ish Types			
Countermeasure 3			No.		0%	0.0		113.300.3			
Countermeasure 4			No		.0%	0.0					
Countermeasure 5			No.		0%	0.0		_			
Fatal and Severe (Inju	ary A) Injury Crashe	s:	70 M)	Total Fa	tat & InjA	Crashei	1 0.0 Tune of China	\$1,359,000	E =	5	-
Countermeasure 1	0		No.		0%	0.0	1.1000000000000000000000000000000000000				
Countennessure 2			No		0%	0.0	11.5				
Countermousure 3			No		0%	0.0					
Countermeasure 4			- No		.0%	0.0			r c		
Countermeasure t			No.		0%	0.0		_			
Comprehen	nsive Economic Value	per Crush	4	<==Crashe	e To	tal Crae	h Value for	63 :Mont	Pro Com	5	171,000
Highway/Street Type	Urban	Riral	-		*: .68	tor write	(i. 4 man 100.	- 00 Mily I		-	34.424004
Section 2	PDQ*	A STATE OF									
All facilities	\$13,000	\$13,000		Annual B	enefits =	Total	Crash Value	5 5 3	5		34,000
	pry 8) and Minor (Inpu					Total	Months / 12				
Intendale of Preeway Other Statu Highway	\$39,000 \$41,000	\$51,000 \$50,000									
Total Control of the	and Severe (Injury A) a	The street of th		Es	timate	d Pro	ect Cost	in .	S	5.8	30,000
interstate or Freeway	5894,000	51,262,000		17.5				GATE CALL	7	- 10	02.155
Other Highway	\$889,000	81,359,000	B/C Ratio		Acyxusi	Benefits	the Part of the Pa	offs Factor (1	0 ar 20	years)	
		_					Estimated 8	TURNE GARA			
Unitum Seres Prose	iii Worth Factor (4%)		B/C Ratio	5 8	5 34,	000		13.59	170	1	0.09
10 years	20 years	I				\$	5,880,000			1	80.0
1.11	13.59	1									

- 1. Composite crash reduction factor calculated if more than one countermeasure is applied
- 2 Select a PWF for the Me of countermeasure. See instructions.
- 3 PDO value is \$6,000 per crash adjusted with an under reporting factor of 2.0. National Safety Council, 2000 estimates of value per crash
- 4 Economic costs per crash are calculated using 1988-2000 Ovegon crash data and FHWA's Technical Advisory "Motor Vehicle Accident Costs. T 75/0.2. Ciclobar St., 1994 apdated to 2001 dullars with GDF suprice deflator.



Project Name	GWR 4b						Region	2	Date	6/2/07
Project on State High	nety									
Route Number	22	Hwy Name	WILLAMINA	-SALEM			MP From	MP 18.41	50	MP 18.52
Briad Character	RURAL	Facility Type	OTHER HIG	HWAY						
County	POLK	Chy	OUT SIDE S	ALEM UBG		Crash	Data From	8/1/1999	80	7/31/2004
Project Description	Grade Separate to	allow north to sout	th access with	out OR 22 a	ccess - o	verpass				
Prepared By:	Haregu Nemerism	i			Title:		Transpor	tation Engine	or:	
							cc.41	- W		ATR
Type of Target Crashs	88		Tural Constant & Countermouse & £7 No.	Milmber of Target Crashes			Number of Prevenues Orashes	Economic Value per Crash		Total Economic Value
PDO Crashes			17 ha	<==Total PS	DO Crashe	19	0.0	513,000	-	3 .
Countermeasure 1			No		0%	0.0				
Countermeasure 2			No		45%	0.0			-	
Соизметевание 3			No		0%	0.0				
Countermeasure 4			No		05%	0.0				
Clountermeasure 5			, No.		0%	0.0				
Moderate (Injury B) ar	nd Minor (Injury C) in	jury Crashes	2016	Total in	iny BAC C	Crashes	1 3:1 From M Cour	\$55,000 Amentor	*	\$ 171,000
Courtemeasure t	Corcrete Median Barrior (3-6' Shi	1.0		10%	1.6	All Cit	ssh Types		
Countermeasure 2	Constitut Grada Separati	M	37.0		75%	1.6	AliGn	ash Types		
Countermeasure 3			No		0%	0.0			Š	
Countermeasure 4			No		0%	0.0				
Countermeasure 5			No		17%	0.0				
Fatul and Severe (In)	rry A) Injury Crashes	É	ID We	< Total Fo	Ajni & tere	Crashes	0.0	\$1,359,000	*	\$
Countermeasure 1			No		0%	0.0				
Countermeasure 2			No		0%	0.0				
Countermeasure 3			No		0%	0.0				
Countermentsure 4		0	No		0%	0.0				
Countermassure 5			No.		07+	0.0				
		- Video in the latest and the latest		ost rwasees			and warnes of	west spaces	Was in the same	100 100 000 000 000 000 000 000 000 000
Highway Street Type	urban	Rural	- 4	<crashe< td=""><td>9: 10</td><td>OH CHRS</td><td>h Value for</td><td>60 Mont</td><td>194</td><td>\$ 171,000</td></crashe<>	9: 10	OH CHRS	h Value for	60 Mont	194	\$ 171,000
undamentarinen i Aber	PDDA	Miles								
All facilities	\$13,900	\$13,000		Annual S	ionatits =	Total	Cranh Value	= + =	8	34,000
Moderate (in	ury B) and Minor three	y Cy Injury *				Total	Months / 12			
interstate or Freeway	\$39,000	\$51,000								
Other State Highway	\$41,000	\$55,000		Ee	timata	d Dro	ect Cos	10.00	S	5,856,000
	and Severe Unjury A) In		(1)	Es	umate	u Pro	ect cos	-	9	5,056,000
Interstate or Freeway Other Highway	\$694,000 \$689,000	\$1,352,000 \$1,358,000	B/C Ratio		:Annual	Barrette	X Present M	forth Eactor (1	0 or 20	vicam)/
Total Line and A	*PER/000	- 91,000,000	250,040	· 52	22,51000	200000000	Estimated F		9.00.70%	A-STORY C
Uniform Series Preser	ne Worth Feetor (416)	I	B/C Flattic	3 13	5 34,	000	- X	13.60		0.00
10 years	20 years					6	5,856,000			0.08
6.11	13.58	1								

- 1. Composite crass reduction factor calculated if more than one countermeasure is applied
- 2. Select a PWF for the life of countermeasure. See instructions:
- 3 PDG value is \$8,500 per crash adjusted with an under reporting factor of 2.0. National Safety Council, 2000 extenuous of value per crash.
- 4 Economic crists per crism are calculated using 1996-2006 Oregon crush data and FHWA's Technical Advancy Wotor Versicle Accident Costs, 117570-2. October 31, 1994 apdieted to 2001 dotters with GDP implicit price detailor.



Project Name	GWR 6 Offset Dua	i T Intersections					Region	2	Date	E/2/07
Project on State High	way									
Route Number	22	Hwy Name	WILLAMINA	BALEM			MP Frame	MP 18.41	50	MP 18.62
Road Character	RURAL	Facility Type:	OTHER HIGH	HWAY						
County:	POLK	City	OUT SIDE S	ALEM UBG		Crash	Data From:	8/1/1999	50	7/31/2004
Project Descriptory	Install extra wide (16 ft) dual direction	center turn la	ne between	south Ge	eeawas	d Rd and no	orth frontane	road: in	stall decei lanes
Prepared By:	Haregu Nemariam			74-44-44	Title		- The State of State	tation Engine	-	
3							A			AW.
Type of Target Crash	es		Total Crantus, ii Continue pro- (0.16)	Number of Target Crashes			Number of Presenting Crashes	Economic Value per Grash		Total Economic Value
PDO Crashes				<total pi<="" td=""><td>O Crashe</td><td>160</td><td>0.0</td><td>\$13,000</td><td></td><td>s -</td></total>	O Crashe	160	0.0	\$13,000		s -
A STATE OF THE STA			40 No.	The same of		94.77	Typer of Court	100000000000000000000000000000000000000		
Countermeasure f			No		.0%	0.0				
Counternwanure 2			No.	_	0%	0.0				
Countermeasure 3			No	-	0%	0.0			-	
Сошнятювьки 4			No		0%	0.0				
Countermeasure 8			No.		0%	0.0	_	_		
Moderate (Injury E) a	ng Minor (Injury C) In	jury Crashes	A ICTAIN	Total In	inny B&C (rashen	1 21	\$55,000		\$ 171,000
Countermanous I	Coronda Median Barrier D	M 99V	1.0		10%	1.6	Figurer Cream All Com	ssh Types		
	Constact Grade Separate		37.0		75%	1.6		sh Types		
Countermeasure 0		10	No		0%	0.0			£	
Countermeasure 4			No.		10%	0.0				
Соципнинивация 5			No.		0%	0.0				
Fatal and Severo (in)	ry A) injury Crashes			e==Total Fi	nai & InjA	Crashes		51,359,000	9 3	\$1 17
900000000000000	p.		(0.00)		(662/4	8.61	Type of Char	Thistopique :		
Countermeasure / Countermeasure 3			No.		0%	0.0	_		-	
Countermeasure 2			No.	-	0%	0.0	-		ė.	
Coursemeasure 4			No.	-	0%	0.0				
Countemensure 5			No.	_	9%	0.0			Ē	
FACHWWWWBeins						-			-	
THE RESERVE AND ADDRESS OF THE PARTY OF THE	rsive Economic Value (ar Crash	.4	<==:Crashe	€ Yo	tal Cras	h Value for	60 Mont	ns -	\$ 171,000
Highway Street Type	Orbun	Rutel								
Al tagines	\$13,000	\$13,000		Annual 6	enefits +	Total	Grash Value		\$	34,000
	ary file and Minor (Injury			Minister C			Months / 12	F 5 3		94,000
interstate or Freeway	\$38,000	\$51,000	[]				SCHOOL STATE			
Other State Highway	\$41,000	\$55,000		11.744-71	440700-4100	10 may - 17 may			1000	an argent recent
	and Severe (Intury A) in		l'	Es	timated	Pro	ect Cost	= .	S	1,584,000
interstate or Freemay	3884.000	\$1,387,000			o de la marada		war and a second		CONTRACTOR OF STREET	in twent to the second
Other Highway	3889,000	\$1,359,000	B/C Ratio		Annial	Senetits	X Present W Estimated P	forth Factor (1 Voject Cost	10 07 20	Agates)
Unitorn Series Preser	m Worth Easter (dr.)		DIC Datio		5 34/	200		13:50		
THE RESERVE OF THE PERSON NAMED IN	-		B/C Ratio	7 .	0.097	-	A majo man	1,1,00	2 53	0.29
10 years	20 years					5	1,584,000			Ver28222-0
B.11	-13.50									

- 1. Composite crash reduction factor datourned if more than one countermeasure is applied.
- 2 Select a PWF for the life of coordinatessure. See instructions
- 3 PDO value is \$6,000 per crash adjusted with an under reporting factor of 2.0 National Safety Council, 2500 estimates of value per crash.
- 4 Economic costs per uses are calculated using 1990-2000 Oregon crash data and FHWA's Technical Advisory "Motor Veticle Accident Costs, T 7570.2. October 31, 1994 updated to 2001 dutars with GDP anglicit price darliator.



Policy Project Description Standard diamond interchange	Project Name	INH 3						Region	2	Date:	6/2/07
Pound Character Rural	Project on State High	way									
Project Description Standard diamond interchange	Boute Number	22	Hwy Name	WILLAMINA	SALEM			MP Fram	MP 20.27	to	MP 20.61
Project Description Standard diamond interchange Tide Transportation Engineer	Road Character	RURAL	Facility Type:	OTHER HIGH	HWAY						
Project Description Standard diamond interchange Tide Transportation Engineer	Chiefe	DOM R	Co-	OUT SIDE S	AL EM LIBO		Bench	Clabs Evens	8/1/1000	100	2010004
Proposed By:	Source	FOLK	week.	COT SIDE 3	ACEM DOG		9	Maria Profit	0/1//200		tig iteour
Type of Target Crashes	Project Description	Standard diamon	d interchange								
Total Crashes	Prepared By:	Haregu Nemarlan	1			Title		Transpor	tation Engine	er	
Target Crashes Crash					Manufactor						406.5
Type of Target Crisities					of Toward						Total Economic
Countermeasure 2	Type of Target Craub	99			The state of the s				The second section is		
No	PBO Crashes				«==Total P	DO Crissive	16	the state of the s		~	s .
No. Offs 0.0	Companyages	e e				PM.	0.0	(Veral City	Properties.		
No				-		0.000	_	-			
No							-				
No	Participation of Education St.						Charles Science				
Countermeasure 1											
Countermeasure 1	Moderate (trijury B) a	nd Minor (Injury C); I	njury Crashes		<==Total in	ury B&C C	rashes			=	\$ 866,000
No	Countemposium	Construct Goods Second	100			76	15.6	5 100 100 500 500			
No. Offs 0.0		The state of the s					1 Street Street Street	- All Care	tall 1 Specia		
No					-		-	-			
No ON ON ON ON ON ON ON							-	_			
Countermeasure Constitution Countermeasure Counte					_		-				
Countermeasure 1 Columbia Separation 37.8 100% 1.0 All Crash Types	Patal and Severe (Ing.	ury A) Injury Crashe	0	1	<—Total F	Ays & late	Crashes	1.0	\$1,359,000		\$ 1,359,000
No					10-11						
No. 0% 0.0			Mr.		-		-	AFCI	ish Types	5	
No					-		- to eliterate	-			
No O% 0.0	Company of the control of the			Section 1997	-		-			3	
Comprehensive Economic Value per Crash 36							-			8	
Highway Street Type	Countennessure :			NO.		- G%	0.0				
PDD	Comprehe	noive Economic Value	per Cristh	36	< Crashe	s To	tal Cras	h Value for	60 Mont	76 =	\$ 2,228,000
Annual Benefits Total Munths / 12 S 445,000	Highway/Street Type	Urban	Rurat								
Moderate Brown Moderate Deputy C) #ppy		PDO									
## ## ## ## ## ## ## ## ## ## ## ## ##	The state of the s	The same of the sa	The state of the s		Annual E	terwrits =		PRODUCED SERVICE SERVICES	-	S	445,600
Chief State Pighway \$41,000 \$51,000							Total	Morths / 12			
Fatal and Severe (Injury A) Injury* Estimated Project Cost \$ 17,554,000 Internative or Freeway 5694,000 \$1,352,000 Other Haghway 5789,000 \$1,352,000 Other Haghway 5789,000 \$1,352,000 B/C Ratio = Annual Benefits X Present Worth Factor (10 or 20 years) Estimated Project Cost Estimated Project Cost	A STATE OF THE PROPERTY OF THE	10000000	255548450								
Sept.	and the second second second second second	A STATE OF THE PARTY OF THE PAR	According to the second		Fs	timate	d Pro	lect Cost		S	17,554,000
Driver Highway 5769.000 \$1,358.000 B/C Ratio = Annual Benefits X Present Worth Factor (10 or 20 years)			P		0.50		0.000		/ 55		
Estimated Project Cost	CONTRACTOR CONTRACTOR AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE P	1 25/10/23/21/3/11	To 200 EDGS A1130 GOD	B/C Ratio		Armout	Benefite	X Present W	form Factor ()	0 or 20	years)
10 years 20 years 5 17.554,000 0.34					~						
10 years 20 years 5 17.554,000 0.34	Linitorn Sedes Proce	ed Worth Factor (#10)	1	B/C Ratio	=	\$ 445.	2000		13.59	Æ	72723
	T0 years	20 years	1					17.554,000			0.34
			1					Was 43355			

- 1. Composite crisis reduction factor disculated if more than one countermaximum is applied.
- 2 Select a PWF for the life of countermeasure. See instructions
- 3 POD value is \$6,580 per crash adjusted with an under reporting fution of 2.0. National Safety Council, 2000 entimates of value per crash.
- 4 Economic costs per crash are calculated using 1988-2000 Gragon crash data and FHWA's Technical Advancey Motor Vehicle Accident Crists, T 7570.2, October 31, 1994 applicated to 2001 malaris with GOP implice price steflator.



Project Name	INH 4						Region	2	Date	5 1356 5 160 5 1356 6 475 16,248,0	5/2/07
Project on State High	mite										
Route Number	22	Hwy Name	WILLAMINA	SALEM			MP Fram	MP 20.27	tu	M	P 20.61
Road Character	RURAL	Facility Type:	OTHER HIG	HWAY							
County	POLK	City	OUT SIDE S	ALEM UBG		Crash	Data From	8/1/1999	to	71	31/2004
Project Description	Tight diamond int	erchange									
Prepared By:					Title:		Transpor	fation Engine	wit:		
E Market Service	Haregu Nemariam	-			7796		d.	a a			en.
Type of Target Crants	ris.		Total Cigation & Countermanusure (CH4)	Number of Target Orashes			Number of Presentation Grashes	Economic Value per Crash			Eponomic Value
PQO Crashes			14	<==Total P	DO Crashe	ni i	1 10.5 Type of Cres	\$13,000	×	5	137,000
Countermoascre f	Construit Grade Sepurate	CPE .	37.0		75%	10.5		esh Types			
Countermassure 2			No.		05-	0.0		100			
Countermeasure 3			No.		0%	0.0					
Countermeasure 4			No.		0%	0.0					
Соилингливания 2			No.		0%	0.0					
Moderate (injury B) ar	nd Minor (Injury C) to	jury Crashes	21	<==Total in	jury 880 C	nashes	15.8 Part of Court	\$85,000	=	5	866,000
Countenneasure 1	Constnet Grade Separati	on.	37.0		75%	15.8		auti Types			
Countermeasure 2			No.		4%	0.0					
Countermeasure 3	F:		No		0%	0.0					
Countermeasure 4			No.		0%	0.0					
Countermeasurer 5			No		0%	0.0					
Futus and Severe (Inju	iry A) lojury Crashes	į.	1 	ess Total F	atal & InjA (Crashes	1.0 From Grap	31,359,000	=	5	1;359,000
Соижетнявии 1	Construct Grade Septrate	04	37.0		100%	1.0		ash Types			
Countemmeasure 2			No.		0%	0.0					
Соиоветнавиле 3			No		0%	0.0					
Countermeasure 4			No.		0%	0.0					
Countermeasure 5			No		0%	0.0					
Connection	swe Economic Value (And Prints	38	<==Crashe		al China	e management	Wh. 15.00		T E C	nnn rise e
Hydway/Street Type	Urban PIO ³	Piural	36	<===UTHBRE	ns. 1100	ai Crae	h Value for	80 Mont		-	K730K74011
All facilities	\$13,000	\$13,000		Annual 6	lenelits =	Total	Crash Value		8		472,000
Call and Call Street Control of the	pury (I) and Masor (Injur	The second distribution of the second distributi		00-11/01/01/01	CT 100 24 45 6		Months / 12				- Contain
Interstatio or Freeway	\$38,000	551,000									
Other State Highway	541,000	555,000		P-	timate	I Dec	ant Carl	60 E	•	16.0	49 000
	and Severe cinjury At It			CS	umatec	Pro	ect Cos	E 5	\$	10,2	40,000
Internalis or Freeway Other Highway	\$694,000 \$680,000	\$1,352,000	B/C Ratio	100	Annoats	Benefits	X Present V	Yorth Factor (1	D 07-20	Vergreen's	
(Gillie Fighting)	5000,000	21,000,000	tare many	7.3	Transau,	an training	PROPERTY AND ADMINISTRATION OF THE PARTY AND ADMINISTRATION OF	Voject Cost	00,20	Jearsi	
			1000000		02000	222					
Uniform Salles Preser	Worth Factor (4%)	I	B/C Ratio		\$ 472/	-	×	13.59	16		0.39
10 years	20 years					5	6,248,000				0.00
6.11	13.59	l									

- 5 Composite crush reduction factor calculated if more than one countermeasure is applied.
- 2. Select a PWII for the We of countermeasure. See instructions
- 3 PDO value is \$6,500 per crash adjusted with an under reporting factor of 2.0. National Safety Council, 2000 estimates of value per crash.
- 4. Economic costs per crush are calculated using 1988-2000 Gregori crush data and FRWA's Technical Advecory Motor Vehicle Accident Crists, T 7870-2. October 31, 1984 spicient to 2001 dollars with GDF implicit price defaults.



Project Name	INHS						Region	2	Date	_	6/2/07
Project on State High	neary										
House Number:	22	Hwy Narre	WILLAMINA	SALEM			MP Front	MP 20.27	10:		AP 20.61
Road Character	RURAL	Facility Type:	OTHER HIG	HWAY							
County	POLK	City	Out side Sal	lom UBG		Cranh	Data From	8/1/1999	10	,	31/2004
GOODING.	FULK	Cary	COLUMN SHIP	en DDG		Craso	Const Profits	00111939		- 2	73112004
Project Description	Replace intersecti	on with partial clov	erleaf intercha	inges							
Prepared By:	Haregu Nemariam				Titte			tation Engine	100		
				Number			A Number of	Economic			.011
			Total Crosses & Countervessors	of Target			Physicalis	Value per		Total	il Economic
Type of Turget Orash	ets		10160	Crashes			Crashes	Crush			Vake
PDO Crashes			14	<==Total P	DO Crashe	116	10.5	\$13,000	=	*	137,000
740000000000	. Commence Commence	21	ET MAIL		200	40.5	There ar Charl			-	
Countermeasure 2	Construct Grade Separate	1	37.0	-	75% 0%	10.5	AU-Citi	ash Types			
Countermeasure 2			No.		0%	0.0	_				
Countermeasure 4			No.	_	0%	0.0	-		9		
Countermeasure 5			No.		0%	0.0	_				
Westernam entre en	market succession	A TOWNSON	24	4.600	and the second	SZUENO	VCC000V	#41 mag		4	esem later
Moderate (Injury B) a	og weder (minsk &) in	tury Crashes	21 0760	===Total le	gury B&C C	tashes.	15.8 Twent Dan	\$85,000 n.Prevented		-	966,000
Countermeasure 1	Constact Grass Separate	n .	37.0		75%	15.8	All Cin	ash Types			
Countermeasure 2			No		-0%	0.0					
Countermeasure 3			No		0%	0.0					
Countermeasure 4			, No		4%	0.0	_				
Countermeasure 6	9		No.		0%	0.0			3		
Fatal and Severe (Inj.	ury A) Injury Crashes	i i	1	<=Total F	arat & InjA	Crashes	+ t.0	\$1,359,000	=	3	1,359,000
			12 No.			72	Operat Day				71.00
	Contract Grade Separate	0	37.0		100%	1.0	All Cit	ash Types			
Countermeasure 2			No		0%	0.0	_				
Countermeasure :			No.	-	0%	0.0	_				
			No	_	9%	0.0					
Countemeasure !			No		0%	0.0	-				
Comprehe	raine Economic Value (our Crush	36	<==Crashe	es To	tal Cras	h Value for	80 Mont	ns -	\$	2.062,000
Highway/Street Type	Urban PDO T	Rural					ALL WARRANT				
All tacities	\$13,300	\$13,000		Annual E	Benefits =	Total	Crash Vatue		\$3		472,000
	sury B) and Minor Cinjur					Total	Months / 12				
Interstale or Freeway	\$39,000	551,000									
Other State Highway	\$41,000	\$55,000		F	timate	d Pro	ect Cost		\$	18 0	32,000
Hiteralate or Freeway	and Seems (Injury A) in 5604,000	\$1,352,000		Sec. 4		0.00	001 003		-	10,0	ME TOU
Other Highway	\$889,000	\$1,359,000 \$1,359,000	B/C Ratio		Ammiat	Benefits	X Present W	Voeth Factor (1	D or 20	Veart	
				- 3			Estimated F				
Uniform Series Prese	et Worth Factor (4%)	Î	B/C Ratio		5 472	000	*	13.59			888
10 years	20 years						8.932,000				0.34
8.11	13.59	1				293					
	A CONTRACTOR OF THE PARTY OF TH										

- 1. Composite crash reduction factor calculated if more than one countermeasure is applied
- 2. Select a FWF for the We of countermeasure. See instructions.
- PDC value is \$6,500 per crash are calculated with an under reporting factor of 2.0. National Safety Council, 2000 estimates of value per crash.
 Economic crash per crash are calculated using 1996-2000 Oregon crash data and PHWWs Technical Advisory "Motor Vehicle Accident Costs, T 7570-2. October 31, 1994 updated to 2001 slotters with GOP implicit price distator.



Project Name	INH 6						Region:	2	Date	5	22/07
Project on State High	nway.										
Route Number	22	Hwy Name	WILLAMINA	SALEM			MP Front	MP 20.27	TO:	M	P 20.61
Road Character	RURAL	Facility Type	OTHER HIG	HWAY							
County	POLK	Gity	Out side Sa	iem UGB		Cirash	Data From	8/1/1999	to:	233	1/2004
District the southfline	Booless Intercept	tion with attack and to	e constante de la constante de	• Taladicatasi sa		te soone	kation (ministrate succession)			99	
Project Description	DESCRIPTION OF THE PROPERTY.	ion with diamond in	terchange tha	t includes v	INVEST	ie sout	DOMESTIC ACT	owers and	9.75	ER:	
Prepared By:	Haregu Nemariam				Title		Transpor	tation Engine	iar.		Trial (
				Nontper			Number of	Economic			A10.0
Type of Target Grash	104		Total Cranine 6 Countermouses (Drive)	and Managerial			Preventable Crashes	Value per Crash			Epanomia Value
PDO Crashes			14	c-Total P	00 Crashes		10.5	\$19,000	· =	3	137,000
Countaemannen	Constact Grade Separate	m .	37.0		75%	10.5	At Co	ash Types			
Countermeasure :	The state of the s		No.	-	0%L	0.0	711 1211	or types	1		
Countermeasure			No		976	0.0					
Countermeasure -	4		No.		0%	0.0					
Countermousure:			Np		0%	0.0					
Moderate (Injury 8) a	and Minor (Injury C) in	ijury Crashes	21 /2000	<total in<="" td=""><td>pary BAC Co</td><td>rashes</td><td>1 15.8 Specif Con.</td><td>\$55,000</td><td>. 9</td><td>\$</td><td>866,008</td></total>	pary BAC Co	rashes	1 15.8 Specif Con.	\$55,000	. 9	\$	866,008
Countermeasury	7 Commet Grade Separate	in .	37.0		75%	15.8		inh Types			
Countermeasure	-		No		0%	0.0					
Countermossure a			No.		0%	0.0					
Countermousure	4		No.		49%	0.0					
Countermeasure	5		No		0%	0.0					
Fatal and Severe (In)	july A) Injury Crashes		1	<=Total F	atai & InjA C	Inshes		\$1,359,000	1	\$	1,369,000
On menomenous	1 - Covernet Grade Superall	1	67 As 2		1000	4.0	Type of Conc.	ish Types			
Countermassure :	many and a second property of the contract of		37.0 No.		0%	0.0	PLE CO	ion i pres			
Countermeasure:	C+		No.	-	0%	0.0			63		
Countermeasure	1		No.		0%	0.0	_				
Countermeasure	_		No.		0%	0.0	-				
			- 32	200	987	-17-17	hencons	42-10000	in the second		87557555555
250000000	emine Economic Value (36	<crashe< td=""><td>w Tota</td><td>nt Cras</td><td>h Value for</td><td>_60 Monti</td><td>THE</td><td>5 1</td><td>2,362,000</td></crashe<>	w Tota	nt Cras	h Value for	_60 Monti	THE	5 1	2,362,000
Highway/Street Type	PDO:	Rural									
Alt facilities	\$13,000	\$13,000		Annual F	Sonefits =	Total	Crash Value	-			472,000
	Hury El and Masor (File			7-111-11-1			Months / 12		-		
Interstate or Freeway	\$39,000	551,000				discussion					
Other State Highway	\$41,000	\$55,000		1	25 550	energy.	1 872 Y		120	2000	
	and Severe (Injury A) in			Es	timated	Pro	ect Cos		5	18,6	45,000
Interstate or Freekey	\$894,000	\$1,362,000	205-013915		guiltean	2009708	W4235-17000		2110720	YESTON I	
Other Highway	\$689,000	\$1,389,000	B/C Ratio		Annual E	Senefits		/ortil Factor (1 Project Cost	0 or 20	ynars)	
			1 4 34 4 300		E 498	NISS.		OHMERICAN III			
	art Worth Factor (4%)		B/C Ratio	-	5 472.0		X	13.59		0	0.34
10 years	20 years	Į					IB,645,000				
8.11	15.50	E .									

- 1. Composte crash reduction factor calculated if more than one countemnessure is applied.
- 2' Select a PWF for the life of countermeasure. See instructions
- 3 PDO value is \$6,500 per crash adjusted with an under reporting factor of 2.0. National Safety Council, 2000 estimates of value per crash.
- 4. Economic costs per crash are calculated using 1998-2500 Oregon crash data and FHWA's Technical Advisory "Motor Vetticle Accident Costs, T 7570.2, Catabar 31, 1994 applicated to 2001 dollars with GDP implicit price deflator.