

ARTS - Region 5
Draft Hot Spot Project List

| Rank | Location ID | Jurisdiction | Location Description | Group | Cost | Benefit | B/C Ratio | Countermeasures |
|------|-------------|-----------------|--|-------|-----------------|-----------------|-----------|---|
| 1 | 11 | ODOT | 207 @ MP 10 (333-HERMISTON) | 1 | \$ 9,000.00 | \$ 2,279,000.00 | 240.3 | RD6 - Install RECOMMENDED Chevron Signs on Rural Horizontal Curves RD7 - Install REQUIRED Chevron Signs on Rural Horizontal Curves (Ballbanking and Revised Speed Riders Included) RD8 - Install Oversized, Doubled Up and/or Fluorescent Yellow Sheeting for Advance Curve Warning Signs RD15 - Install Centerline Rumble Strips |
| 2 | 17 | Grant County | MIDDLE FORK RD @ MP 13.7 | 1 | \$ 12,000.00 | \$ 2,306,000.00 | 192.2 | RD6 - Install RECOMMENDED Chevron Signs on Rural Horizontal Curves RD7 - Install REQUIRED Chevron Signs on Rural Horizontal Curves (Ballbanking and Revised Speed Riders Included) RD9 - Provide Static Combination Horizontal Alignment/Advisory Curve Warning Sign RD14 - Install Edgeline Striping (Tangent and/or Curve Application) |
| 3 | 12 | ODOT | US 95 @ MP 63 (456-I.O.N.) | 1 | \$ 35,000.00 | \$ 4,615,000.00 | 133.9 | RD6 - Install RECOMMENDED Chevron Signs on Rural Horizontal Curves RD7 - Install REQUIRED Chevron Signs on Rural Horizontal Curves (Ballbanking and Revised Speed Riders Included) RD9 - Provide Static Combination Horizontal Alignment/Advisory Curve Warning Sign RD10 - Install Advance Curve Warning Flashers (Curve Warning Signs Exist) RD13 - Install Post-Mounted Delineators (Curve Application) |
| 4 | 23 | ODOT | US 20 @ MP 258.2 (007-CENTRAL OREGON) | 2 | \$ 197,000.00 | \$ 2,198,000.00 | 64.3 | I12 - Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs I16 - Install Transverse Rumble Strips on Approach(es) H27 - Install any type of median barrier. |
| 5 | 26 | ODOT | 201 @ MP 31.3 (455-OLDS FERRY-ONTARIO) | 1 | \$ 59,000.00 | \$ 2,399,000.00 | 40.7 | I12 - Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs H28 - Install New Guardrail (Not Median Barrier Application) |
| 6 | 15 | ODOT | OR 82 @ MP 40 (010-WALLOWA LAKE) | 1 | \$ 53,000.00 | \$ 1,868,000.00 | 35.2 | RD6 - Install RECOMMENDED Chevron Signs on Rural Horizontal Curves RD7 - Install REQUIRED Chevron Signs on Rural Horizontal Curves (Ballbanking and Revised Speed Riders Included) RD9 - Provide Static Combination Horizontal Alignment/Advisory Curve Warning Sign H28 - Install New Guardrail (Not Median Barrier Application) |
| 7 | 7 | ODOT | US 395 @ MP 5.4 (054-UMATILLA-STANFIELD) | 1 | \$ 42,000.00 | \$ 1,446,000.00 | 34.4 | I2 - Improve Signal Hardware: Lenses, ReflectORIZED Back plates, Size, and Number |
| 8 | 24 | ODOT | US 395 @ MP 5.1 (054-UMATILLA-STANFIELD) | 1 | \$ 104,000.00 | \$ 3,552,000.00 | 34.2 | I2 - Improve Signal Hardware: Lenses, ReflectORIZED Back plates, Size, and Number I4 - Replace Urban Permissive or Protected/Permissive Left Turns to Protected Only |
| 9 | 20 | Umatilla County | BRIDGE RD @ MP 1.8 | 1 | \$ 88,000.00 | \$ 2,331,000.00 | 26.5 | H25 - Install Lighting at 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 |
| 10 | 34 | ODOT | I-84 @ MP 340 (006-OLD OREGON TRAIL) | 1 | \$ 100,000.00 | \$ 2,312,000.00 | 23.1 | RD11 - Install Dynamic Curve Speed Warning System RD6 - Install RECOMMENDED Chevron Signs on Rural Horizontal Curves |
| 11 | 3 | ODOT | OR 11 @ MP 33.9 (008-OREGON-WASHINGTON) | 1 | \$ 286,000.00 | \$ 6,510,000.00 | 22.8 | H35 - Provide a Raised Median, Rural Multi-Lane Road I12 - Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs RD1 - Increase Distance to Rural Roadside Obstacle from 3 ft. (1 m) to 16 ft. (5 m) |
| 12 | 35 | ODOT | I-84 @ MP 332.5 (006-OLD OREGON TRAIL) | 1 | \$ 100,000.00 | \$ 2,171,000.00 | 21.7 | RD11 - Install Dynamic Curve Speed Warning System RD6 - Install RECOMMENDED Chevron Signs on Rural Horizontal Curves |
| 13 | 14 | ODOT | US 95 @ MP 1.8 (456-I.O.N.) | 1 | \$ 264,000.00 | \$ 5,000,000.00 | 18.9 | H28 - Install New Guardrail (Not Median Barrier Application) RD8 - Install Oversized, Doubled Up and/or Fluorescent Yellow Sheeting for Advance Curve Warning Signs H41 - Improve Superelevation Variance (SV) on Rural Curves (Between 0.01 and 0.02) |
| 14 | 9 | Umatilla County | UMATILLA RV RD @ MP 3 | 1 | \$ 173,000.00 | \$ 3,070,000.00 | 17.7 | RD15 - Install Centerline Rumble Strips H27 - Install Any Type of Median Barrier |
| 15 | 2 | ODOT | US 395 @ MP 184.1 (002-COLUMBIA RIVER) | 1 | \$ 190,000.00 | \$ 3,050,000.00 | 16.1 | I8 - Install Flashing Beacons as Advance Warning at Intersections (Not Coordinated with Signal Timing) H28 - Install New Guardrail (Not Median Barrier Application) |
| 16 | 6 | ODOT | 201 @ MP 30.3 (455-OLDS FERRY-ONTARIO) | 1 | \$ 221,000.00 | \$ 3,410,000.00 | 15.4 | I7 - Install Actuated Advance Warning Dilemma Zone Protection System at High Speed Signals (Microwave Detection) I9 - Install Actuated/Coordinated Flashing Beacons as Advance Warning for Signalized Intersections I4 - Replace Urban Permissive or Protected/Permissive Left Turns to Protected Only |
| 17 | 1 | ODOT | US 395 @ MP 4.8 (054-UMATILLA-STANFIELD) | 1 | \$ 477,000.00 | \$ 2,454,000.00 | 10.5 | H4 - Right Turn Lane on Single Major Road Approaches: Signalized Intersection (3- or 4-leg) I9 - Install Actuated/Coordinated Flashing Beacons as Advance Warning for Signalized Intersections |
| 18 | 19 | ODOT | US 395 @ MP 2.8 (054-UMATILLA-STANFIELD) | 1 | \$ 363,000.00 | \$ 2,431,000.00 | 6.7 | H27 - Install Any Type of Median Barrier H2 - Right Turn Lane on Single Major Road Approach: Unsignalized Intersection (3- or 4-leg) |
| 19 | 13 | ODOT | OR 82 @ MP 63.5 (010-WALLOWA LAKE) | 1 | \$ 1,373,000.00 | \$ 2,537,000.00 | 6.6 | RD20 - Install Widen Paved Shoulder by 3 ft. H13 - Left Turn Lane on Single Major Road Approach: Rural, Signalized Intersection (3-leg) |

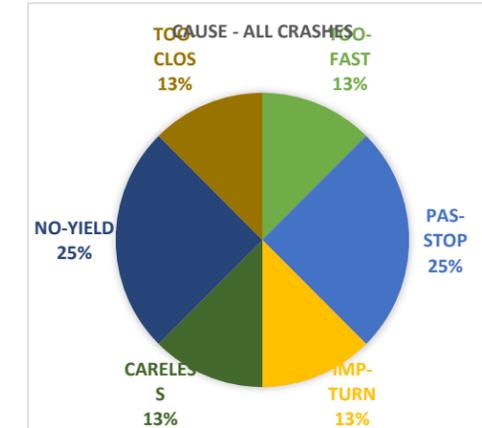
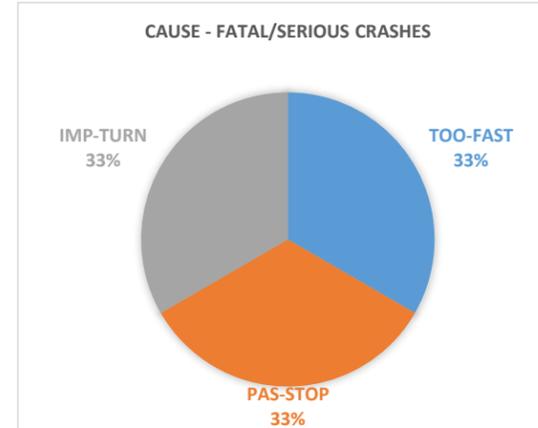
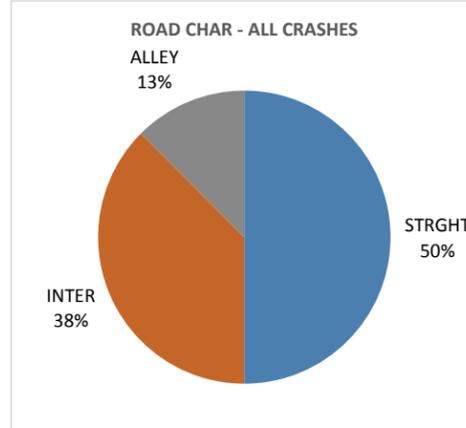
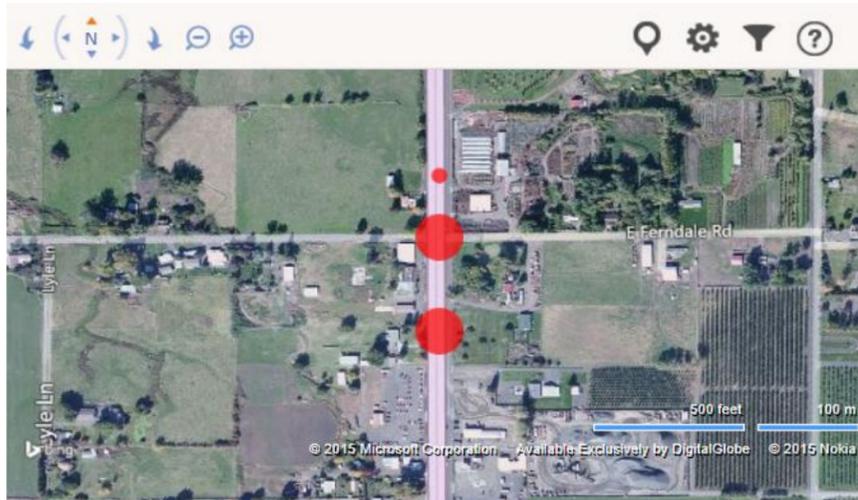
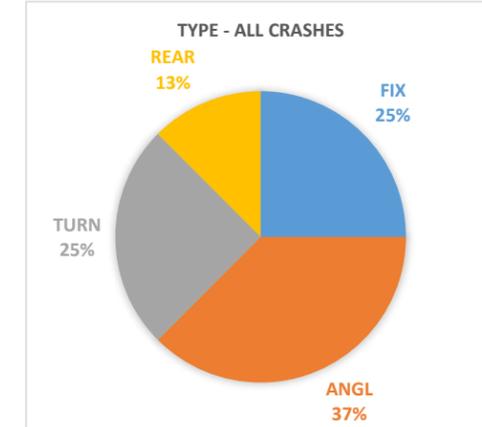
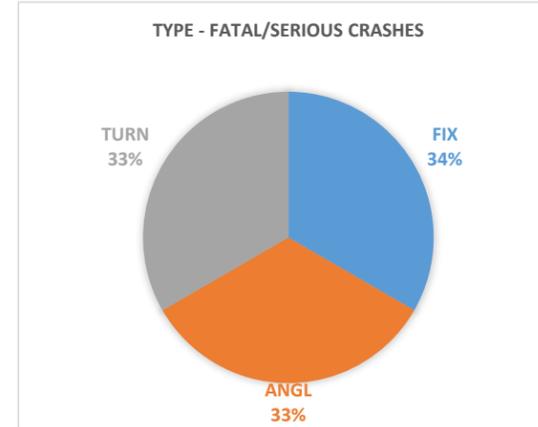
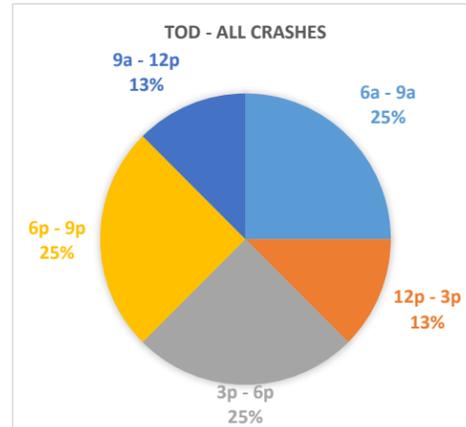
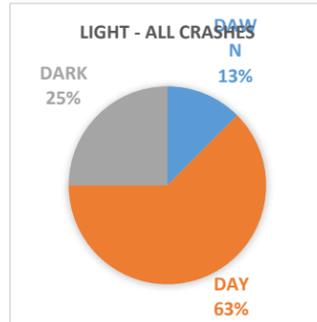
ARTS - Region 5
Draft Hot Spot Project List

| Rank | Location ID | Jurisdiction | Location Description | Group | Cost | Benefit | B/C Ratio | Countermeasures |
|------|-------------|-------------------|--|-------|-----------------|-----------------|-----------|---|
| 20 | 4 | ODOT | US 395 @ MP 1.8 (028-PENDLETON-JOHN DAY) | 1 | \$ 1,515,000.00 | \$ 3,324,000.00 | 5.8 | I9 - Install Actuated/Coordinated Flashing Beacons as Advance Warning for Signalized Intersections I2 - Improve Signal Hardware: Lenses, Reflectorized Back plates, Size, and Number H4 - Right Turn Lane on Single Major Road Approaches: Signalized Intersection (3- or 4-leg) H11 - Left Turn Lane on Single Major Road Approaches: Signalized Intersection (3- or 4-leg) |
| 21 | 29 | City of La Grande | MONROE AVE @ SPRUCE ST | 1 | \$ 180,000.00 | \$ 971,000.00 | 5.4 | H18 - Convert to All-Way Stop Control (From Urban 2-Way or Yield Control) H27 - Install Any Type of Median Barrier |
| 22 | 5 | ODOT | OR 37 @ MP 1.4 (028-PENDLETON-JOHN DAY) | 1 | \$ 192,000.00 | \$ 949,000.00 | 4.9 | H2 - Right Turn Lane on Single Major Road Approach: Unsignalized Intersection (3- or 4-leg) |
| 23 | 22 | ODOT | 207 @ MP 5 (333-HERMISTON) | 1 | \$ 359,000.00 | \$ 1,597,000.00 | 4.4 | 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 |
| 24 | 27 | ODOT | I-84 @ MP 313.5 (006-OLD OREGON TRAIL) | 1 | \$ 218,000.00 | \$ 1,847,000.00 | 4.1 | H46 - Install Rural Variable Speed Limit Signs H26 - Install Lighting on a Roadway Segment |
| 25 | 30 | ODOT | I-84 @ MP 323.4 (006-OLD OREGON TRAIL) | 1 | \$ 575,000.00 | \$ 2,319,000.00 | 4.0 | H46 - Install Rural Variable Speed Limit Signs H26 - Install Lighting on a Roadway Segment |
| 26 | 32 | ODOT | I-84 @ MP 283.4 (006-OLD OREGON TRAIL) | 1 | \$ 218,000.00 | \$ 1,847,000.00 | 4.0 | H26 - Install Lighting on a Roadway Segment |
| 27 | 33 | Umatilla County | UMATILLA RV RD @ MP 1.7 | 1 | \$ 955,000.00 | \$ 3,131,000.00 | 3.3 | H9 - Left Turn Lane on Single Major Road Approach: Rural, Unsignalized Intersection (3-leg) RD1 - Increase Distance to Rural Roadside Obstacle from 3 ft. (1 m) to 16 ft. (5 m) RD15 - Install Centerline Rumble Strips |
| 28 | 25 | ODOT | OR 82 @ MP 0.2 (010-WALLOWA LAKE) | 1 | \$ 364,000.00 | \$ 1,139,000.00 | 3.1 | I2 - Improve Signal Hardware: Lenses, Reflectorized Back plates, Size, and Number H4 - Right Turn Lane on Single Major Road Approaches: Signalized Intersection (3- or 4-leg) |
| 29 | 28 | Umatilla County | PUNKIN CENTER RD @ MP 1 | 1 | \$ 616,000.00 | \$ 1,291,000.00 | 2.1 | H40 - Flatten Crest Vertical Curve I12 - Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs |
| 30 | 23 | ODOT | US 20 @ MP 258.2 (007-CENTRAL OREGON) | 1 | \$ 4,775,000.00 | \$ 4,437,000.00 | 0.6 | H16 - Install Roundabout from Minor Road Stop Control |
| 31 | 8 | ODOT | @ MP 295.1 (006-OLD OREGON TRAIL) | | | | 0.0 | No Countermeasure Selected |
| 32 | 10 | ODOT | OR 82 @ MP 15 (010-WALLOWA LAKE) | | | | 0.0 | No Countermeasure Selected |
| 33 | 16 | Umatilla County | CANAL RD A @ MP 1 | | | | 0.0 | No Countermeasure Selected |
| 34 | 18 | ODOT | 204 @ MP 18.8 (330-WESTON-ELGIN) | | | | 0.0 | No Countermeasure Selected |
| 35 | 21 | ODOT | 207 @ MP 8.4 (333-HERMISTON) | | | | 0.0 | No Countermeasure Selected |
| 36 | 31 | ODOT | I-84 @ MP 237.9 (006-OLD OREGON TRAIL) | | | | 0.0 | No Countermeasure Selected |

Funding: \$ 5,613,273.21
300% Amount: \$ 16,839,819.62
Project Total: \$ 14,113,000.00

ARTS - Region 5
Draft Hot Spot Cut Sheet

Location ID: 3
 Road Control: RURAL HWY SYSTEM
 County: Umatilla
 City: 0
 Urban Area: 0
 Route Name: OR 11
 Route M.P.: 33.81999969
 Street Name: 0
 Intersecting Street: 0
 Number of Crashes: 8 (3 F&A)



Severe Crash Characteristics

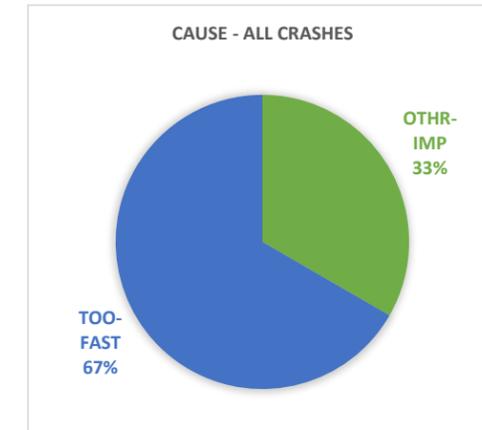
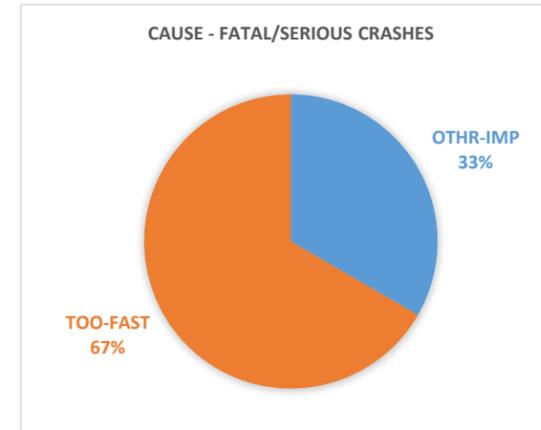
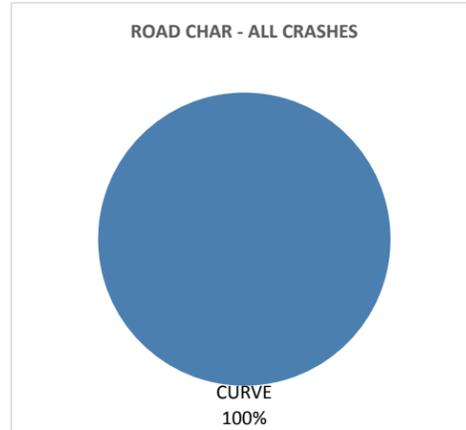
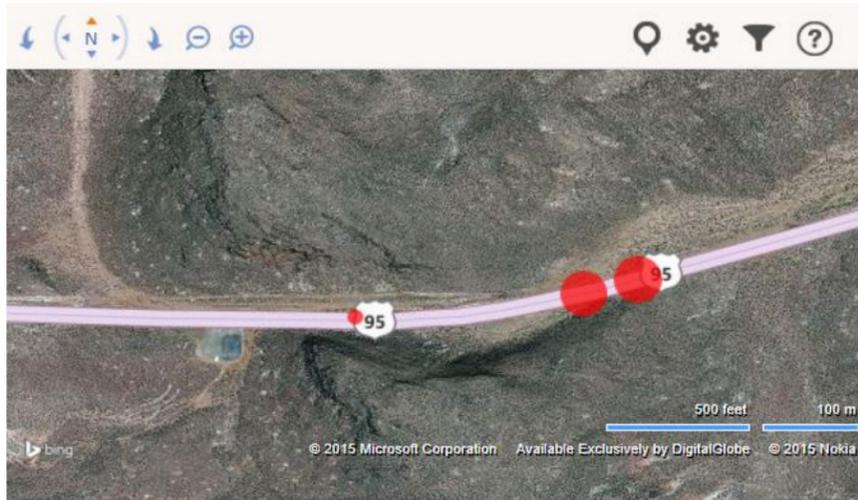
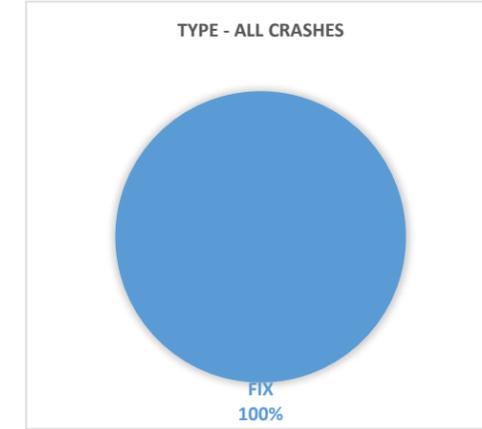
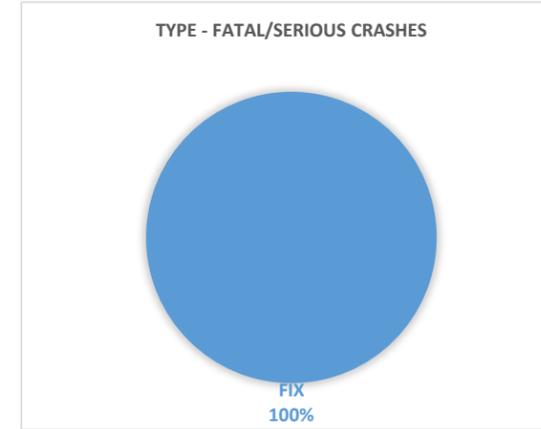
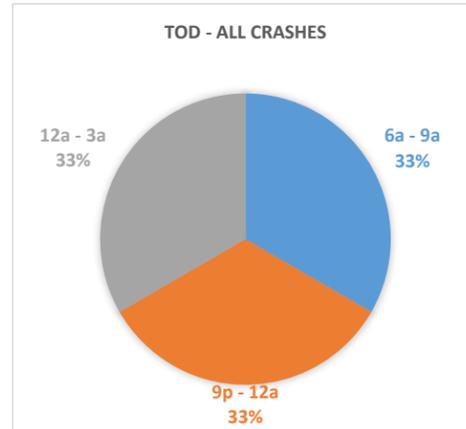
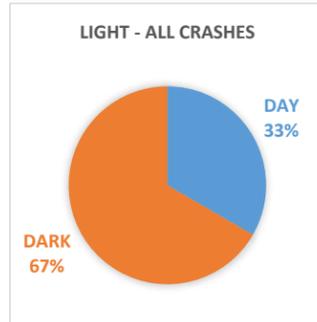
| Crash | Severity | Type - Event | Pave | Weather | Light | Cause | V1 Mvnt | V1 From | V1 To | V2 Mvnt | V2 From | V2 To | Ped Inv? | Bike Inv? | SPD/ALC/DRG | Date | ToD | Road Char |
|---------|----------|--------------|------|---------|-------|----------|---------|---------|-------|---------|---------|-------|----------|-----------|-------------|------------|----------|-----------|
| 1457474 | Fatal | FIX (CURB) | ICE | SNOW | DAWN | TOO-FAST | STRGHT | N | S | | | | 0 | 0 | 1 / 0 / 0 | 2/27/2012 | 6a - 9a | STRGHT |
| 1490446 | Fatal | ANGL | WET | CLD | DAY | PAS-STOP | STRGHT | S | N | STRGHT | W | E | 0 | 0 | 0 / 0 / 0 | 12/26/2012 | 12p - 3p | INTER |
| 1542439 | Inj A | TURN | DRY | CLD | DAY | IMP-TURN | STRGHT | S | N | U-TURN | S | S | 0 | 0 | 0 / 0 / 0 | 12/23/2013 | 3p - 6p | STRGHT |

Countermeasures

| ID | Description | Notes | Project Group # | Estimated Benefit | Estimated Cost | Estimated B/C Ratio | Other Notes |
|-----|---|--|-----------------|-------------------|----------------|---------------------|--|
| H35 | Provide a Raised Median, Rural Multi-Lane Road | Would eliminate illegal u-turn | 1 | \$ 1,605,000.00 | \$ 216,000.00 | 7.4 | 2013 SPIS Site: Install advance warning signs or signalize |
| I12 | Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs | Provide better warning about upcoming intersection | 1 | \$ 2,079,000.00 | \$ 14,000.00 | 148.5 | |
| RD1 | Increase Distance to Rural Roadside Obstacle from 3 ft. (1 m) to 16 ft. (5 m) | One serious crash hit a fixed object. It appears that many signs/poles could be moved further from roadway | 1 | \$ 2,953,000.00 | \$ 56,000.00 | 52.7 | |

ARTS - Region 5
Draft Hot Spot Cut Sheet

Location ID: 12
 Road Control: RURAL HWY SYSTEM
 County: Malheur
 City: 0
 Urban Area: 0
 Route Name: US 95
 Route M.P.: 63.04000092
 Street Name: 0
 Intersecting Street: 0
 Number of Crashes: 3 (3 F&A)



Severe Crash Characteristics

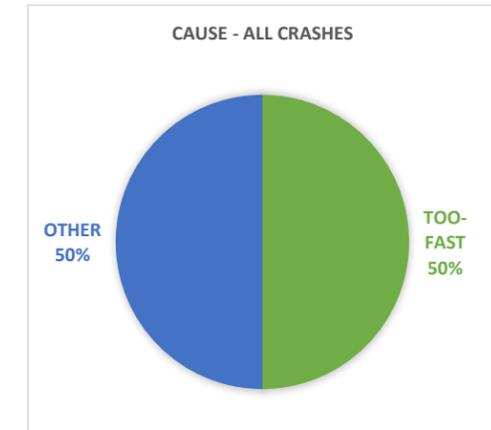
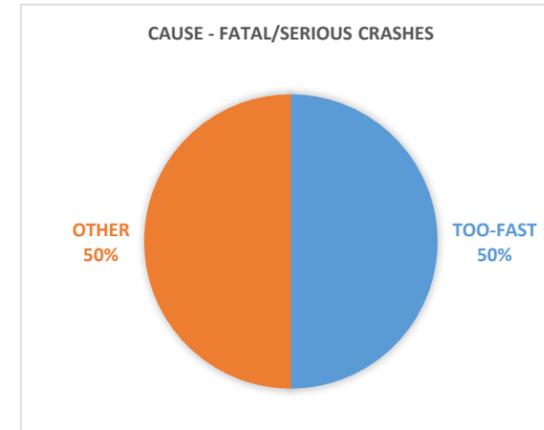
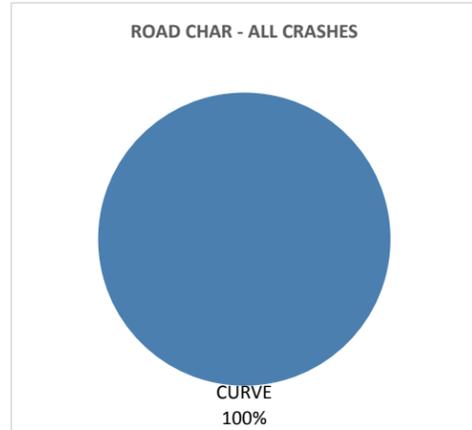
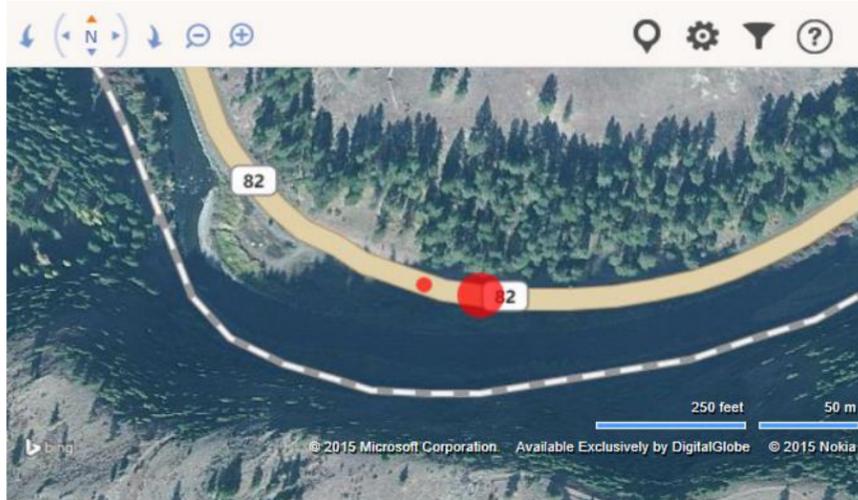
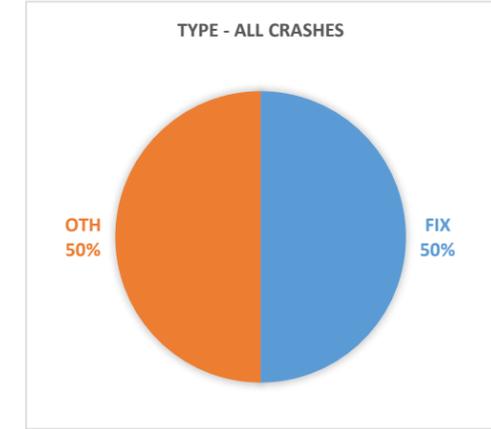
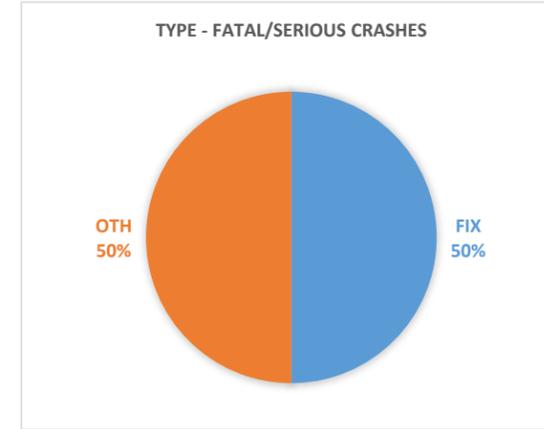
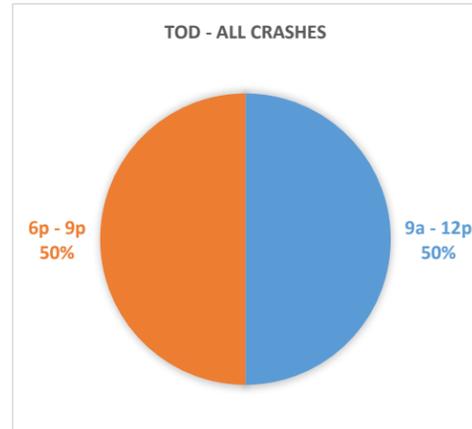
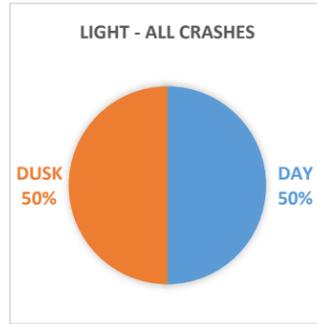
| Crash | Severity | Type - Event | Pave | Weather | Light | Cause | V1 Mvnt | V1 From | V1 To | V2 Mvnt | V2 From | V2 To | Ped Inv? | Bike Inv? | SPD/ALC/DRG | Date | ToD | Road Char |
|---------|----------|--------------|------|---------|-------|----------|---------|---------|-------|---------|---------|-------|----------|-----------|-------------|------------|----------|-----------|
| 1330415 | Fatal | FIX (DITCH) | DRY | CLR | DAY | OTHR-IMP | STRGHT | S | N | | | | 0 | 0 | 0 / 0 / 0 | 9/18/2009 | 6a - 9a | CURVE |
| 1342237 | Fatal | FIX (MARKER) | WET | RAIN | DARK | TOO-FAST | STRGHT | S | N | | | | 0 | 0 | 1 / 1 / 0 | 10/14/2009 | 9p - 12a | CURVE |
| 1405142 | Inj A | FIX (DITCH) | DRY | CLD | DARK | TOO-FAST | STRGHT | S | N | | | | 0 | 0 | 1 / 1 / 1 | 1/2/2011 | 12a - 3a | CURVE |

Countermeasures

| ID | Description | Notes | Project Group # | Estimated Benefit | Estimated Cost | Estimated B/C Ratio | Other Notes |
|------|---|--|-----------------|-------------------|----------------|---------------------|-------------|
| RD6 | Install RECOMMENDED Chevron Signs on Rural Horizontal Curves | Install both recommended and required chevrons, cost is cheap. | 1 | \$ 1,245,000.00 | \$ 3,000.00 | 415.0 | |
| RD7 | Install REQUIRED Chevron Signs on Rural Horizontal Curves (Ballbanking and Revised Speed Riders Included) | Install both recommended and required chevrons, cost is cheap. | 1 | \$ 1,167,000.00 | \$ 3,000.00 | 389.0 | |
| RD9 | Provide Static Combination Horizontal Alignment/Advisory Curve Warning Sign | Advanced warning of upcoming curve. | 1 | \$ 1,012,000.00 | \$ 2,000.00 | 506.0 | |
| RD10 | Install Advance Curve Warning Flashers (Curve Warning Signs Exist) | Extra warning of upcoming curve. Would need to be solar powered. | 1 | \$ 778,000.00 | \$ 25,000.00 | 31.1 | |
| RD13 | Install Post-Mounted Delineators (Curve Application) | Two collisions occurred in low-light or dark conditions | 1 | \$ 1,556,000.00 | \$ 2,000.00 | 778.0 | |

ARTS - Region 5
Draft Hot Spot Cut Sheet

Location ID 15
 Road Control RURAL HWY SYSTEM
 County Wallowa
 City 0
 Urban Area 0
 Route Name OR 82
 Route M.P. 39.97999954
 Street Name 0
 Intersecting Street 0
 Number of Crashes 2 (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 |
|---------|----------|----------------|------|---------|-------|----------|---------|---------|-------|---------|---------|-------|----------|-----------|-------------|------------|----------|-----------|
| 1399076 | Inj A | FIX (OTH SIGN) | SNO | CLR | DAY | TOO-FAST | STRGHT | W | E | | | | 0 | 0 | 1 / 0 / 0 | 11/24/2010 | 9a - 12p | CURVE |
| 1481480 | Fatal | OTH (DEER ELK) | DRY | CLR | DUSK | OTHER | STRGHT | E | W | STRGHT | W | E | 0 | 0 | 0 / 1 / 1 | 9/29/2012 | 6p - 9p | CURVE |
| | | | | | | | | | | | | | | | | | | |
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Countermeasures

| ID | Description | Notes | Project Group # | Estimated Benefit | Estimated Cost | Estimated B/C Ratio | Other Notes |
|-----|---|---|-----------------|-------------------|----------------|---------------------|-------------------------------------|
| RD6 | Install RECOMMENDED Chevron Signs on Rural Horizontal Curves | Install both recommended and required chevrons, cost is low. | 1 | \$ 415,000.00 | \$ 3,000.00 | 138.3 | 2013 SPIS Site: Continue to monitor |
| RD7 | Install REQUIRED Chevron Signs on Rural Horizontal Curves (Ballbanking and Revised Speed Riders Included) | Install both recommended and required chevrons, cost is low. | 1 | \$ 389,000.00 | \$ 3,000.00 | 129.7 | |
| RD9 | Provide Static Combination Horizontal Alignment/Advisory Curve Warning Sign | Signs currently exist, but the advisory speeds are different. Advisory speeds should be verified and updated if necessary | 1 | \$ 674,000.00 | \$ 2,000.00 | 337.0 | |
| H28 | Install New Guardrail (Not Median Barrier Application) | Guardrail currently exists, but it looks like it could be extended to cover the curve better. | 1 | \$ 1,968,000.00 | \$ 45,000.00 | 43.7 | |
| | | | | | | | |

