

**ARTS**

Region 4 Hot Spot Location List

Rank	Location ID	Jurisdiction	Location Description	Group	Cost	Benefit	B/C Ratio	Countermeasures
1	18	Deschutes County	BEAR CREEK RD @ WARD RD	2	\$ 25,000	\$ 1,640,000	65.6	<b>H19</b> - Convert to All-Way Stop Control (From Rural 2-Way or Yield Control)
2	10	ODOT	140 @ MP 46.9 (270-LAKE OF THE WOODS)	1	\$ 56,000	\$ 2,819,000	50.3	<b>RD1</b> - Increase Distance to Rural Roadside Obstacle from 3 ft. (1 m) to 16 ft. (5 m)
3	34	City of Bend	COUNTRY CLUB RD @ MURPHY RD	1	\$ 63,000	\$ 1,656,000	26.3	<b>I12</b> - Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs <b>H47</b> - Install Individual Changeable Speed Warning Signs
4	24	ODOT	US 97 @ MP 122 (004-THE DALLES-CALIFORNIA) (VETERAN'S WAY)	1	\$ 126,000	\$ 2,775,000	22.0	<b>I1</b> - Install Lighting at Intersection <b>BP5</b> - Install Urban Green Bike Lanes at Conflict Points <b>I2</b> - Improve Signal Hardware: Lenses, Reflectorized Back plates, Size, and Number
5	3	ODOT	US 20 @ MP 2.5 (007-CENTRAL OREGON) (27TH ST)	1	\$ 213,000	\$ 4,626,000	21.7	<b>I2</b> - Improve Signal Hardware: Lenses, Reflectorized Back plates, Size, and Number <b>H27</b> - Install Any Type of Median Barrier
6	20	City of Bend	GRAND WAY @ E 27TH ST	1	\$ 187,000	\$ 3,621,000	19.4	<b>I1</b> - Install Lighting at Intersection <b>I4</b> - Replace Urban Permissive or Protected/Permissive Left Turns to Protected Only <b>BP3</b> - Install Urban Leading Pedestrian or Bicycle Interval at Signalized Intersection
7	16	ODOT	BRET CLODFELTER WY @ THE DALLES-CAL HY	1	\$ 247,000	\$ 4,340,000	17.6	<b>I1</b> - Install Lighting at Intersection <b>I12</b> - Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs <b>H33</b> - Provide a Raised Median, Urban 2-Lane Road
8	36	ODOT	US 20 @ MP 1.8 (007-CENTRAL OREGON) (ARNETT WAY)	1	\$ 74,000	\$ 1,108,000	15.0	<b>I1</b> - Install Lighting at Intersection
9	33	ODOT	126 @ MP 95 (015-MCKENZIE) (BRADLEY RD)	1	\$ 455,000	\$ 4,873,000	10.7	<b>RD4</b> - Increase Pavement Friction by Installing High Friction Surface Treatment - Intersection or Segment Application <b>RD16</b> - Install Shoulder Rumble Strips <b>H46</b> - Install Rural Variable Speed Limit Signs <b>RD1</b> - Increase Distance to Rural Roadside Obstacle from 3 ft. (1 m) to 16 ft. (5 m)
10	22	Deschutes County	S CANAL BLVD @ MP 0 (SW HELMHOLTZ WAY)	1	\$ 539,000	\$ 5,270,000	9.8	<b>I1</b> - Install Lighting at Intersection <b>RD1</b> - Increase Distance to Rural Roadside Obstacle from 3 ft. (1 m) to 16 ft. (5 m) <b>I14</b> - Provide Flashing Beacons at Minor Road Stop Controlled Intersections <b>RD5</b> - Provide Safety Edge for Rural Pavement Edge Drop-Off <b>I12</b> - Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs
11	30	ODOT	140 @ MP 21.1 (270-LAKE OF THE WOODS)	1	\$ 206,000	\$ 1,987,000	9.7	<b>RD1</b> - Increase Distance to Rural Roadside Obstacle from 3 ft. (1 m) to 16 ft. (5 m)
12	25	ODOT	140 @ MP 27.1 (270-LAKE OF THE WOODS)	1	\$ 256,000	\$ 2,086,000	8.2	<b>RD1</b> - Increase Distance to Rural Roadside Obstacle from 3 ft. (1 m) to 16 ft. (5 m)
13	6	ODOT	US 97 @ MP 165 (004-THE DALLES-CALIFORNIA) (ROSLAND RD)	1	\$ 374,000	\$ 2,910,000	7.8	<b>I1</b> - Install Lighting at Intersection <b>I15</b> - Provide Actuated Flashing Beacons Triggered by Approaching Vehicles at Unsignalized Intersections
14	21	ODOT	US 20 @ MP 16.7 (017-MCKENZIE-BEND) (OLD REDMOND-BEND HWY)	1	\$ 1,071,000	\$ 7,041,000	6.6	<b>I1</b> - Install Lighting at Intersection <b>I12</b> - Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs <b>I15</b> - Provide Actuated Flashing Beacons Triggered by Approaching Vehicles at Unsignalized Intersections <b>H24</b> - Install Rural Median Acceleration Lane <b>I14</b> - Provide Flashing Beacons at Minor Road Stop Controlled Intersections
15	11	City of Klamath Falls	WASHBURN WAY @ 6TH ST	1	\$ 124,000	\$ 780,000	6.3	<b>BP18</b> - Install Bike Lanes
16	19	ODOT	US 97 @ MP 155.5 (004-THE DALLES-CALIFORNIA) (VANDERVERT RD)	1	\$ 648,000	\$ 3,879,000	6.0	<b>I12</b> - Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs <b>H44</b> - Increase Pavement Friction by Installing High Friction Surface Treatment - Intersection or Segment Application <b>I15</b> - Provide Actuated Flashing Beacons Triggered by Approaching Vehicles at Unsignalized Intersections <b>I10</b> - Increase Triangle Sight Distance
17	5	City of Bend	REED MARKET RD @ S 3RD ST	1	\$ 688,000	\$ 3,793,000	5.5	<b>I1</b> - Install Lighting at Intersection <b>I2</b> - Improve Signal Hardware: Lenses, Reflectorized Back plates, Size, and Number <b>BP3</b> - Install Urban Leading Pedestrian or Bicycle Interval at Signalized Intersection <b>H27</b> - Install Any Type of Median Barrier
18	23	City of Bend	GREENWOOD AVE @ HILL ST	1	\$ 639,000	\$ 3,384,000	5.3	<b>H25</b> - Install Lighting at Intersection <b>H48</b> - Convert 4-Lane Roadway to 3-Lane Roadway with Center Turn Lane (Road Diet) <b>I10</b> - Increase Triangle Sight Distance
19	17	ODOT	140 @ MP 4.6 (424-SOUTH KLAMATH FALLS) (HOMEDALE WAY)	2	\$ 953,000	\$ 4,976,000	5.2	<b>H21</b> - Install Rural Traffic Signal
20	7	ODOT	OR 66 @ MP 59 (021-GREEN SPRINGS) (DELAP PIT RD)	1	\$ 1,245,000	\$ 5,802,000	4.7	<b>H21</b> - Install Rural Traffic Signal <b>H25</b> - Install Lighting at Intersection <b>H26</b> - Install Lighting on a Roadway Segment
21	12	ODOT	US 97 @ MP 140 (004-THE DALLES-CALIFORNIA) (POWERS RD)	1	\$ 1,002,000	\$ 4,253,000	4.2	<b>I12</b> - Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs <b>H5</b> - Right Turn Lane on Both Major Road Approaches: Signalized Intersection (3- or 4-leg) <b>I10</b> - Increase Triangle Sight Distance
22	2	City of Bend	E FRANKLIN AVE @ E 3RD ST	1	\$ 656,000	\$ 2,693,000	4.1	<b>BP5</b> - Install Urban Green Bike Lanes at Conflict Points <b>BP3</b> - Install Urban Leading Pedestrian or Bicycle Interval at Signalized Intersection <b>I10</b> - Increase Triangle Sight Distance
23	28	City of Bend	POWERS RD @ S 3RD ST	1	\$ 478,000	\$ 1,713,000	3.6	<b>I2</b> - Improve Signal Hardware: Lenses, Reflectorized Back plates, Size, and Number <b>I5</b> - Replace Urban Permissive Left Turns to Protected/Permissive <b>H25</b> - Install lighting at intersection.

**ARTS**

Region 4 Hot Spot Location List

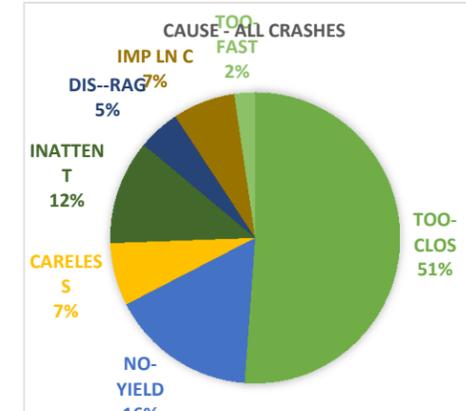
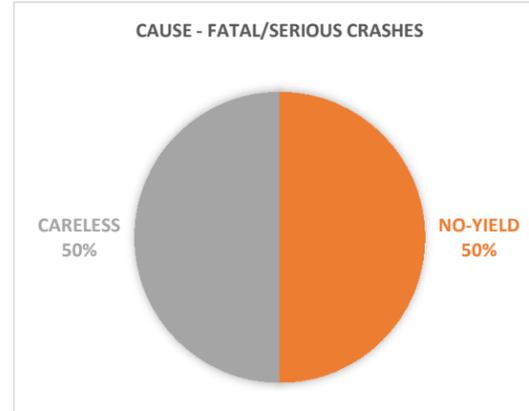
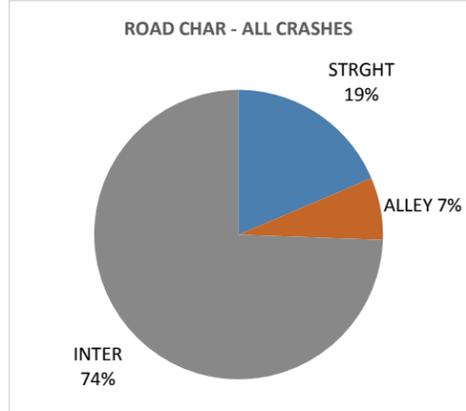
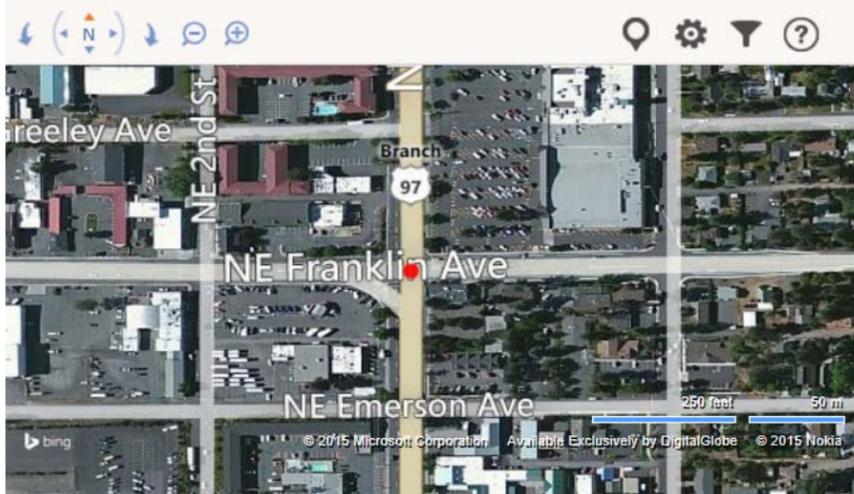
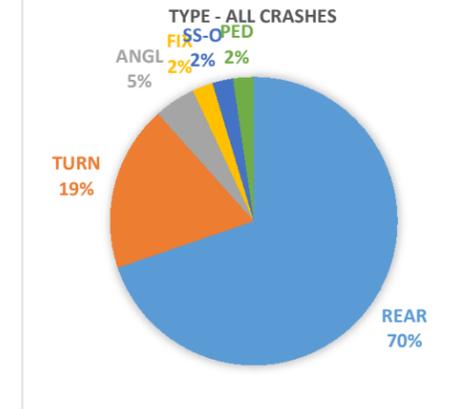
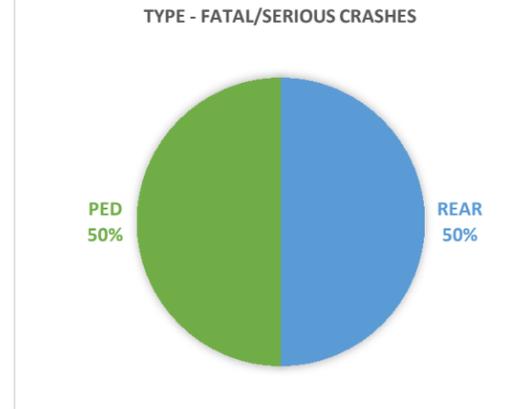
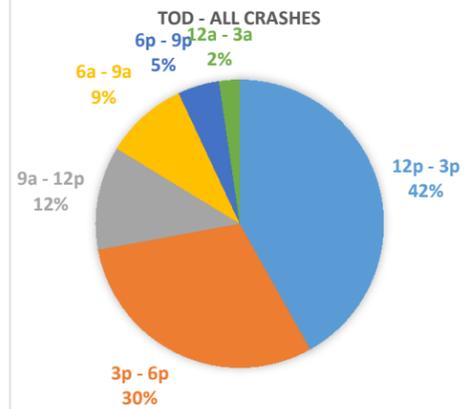
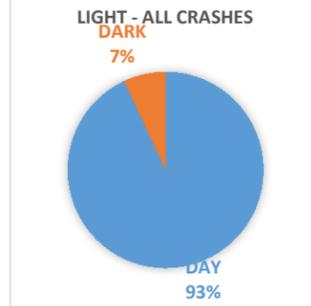
Rank	Location ID	Jurisdiction	Location Description	Group	Cost	Benefit	B/C Ratio	Countermeasures
24	18	Deschutes County	BEAR CREEK RD @ WARD RD	1	\$ 659,000	\$ 2,246,000	3.4	I10 - Increase Triangle Sight Distance I12 - Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs I15 - Provide Actuated Flashing Beacons Triggered by Approaching Vehicles at Unsignalized Intersections
25	31	ODOT	OR 39 @ MP 4.3 (020-KLAMATH FALLS-LAKEVIEW) (MADISON ST)	1	\$ 500,000	\$ 1,390,000	2.8	I2 - Improve Signal Hardware: Lenses, Reflectorized Back plates, Size, and Number
26	17	ODOT	140 @ MP 4.6 (424-SOUTH KLAMATH FALLS) (HOMEDALE WAY)	1	\$ 374,000	\$ 757,000	2.0	I1 - Install Lighting at Intersection I15 - Provide Actuated Flashing Beacons Triggered by Approaching Vehicles at Unsignalized Intersections
27	8	City of The Dalles	WEBBER ST @ 6TH ST	1	\$ 991,000	\$ 1,933,000	2.0	H15 - Channelized Left Turn Lane with Raised Median on All Approaches (3- or 4-leg) I4 - Replace Urban Permissive or Protected/Permissive Left Turns to Protected Only
28	14	ODOT	US 20 @ MP 99.9 (016-SANTIAM) (BARCLAY WAY)	1	\$ 4,775,000	\$ 8,037,000	1.7	H16 - Install Roundabout from Minor Road Stop Control
29	27	ODOT	126 @ MP 110.2 (015-MCKENZIE) (35TH ST)	1	\$ 2,284,000	\$ 3,529,000	1.5	I15 - Provide Actuated Flashing Beacons Triggered by Approaching Vehicles at Unsignalized Intersections H8 - Left Turn Lane on Both Major Road Approaches: Urban, Unsignalized Intersection (4-leg) H3 - Right Turn Lane on Both Major Road Approaches: Unsignalized Intersection (3- or 4-leg)
30	17	ODOT	140 @ MP 4.6 (424-SOUTH KLAMATH FALLS) (HOMEDALE WAY)	3	\$ 4,775,000	\$ 5,647,000	1.2	H16 - Install Roundabout from Minor Road Stop Control
31	5	City of Bend	REED MARKET RD @ S 3RD ST	2	\$ 5,022,000	\$ 5,069,000	1.0	H17 - Install Roundabout from Signalized Intersection
32	29	ODOT	126 @ MP 110.9 (015-MCKENZIE) (23RD ST)	1	\$ 74,000	\$ 67,000	0.9	H25 - Install Lighting at Intersection
33	26	ODOT	US 20 @ MP 14.7 (017-MCKENZIE-BEND) (OB RILEY RD)	1	\$ 5,183,000	\$ 4,545,000	0.9	I12 - Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs I15 - Provide Actuated Flashing Beacons Triggered by Approaching Vehicles at Unsignalized Intersections I14 - Provide Flashing Beacons at Minor Road Stop Controlled Intersections H22 - Convert 4-Leg Intersection to Two 3-Leg Intersections (Minor St ADT is 15-30% of Total Entering Traffic)
34	15	ODOT	OR 39 @ MP 4 (020-KLAMATH FALLS-LAKEVIEW) (6TH ST @ HOMEDALE WAY)	1	\$ 3,303,000	\$ 1,791,000	0.5	H15 - Channelized left turn lane w/ raised median on all approaches I1 - Install Lighting at Intersection
35	1	ODOT	US 97 @ MP 134.6 (004-THE DALLES-CALIFORNIA) (ROBAL RD)	-	-	-	0.0	No Countermeasures Identified
36	4	ODOT	US 20 @ MP 0.9 (007-CENTRAL OREGON) (8TH ST)	-	-	-	0.0	No Countermeasures Identified
37	9	ODOT	US 97 @ MP 122.8 (004-THE DALLES-CALIFORNIA) (ODEM MEDO WAY)	-	-	-	0.0	No Countermeasures Identified
38	13	City of Bend	REED MARKET RD @ SE 15TH ST	-	-	-	0.0	No Countermeasures Identified
39	32	ODOT	I-84 @ MP 71.5 (002-COLUMBIA RIVER)	-	-	-	0.0	No Countermeasures Identified
40	35	ODOT	US 97 @ MP 125 (004-THE DALLES-CALIFORNIA)	-	-	-	0.0	No Countermeasures Identified

**Total Project Cost: \$ 38,265,000.00**  
**Region 4 Funding: \$ 9,077,093.24**  
**300% Total: \$ 27,231,279.73**



**ARTS - Region 4**  
Draft Hot Spot Cut Sheet

**Location ID** 2  
**Road Control** URBAN CITY STREET  
**County** Deschutes  
**City** Bend  
**Urban Area** BEND UA  
**Route Name** 0  
**Route M.P.** 0  
**Street Name** E FRANKLIN AVE  
**Intersecting Street** E 3RD ST  
**Number of Crashes** 43 (2 F&A)



**Severe Crash Characteristics**

Crash	Severity	Type - Event	Pave	Weather	Light	Cause	V1 Mvnt	V1 From	V1 To	V2 Mvnt	V2 From	V2 To	Ped Inv?	Bike Inv?	SPD/ALC/DRG	Date	ToD	Road Char
1378487	Inj A	REAR (FORCED)	DRY	CLR	DAY	CARELESS	STRGHT	S	N	STOP	S	N	0	0	0 / 0 / 0	8/9/2010	9a - 12p	INTER
1542515	Inj A	PED	ICE	SNOW	DAY	NO-YIELD	STRGHT	S	N				1	0	0 / 1 / 0	12/5/2013	6a - 9a	INTER

**Countermeasures**

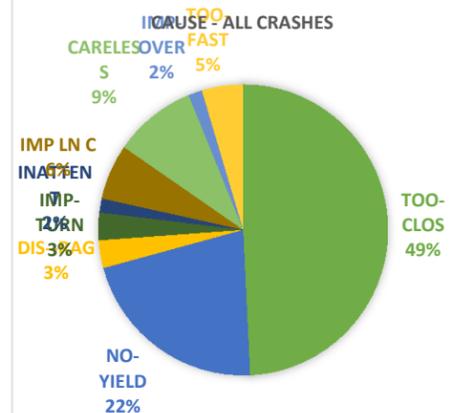
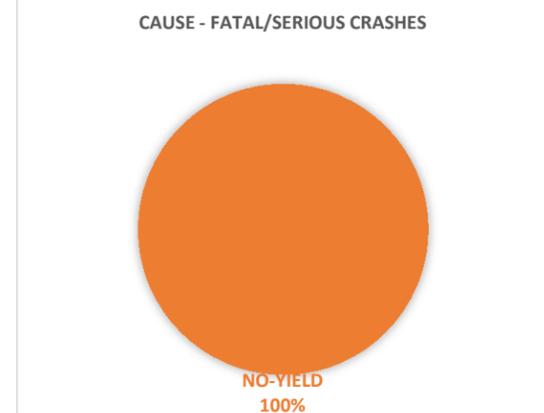
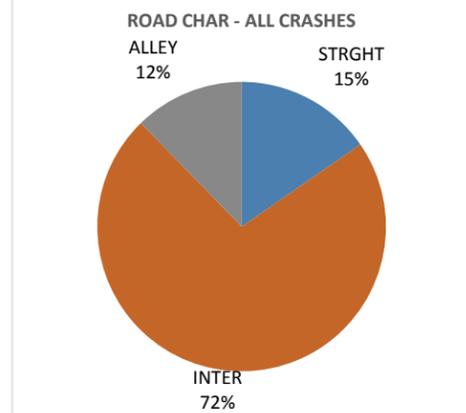
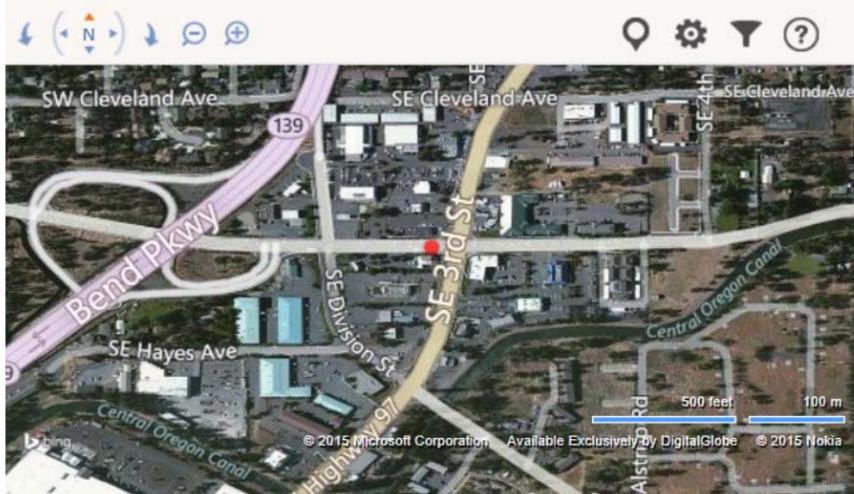
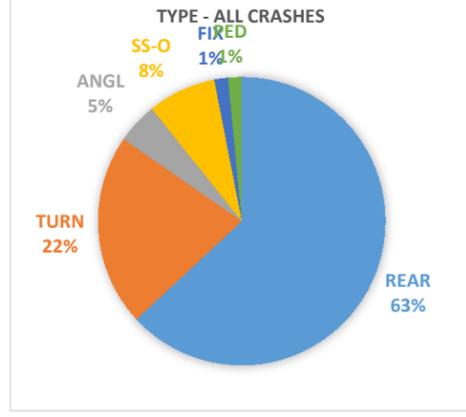
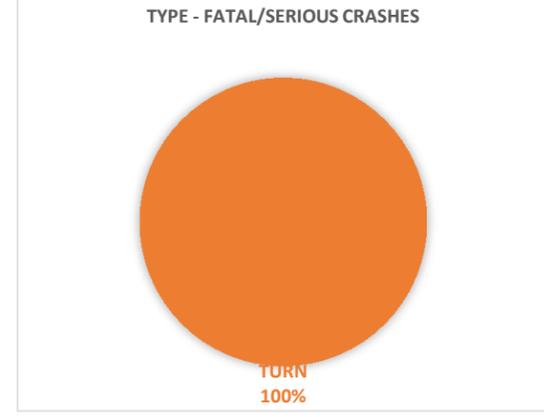
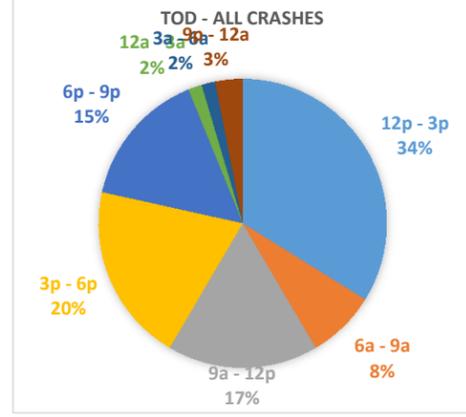
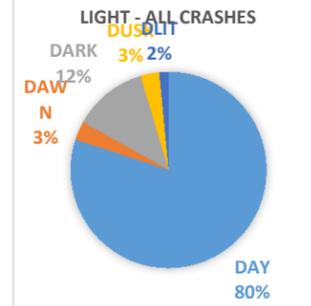
ID	Description	Notes	Project Group #	Estimated Benefit	Estimated Cost	Estimated B/C Ratio	Other Notes
BP5	Install Urban Green Bike Lanes at Conflict Points	Mid-radius, in conflict with turning traffic, to side of thru traffic.	1	\$ 142,000.00	\$ 10,000.00	14.2	
BP3	Install Urban Leading Pedestrian or Bicycle Interval at Signalized Intersection		1	\$ 632,000.00	\$ 1,000.00	632.0	
I10	Increase Triangle Sight Distance	Existing building located on southeast corner restricts view for westbound right turning vehicles	1	\$ 2,309,000.00	\$ 645,000.00	3.6	
							Can signal deficiencies be addressed? Controller, new conduit





**ARTS - Region 4**  
Draft Hot Spot Cut Sheet

**Location ID** 5  
**Road Control** URBAN CITY STREET  
**County** Deschutes  
**City** Bend  
**Urban Area** BEND UA  
**Route Name** 0  
**Route M.P.** 0  
**Street Name** REED MARKET RD  
**Intersecting Street** S 3RD ST  
**Number of Crashes** 65 (1 F&A)



**Severe Crash Characteristics**

Crash	Severity	Type - Event	Pave	Weather	Light	Cause	V1 Mvnt	V1 From	V1 To	V2 Mvnt	V2 From	V2 To	Ped Inv?	Bike Inv?	SPD/ALC/DRG	Date	ToD	Road Char
1348354	Inj A	TURN (VEH HID)	DRY	CLR	DAY	NO-YIELD	TURN-L	E	S	STRGHT	W	E		0	0 / 0 / 0	7/22/2009	12p - 3p	ALLEY

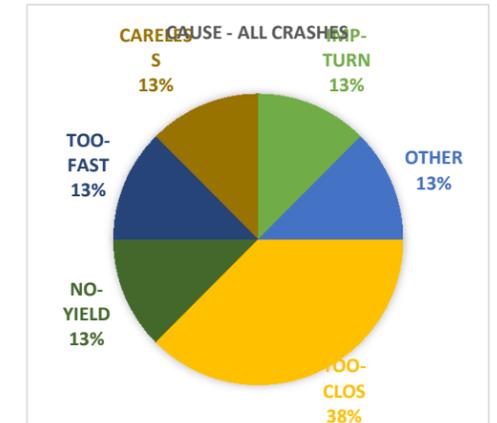
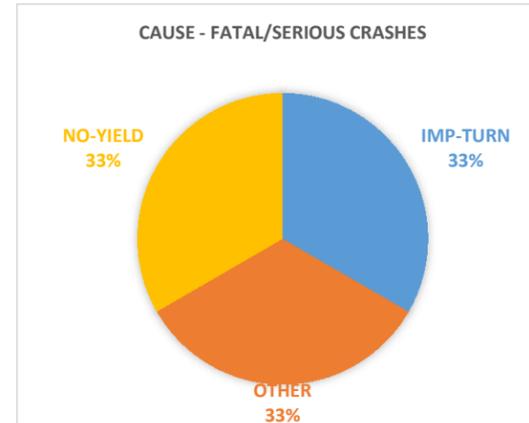
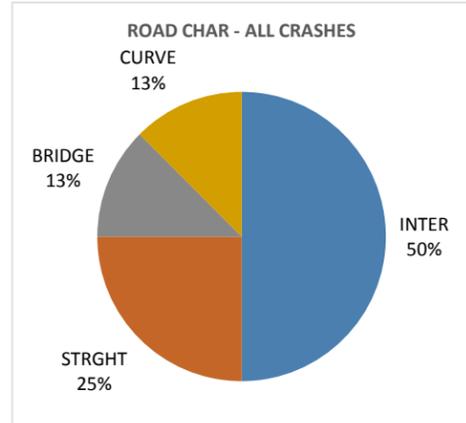
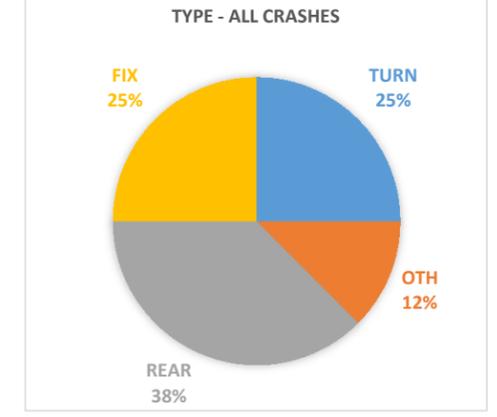
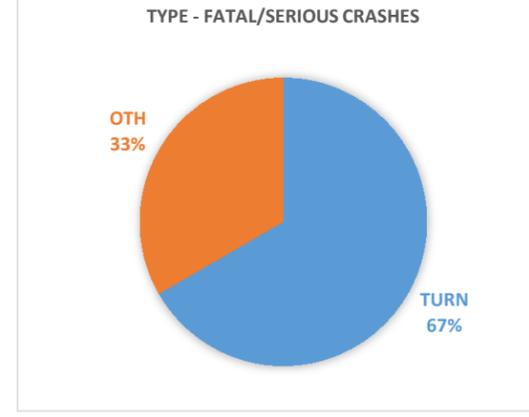
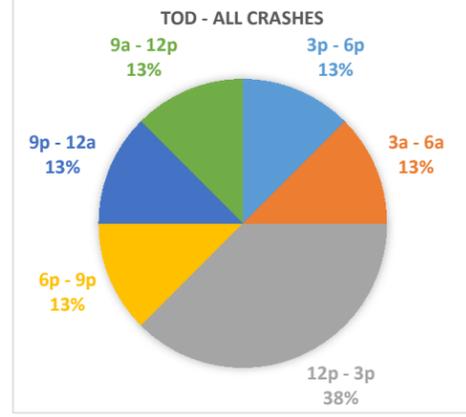
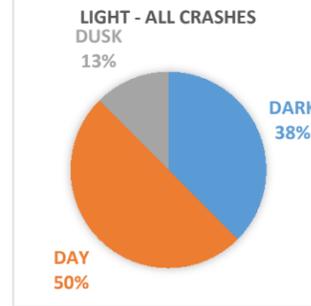
**Countermeasures**

ID	Description	Notes	Project Group #	Estimated Benefit	Estimated Cost	Estimated B/C Ratio	Other Notes
I1	Install Lighting at Intersection	Existing luminaires on northeast and southwest corners, however additional lighting may be needed to achieve recommended light levels	1	\$ 343,000.00	\$ 374,000.00	0.9	
I2	Improve Signal Hardware: Lenses, Reflectorized Back plates, Size, and Number	Improve visibility and signal head positioning. Add near right and far left heads due to truck traffic blocking view	1	\$ 2,108,000.00	\$ 42,000.00	50.2	
BP3	Install Urban Leading Pedestrian or Bicycle Interval at Signalized Intersection		1	\$ 83,000.00	\$ 1,000.00	83.0	
H27	Install Any Type of Median Barrier	Restrict driveway access to right in/right out	1	\$ 1,949,000.00	\$ 171,000.00	11.4	
H17	Install Roundabout from Signalized Intersection	Not paired with any other countermeasures	2	\$ 5,069,000.00	\$ 5,022,000.00	1.0	ROW cost expected to be high



**ARTS - Region 4**  
Draft Hot Spot Cut Sheet

**Location ID** 7  
**Road Control** SUBURBAN HWY SYSTEM  
**County** Klamath  
**City** 0  
**Urban Area** KLAM FLS UA  
**Route Name** OR 66  
**Route M.P.** 59.00999832  
**Street Name** 0  
**Intersecting Street** 0  
**Number of Crashes** 8 (3 F&A)



**Severe Crash Characteristics**

Crash	Severity	Type - Event	Pave	Weather	Light	Cause	V1 Mvnt	V1 From	V1 To	V2 Mvnt	V2 From	V2 To	Ped Inv?	Bike Inv?	SPD/ALC/DRG	Date	ToD	Road Char
1323173	Inj A	TURN	DRY	CLR	DARK	IMP-TURN	TURN-L	E	S	STRGHT	W	E	0	0	0 / 0 / 0	1/9/2009	3p - 6p	INTER
1382886	Inj A	OTH (DEER ELK)	DRY	CLR	DARK	OTHER	STRGHT	W	E	STRGHT	W	E	0	0	0 / 0 / 0	9/12/2010	3a - 6a	STRGHT
1400228	Inj A	TURN	DRY	CLR	DUSK	NO-YIELD	STRGHT	NE	SW	TURN-L	NW	NE	0	0	0 / 0 / 0	10/13/2010	6p - 9p	INTER

**Countermeasures**

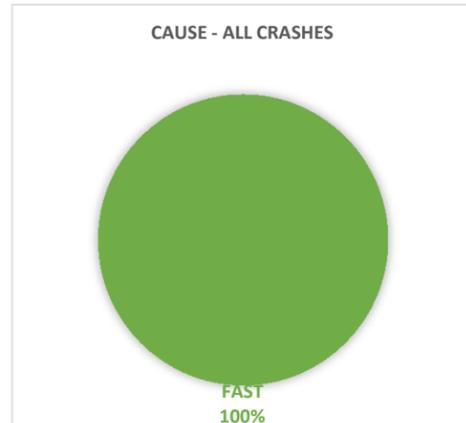
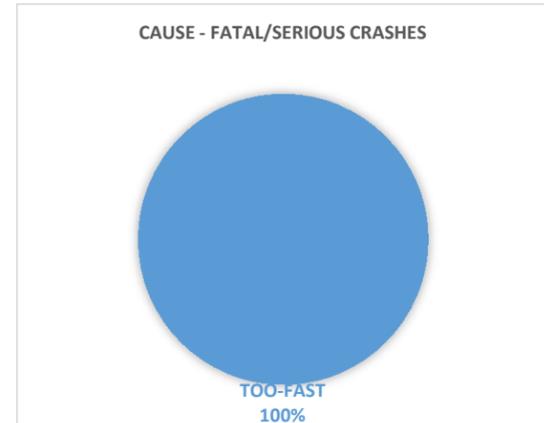
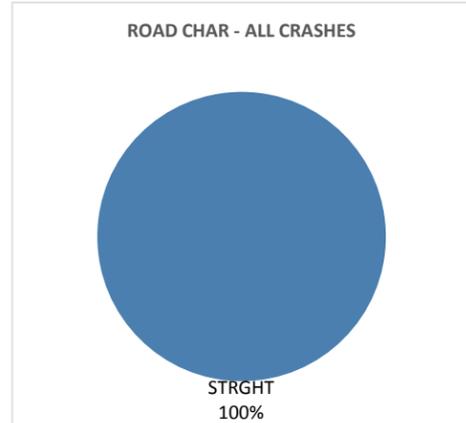
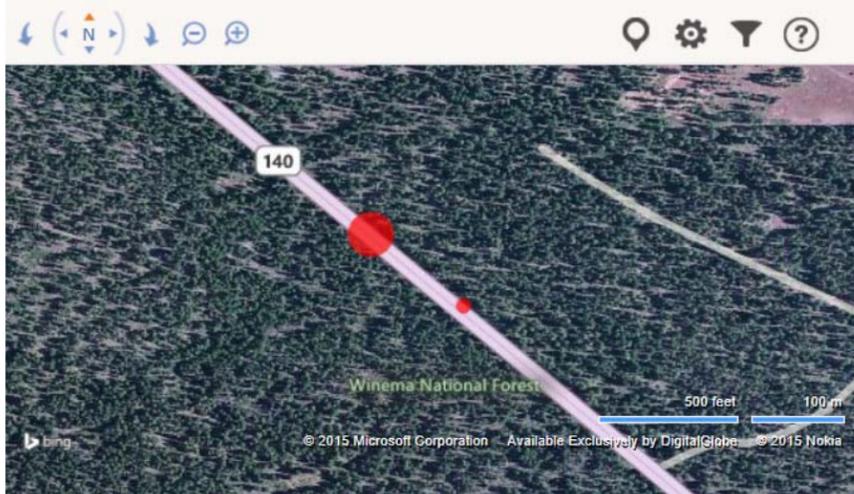
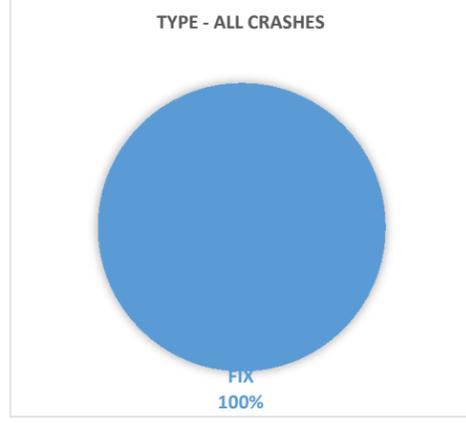
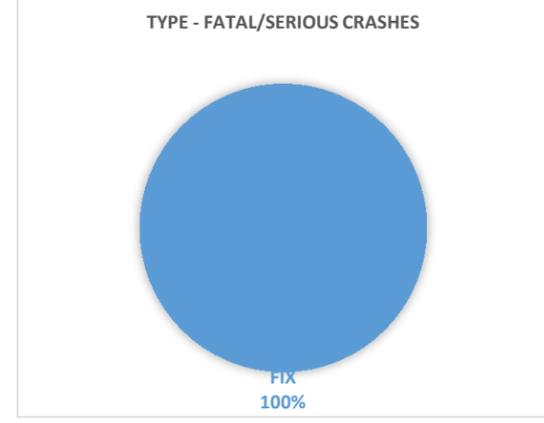
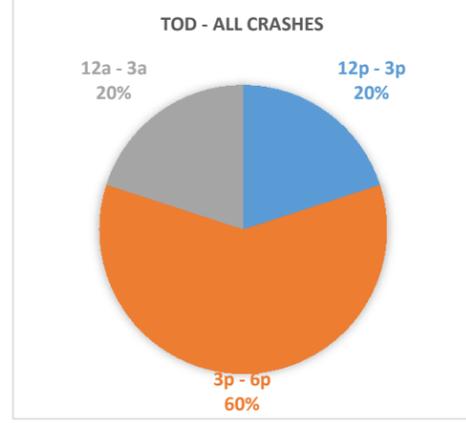
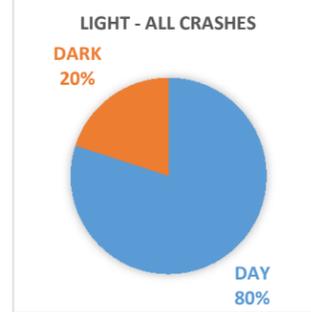
ID	Description	Notes	Project Group #	Estimated Benefit	Estimated Cost	Estimated B/C Ratio	Other Notes
H21	Install Rural Traffic Signal		1	\$ 4,490,000.00	\$ 953,000.00	4.7	See Green Springs IAMP. SB ramp and Delap Pit Rd to be realigned
H25	Install Lighting at Intersection	Install lighting throughout interchange	1	\$ 3,324,000.00	\$ 74,000.00	44.9	
H26	Install Lighting on a Roadway Segment	Install lighting throughout interchange	1	\$ 2,449,000.00	\$ 218,000.00	11.2	





**ARTS - Region 4**  
Draft Hot Spot Cut Sheet

**Location ID** 10  
**Road Control** RURAL HWY SYSTEM  
**County** Klamath  
**City** 0  
**Urban Area** 0  
**Route Name** 140  
**Route M.P.** 46.90000153  
**Street Name** 0  
**Intersecting Street** 0  
**Number of Crashes** 5 (3 F&A)



**Severe Crash Characteristics**

Crash	Severity	Type - Event	Pave	Weather	Light	Cause	V1 Mvnt	V1 From	V1 To	V2 Mvnt	V2 From	V2 To	Ped Inv?	Bike Inv?	SPD/ALC/DRG	Date	ToD	Road Char	
1335686	Fatal	FIX (DITCH)	ICE	CLD	DAY	TOO-FAST	STRGHT	W	E					0	0	1 / 0 / 0	11/21/2009	12p - 3p	STRGHT
1450275	Inj A	FIX (DITCH)	ICE	SNOW	DAY	TOO-FAST	STRGHT	W	E					0	0	1 / 0 / 0	1/10/2012	3p - 6p	STRGHT
1492080	Inj A	FIX (DITCH)	ICE	SNOW	DAY	TOO-FAST	STRGHT	W	E					0	0	1 / 0 / 0	1/10/2012	3p - 6p	STRGHT

**Countermeasures**

ID	Description	Notes	Project Group #	Estimated Benefit	Estimated Cost	Estimated B/C Ratio	Other Notes
RD1	Increase Distance to Rural Roadside Obstacle from 3 ft. (1 m) to 16 ft. (5 m)		1	\$ 2,819,000.00	\$ 56,000.00	50.3	









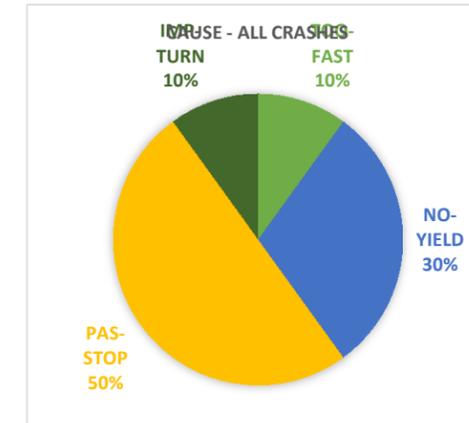
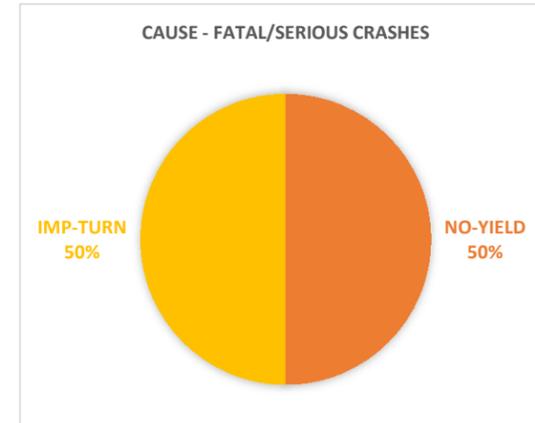
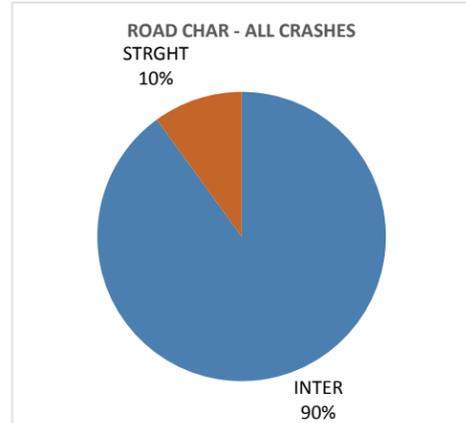
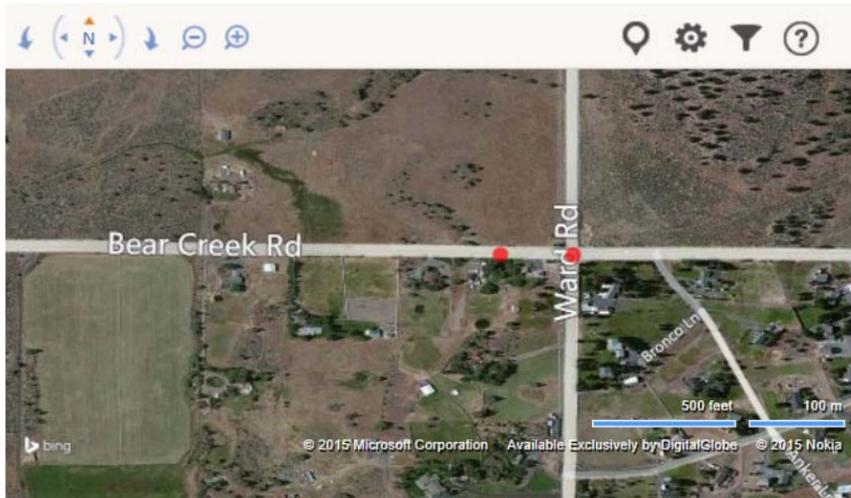
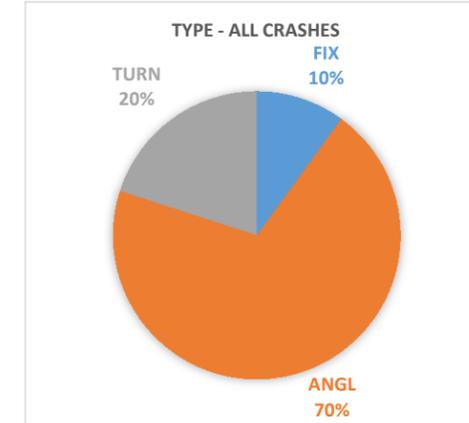
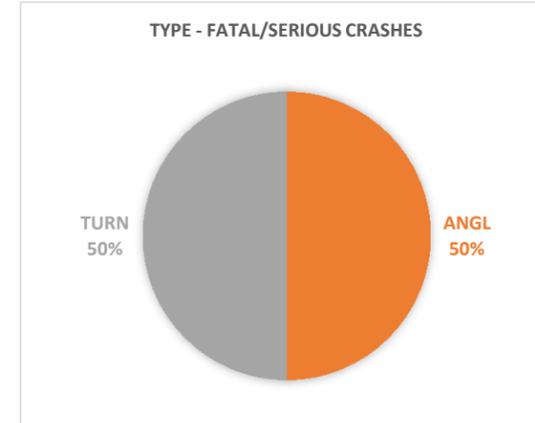
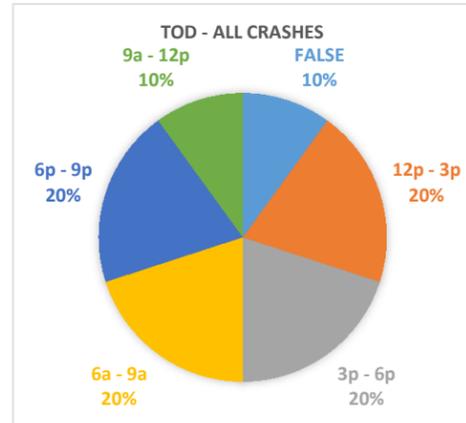
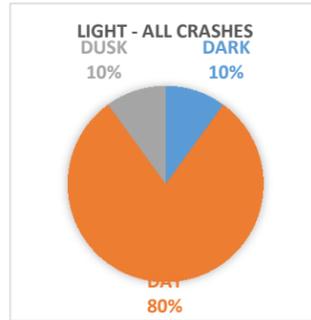






**ARTS - Region 4**  
Draft Hot Spot Cut Sheet

Location ID: 18  
 Road Control: SUBURBAN COUNTY ROAD  
 County: Deschutes  
 City: 0  
 Urban Area: BEND UA  
 Route Name: 0  
 Route M.P.: 0  
 Street Name: 0  
 Intersecting Street: BEAR CREEK RD  
 Number of Crashes: 10 (2 F&A)



**Severe Crash Characteristics**

Crash	Severity	Type - Event	Pave	Weather	Light	Cause	V1 Mvnt	V1 From	V1 To	V2 Mvnt	V2 From	V2 To	Ped Inv?	Bike Inv?	SPD/ALC/DRG	Date	ToD	Road Char
1375755	Inj A	TURN	DRY	CLD	DAY	IMP-TURN	U-TURN	W	W	STRGHT	W	E		0	0 / 0 / 0	7/2/2010	3p - 6p	STRGHT
1529427	Inj A	ANGL	DRY	CLR	DAY	NO-YIELD	STRGHT	W	E	STRGHT	N	S		0	0 / 0 / 0	7/11/2013	6p - 9p	INTER

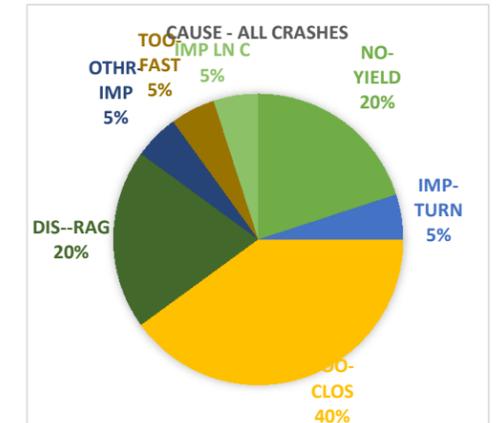
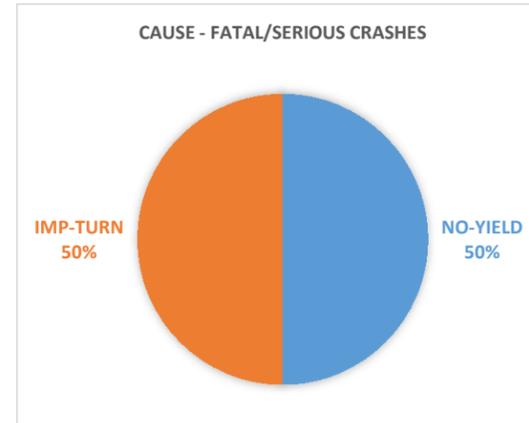
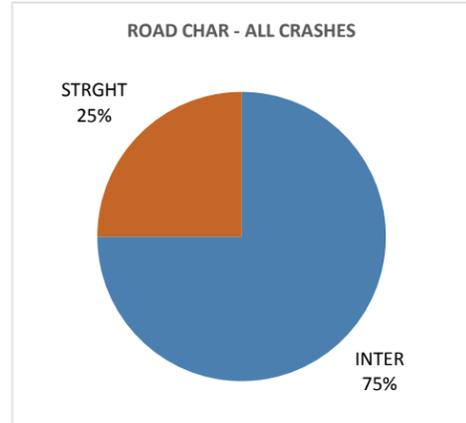
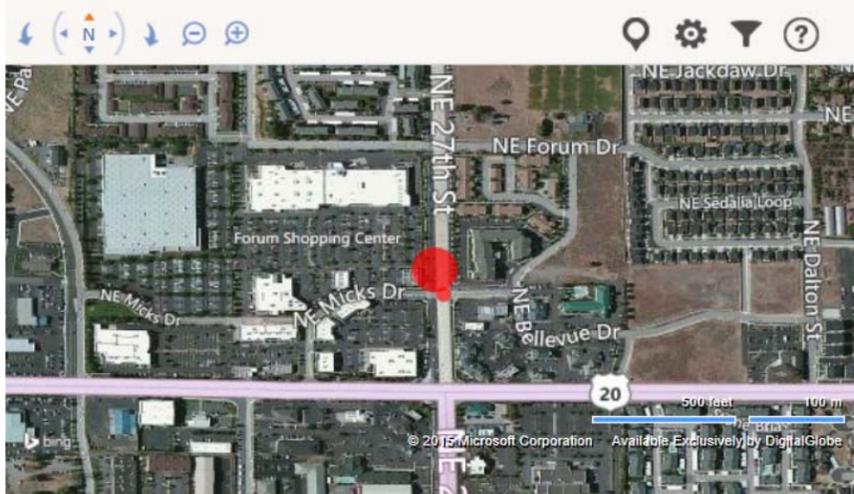
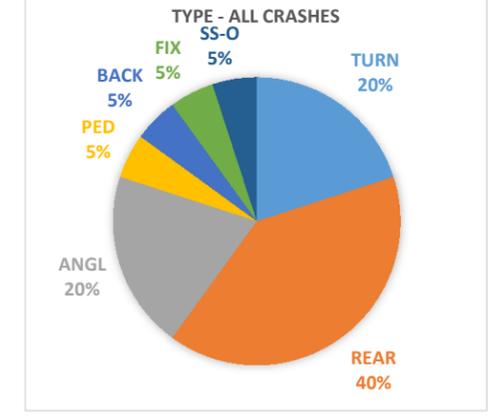
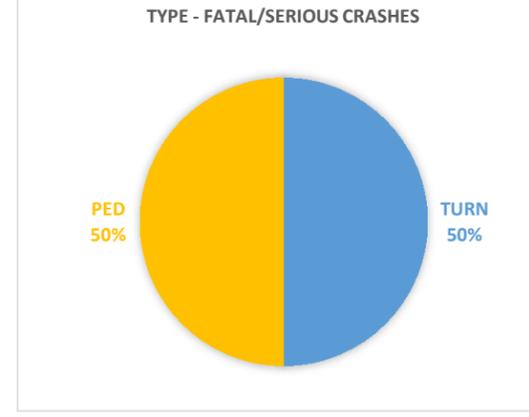
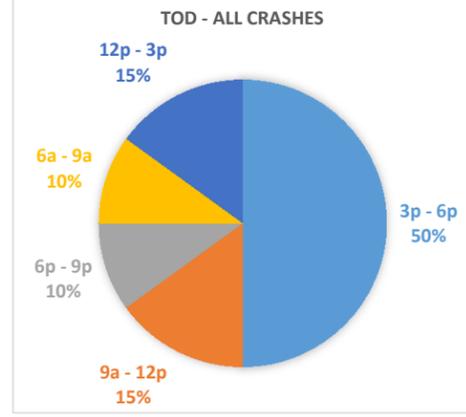
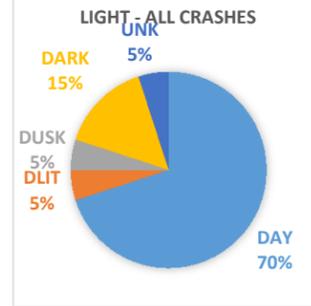
**Countermeasures**

ID	Description	Notes	Project Group #	Estimated Benefit	Estimated Cost	Estimated B/C Ratio	Other Notes
I10	Increase Triangle Sight Distance	Grade might reduce sight distance	1	\$ 1,611,000.00	\$ 345,000.00	4.7	
I12	Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs		1	\$ 854,000.00	\$ 14,000.00	61.0	
I15	Provide Actuated Flashing Beacons Triggered by Approaching Vehicles at Unsignalized Intersections		1	\$ 463,000.00	\$ 300,000.00	1.5	
H19	Convert to All-Way Stop Control (From Rural 2-Way or Yield Control)		2	\$ 1,640,000.00	\$ 25,000.00	65.6	



**ARTS - Region 4**  
Draft Hot Spot Cut Sheet

**Location ID** 20  
**Road Control** URBAN CITY STREET  
**County** Deschutes  
**City** Bend  
**Urban Area** BEND UA  
**Route Name** 0  
**Route M.P.** 0  
**Street Name** GRAND WAY  
**Intersecting Street** E 27TH ST  
**Number of Crashes** 20 (2 F&A)



**Severe Crash Characteristics**

Crash	Severity	Type - Event	Pave	Weather	Light	Cause	V1 Mvnt	V1 From	V1 To	V2 Mvnt	V2 From	V2 To	Ped Inv?	Bike Inv?	SPD/ALC/DRG	Date	ToD	Road Char
1332250	Inj A	TURN	DRY	CLR	DAY	IMP-TURN	TURN-L	N	E	STRGHT	S	N	0	0	0 / 0 / 0	5/1/2009	9a - 12p	INTER
1440888	Fatal	PED	DRY	CLD	DARK	NO-YIELD	STRGHT	N	S				1	0	0 / 1 / 0	12/12/2011	6p - 9p	STRGHT

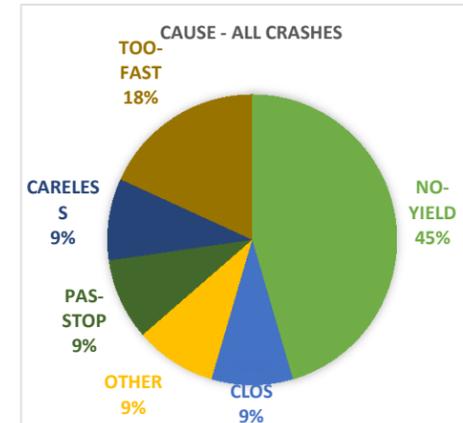
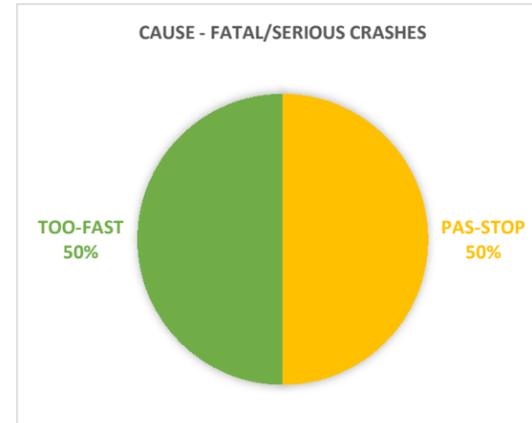
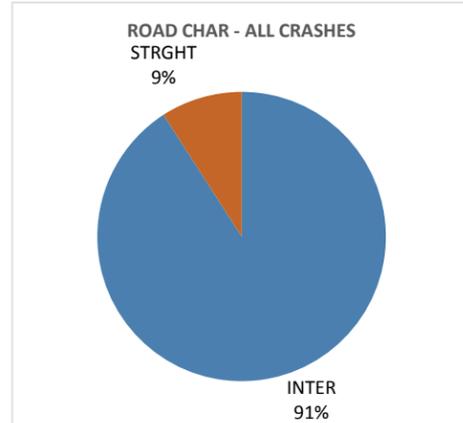
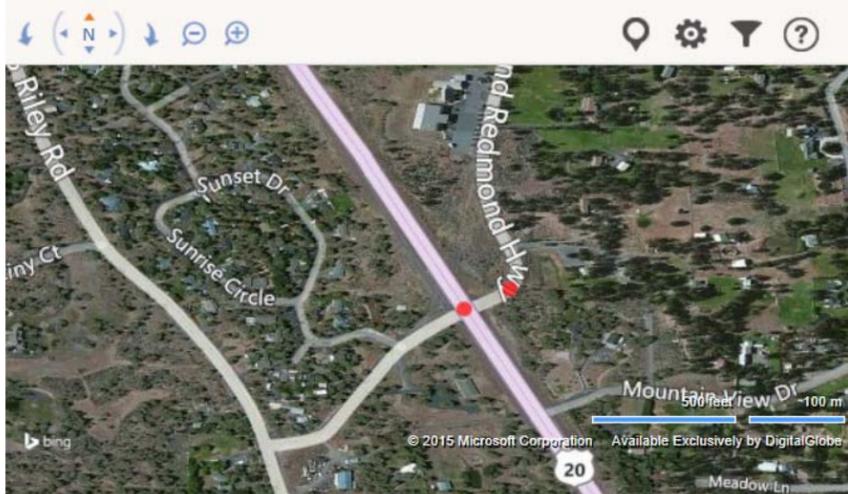
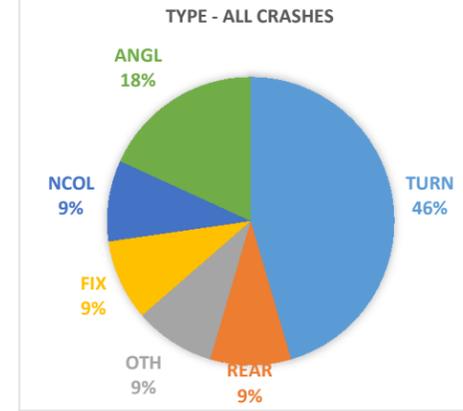
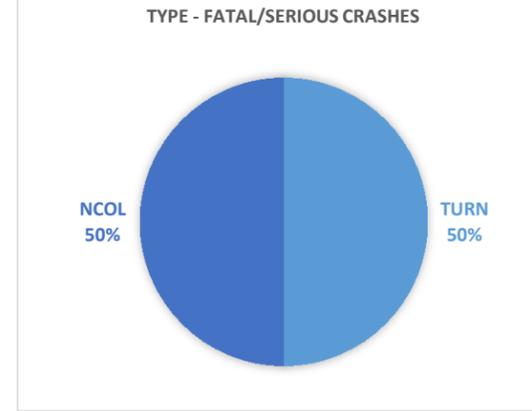
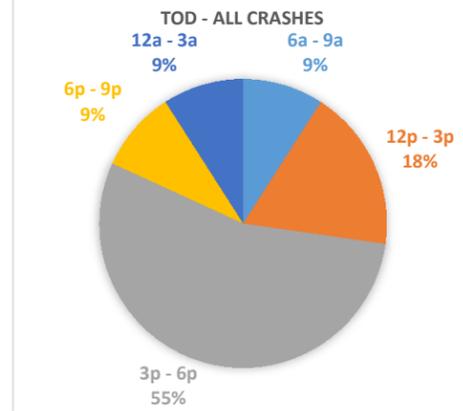
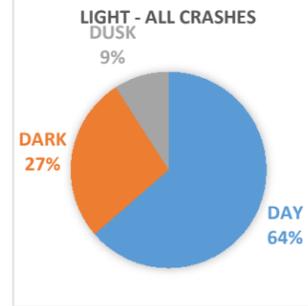
**Countermeasures**

ID	Description	Notes	Project Group #	Estimated Benefit	Estimated Cost	Estimated B/C Ratio	Other Notes
I1	Install Lighting at Intersection	Verify existing lighting (two luminaires existing)	1	\$ 1,030,000.00	\$ 174,000.00	5.9	
I4	Replace Urban Permissive or Protected/Permissive Left Turns to Protected Only	Posted speed 45mph along 27th St	1	\$ 96,000.00	\$ 12,000.00	8.0	
BP3	Install Urban Leading Pedestrian or Bicycle Interval at Signalized Intersection		1	\$ 538,000.00	\$ 1,000.00	538.0	If don't use I4 consider BP4 (restrict FYA when active pedestrian phase)
		Elderly population on northeast corner					
		Elderly population on northeast corner					

## ARTS - Region 4

### Draft Hot Spot Cut Sheet

**Location ID** 21  
**Road Control** RURAL HWY SYSTEM  
**County** Deschutes  
**City** 0  
**Urban Area** 0  
**Route Name** US 20  
**Route M.P.** 16.73999977  
**Street Name** 0  
**Intersecting Street** 0  
**Number of Crashes** 11 (2 F&A)



#### Severe Crash Characteristics

Crash	Severity	Type - Event	Pave	Weather	Light	Cause	V1 Mvnt	V1 From	V1 To	V2 Mvnt	V2 From	V2 To	Ped Inv?	Bike Inv?	SPD/ALC/DRG	Date	ToD	Road Char
1410461	Inj A	TURN (VEH HID)	DRY	CLR	DUSK	PAS-STOP	TURN-R	N	W	STRGHT	E	W	0	0	0 / 0 / 0	2/24/2011	3p - 6p	INTER
1459130	Inj A	NCOL	DRY	CLR	DARK	TOO-FAST	STRGHT	E	W				0	0	1 / 0 / 0	2/3/2012	12a - 3a	STRGHT

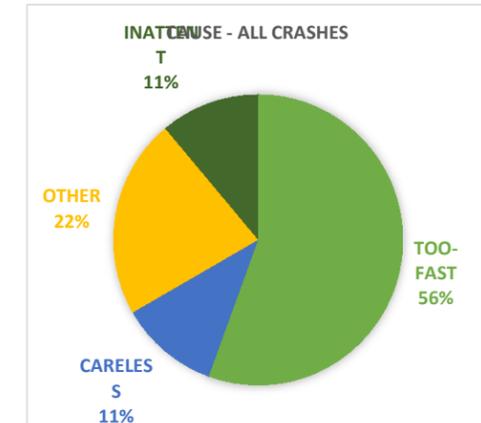
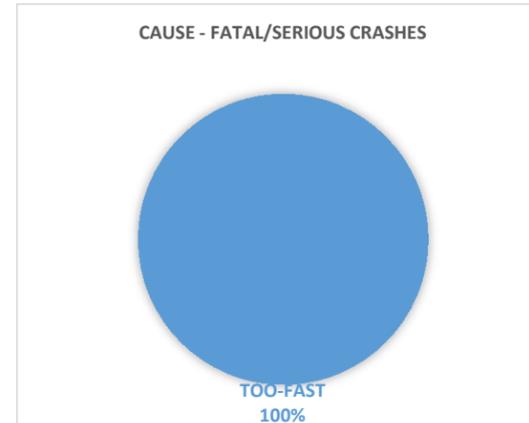
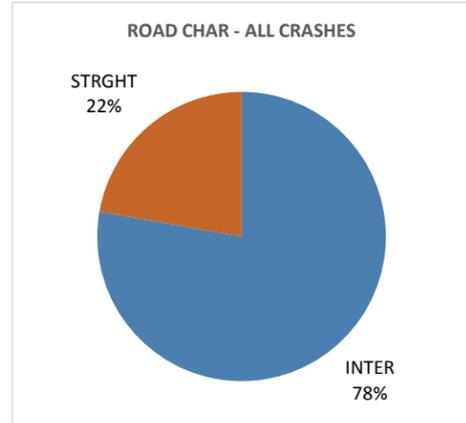
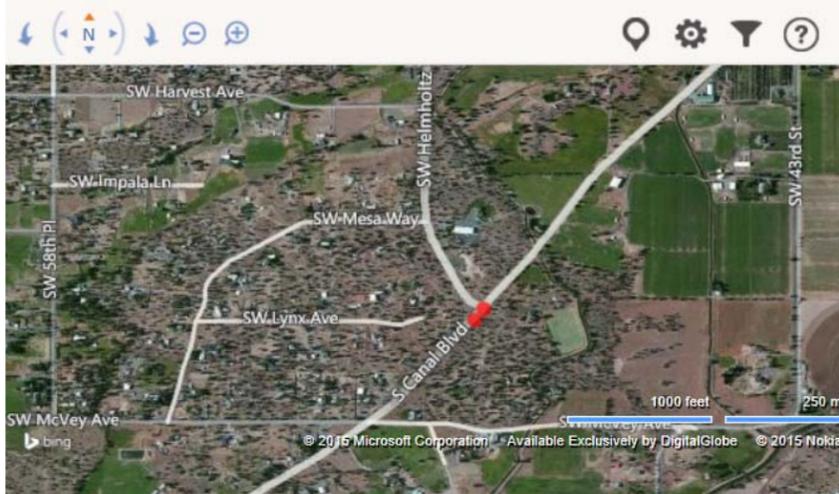
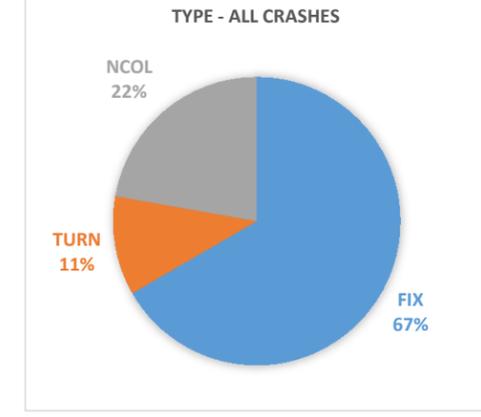
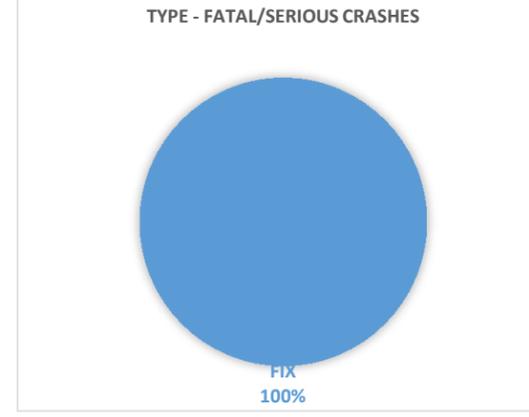
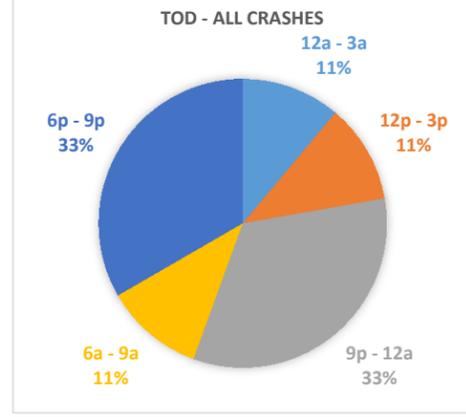
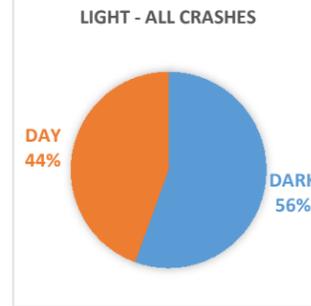
#### Countermeasures

ID	Description	Notes	Project Group #	Estimated Benefit	Estimated Cost	Estimated B/C Ratio	Other Notes
I1	Install Lighting at Intersection		1	\$ 3,182,000.00	\$ 74,000.00	43.0	Close west leg, require people to use signal at adjacent intersection.
I12	Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs		1	\$ 1,485,000.00	\$ 14,000.00	106.1	
I15	Provide Actuated Flashing Beacons Triggered by Approaching Vehicles at Unsignalized Intersections		1	\$ 442,000.00	\$ 300,000.00	1.5	
H24	Install Rural Median Acceleration Lane	Also consider right turn acceleration lane	1	\$ 4,227,000.00	\$ 670,000.00	6.3	
I14	Provide Flashing Beacons at Minor Road Stop Controlled Intersections	Along westbound approach (horizontal curve)	1	\$ 411,000.00	\$ 13,000.00	31.6	

## ARTS - Region 4

### Draft Hot Spot Cut Sheet

**Location ID** 22  
**Road Control** RURAL COUNTY ROAD  
**County** Deschutes  
**City** 0  
**Urban Area** 0  
**Route Name** 0  
**Route M.P.** 0  
**Street Name** 0  
**Intersecting Street** 0  
**Number of Crashes** 9 (2 F&A)



#### Severe Crash Characteristics

Crash	Severity	Type - Event	Pave	Weather	Light	Cause	V1 Mvnt	V1 From	V1 To	V2 Mvnt	V2 From	V2 To	Ped Inv?	Bike Inv?	SPD/ALC/DRG	Date	ToD	Road Char
1431777	Inj A	FIX (POLE UTL)	DRY	CLR	DAY	TOO-FAST	STRGHT	S	N				0	0	1 / 0 / 0	7/6/2011	6a - 9a	STRGHT
1498714	Inj A	FIX (UNK FIXD)	WET	RAIN	DARK	TOO-FAST	STRGHT	W	E				0	0	1 / 0 / 0	12/1/2012	6p - 9p	INTER

#### Countermeasures

ID	Description	Notes	Project Group #	Estimated Benefit	Estimated Cost	Estimated B/C Ratio	Other Notes
I1	Install Lighting at Intersection		1	\$ 1,820,000.00	\$ 174,000.00	10.5	
RD1	Increase Distance to Rural Roadside Obstacle from 3 ft. (1 m) to 16 ft. (5 m)	Relocate utility poles and protect ditch (guardrail or pipe)	1	\$ 2,082,000.00	\$ 256,000.00	8.1	
I14	Provide Flashing Beacons at Minor Road Stop Controlled Intersections	Consider along horizontal curve on eastbound approach. Could include chevron signs (RD7)	1	\$ 17,000.00	\$ 13,000.00	1.3	Fixed object crashes are speed related
RD5	Provide Safety Edge for Rural Pavement Edge Drop-Off		1	\$ 352,000.00	\$ 82,000.00	4.3	
I12	Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs		1	\$ 1,466,000.00	\$ 14,000.00	104.7	



























