

Stream Crossing Data Sheet

Site ID: FAWN 13

General Information

Name of Observer(s): Snell Date: 10/10/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: Alarion Lk Rd

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): 2

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape Structure Material Substrate in Structure Structure Condition

<u>Round</u>	<u>Metal</u>	<u>None</u>	Sand	General Condition: New Good Fair Poor
Square/Rectangle	Concrete	Gravel	Rock	Plugged: ___ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	Mixture		Crushed: ___ % Inlet Outlet In Pipe
Pipe Arch	Wood			Rusted Through? Yes No

Open Bottom Arch Structure Interior Smooth or Corrugated

Structure Water Velocity (ft/sec):¹ 2.5

Structure Water Depth (ft):¹ inlet 0.4 outlet 0.4

Structure Length (ft):¹ 63

Structure Width (ft):¹ 30 Structure Height (ft):¹ 30

Perch Height (ft):^{1,2} 0.1 Height of Head (ft):^{1,2} _____

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Stream Information

Stream Name: Nak Stream Water Velocity (in riffle) (ft/sec): 1.5

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.2 Bankfull Width (in riffle) (ft): 10 Stream Width (in riffle) ft: 8

Scour Pool Length, Width & Depth (ft):² 8 1.5 11.5 Upstream Pond Length & Width (ft):² 1.0

Fish Passage Information

Is the structure perched?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is there ponding upstream?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is there a scour pool at the outlet?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the structure fully backwatered?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is there substrate through the structure's entire length?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there a change in head from the upstream side to downstream side?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Does the structure substrate match the stream substrate?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Is the structure narrower than the bankfull stream width?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is water in the structure moving faster than in the stream?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is there debris blocking the inlet?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is water in the structure shallower than in the stream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there evidence of overtopping or wash-outs?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- 1. The outlet of the structure is perched. Yes No
 - 2. The structure water velocity is greater than 3 feet/second during baseflow. Yes No
 - 3. The ratio of the structure water depth to stream water depth is less than 0.1. Yes No
- Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- 1. The water depth in the structure is less than 0.2 feet. Yes No
- 2. The structure water velocity is 2-3 feet/second during baseflow. Yes No
- 3. The structure is longer than 30 feet and does not have natural substrate through its entire length. Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- 1. There is a scour pool below the structure. Yes No
 - 2. The ratio of the structure width to stream bankfull width is less than 0.5. Yes No
- Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- 1. The outlet of the structure is not perched. Yes No
- 2. The structure water velocity is less than 2 feet/second during baseflow. Yes No
- 3. The ratio of the structure water depth to stream water depth is greater than 0.1. Yes No
- 4. The water depth in the structure is greater than 0.2 feet. Yes No
- 5. There is not a scour pool below the structure. Yes No
- 6. The ratio of the structure width to stream bankfull width is greater than 0.5. Yes No
- 7. The structure is longer than 30 feet and has natural substrate through its entire length, or Yes No
- The structure is shorter than 30 feet and has natural substrate through its entire length, or
- The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



FAWN13

Stream Crossing Data Sheet

Site ID: Fawn 16

General Information

Name of Observer(s): Snell Date: 10/11/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: 700 N

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): 2

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
<u>Round</u>	<u>Metal</u>	None Sand	General Condition: New Good Fair Poor
Square/Rectangle	Concrete	Gravel Rock	Plugged: <u>50</u> % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	Mixture	Crushed _____ % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

Structure Interior	Inlet Type	Outlet Type
Smooth or <u>Corrugated</u>	<u>Projecting</u> Mitered	<u>At stream grade</u>
Structure Water Velocity (ft/sec): ¹ <u>0</u>	Headwall Apron	Cascade over riprap
Structure Water Depth (ft): ¹ inlet <u>2</u> outlet <u>2</u>	Wingwall 10-30° or 30-70°	Freefall into pool.
Structure Length (ft): ¹ <u>45</u>	Trashrack	Freefall onto riprap
Structure Width (ft): ¹ <u>48</u> Structure Height (ft): ¹ <u>48</u>	Other	Outlet apron
Perch Height (ft): ^{1,2} <u>-</u> Height of Head (ft): ^{1,2} _____		Other
Buried Depth of Structure (ft): ¹ inlet <u>2</u> outlet <u>2</u>		

Stream Information

Stream Name: Wenger Ditch Stream Water Velocity (in riffle) (ft/sec): 0

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): _____ Bankfull Width (in riffle) (ft): 10 Stream Width (in riffle) ft: 10

Scour Pool Length, Width & Depth (ft):² 1 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there ponding upstream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is there a scour pool at the outlet?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the structure fully backwatered?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is there substrate through the structure's entire length?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is there a change in head from the upstream side to downstream side?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Does the structure substrate match the stream substrate?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the structure narrower than the bankfull stream width?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is water in the structure moving faster than in the stream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there debris blocking the inlet?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is water in the structure shallower than in the stream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there evidence of overtopping or wash-outs?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine "passability" for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

Yes No

Yes No

Yes No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet.
- The structure water velocity is 2-3 feet/second during baseflow.
- The structure is longer than 30 feet and does not have natural substrate through its entire length.

Yes No

Yes No

Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

Yes No

Yes No

Structure width: 4 Stream bankfull width: 10 Constriction Ratio: 0.4

Passability = 1

Not a barrier.

If all of the following questions can be answered "yes", then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or The structure is shorter than 30 feet and has natural substrate through its entire length, or The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Yes No

Yes No

Yes No

Yes No

Yes No

Yes No

Yes No

Yes No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



FAWN16-CULVERT

Stream Crossing Data Sheet

Site ID: Fawn 17

General Information

Name of Observer(s): Snell Date: 10/11/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: 700 N

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): 6

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
<u>Round</u>	<u>Metal</u>	None Sand	General Condition: New <u>Good</u> Fair Poor
Square/Rectangle	Concrete	Gravel Rock	Plugged: <u>5</u> % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	Mixture	Crushed: <u>5</u> % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

Structure Interior		Inlet Type	Outlet Type
Smooth or <u>Corrugated</u>		<u>Projecting</u> Mitered	<u>At stream grade</u>
Structure Water Velocity (ft/sec): ¹ <u>1.5</u>		Headwall Apron	Cascade over riprap
Structure Water Depth (ft): ¹ inlet <u>0.3</u> outlet <u>0.3</u>		Wingwall 10-30° or 30-70°	Freefall into pool.
Structure Length (ft): ¹ <u>63</u>		Trashrack	Freefall onto riprap
Structure Width (ft): ¹ <u>36</u> Structure Height (ft): ¹ <u>36</u>		Other	Outlet apron
Perch Height (ft): ^{1,2} _____ Height of Head (ft): ^{1,2} _____			Other

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Stream Information

Stream Name: Wongars Ditch Stream Water Velocity (in riffle) (ft/sec): 1

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.3 Bankfull Width (in riffle) (ft): 10 Stream Width (in riffle) ft: 8

Scour Pool Length, Width & Depth (ft):² T 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	Yes	<u>No</u>	Is there a change in head from the upstream side to downstream side?	Yes	<u>No</u>
Does the structure substrate match the stream substrate?	Yes	No	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	<u>Yes</u>	No	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

- | | |
|-----|----|
| Yes | No |
| Yes | No |
| Yes | No |

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet.
- The structure water velocity is 2-3 feet/second during baseflow.
- The structure is longer than 30 feet and does not have natural substrate through its entire length.

- | | |
|------------|----|
| Yes | No |
| Yes | No |
| <u>Yes</u> | No |

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

- | | |
|-----|----|
| Yes | No |
| Yes | No |

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

- | | |
|-----|----|
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



FAWN17-CULVERT

Stream Crossing Data Sheet

Site ID: Fawn 18

General Information

Name of Observer(s): Snell Date: 10/1/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: farm crossing

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 20 Fill Depth (ft): 2

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
<u>Round</u>	<u>Metal</u>	None <u>Sand</u>	General Condition: New Good Fair Poor
Square/Rectangle	Concrete	Gravel Rock	Plugged: _____ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	Mixture	Crushed: _____ % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

Open Bottom Arch	Structure Interior		<table border="1"> <thead> <tr> <th colspan="2">Inlet Type</th> <th>Outlet Type</th> </tr> </thead> <tbody> <tr> <td><u>Projecting</u></td> <td>Mitered</td> <td><u>At stream grade</u></td> </tr> <tr> <td>Headwall</td> <td>Apron</td> <td>Cascade over riprap</td> </tr> <tr> <td>Wingwall 10-30° or 30-70°</td> <td></td> <td>Freefall into pool.</td> </tr> <tr> <td>Trashrack</td> <td></td> <td>Freefall onto riprap</td> </tr> <tr> <td>Other</td> <td></td> <td>Outlet apron</td> </tr> <tr> <td>Ellipse</td> <td colspan="2">Smooth or Corrugated</td> <td>Other</td> </tr> </tbody> </table>	Inlet Type		Outlet Type	<u>Projecting</u>	Mitered	<u>At stream grade</u>	Headwall	Apron	Cascade over riprap	Wingwall 10-30° or 30-70°		Freefall into pool.	Trashrack		Freefall onto riprap	Other		Outlet apron	Ellipse	Smooth or Corrugated		Other
Inlet Type		Outlet Type																							
<u>Projecting</u>	Mitered	<u>At stream grade</u>																							
Headwall	Apron	Cascade over riprap																							
Wingwall 10-30° or 30-70°		Freefall into pool.																							
Trashrack		Freefall onto riprap																							
Other		Outlet apron																							
Ellipse	Smooth or Corrugated		Other																						
Structure Water Velocity (ft/sec): ¹	<u>0.3</u>																								
Structure Water Depth (ft): ¹	inlet <u>0.3</u>	outlet <u>0.3</u>																							
Structure Length (ft): ¹	<u>21</u>																								
Structure Width (ft): ¹	<u>3</u>	Structure Height (ft): ¹ <u>3</u>																							
Perch Height (ft): ^{1,2}	<u>-</u>	Height of Head (ft): ^{1,2} <u>-</u>																							
Buried Depth of Structure (ft): ¹	inlet <u>-</u>	outlet _____																							

Stream Information

Stream Name: Wingers Ditch Stream Water Velocity (in riffle) (ft/sec): 0.8

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.4 Bankfull Width (in riffle) (ft): 8 Stream Width (in riffle) ft: 8

Scour Pool Length, Width & Depth (ft):² 1 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	<u>Yes</u>	No	Is there a change in head from the upstream side to downstream side?	Yes	<u>No</u>
Does the structure substrate match the stream substrate?	<u>Yes</u>	No	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	Yes	<u>No</u>	Is there debris blocking the inlet?	Yes	No
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	No

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0 **Most species and life stages cannot pass at most flows.**

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- | | | |
|---|-----|----|
| 1. The outlet of the structure is perched. | Yes | No |
| 2. The structure water velocity is greater than 3 feet/second during baseflow. | Yes | No |
| 3. The ratio of the structure water depth to stream water depth is less than 0.1. | Yes | No |
- Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5 **Some species and/or life stages cannot pass at most flows.**

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- | | | |
|--|-----|----|
| 1. The water depth in the structure is less than 0.2 feet. | Yes | No |
| 2. The structure water velocity is 2-3 feet/second during baseflow. | Yes | No |
| 3. The structure is longer than 30 feet and does not have natural substrate through its entire length. | Yes | No |

Passability = 0.9 **Barrier at high flows.**

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- | | | |
|--|-----|----|
| 1. There is a scour pool below the structure. | Yes | No |
| 2. The ratio of the structure width to stream bankfull width is less than 0.5. | Yes | No |
- Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1 **Not a barrier.**

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- | | | |
|---|-----|----|
| 1. The outlet of the structure is not perched. | Yes | No |
| 2. The structure water velocity is less than 2 feet/second during baseflow. | Yes | No |
| 3. The ratio of the structure water depth to stream water depth is greater than 0.1. | Yes | No |
| 4. The water depth in the structure is greater than 0.2 feet. | Yes | No |
| 5. There is not a scour pool below the structure. | Yes | No |
| 6. The ratio of the structure width to stream bankfull width is greater than 0.5. | Yes | No |
| 7. <input type="checkbox"/> The structure is longer than 30 feet and has natural substrate through its entire length, or | | |
| <input type="checkbox"/> The structure is shorter than 30 feet and has natural substrate through its entire length, or | Yes | No |
| <input type="checkbox"/> The structure is shorter than 30 feet and does not have natural substrate through its entire length. | | |

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



FAWN18

Stream Crossing Data Sheet

Site ID: FANUS 19

General Information

Name of Observer(s): Small Date: 10/11/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: 300 W

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): 25

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
Round	Metal	None	<u>Sand</u>
Square/Rectangle	<u>Concrete</u>	<u>Gravel</u>	Rock
<u>Open Bottom Square/Rectangle</u>	Plastic	<u>Mixture</u>	
Pipe Arch	Wood		
Open Bottom Arch			
Ellipse			

Structure Water Velocity (ft/sec):¹ 0.3

Structure Water Depth (ft):¹ inlet 0.5 outlet 0.4

Structure Length (ft):¹ ~ 80

Structure Width (ft):¹ 8 Structure Height (ft):¹ 7

Perch Height (ft):^{1,2} _____ Height of Head (ft):^{1,2} _____

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Inlet Type		Outlet Type
<u>Projecting</u>	Mitered	<u>At stream grade</u>
Headwall	Apron	Cascade over riprap
Wingwall 10-30° or 30-70°		Freefall into pool.
Trashrack		Freefall onto riprap
Other		Outlet apron
		Other

Stream Information

Stream Name: Wangung Ditch Stream Water Velocity (in riffle) (ft/sec): _____

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.3 Bankfull Width (in riffle) (ft): 10 Stream Width (in riffle) ft: 10

Scour Pool Length, Width & Depth (ft):² 1 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	<u>Yes</u>	No	Is there a change in head from the upstream side to downstream side?	Yes	<u>No</u>
Does the structure substrate match the stream substrate?	<u>Yes</u>	No	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	Yes	<u>No</u>	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- 1. The outlet of the structure is perched. Yes No
 - 2. The structure water velocity is greater than 3 feet/second during baseflow. Yes No
 - 3. The ratio of the structure water depth to stream water depth is less than 0.1. Yes No
- Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- 1. The water depth in the structure is less than 0.2 feet. Yes No
- 2. The structure water velocity is 2-3 feet/second during baseflow. Yes No
- 3. The structure is longer than 30 feet and does not have natural substrate through its entire length. Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- 1. There is a scour pool below the structure. Yes No
 - 2. The ratio of the structure width to stream bankfull width is less than 0.5. Yes No
- Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- 1. The outlet of the structure is not perched. Yes No
- 2. The structure water velocity is less than 2 feet/second during baseflow. Yes No
- 3. The ratio of the structure water depth to stream water depth is greater than 0.1. Yes No
- 4. The water depth in the structure is greater than 0.2 feet. Yes No
- 5. There is not a scour pool below the structure. Yes No
- 6. The ratio of the structure width to stream bankfull width is greater than 0.5. Yes No
- 7. The structure is longer than 30 feet and has natural substrate through its entire length, or Yes No
- The structure is shorter than 30 feet and has natural substrate through its entire length, or
- The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



FAWN19

Stream Crossing Data Sheet

Site ID: Fawn 22

General Information

Name of Observer(s): Small Date: 10/11/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: Bank

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 24 Fill Depth (ft): 1-2

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
<u>Round</u>	<u>Metal</u>	<u>None</u> Sand	General Condition: New <u>Good</u> Fair Poor
Square/Rectangle	Concrete	Gravel <u>little</u> Rock	Plugged: _____ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	<u>Mixture</u>	Crushed: _____ % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

Structure Interior		Inlet Type	Outlet Type
Smooth or <u>Corrugated</u>		<u>Projecting</u> Mitered	At stream grade
Structure Water Velocity (ft/sec):¹ <u>2.8</u>		Headwall Apron	<u>Cascade over riprap</u>
Structure Water Depth (ft):¹ inlet <u>1.0</u> outlet <u>0.7</u>		Wingwall 10-30° or 30-70°	Freefall into pool.
Structure Length (ft):¹ <u>57</u>		Trashrack	Freefall onto riprap
Structure Width (ft):¹ <u>6</u> Structure Height (ft):¹ <u>6</u>		Other	Outlet apron
Perch Height (ft):^{1,2} <u>-</u> Height of Head (ft):^{1,2} <u>-</u>			Other
Buried Depth of Structure (ft):¹ inlet <u>-</u> outlet <u>-</u>			

Stream Information

Stream Name: Nya Drain Stream Water Velocity (in riffle) (ft/sec): 1.2

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.8 Bankfull Width (in riffle) (ft): 12 Stream Width (in riffle) ft: 8

Scour Pool Length, Width & Depth (ft):² 221-221 4 Upstream Pond Length & Width (ft):² -

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	<u>Yes</u>	No	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	Yes	<u>No</u>	Is there a change in head from the upstream side to downstream side?	<u>Yes</u>	No
Does the structure substrate match the stream substrate?	Yes	<u>No</u>	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	<u>Yes</u>	No	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	No	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0 **Most species and life stages cannot pass at most flows.**

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- 1. The outlet of the structure is perched. Yes No
 - 2. The structure water velocity is greater than 3 feet/second during baseflow. Yes No
 - 3. The ratio of the structure water depth to stream water depth is less than 0.1. Yes No
- Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5 **Some species and/or life stages cannot pass at most flows.**

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- 1. The water depth in the structure is less than 0.2 feet. Yes No
- 2. The structure water velocity is 2-3 feet/second during baseflow. Yes No
- 3. The structure is longer than 30 feet and does not have natural substrate through its entire length. Yes No

Passability = 0.9 **Barrier at high flows.**

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- 1. There is a scour pool below the structure. Yes No
 - 2. The ratio of the structure width to stream bankfull width is less than 0.5. Yes No
- Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1 **Not a barrier.**

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- 1. The outlet of the structure is not perched. Yes No
- 2. The structure water velocity is less than 2 feet/second during baseflow. Yes No
- 3. The ratio of the structure water depth to stream water depth is greater than 0.1. Yes No
- 4. The water depth in the structure is greater than 0.2 feet. Yes No
- 5. There is not a scour pool below the structure. Yes No
- 6. The ratio of the structure width to stream bankfull width is greater than 0.5. Yes No
- 7. The structure is longer than 30 feet and has natural substrate through its entire length, or Yes No
- The structure is shorter than 30 feet and has natural substrate through its entire length, or
- The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



FAWN22-DOWNSTREAM



UPSTREAM



ROAD

Stream Crossing Data Sheet

Site ID: FAWN 23

General Information

Name of Observer(s): Small Date: 10/11/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: Bogus

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): 1.5

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
<u>Round</u>	<u>Metal</u>	None Sand	General Condition: New Good Fair Poor
Square/Rectangle	Concrete	Gravel Rock	Plugged: _____ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	Mixture	Crushed <u>15</u> % Inlet <u>Outlet</u> <u>In Pipe</u>
Pipe Arch	Wood		Rusted Through? Yes <u>No</u>

Structure Interior		Inlet Type		Outlet Type	
Smooth or <u>Corrugated</u>		Projecting	<u>Mitered</u>	<u>At stream grade</u>	
Structure Water Velocity (ft/sec): ¹ <u>2</u>		Headwall	Apron	Cascade over riprap	
Structure Water Depth (ft): ¹ inlet <u>0.8</u> outlet <u>0.8</u>		Wingwall 10-30° or 30-70°		Freefall into pool.	
Structure Length (ft): ¹ <u>78</u>		Trashrack		Freefall onto riprap	
Structure Width (ft): ¹ <u>7</u>	Structure Height (ft): ¹ <u>5.5</u>	Other		Outlet apron	
Perch Height (ft): ^{1,2} _____	Height of Head (ft): ^{1,2} _____			Other	
Buried Depth of Structure (ft): ¹ inlet _____ outlet _____					

Stream Information

Stream Name: Nye Drain Stream Water Velocity (in riffle) (ft/sec): 1.4

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.7 Bankfull Width (in riffle) (ft): 12 Stream Width (in riffle) ft: 9

Scour Pool Length, Width & Depth (ft):² 8 1 14 1 3 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there ponding upstream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is there a scour pool at the outlet?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the structure fully backwatered?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is there substrate through the structure's entire length?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there a change in head from the upstream side to downstream side?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Does the structure substrate match the stream substrate?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the structure narrower than the bankfull stream width?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is water in the structure moving faster than in the stream?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is there debris blocking the inlet?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is water in the structure shallower than in the stream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there evidence of overtopping or wash-outs?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine "passability" for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.

1. The outlet of the structure is perched.
2. The structure water velocity is greater than 3 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is less than 0.1.

- | | |
|-----|----|
| Yes | No |
| Yes | No |
| Yes | No |

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.5.

1. The water depth in the structure is less than 0.2 feet.
2. The structure water velocity is 2-3 feet/second during baseflow.
3. The structure is longer than 30 feet and does not have natural substrate through its entire length.

- | | |
|------------|----|
| Yes | No |
| <u>Yes</u> | No |
| <u>Yes</u> | No |

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.9.

1. There is a scour pool below the structure.
2. The ratio of the structure width to stream bankfull width is less than 0.5.

- | | |
|-----|----|
| Yes | No |
| Yes | No |

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered "yes", then the crossing barrier score = 1.

1. The outlet of the structure is not perched.
2. The structure water velocity is less than 2 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is greater than 0.1.
4. The water depth in the structure is greater than 0.2 feet.
5. There is not a scour pool below the structure.
6. The ratio of the structure width to stream bankfull width is greater than 0.5.
7. The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

- | | |
|-----|----|
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



FAWN23-DOWNSTREAM



UPSTREAM



UPSTREAM

Stream Crossing Data Sheet

Site ID: FAWIN 5

General Information

Name of Observer(s): Snall Date: 10/11/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: Miston

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): 2

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape Structure Material Substrate in Structure Structure Condition

Round Metal None Sand General Condition: New Good Fair Poor
 Square/Rectangle Concrete Gravel Silt Rock Plugged: 5 % Inlet Outlet In Pipe
 Open Bottom Square/Rectangle Plastic Mixture Crushed _____ % Inlet Outlet In Pipe
 Pipe Arch Wood Rusted Through? Yes No

Open Bottom Arch Structure Interior Inlet Type Outlet Type
 Ellipse Smooth or Corrugated Projecting Mitered At stream grade

Structure Water Velocity (ft/sec):¹ 1
 Structure Water Depth (ft):¹ inlet 0.7 outlet 0.4
 Structure Length (ft):¹ 54
 Structure Width (ft):¹ 24 30 Structure Height (ft):¹ 24 30
 Perch Height (ft):^{1,2} - Height of Head (ft):^{1,2} _____
 Buried Depth of Structure (ft):¹ inlet 0.2 outlet -

Stream Information

Stream Name: None Stream Water Velocity (in riffle) (ft/sec): 1

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.2 Bankfull Width (in riffle) (ft): dredged Stream Width (in riffle) ft: 5

Scour Pool Length, Width & Depth (ft):² - Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there ponding upstream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is there a scour pool at the outlet?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the structure fully backwatered?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is there substrate through the structure's entire length?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there a change in head from the upstream side to downstream side?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Does the structure substrate match the stream substrate?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the structure narrower than the bankfull stream width?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is water in the structure moving faster than in the stream?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is there debris blocking the inlet?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is water in the structure shallower than in the stream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there evidence of overtopping or wash-outs?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine "passability" for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0 Most species and life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.

- 1. The outlet of the structure is perched. Yes No
 - 2. The structure water velocity is greater than 3 feet/second during baseflow. Yes No
 - 3. The ratio of the structure water depth to stream water depth is less than 0.1. Yes No
- Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5 Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.5.

- 1. The water depth in the structure is less than 0.2 feet. Yes No
- 2. The structure water velocity is 2-3 feet/second during baseflow. Yes No
- 3. The structure is longer than 30 feet and does not have natural substrate through its entire length. Yes No

Passability = 0.9 Barrier at high flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.9.

- 1. There is a scour pool below the structure. Yes No
 - 2. The ratio of the structure width to stream bankfull width is less than 0.5. Yes No
- Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1 Not a barrier.

If all of the following questions can be answered "yes", then the crossing barrier score = 1.

- 1. The outlet of the structure is not perched. Yes No
- 2. The structure water velocity is less than 2 feet/second during baseflow. Yes No
- 3. The ratio of the structure water depth to stream water depth is greater than 0.1. Yes No
- 4. The water depth in the structure is greater than 0.2 feet. Yes No
- 5. There is not a scour pool below the structure. Yes No
- 6. The ratio of the structure width to stream bankfull width is greater than 0.5. Yes No
- 7. The structure is longer than 30 feet and has natural substrate through its entire length, or Yes No
- The structure is shorter than 30 feet and has natural substrate through its entire length, or
- The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



FAWN5-DOWNSTREAM



UPSTREAM



Stream Crossing Data Sheet

Site ID: Low / LCN1

General Information

Name of

Observer(s): Snell

Date: 08/05/10

GPS Waypoint:

GPS Lat/Long:

Additional Location

Comments:

Road Information

Road Name/Number: Hillendale / 4.15 (Hipp's Hollow)

Road Type: Federal State County Town Tribal Private Other:

Road Surface: Paved Gravel Sand Native Surface Other:

Road Width (ft): 30 Fill Depth (ft): 5

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: Structure ID:

Structure Shape

Structure Material

Substrate in Structure

Structure Condition

Round

Metal

None

Sand

General Condition: New Good Fair Poor

Square/Rectangle

Concrete

Gravel

Rock

Plugged: % Inlet Outlet In Pipe

Open Bottom Square/Rectangle

Plastic

Mixture

Crushed % Inlet Outlet In Pipe

Pipe Arch

Wood

Rusted Through? Yes No

Open Bottom Arch

Structure Interior

Inlet Type

Outlet Type

Ellipse

Smooth or Corrugated

Projecting

Mitered

At stream grade

Structure Water Velocity (ft/sec):¹ 1.5

Headwall

Apron

Cascade over riprap

Structure Water Depth (ft):¹ inlet 0.15 outlet 0.15

Wingwall 10-30° or 30-70°

Freefall into pool

Structure Length (ft):¹ 70

Trashrack

Freefall onto riprap

Structure Width (ft):¹ 7

Structure Height (ft):¹ 7

Other

Outlet apron

Perch Height (ft):^{1,2} 1.0

Height of Head (ft):^{1,2}

Other

Buried Depth of Structure (ft):¹ inlet outlet

Stream Information

Stream Name: Low Creek

Stream Water Velocity (in riffle) (ft/sec): 1.0

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.3 Bankfull Width (in riffle) (ft): 21 Stream Width (in riffle) ft: 9

Scour Pool Length, Width & Depth (ft):² 50 / 40 / 5 Upstream Pond Length & Width (ft):²

Fish Passage Information

Is the structure perched?	<u>Yes</u>	No	Is there ponding upstream?	Yes	No
Is there a scour pool at the outlet?	<u>Yes</u>	No	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	Yes	<u>No</u>	Is there a change in head from the upstream side to downstream side?	Yes	No
Does the structure substrate match the stream substrate?	Yes	No	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	<u>Yes</u>	No	Is there debris blocking the inlet?	Yes	No
Is water in the structure shallower than in the stream?	<u>Yes</u>	No	Is there evidence of overtopping or wash-outs?	Yes	No

LOV1
LCN1

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine "passability" for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

<input checked="" type="checkbox"/>	Yes	No
<input type="checkbox"/>	Yes	No
<input type="checkbox"/>	Yes	No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet.
- The structure water velocity is 2-3 feet/second during baseflow.
- The structure is longer than 30 feet and does not have natural substrate through its entire length.

<input type="checkbox"/>	Yes	No
<input type="checkbox"/>	Yes	No
<input type="checkbox"/>	Yes	No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

<input type="checkbox"/>	Yes	No
<input type="checkbox"/>	Yes	No

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered "yes", then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

<input type="checkbox"/>	Yes	No
<input type="checkbox"/>	Yes	No
<input type="checkbox"/>	Yes	No
<input type="checkbox"/>	Yes	No
<input type="checkbox"/>	Yes	No
<input type="checkbox"/>	Yes	No
<input type="checkbox"/>	Yes	No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

3" steps in culvert - 0.2' deep cold water. Lots of fish in & near pool. white substrate, silt/moss, etc.

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



LCN1- UPSTREAM



DOWNSTREAM

Stream Crossing Data Sheet

Site ID: LCV 2
LCN 2

General Information

Name of Observer(s): Saell Date: 08/05/10

GPS Waypoint: _____ Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: Taber

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): 5

Crossing Information

Structure Type: Culvert(s) no.: 2 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape Structure Material Substrate in Structure Structure Condition

Round Metal None Sand General Condition: New Good Fair Poor
Square/Rectangle Concrete Gravel Rock Plugged: 40 % Inlet Outlet In Pipe
Open Bottom Square/Rectangle Plastic Mixture Crushed _____ % Inlet Outlet In Pipe
Pipe Arch Wood Rusted Through? Yes No

Open Bottom Arch Structure Interior Inlet Type Outlet Type
Ellipse Smooth or Corrugated Projecting Mitered At stream grade

Structure Water Velocity (ft/sec):¹ 0 Headwall Apron Cascade over riprap

Structure Water Depth (ft):¹ inlet _____ outlet 0.8 Wingwall 10-30° or 30-70° Freefall into pool.

Structure Length (ft):¹ 60 Trashrack Freefall onto riprap

Structure Width (ft):¹ 4 Structure Height (ft):¹ 2.8 Other Outlet apron

Perch Height (ft):^{1,2} _____ Height of Head (ft):^{1,2} _____ Other

Buried Depth of Structure (ft):¹ inlet _____ outlet 1.2

Stream Information

Stream Name: Love Creek Stream Water Velocity (in riffle) (ft/sec): 0

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.2 Bankfull Width (in riffle) (ft): 20 Stream Width (in riffle) ft: 2

Scour Pool Length, Width & Depth (ft):² 1 / 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	<u>Yes</u>	No
Is there substrate through the structure's entire length?	<u>Yes</u>	No	Is there a change in head from the upstream side to downstream side?	Yes	<u>No</u>
Does the structure substrate match the stream substrate?	<u>Yes</u>	No	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	Yes	<u>No</u>	Is there debris blocking the inlet?	<u>Yes</u>	No
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

DOVZ
LCNZ

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2	4	2.8	60
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine "passability" for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.

- 1. The outlet of the structure is perched. Yes No
 - 2. The structure water velocity is greater than 3 feet/second during baseflow. Yes No
 - 3. The ratio of the structure water depth to stream water depth is less than 0.1. Yes No
- Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.5.

- 1. The water depth in the structure is less than 0.2 feet. Yes No
- 2. The structure water velocity is 2-3 feet/second during baseflow. Yes No
- 3. The structure is longer than 30 feet and does not have natural substrate through its entire length. Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.9.

- 1. There is a scour pool below the structure. Yes No
 - 2. The ratio of the structure width to stream bankfull width is less than 0.5. Yes No
- Structure width: 8 Stream bankfull width: 20 Constriction Ratio: 0.4

Passability = 1

Not a barrier.

If all of the following questions can be answered "yes", then the crossing barrier score = 1.

- 1. The outlet of the structure is not perched. Yes No
- 2. The structure water velocity is less than 2 feet/second during baseflow. Yes No
- 3. The ratio of the structure water depth to stream water depth is greater than 0.1. Yes No
- 4. The water depth in the structure is greater than 0.2 feet. Yes No
- 5. There is not a scour pool below the structure. Yes No
- 6. The ratio of the structure width to stream bankfull width is greater than 0.5. Yes No
- 7. The structure is longer than 30 feet and has natural substrate through its entire length, or Yes No
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

*plugged inlets, warm water, silt/clay
current passability near 0 - needs debris removed*

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



LCN2-UPSTREAM



DOWNSTREAM

Stream Crossing Data Sheet

Site ID: LOV 3
LCN 3

General Information

Name of Observer(s): Small Date: 08/05/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: Hartman

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): 4

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
<u>Round</u>	<u>Metal</u>	None <u>Sand</u>	General Condition: <u>New</u> Good Fair Poor
Square/Rectangle	Concrete	Gravel Rock	Plugged: _____ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	Mixture	Crushed: _____ % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

Structure Interior	Inlet Type	Outlet Type
Smooth or <u>Corrugated</u>	<u>Projecting</u> Mitered	<u>At stream grade</u>
	Headwall Apron	Cascade over riprap
	Wingwall 10-30° or 30-70°	Freefall into pool.
	Trashrack	Freefall onto riprap
	Other <u>Rip rap</u>	Outlet apron
		Other

Structure Water Velocity (ft/sec):¹ 0

Structure Water Depth (ft):¹ inlet 0.2 outlet 0.75

Structure Length (ft):¹ 66

Structure Width (ft):¹ 4 Structure Height (ft):¹ 4

Perch Height (ft):^{1,2} - Height of Head (ft):^{1,2} _____

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Stream Information

Stream Name: Love Creek Stream Water Velocity (in riffle) (ft/sec): 0.8

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.2 Bankfull Width (in riffle) (ft): 6 Stream Width (in riffle) ft: 2

Scour Pool Length, Width & Depth (ft):² 1 Upstream Pond Length & Width (ft):² -

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	<u>Yes</u>	No	Is there a change in head from the upstream side to downstream side?	<u>Yes</u>	No
Does the structure substrate match the stream substrate?	<u>Yes</u>	No	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	<u>Yes</u>	No	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

Multiple Culverts

LCN 3

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Inlet
- Outlet
- Road Approach – Left
- Road Approach – Right
-
- Upstream Conditions
- Downstream Conditions
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- 1. The outlet of the structure is perched. Yes No
 - 2. The structure water velocity is greater than 3 feet/second during baseflow. Yes No
 - 3. The ratio of the structure water depth to stream water depth is less than 0.1. Yes No
- Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- 1. The water depth in the structure is less than 0.2 feet. Yes No
- 2. The structure water velocity is 2-3 feet/second during baseflow. Yes No
- 3. The structure is longer than 30 feet and does not have natural substrate through its entire length. Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- 1. There is a scour pool below the structure. Yes No
 - 2. The ratio of the structure width to stream bankfull width is less than 0.5. Yes No
- Structure width: 4 Stream bankfull width: 6 Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- 1. The outlet of the structure is not perched. No
- 2. The structure water velocity is less than 2 feet/second during baseflow. No
- 3. The ratio of the structure water depth to stream water depth is greater than 0.1. No
- 4. The water depth in the structure is greater than 0.2 feet. No
- 5. There is not a scour pool below the structure. No
- 6. The ratio of the structure width to stream bankfull width is greater than 0.5. No
- 7. The structure is longer than 30 feet and has natural substrate through its entire length, or No
- The structure is shorter than 30 feet and has natural substrate through its entire length, or
- The structure is shorter than 30 feet and does not have natural substrate through its entire length. No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

Shallow water in middle of culvert, U/S end has narrow flowing stream D/S end is dredged + ponded half way through culvert. Sediment issues on approaches.

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



LCN3-UPSTREAM



DOWNSTREAM

Dam Crossing Data Sheet

Site ID: LOV-P
LCN4

General Information

Name of Observer(s): Snell Date: _____

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: Pipestone

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 24 Fill Depth (ft): _____

Crossing Information

Structure Type: Culvert(s) no.: _____ Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
Round	Metal	None Sand	General Condition: New <u>Good</u> Fair Poor
Square/Rectangle	<u>Concrete</u>	Gravel Rock	Plugged: _____ % Inlet Outlet In Pipe
<u>Open Bottom Square/Rectangle</u>	Plastic	Mixture	Crushed: _____ % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

Structure Interior: Smooth or Corrugated

Inlet Type		Outlet Type
<u>Projecting</u>	Mitered	<u>At stream grade</u>
Headwall	Apron	Cascade over riprap
Wingwall 10-30° or 30-70°		Freefall into pool.
Trashrack		Freefall onto riprap
Other		Outlet apron
		Other

Structure Water Velocity (ft/sec):¹ _____

Structure Water Depth (ft):¹ inlet 44 0.2 outlet 0.4

Structure Length (ft):¹ _____

Structure Width (ft):¹ 10 Structure Height (ft):¹ 7

Perch Height (ft):^{1,2} _____ Height of Head (ft):^{1,2} _____

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Stream Information

Stream Name: Love Creek Stream Water Velocity (in riffle) (ft/sec): 0

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.2 Bankfull Width (in riffle) (ft): 10 Stream Width (in riffle) ft: 2

Scour Pool Length, Width & Depth (ft):² 1 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	<u>Yes</u>	No	Is there a change in head from the upstream side to downstream side?	Yes	<u>No</u>
Does the structure substrate match the stream substrate?	<u>Yes</u>	No	Is the structure narrower than the bankfull stream width?	Yes	<u>No</u>
Is water in the structure moving faster than in the stream?	Yes	<u>No</u>	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

LOV-P
LCN 4

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- | | | |
|---|--|---------------------------------|
| <input type="checkbox"/> Site ID | <input type="checkbox"/> Inlet | <input type="checkbox"/> Outlet |
| <input type="checkbox"/> Road Approach – Left | <input type="checkbox"/> Road Approach – Right | <input type="checkbox"/> |
| <input type="checkbox"/> Upstream Conditions | <input type="checkbox"/> Downstream Conditions | <input type="checkbox"/> |

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- | | | |
|---|-----|----|
| 1. The outlet of the structure is perched. | Yes | No |
| 2. The structure water velocity is greater than 3 feet/second during baseflow. | Yes | No |
| 3. The ratio of the structure water depth to stream water depth is less than 0.1. | Yes | No |

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- | | | |
|--|-----|----|
| 1. The water depth in the structure is less than 0.2 feet. | Yes | No |
| 2. The structure water velocity is 2-3 feet/second during baseflow. | Yes | No |
| 3. The structure is longer than 30 feet and does not have natural substrate through its entire length. | Yes | No |

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- | | | |
|--|-----|----|
| 1. There is a scour pool below the structure. | Yes | No |
| 2. The ratio of the structure width to stream bankfull width is less than 0.5. | Yes | No |

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- | | | |
|---|-----|----|
| 1. The outlet of the structure is not perched. | Yes | No |
| 2. The structure water velocity is less than 2 feet/second during baseflow. | Yes | No |
| 3. The ratio of the structure water depth to stream water depth is greater than 0.1. | Yes | No |
| 4. The water depth in the structure is greater than 0.2 feet. | Yes | No |
| 5. There is not a scour pool below the structure. | Yes | No |
| 6. The ratio of the structure width to stream bankfull width is greater than 0.5. | Yes | No |
| 7. <input type="checkbox"/> The structure is longer than 30 feet and has natural substrate through its entire length, or | Yes | No |
| <input type="checkbox"/> The structure is shorter than 30 feet and has natural substrate through its entire length, or | | |
| <input type="checkbox"/> The structure is shorter than 30 feet and does not have natural substrate through its entire length. | | |

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

²Fill out, if present.



LCN4

Stream Crossing Data Sheet

Site ID: LC2
LC52

General Information

Name of Observer(s): Snell & Marshall Date: 9/16/10

GPS Waypoint: yes GPS Lat/Long: yes

Additional Location Comments: Huckleberry Road - 0.2 miles south of Deans Hill Rd

Road Information

Road Name/Number: Huckleberry Road

Road Type: Federal State County Town Tribal Private Other:

Road Surface: Paved Gravel Sand Native Surface Other:

Road Width (ft): 24 culvert Fill Depth (ft): 10-12ft 66ft total culvert length

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: Structure ID:

Structure Shape

Round
Square/Rectangle
Open Bottom Square/Rectangle
Pipe Arch
Open Bottom Arch
Ellipse

Structure Material

Metal
Concrete
Plastic
Wood

Substrate in Structure

None Sand
Gravel Rock
Mixture

Structure Condition

General Condition: New Good Fair Poor
Plugged: 0 % Inlet Outlet In Pipe
Crushed: 0 % Inlet Outlet In Pipe
Rusted Through? Yes No

Structure Interior

Smooth or Corrugated

Structure Water Velocity (ft/sec):¹ no flow

Structure Water Depth (ft):¹ 0 inlet outlet

Structure Length (ft):¹

Structure Width (ft):¹ 3ft Structure Height (ft):¹ 3ft

Perch Height (ft):^{1,2} 1.9ft to apron Height of Head (ft):^{1,2}

Buried Depth of Structure (ft):¹ inlet outlet

	Inlet Type	Outlet Type
Projecting	<u>Mitered</u>	At stream grade
Headwall	<u>Apron</u>	Cascade over riprap
Wingwall 10-30° or 30-70°		Freefall into pool.
Trashrack		<u>Freefall onto riprap</u>
Other		<u>Outlet apron</u>
		Other

Stream Information

Stream Name: Love Creek Stream Water Velocity (in riffle) (ft/sec):

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0 Bankfull Width (in riffle) (ft): 14ft Stream Width (in riffle) ft: 9ft

Scour Pool Length, Width & Depth (ft):² / / Upstream Pond Length & Width (ft):²

Fish Passage Information

Is the structure perched?	<u>Yes</u>	No	Is there ponding upstream?	Yes	No
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	Yes	<u>No</u>	Is there a change in head from the upstream side to downstream side?	Yes	No
Does the structure substrate match the stream substrate?	Yes	No	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream? <u>would be if flowing</u>	Yes	No	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream? <u>would be if flowing</u>	Yes	No	Is there evidence of overtopping or wash-outs?	<u>Yes</u>	<u>No</u>

LC2
LC52

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet.
- The structure water velocity is 2-3 feet/second during baseflow.
- The structure is longer than 30 feet and does not have natural substrate through its entire length.

<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> No

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

extensive erosion, trees, trash

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



LCS2-DOWNSTREAM

Stream Crossing Data Sheet

Site ID: LC3

General Information

Name of

Observer(s): Shel & Marshall

Date: 9/16/10

GPS Waypoint: _____

GPS

Lat/Long: _____

Additional Location

Comments: _____

Road Information

Road Name/Number: _____

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 24 Fill Depth (ft): 5 27 ft wide
24 ft wide

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape

Structure Material

Substrate in Structure

Structure Condition

Round

Metal

None

Sand

General Condition:

New

Good

Fair

Poor

Square/Rectangle

Concrete

Gravel

Rock

Plugged: 0 %

Inlet

Outlet

In Pipe

Open Bottom Square/Rectangle

Plastic

Mixture

Crushed 0 %

Inlet

Outlet

In Pipe

Pipe Arch

Wood

Rusted Through?

Yes

No

Open Bottom Arch

Structure Interior

Smooth or Corrugated

Ellipse

Structure Water Velocity (ft/sec):¹ none

Structure Water Depth (ft):¹ inlet none outlet _____

Structure Length (ft):¹ 54 ft

Structure Width (ft):¹ 4 ft Structure Height (ft):¹ 3.5 ft

Perch Height (ft):^{1,2} 0.2 ft Height of Head (ft):^{1,2} _____

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Inlet Type		Outlet Type
Projecting	Mitered	At stream grade
Headwall	Apron	Cascade over riprap
<u>Wingwall 10-30°</u> or <u>30-70°</u>		Freefall into pool.
Trashrack		<u>Freefall onto riprap</u>
Other <u>45°</u>		<u>Outlet apron</u>
		Other

45° headwall

Stream Information

Stream Name: Love Creek 27 ft wide Road Stream Water Velocity (in riffle) (ft/sec): _____

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): none Bankfull Width (in riffle) (ft): 4.0 ft Stream Width (in riffle) ft: 2.0 ft

Scour Pool Length, Width & Depth (ft):² / / / Upstream Pond Length & Width (ft):² / /

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	Yes	<u>No</u>	Is there a change in head from the upstream side to downstream side?	Yes	<u>No</u>
Does the structure substrate match the stream substrate?	Yes	<u>No</u>	Is the structure narrower than the bankfull stream width?	Yes	<u>No</u>
Is water in the structure moving faster than in the stream?	Yes	<u>No</u>	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

LC3
LCS3

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine "passability" for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

Yes No
 Yes No
 Yes No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.5.

- 0.5
- The water depth in the structure is less than 0.2 feet.
 - The structure water velocity is 2-3 feet/second during baseflow.
 - The structure is longer than 30 feet and does not have natural substrate through its entire length.

Yes No
 Yes No
 Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

Yes No
 Yes No

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered "yes", then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

x LO's on down stream side of Dean Hill road crossing have cut & removed vegetation
 x Park Emp said 8 years ago Salmon were running up Lore's Creek

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



LCS3-DOWNSTREAM



UPSTREAM

Stream Crossing Data Sheet

Site ID: LMN 1

General Information

Name of Observer(s): Smith Date: 07/20/10

GPS Waypoint: _____ Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: Dairy - Andrews Univ

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 18 Fill Depth (ft): N/A

Crossing Information

Structure Type: Culvert(s) no.: _____ Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
Round	Metal	None Sand	General Condition: New Good <u>Fair</u> Poor
Square/Rectangle	<u>Concrete</u>	Gravel Rock	Plugged: _____ % Inlet Outlet In Pipe
<u>Open Bottom Square/Rectangle</u>	Plastic	Mixture	Crushed _____ % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

Structure Interior		Inlet Type		Outlet Type	
Smooth or Corrugated		Projecting	Mitered	<u>At stream grade</u>	
Structure Water Velocity (ft/sec): ¹	<u>1.6</u>	Headwall	Apron	Cascade over riprap	
Structure Water Depth (ft): ¹	inlet <u>0.8</u> outlet <u>0.7</u>	Wingwall 10-30° or <u>30-70°</u>		Freefall into pool.	
Structure Length (ft): ¹	<u>18</u>	Trashrack		Freefall onto riprap	
Structure Width (ft): ¹	<u>21</u>	Other		Outlet apron	
Perch Height (ft): ^{1,2}	_____			Other	
Buried Depth of Structure (ft): ¹	inlet _____ outlet _____				

Stream Information

Stream Name: Lemon Creek Stream Water Velocity (in riffle) (ft/sec): 2.4

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.7 Bankfull Width (in riffle) (ft): 35 Stream Width (in riffle) ft: 12

Scour Pool Length, Width & Depth (ft):² 1 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes <u>No</u>	Is there ponding upstream?	Yes <u>No</u>
Is there a scour pool at the outlet?	Yes <u>No</u>	Is the structure fully backwatered?	Yes <u>No</u>
Is there substrate through the structure's entire length?	<u>Yes</u> No	Is there a change in head from the upstream side to downstream side?	Yes <u>No</u>
Does the structure substrate match the stream substrate?	<u>Yes</u> No	Is the structure narrower than the bankfull stream width?	<u>Yes</u> No
Is water in the structure moving faster than in the stream?	Yes <u>No</u>	Is there debris blocking the inlet?	Yes <u>No</u>
Is water in the structure shallower than in the stream?	Yes <u>No</u>	Is there evidence of overtopping or wash-outs?	Yes <u>No</u>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

1. The outlet of the structure is perched.
2. The structure water velocity is greater than 3 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is less than 0.1.

- | | |
|-----|----|
| Yes | No |
| Yes | No |
| Yes | No |

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

1. The water depth in the structure is less than 0.2 feet.
2. The structure water velocity is 2-3 feet/second during baseflow.
3. The structure is longer than 30 feet and does not have natural substrate through its entire length.

- | | |
|-----|----|
| Yes | No |
| Yes | No |
| Yes | No |

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

1. There is a scour pool below the structure.
2. The ratio of the structure width to stream bankfull width is less than 0.5.

- | | |
|-----|----|
| Yes | No |
| Yes | No |

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

1. The outlet of the structure is not perched.
2. The structure water velocity is less than 2 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is greater than 0.1.
4. The water depth in the structure is greater than 0.2 feet.
5. There is not a scour pool below the structure.
6. The ratio of the structure width to stream bankfull width is greater than 0.5.
7. The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

- | | |
|----------------|----|
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



LMN1-DOWNSTREAM

Stream Crossing Data Sheet

Site ID: LMN 2

General Information

Name of

Observer(s): Snell

Date: 07/21/10

GPS

Lat/Long: _____

GPS Waypoint: _____

Additional Location

Comments: _____

Road Information

Road Name/Number: Old US 31

Road Type:

Federal

State

County

Town

Tribal

Private

Other: _____

Road Surface:

Paved

Gravel

Sand

Native Surface

Other: _____

Road Width (ft): 40

Fill Depth (ft): 15

Crossing Information

Structure Type:

Culvert(s) no.: 2

Bridge

Ford

Dam

Other: _____

Structure ID: _____

Structure Shape

Structure Material

Substrate in Structure

Structure Condition

Round

Metal

None

Sand

General Condition:

New

Good

Fair

Poor

Square/Rectangle

Concrete

Gravel

Rock

Plugged: _____ %

Inlet

Outlet

In Pipe

Open Bottom Square/Rectangle

Plastic

Mixture

Crushed _____ %

Inlet

Outlet

In Pipe

Pipe Arch

Wood

Rusted Through?

Yes

No

Open Bottom Arch

Structure Interior

Inlet Type

Outlet Type

Ellipse

Smooth or Corrugated

Projecting

Mitered

At stream grade

Structure Water Velocity (ft/sec):¹ 0.75

Headwall

Apron

Cascade over riprap

Structure Water Depth (ft):¹

inlet

1

outlet

1.7

Wingwall 10-30° or 30-70°

Freefall into pool.

Structure Length (ft):¹ 93

Trashrack

Freefall onto riprap

Structure Width (ft):¹ 9

Structure Height (ft):¹ 5.8

Other

Outlet apron

Perch Height (ft):^{1,2} 0

Height of Head (ft):^{1,2}

Other

Buried Depth of Structure (ft):¹

inlet

outlet

Stream Information

Stream Name: Lena Creek

Stream Water Velocity (in riffle) (ft/sec): 1.2

Stream Flow:

None

< 1/2 Bankfull

< Bankfull

= Bankfull

> Bankfull

Water Depth (in riffle) (ft): 0.6

Bankfull Width (in riffle) (ft): 24

Stream Width (in riffle) (ft): 15

Scour Pool Length, Width & Depth (ft):² 10 1 1

Upstream Pond Length & Width (ft):² NA

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	<u>Yes</u>	No	Is there a change in head from the upstream side to downstream side?	<u>Yes</u>	No
Does the structure substrate match the stream substrate?	<u>Yes</u>	No	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	Yes	<u>No</u>	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2	9	4.9	63 - Sedimentation - passes BKF
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach - Left
- Upstream Conditions
- Inlet
- Road Approach - Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine "passability" for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0 Most species and life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.

- The outlet of the structure is perched. Yes No
 - The structure water velocity is greater than 3 feet/second during baseflow. Yes No
 - The ratio of the structure water depth to stream water depth is less than 0.1. Yes No
- Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5 Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet. Yes No
- The structure water velocity is 2-3 feet/second during baseflow. Yes No
- The structure is longer than 30 feet and does not have natural substrate through its entire length. Yes No

Passability = 0.9 Barrier at high flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.9.

- There is a scour pool below the structure. Yes No
 - The ratio of the structure width to stream bankfull width is less than 0.5. Yes No
- Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1 Not a barrier.

If all of the following questions can be answered "yes", then the crossing barrier score = 1.

- The outlet of the structure is not perched. Yes No
- The structure water velocity is less than 2 feet/second during baseflow. Yes No
- The ratio of the structure water depth to stream water depth is greater than 0.1. Yes No
- The water depth in the structure is greater than 0.2 feet. Yes No
- There is not a scour pool below the structure. Yes No
- The ratio of the structure width to stream bankfull width is greater than 0.5. Yes No
- The structure is longer than 30 feet and has natural substrate through its entire length, or Yes No
- The structure is shorter than 30 feet and has natural substrate through its entire length, or Yes No
- The structure is shorter than 30 feet and does not have natural substrate through its entire length. Yes No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



LMN2-ROAD



UPSTREAM

Stream Crossing Data Sheet

Site ID: LMN 3

General Information

Name of Observer(s): Snell Date: 07/21/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: US 31

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): _____ Fill Depth (ft): _____

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
Round	Metal	None	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor
Square/Rectangle	<input checked="" type="checkbox"/> Concrete	Gravel	Plugged: _____ % Inlet <input type="checkbox"/> Outlet <input type="checkbox"/> In Pipe
<input checked="" type="checkbox"/> Open Bottom Square/Rectangle	Plastic	<input checked="" type="checkbox"/> Mixture	Crushed: _____ % Inlet <input type="checkbox"/> Outlet <input type="checkbox"/> In Pipe
Pipe Arch	Wood		Rusted Through? Yes <input type="checkbox"/> No <input type="checkbox"/>
Open Bottom Arch			
Ellipse			

Structure Water Velocity (ft/sec): ¹ <u>0.6</u>	Structure Interior	<table border="1"> <thead> <tr> <th colspan="2">Inlet Type</th> <th>Outlet Type</th> </tr> </thead> <tbody> <tr> <td>Projecting</td> <td>Mitered</td> <td><input checked="" type="checkbox"/> At stream grade</td> </tr> <tr> <td>Headwall</td> <td>Apron</td> <td>Cascade over riprap</td> </tr> <tr> <td>Wingwall 10-30° or <input checked="" type="checkbox"/> 30-70°</td> <td></td> <td>Freefall into pool.</td> </tr> <tr> <td>Trashrack</td> <td></td> <td>Freefall onto riprap</td> </tr> <tr> <td>Other</td> <td></td> <td>Outlet apron</td> </tr> <tr> <td></td> <td></td> <td>Other</td> </tr> </tbody> </table>	Inlet Type		Outlet Type	Projecting	Mitered	<input checked="" type="checkbox"/> At stream grade	Headwall	Apron	Cascade over riprap	Wingwall 10-30° or <input checked="" type="checkbox"/> 30-70°		Freefall into pool.	Trashrack		Freefall onto riprap	Other		Outlet apron			Other
Inlet Type			Outlet Type																				
Projecting	Mitered		<input checked="" type="checkbox"/> At stream grade																				
Headwall	Apron		Cascade over riprap																				
Wingwall 10-30° or <input checked="" type="checkbox"/> 30-70°			Freefall into pool.																				
Trashrack			Freefall onto riprap																				
Other		Outlet apron																					
		Other																					
Structure Water Depth (ft): ¹ inlet <u>1.0</u> outlet <u>0.9</u>	Smooth or Corrugated																						
Structure Length (ft): ¹ _____																							
Structure Width (ft): ¹ <u>21</u> Structure Height (ft): ¹ <u>7</u>																							
Perch Height (ft): ^{1,2} _____ Height of Head (ft): ^{1,2} _____																							
Buried Depth of Structure (ft): ¹ inlet _____ outlet _____																							

Stream Information

Stream Name: Lemon Stream Water Velocity (in riffle) (ft/sec): 0.5

Stream Flow: None 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.9 Bankfull Width (in riffle) (ft): 18 Stream Width (in riffle) ft: 10

Scour Pool Length, Width & Depth (ft):² 1 1 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there ponding upstream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is there a scour pool at the outlet?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the structure fully backwatered?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is there substrate through the structure's entire length?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is there a change in head from the upstream side to downstream side?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Does the structure substrate match the stream substrate?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the structure narrower than the bankfull stream width?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is water in the structure moving faster than in the stream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there debris blocking the inlet?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is water in the structure shallower than in the stream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there evidence of overtopping or wash-outs?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

1. The outlet of the structure is perched.
2. The structure water velocity is greater than 3 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is less than 0.1.

Yes No
 Yes No
 Yes No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

1. The water depth in the structure is less than 0.2 feet.
2. The structure water velocity is 2-3 feet/second during baseflow.
3. The structure is longer than 30 feet and does not have natural substrate through its entire length.

Yes No
 Yes No
 Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

1. There is a scour pool below the structure.
2. The ratio of the structure width to stream bankfull width is less than 0.5.

Yes No
 Yes No

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

1. The outlet of the structure is not perched.
2. The structure water velocity is less than 2 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is greater than 0.1.
4. The water depth in the structure is greater than 0.2 feet.
5. There is not a scour pool below the structure.
6. The ratio of the structure width to stream bankfull width is greater than 0.5.
7. The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



LMN3

Stream Crossing Data Sheet

Site ID: LMN4

General Information

Name of

Observer(s): SNELL Date: 07/21/10

GPS Lat/Long: _____

GPS Waypoint: _____

Additional Location

Comments: _____

Road Information

Road Name/Number: Red Bud Trail

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 24 Fill Depth (ft): 2

Crossing Information

Structure Type: Culvert(s) no.: _____ Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
Round	<u>Meta Beams</u>	None	General Condition: New Good <u>Fair</u> Poor
Square/Rectangle	<u>Concrete</u>	Gravel	Plugged: _____ % Inlet Outlet In Pipe
<u>Open Bottom Square/Rectangle</u>	Plastic	Mixture	Crushed: _____ % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

Structure Interior: Smooth or Corrugated *Broken concrete*

Structure Water Velocity (ft/sec):¹ 0.7

Structure Water Depth (ft):¹ inlet 0.7 outlet 0.2

Structure Length (ft):¹ 54

Structure Width (ft):¹ 18' Structure Height (ft):¹ 5.0

Perch Height (ft):^{1,2} 0.3 Height of Head (ft):^{1,2} 0.2

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Inlet Type		Outlet Type
<u>Projecting</u>	Mitered	At stream grade
Headwall	Apron	<u>Cascade over riprap</u>
Wingwall 10-30° or 30-70°		Freefall into pool.
Trashrack		Freefall onto riprap
Other		<u>Outlet apron</u>
		Other

Stream Information

Stream Name: Lemon Creek Stream Water Velocity (in riffle) (ft/sec): 0.6

Stream Flow: None 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.25 Bankfull Width (in riffle) (ft): 14 Stream Width (in riffle) ft: 9

Scour Pool Length, Width & Depth (ft):² NA / 1 / 1 Upstream Pond Length & Width (ft):² 210

Fish Passage Information

Is the structure perched?	<u>Yes</u>	No	Is there ponding upstream?	<u>Yes</u>	No
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	<u>Yes</u>	No	Is there a change in head from the upstream side to downstream side?	<u>Yes</u>	No
Does the structure substrate match the stream substrate?	<u>Yes</u>	No	Is the structure narrower than the bankfull stream width?	Yes	<u>No</u>
Is water in the structure moving faster than in the stream?	Yes	<u>No</u>	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine "passability" for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0 **Most species and life stages cannot pass at most flows.**

If any of the following questions can be answered "yes", then the crossing barrier score = 0.

- The outlet of the structure is perched. Yes No
 - The structure water velocity is greater than 3 feet/second during baseflow. Yes No
 - The ratio of the structure water depth to stream water depth is less than 0.1. Yes No
- Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5 **Some species and/or life stages cannot pass at most flows.**

If any of the following questions can be answered "yes", then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet. Yes No
- The structure water velocity is 2-3 feet/second during baseflow. Yes No
- The structure is longer than 30 feet and does not have natural substrate through its entire length. Yes No

Passability = 0.9 **Barrier at high flows.**

If any of the following questions can be answered "yes", then the crossing barrier score = 0.9.

- There is a scour pool below the structure. Yes No
 - The ratio of the structure width to stream bankfull width is less than 0.5. Yes No
- Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1 **Not a barrier.**

If all of the following questions can be answered "yes", then the crossing barrier score = 1.

- The outlet of the structure is not perched. Yes No
- The structure water velocity is less than 2 feet/second during baseflow. Yes No
- The ratio of the structure water depth to stream water depth is greater than 0.1. Yes No
- The water depth in the structure is greater than 0.2 feet. Yes No
- There is not a scour pool below the structure. Yes No
- The ratio of the structure width to stream bankfull width is greater than 0.5. Yes No
- The structure is longer than 30 feet and has natural substrate through its entire length, or Yes No
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

low-flow channel built in culvert to stabilize headwalls. small dam built in culvert. Agron on old road - previous attempt at fish passage?

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



LMN4- DOWNSTREAM



UPSTREAM

Stream Crossing Data Sheet

Site ID: LMN 5

General Information

Name of Observer(s): Snell Date: 07/21/10

GPS Waypoint: _____ Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: GARR - South crossing

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 25 Fill Depth (ft): 1.6

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
Round	<u>Metal</u>	None <u>Sand</u>	General Condition: New <u>Good</u> Fair Poor
Square/Rectangle	Concrete	Gravel Rock	Plugged: ___ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	Mixture	Crushed: ___ % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

<u>Open Bottom Arch</u>	Structure Interior	
Ellipse	Smooth or <u>Corrugated</u>	
Structure Water Velocity (ft/sec):¹	<u>0.25</u>	
Structure Water Depth (ft):¹	inlet <u>0.8</u> outlet <u>0.25</u>	
Structure Length (ft):¹	<u>54</u>	
Structure Width (ft):¹	<u>8</u>	Structure Height (ft):¹ <u>4.7</u>
Perch Height (ft):^{1,2}	<u>-</u>	Height of Head (ft):^{1,2} <u>-</u>
Buried Depth of Structure (ft):¹	inlet <u>-</u> outlet <u>-</u>	

Inlet Type		Outlet Type
Projecting	Mitered	At stream grade
<u>Headwall</u>	Apron	<u>Cascade over riprap</u>
Wingwall 10-30° or 30-70°		Freefall into pool.
Trashrack		Freefall onto riprap
Other		Outlet apron
		Other

Stream Information

Stream Name: Lemon Creek Stream Water Velocity (in riffle) (ft/sec): 0.1

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull NO RIFFLES

Water Depth (in riffle) (ft): 0.8 Bankfull Width (in riffle) (ft): 6 Stream Width (in riffle) ft: 4

Scour Pool Length, Width & Depth (ft):² NA 1 - Upstream Pond Length & Width (ft):² NA

Fish Passage Information

Is the structure perched?	Yes	<u>NO</u>	Is there ponding upstream?	Yes	<u>NO</u>
Is there a scour pool at the outlet?	Yes	<u>NO</u>	Is the structure fully backwatered?	Yes	<u>NO</u>
Is there substrate through the structure's entire length?	<u>YES</u>	No	Is there a change in head from the upstream side to downstream side?	<u>YES</u>	No
Does the structure substrate match the stream substrate?	<u>YES</u>	NO	Is the structure narrower than the bankfull stream width?	Yes	<u>NO</u>
Is water in the structure moving faster than in the stream?	Yes	<u>NO</u>	Is there debris blocking the inlet?	Yes	<u>NO</u>
Is water in the structure shallower than in the stream?	<u>YES</u>	No	Is there evidence of overtopping or wash-outs?	Yes	<u>NO</u>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

Yes No
Yes No
Yes No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet.
- The structure water velocity is 2-3 feet/second during baseflow.
- The structure is longer than 30 feet and does not have natural substrate through its entire length.

Yes No
Yes No
Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

Yes No
Yes No

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Yes No
Yes No
Yes No
Yes No
Yes No
Yes No
Yes No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



LMN5-DOWNSTREAM



ROAD



UPSTREAM

Stream Crossing Data Sheet

Site ID: LMN 6

General Information

Name of Observer(s): Snell Date: _____

GPS Lat/Long: _____

GPS Waypoint: _____
Additional Location: _____
Comments: _____

Road Information

Road Name/Number: Burgoyne

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 25 Fill Depth (ft): 3

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
<u>Round</u>	Metal	None Sand	General Condition: New <u>Good</u> Fair Poor
Square/Rectangle	<u>Concrete</u>	Gravel Rock	Plugged: _____ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	Mixture	Crushed: _____ % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

Structure Interior: Smooth or Corrugated

Structure Water Velocity (ft/sec): ¹	Structure Water Depth (ft): ¹	Structure Length (ft): ¹	Structure Width (ft): ¹	Structure Height (ft): ¹	Inlet Type	Outlet Type
	inlet _____ outlet _____	<u>28</u>	<u>12</u>	<u>12</u>	<u>Headwall</u> Apron	Cascade over riprap
					Wingwall 10-30° or 30-70°	<u>Freefall into pool.</u>
					Trashrack	Freefall onto riprap
					Other	Outlet apron
						Other

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Stream Information

Stream Name: Lemon Creek Stream Water Velocity (in riffle) (ft/sec): _____

Stream Flow: None 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.5 Bankfull Width (in riffle) (ft): 2.4 Stream Width (in riffle) (ft): 2-8

Scour Pool Length, Width & Depth (ft):² ← 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	<u>Yes</u>	No	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	Yes	<u>No</u>	Is there a change in head from the upstream side to downstream side?	Yes	<u>No</u>
Does the structure substrate match the stream substrate?	Yes	<u>No</u>	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	<u>Yes</u>	No	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	<u>Yes</u>	No	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

1. The outlet of the structure is perched.
2. The structure water velocity is greater than 3 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is less than 0.1.

<u>Yes</u>	No
Yes	No
Yes	No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

1. The water depth in the structure is less than 0.2 feet.
2. The structure water velocity is 2-3 feet/second during baseflow.
3. The structure is longer than 30 feet and does not have natural substrate through its entire length.

Yes	No
Yes	No
Yes	No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

1. There is a scour pool below the structure.
2. The ratio of the structure width to stream bankfull width is less than 0.5.

Yes	No
Yes	No

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

1. The outlet of the structure is not perched.
2. The structure water velocity is less than 2 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is greater than 0.1.
4. The water depth in the structure is greater than 0.2 feet.
5. There is not a scour pool below the structure.
6. The ratio of the structure width to stream bankfull width is greater than 0.5.
7. The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Yes	No
Yes	No
Yes	No
Yes	No
Yes	No
Yes	No
Yes	No
Yes	No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



LMN6-DOWNSTREAM

Stream Crossing Data Sheet

Site ID: PIP4

General Information

Name of Observer(s): Small Date: 08/05/10

GPS Lat/Long: _____

GPS Waypoint: _____
Additional Location: _____
Comments: _____

Road Information

Road Name/Number: Merry

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): 3

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape Structure Material Substrate in Structure Structure Condition

Round Metal None Sand **General Condition:** New Good Fair Poor
Square/Rectangle Concrete Gravel Rock **Plugged:** ___ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle Plastic Mixture **Crushed** ___ % Inlet Outlet In Pipe
Pipe Arch Wood **Rusted Through?** Yes No

Open Bottom Arch **Structure Interior**
Ellipse Smooth or Corrugated

Structure Water Velocity (ft/sec):¹ 0.6

Structure Water Depth (ft):¹ inlet 0.6 outlet 0.6

Structure Length (ft):¹ 36

Structure Width (ft):¹ 8 Structure Height (ft):¹ 8

Perch Height (ft):^{1,2} _____ Height of Head (ft):^{1,2} _____

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Inlet Type		Outlet Type
Projecting	Mitered	<u>At stream grade</u>
Headwall	Apron	Cascade over riprap
Wingwall 10-30° or <u>30-70°</u>		Freefall into pool.
Trashrack		Freefall onto riprap
Other		Outlet apron
		Other

Stream Information

Stream Name: Pipestone Creek Stream Water Velocity (in riffle) (ft/sec): 1.4

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.35 Bankfull Width (in riffle) (ft): 18 Stream Width (in riffle) ft: 12

Scour Pool Length, Width & Depth (ft):² 20 / 8 / 2 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes <u>No</u>	Is there ponding upstream?	Yes <u>No</u>
Is there a scour pool at the outlet?	<u>Yes</u> No	Is the structure fully backwatered?	Yes <u>No</u>
Is there substrate through the structure's entire length?	Yes <u>No</u>	Is there a change in head from the upstream side to downstream side?	Yes No
Does the structure substrate match the stream substrate?	Yes No	Is the structure narrower than the bankfull stream width?	<u>Yes</u> No
Is water in the structure moving faster than in the stream?	<u>Yes</u> No	Is there debris blocking the inlet?	Yes <u>No</u>
Is water in the structure shallower than in the stream?	<u>Yes</u> No	Is there evidence of overtopping or wash-outs?	Yes <u>No</u>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

- | | |
|-----|----|
| Yes | No |
| Yes | No |
| Yes | No |

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet.
- The structure water velocity is 2-3 feet/second during baseflow.
- The structure is longer than 30 feet and does not have natural substrate through its entire length.

- | | |
|------------|----|
| Yes | No |
| Yes | No |
| <u>Yes</u> | No |

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

- | | |
|-----|----|
| Yes | No |
| Yes | No |

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

- | | |
|-----|----|
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



PIP4-DOWNSTREAM



UPSTREAM

Stream Crossing Data Sheet

Site ID: PIP 5

General Information

Name of Observer(s): Small Date: 08/10/10

GPS Lat/Long: _____

GPS Waypoint: _____
Additional Location: _____
Comments: _____

Road Information

Road Name/Number: Highway 1

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): ~20

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape Structure Material Substrate in Structure Structure Condition

Round Metal None Sand General Condition: New Good Fair Poor

Square/Rectangle Concrete Gravel Rock Plugged: _____ % Inlet Outlet In Pipe

Open Bottom Square/Rectangle Plastic Mixture Crushed: _____ % Inlet Outlet In Pipe

Pipe Arch Wood Rusted Through? Yes No

Open Bottom Arch Structure Interior

Ellipse Smooth or Corrugated

Structure Water Velocity (ft/sec):¹ _____

Structure Water Depth (ft):¹ inlet 0.5 outlet 0.5

Structure Length (ft):¹ 80

Structure Width (ft):¹ 5 Structure Height (ft):¹ 5

Perch Height (ft):^{1,2} _____ Height of Head (ft):^{1,2} _____

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Stream Information

Stream Name: Pipestone Creek Stream Water Velocity (in riffle) (ft/sec): _____

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.6 Bankfull Width (in riffle) (ft): 12 Stream Width (in riffle) ft: 7

Scour Pool Length, Width & Depth (ft):² 1 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	Yes	<u>No</u>	Is there a change in head from the upstream side to downstream side?	Yes	<u>No</u>
Does the structure substrate match the stream substrate?	Yes	No	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	Yes	<u>No</u>	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

1. The outlet of the structure is perched.
2. The structure water velocity is greater than 3 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is less than 0.1.

- | | |
|-----|----|
| Yes | No |
| Yes | No |
| Yes | No |

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

1. The water depth in the structure is less than 0.2 feet.
2. The structure water velocity is 2-3 feet/second during baseflow.
3. The structure is longer than 30 feet and does not have natural substrate through its entire length.

- | | |
|------------|----|
| Yes | No |
| Yes | No |
| <u>Yes</u> | No |

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

1. There is a scour pool below the structure.
2. The ratio of the structure width to stream bankfull width is less than 0.5.

- | | |
|-----|----|
| Yes | No |
| Yes | No |

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

1. The outlet of the structure is not perched.
2. The structure water velocity is less than 2 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is greater than 0.1.
4. The water depth in the structure is greater than 0.2 feet.
5. There is not a scour pool below the structure.
6. The ratio of the structure width to stream bankfull width is greater than 0.5.
7. The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

- | | |
|-----|----|
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |
| Yes | No |

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

²Fill out, if present.



PIP5

Stream Crossing Data Sheet

Site ID: PIP 6

General Information

Name of Observer(s): Snell Date: 08/05/10

GPS Lat/Long: _____

GPS Waypoint: _____
Additional Location: _____
Comments: _____

Road Information

Road Name/Number: Union E

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): ~15

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape: Round
Structure Material: Metal
Substrate in Structure: None 1.4/2 Sand
Structure Condition: General Condition: New Good Fair Poor
Plugged: _____ % Inlet Outlet In Pipe
Crushed 5 % Inlet Outlet In Pipe
Rusted Through? Yes No

Structure Interior: Smooth or Corrugated
Structure Water Velocity (ft/sec):¹ 1.4
Structure Water Depth (ft):¹ inlet 0.9 outlet 0.4
Structure Length (ft):¹ 75
Structure Width (ft):¹ 6 Structure Height (ft):¹ 6
Perch Height (ft):^{1,2} slight Height of Head (ft):^{1,2} _____
Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Inlet Type		Outlet Type
<u>Projecting</u>	Mitered	At stream grade
Headwall	Apron	<u>Cascade over riprap</u>
Wingwall 10-30° or 30-70°		Freefall into pool.
Trashrack		Freefall onto riprap
Other		Outlet apron
		Other

Stream Information

Stream Name: Pipestone CK Stream Water Velocity (in riffle) (ft/sec): 0.7

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.5 Bankfull Width (in riffle) (ft): 14 Stream Width (in riffle) (ft): 9

Scour Pool Length, Width & Depth (ft):² 1 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes <u>No</u>	Is there ponding upstream?	Yes <u>No</u>
Is there a scour pool at the outlet?	Yes <u>No</u>	Is the structure fully backwatered?	Yes <u>No</u>
Is there substrate through the structure's entire length?	Yes <u>No</u>	Is there a change in head from the upstream side to downstream side?	Yes <u>No</u>
Does the structure substrate match the stream substrate?	Yes <u>No</u>	Is the structure narrower than the bankfull stream width?	Yes <u>No</u>
Is water in the structure moving faster than in the stream?	<u>Yes</u> No	Is there debris blocking the inlet?	Yes <u>No</u>
Is water in the structure shallower than in the stream?	Yes <u>No</u>	Is there evidence of overtopping or wash-outs?	<u>Yes</u> No

u/s etc

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

Yes No
Yes No
Yes No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet.
- The structure water velocity is 2-3 feet/second during baseflow.
- The structure is longer than 30 feet and does not have natural substrate through its entire length.

Yes No
Yes No
Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

Yes No
Yes No

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Yes No
Yes No
Yes No
Yes No
Yes No
Yes No
Yes No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

large sediment load, severe/high bank erosion

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



PIP6-DOWNSTREAM

Stream Crossing Data Sheet

Site ID: PIP 7

General Information

Name of

Observer(s): Snell

Date: 02/05/10

GPS
Lat/Long: _____

GPS Waypoint: _____

Additional Location

Comments: _____

Road Information

Road Name/Number: Fairview

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): 4

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape

Structure Material

Substrate in Structure

Structure Condition

Round

Metal

None

Sand

General Condition: New Good Fair Poor

Square/Rectangle

Concrete

Gravel

Rock

Plugged: 5 % Inlet Outlet In Pipe

Open Bottom Square/Rectangle

Plastic

Mixture

Crushed % Inlet Outlet In Pipe

Pipe Arch

Wood

Rusted Through? Yes No

Open Bottom Arch

Structure Interior

Inlet Type

Outlet Type

Ellipse

Smooth or Corrugated

Projecting Mitered

At stream grade

Structure Water Velocity (ft/sec):¹ 0.5

Headwall Apron

Cascade over riprap

Structure Water Depth (ft):¹ inlet outlet 0.3

Wingwall 10-30° or 30-70°

Freefall into pool.

Structure Length (ft):¹ 30

Trashrack

Freefall onto riprap

Structure Width (ft):¹ 6 Structure Height (ft):¹ 5

Other

Outlet apron

Perch Height (ft):^{1,2} Height of Head (ft):^{1,2}

Other

Other

Buried Depth of Structure (ft):¹ inlet outlet 0.8

Stream Information

Stream Name: Pipestone Cr.

Stream Water Velocity (in riffle) (ft/sec): 0.5

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.4 Bankfull Width (in riffle) (ft): 12 Stream Width (in riffle) ft: 4

Scour Pool Length, Width & Depth (ft):² / / Upstream Pond Length & Width (ft):²

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	<u>Yes</u>	No	Is there a change in head from the upstream side to downstream side?	Yes	<u>No</u>
Does the structure substrate match the stream substrate?	<u>Yes</u>	No	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	Yes	<u>No</u>	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2	6	5	30
3			

50% plugged

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine "passability" for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

Yes No
 Yes No
 Yes No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet.
- The structure water velocity is 2-3 feet/second during baseflow.
- The structure is longer than 30 feet and does not have natural substrate through its entire length.

Yes No
 Yes No
 Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

Yes No
 Yes No

Structure width: 5 Stream bankfull width: 12 Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered "yes", then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



PIP7-DOWNSTREAM



IN PIPE



UPSTREAM

Stream Crossing Data Sheet

Site ID: PIP 9

General Information

Name of Observer(s): Smith Date: 6/8/05

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location _____
Comments: _____

Road Information

Road Name/Number: Dallas

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 15 Fill Depth (ft): 2.5

Crossing Information

Structure Type: Culvert(s) no.: 2 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
Round	<u>Metal</u>	None Sand	General Condition: New <u>Good</u> Fair Poor
Square/Rectangle	Concrete	Gravel Rock	Plugged: _____ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	<u>Mixture</u>	Crushed: _____ % Inlet Outlet In Pipe
<u>Pipe Arch</u>	Wood		Rusted Through? Yes No

Open Bottom Arch	Structure Interior	<table border="1"> <thead> <tr> <th colspan="2">Inlet Type</th> <th>Outlet Type</th> </tr> </thead> <tbody> <tr> <td>Projecting</td> <td>Mitered</td> <td>At stream grade</td> </tr> <tr> <td>Headwall</td> <td>Apron</td> <td>Cascade over riprap</td> </tr> <tr> <td>Wingwall 10-30° or 30-70°</td> <td></td> <td>Freefall into pool.</td> </tr> <tr> <td>Trashrack</td> <td></td> <td>Freefall onto riprap</td> </tr> <tr> <td>Other</td> <td></td> <td>Outlet apron</td> </tr> <tr> <td></td> <td></td> <td>Other</td> </tr> </tbody> </table>	Inlet Type		Outlet Type	Projecting	Mitered	At stream grade	Headwall	Apron	Cascade over riprap	Wingwall 10-30° or 30-70°		Freefall into pool.	Trashrack		Freefall onto riprap	Other		Outlet apron			Other
Inlet Type			Outlet Type																				
Projecting	Mitered	At stream grade																					
Headwall	Apron	Cascade over riprap																					
Wingwall 10-30° or 30-70°		Freefall into pool.																					
Trashrack		Freefall onto riprap																					
Other		Outlet apron																					
		Other																					
Ellipse	Smooth or <u>Corrugated</u>																						

Structure Water Velocity (ft/sec):¹ 0.6

Structure Water Depth (ft):¹ inlet 1.2 outlet 1.3

Structure Length (ft):¹ 30

Structure Width (ft):¹ ~15 Structure Height (ft):¹ ~10

Perch Height (ft):^{1,2} _____ Height of Head (ft):^{1,2} _____

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Stream Information

Stream Name: Peperstone CK Stream Water Velocity (in riffle) (ft/sec): _____

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 1.1 Bankfull Width (in riffle) (ft): 30 Stream Width (in riffle) ft: 27

Scour Pool Length, Width & Depth (ft):² 1 / 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	<u>Yes</u>	No	Is there a change in head from the upstream side to downstream side?	Yes	<u>No</u>
Does the structure substrate match the stream substrate?	<u>Yes</u>	No	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	Yes	<u>No</u>	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2	~15	~10	30
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

Yes	No
Yes	No
Yes	No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet.
- The structure water velocity is 2-3 feet/second during baseflow.
- The structure is longer than 30 feet and does not have natural substrate through its entire length.

Yes	No
Yes	No
Yes	No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

Yes	No
Yes	No

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Yes	No
Yes	No
Yes	No
Yes	No
Yes	No
Yes	No
Yes	No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



PIP9

Stream Crossing Data Sheet

Site ID: YLV 1

General Information

Name of Observer(s): Snell Date: _____

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: Scottsdale / 31

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): _____ Fill Depth (ft): _____

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
Round	Metal	None	General Condition: New <u>Good</u> Fair Poor
Square/Rectangle	<u>Concrete</u>	Gravel	Plugged: _____ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	Mixture	Crushed: _____ % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

Open Bottom Arch

Ellipse	Structure Interior	
	Smooth or Corrugated	
Structure Water Velocity (ft/sec):¹	<u>0.2</u>	
Structure Water Depth (ft):¹	inlet <u>0.4</u> outlet <u>0.3-1.0</u>	
Structure Length (ft):¹	_____	
Structure Width (ft):¹	<u>27</u>	Structure Height (ft):¹ <u>15</u>
Perch Height (ft):^{1,2}	<u>0.2</u>	Height of Head (ft):^{1,2} _____
Buried Depth of Structure (ft):¹	inlet _____ outlet _____	

Inlet Type		Outlet Type
Projecting	Mitered	At stream grade
Headwall	Apron	Cascade over riprap
Wingwall 10-30° or 30-70°		Freefall into pool.
Trashrack		Freefall onto riprap
Other		Outlet apron
		Other

Stream Information

Stream Name: Yellow Creek Stream Water Velocity (in riffle) (ft/sec): 1.0

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.4 Bankfull Width (in riffle) (ft): 24 Stream Width (in riffle) ft: 21

Scour Pool Length, Width & Depth (ft):² 10 | 10 | 2 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	<u>Yes</u>	No	Is there ponding upstream?	<u>Yes</u>	No
Is there a scour pool at the outlet?	<u>Yes</u>	No	Is the structure fully backwatered?	Yes	No
Is there substrate through the structure's entire length?	<u>Yes</u>	No	Is there a change in head from the upstream side to downstream side?	Yes	<u>No</u>
Does the structure substrate match the stream substrate?	Yes	<u>No</u>	Is the structure narrower than the bankfull stream width?	Yes	<u>No</u>
Is water in the structure moving faster than in the stream?	Yes	<u>No</u>	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

Y6W1

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine "passability" for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

Yes	No
Yes	No
Yes	No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet.
- The structure water velocity is 2-3 feet/second during baseflow.
- The structure is longer than 30 feet and does not have natural substrate through its entire length.

Yes	No
Yes	No
Yes	No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

Yes	No
Yes	No

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered "yes", then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Yes	No
Yes	No
Yes	No
Yes	No
Yes	No
Yes	No
Yes	No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



YLW1- DOWNSTREAM



DOWNSTREAM



DOWNSTREAM

Stream Crossing Data Sheet

Site ID: Yew 2

General Information

Name of Observer(s): Swell Date: _____

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: M63

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 30 Fill Depth (ft): 5

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
Round	Metal	None <input checked="" type="radio"/> Sand <input type="radio"/>	General Condition: New <input checked="" type="radio"/> Good <input type="radio"/> Fair <input type="radio"/> Poor
Square/Rectangle	<input checked="" type="radio"/> Concrete	Gravel <input type="radio"/> Rock <input type="radio"/>	Plugged: _____ % Inlet <input type="radio"/> Outlet <input type="radio"/> In Pipe <input type="radio"/>
<input checked="" type="radio"/> Open Bottom Square/Rectangle	Plastic	Mixture <input type="radio"/>	Crushed _____ % Inlet <input type="radio"/> Outlet <input type="radio"/> In Pipe <input type="radio"/>
Pipe Arch	Wood		Rusted Through? Yes <input type="radio"/> No <input type="radio"/>

Structure Interior: Smooth or Corrugated

Structure Water Velocity (ft/sec):¹ 1.0

Structure Water Depth (ft):¹ inlet 0.8 outlet 0.7

Structure Length (ft):¹ 80

Structure Width (ft):¹ 30 Structure Height (ft):¹ 10

Perch Height (ft):^{1,2} _____ Height of Head (ft):^{1,2} _____

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Inlet Type		Outlet Type
Projecting	Mitered	At stream grade
Headwall	Apron	Cascade over riprap
Wingwall 10-30° or 30-70°		Freefall into pool.
Trashrack		Freefall onto riprap
Other		Outlet apron
		Other

Stream Information

Stream Name: Yellow Creek Stream Water Velocity (in riffle) (ft/sec): 1.0

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.5 Bankfull Width (in riffle) (ft): 23 Stream Width (in riffle) ft: 15

Scour Pool Length, Width & Depth (ft):² 1 / 1 / _____ Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Is there ponding upstream?	Yes <input type="radio"/> No <input checked="" type="radio"/>
Is there a scour pool at the outlet?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the structure fully backwatered?	Yes <input type="radio"/> No <input checked="" type="radio"/>
Is there substrate through the structure's entire length?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is there a change in head from the upstream side to downstream side?	Yes <input type="radio"/> No <input checked="" type="radio"/>
Does the structure substrate match the stream substrate?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the structure narrower than the bankfull stream width?	Yes <input type="radio"/> No <input checked="" type="radio"/>
Is water in the structure moving faster than in the stream?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Is there debris blocking the inlet?	Yes <input type="radio"/> No <input checked="" type="radio"/>
Is water in the structure shallower than in the stream?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Is there evidence of overtopping or wash-outs?	Yes <input type="radio"/> No <input checked="" type="radio"/>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- 1. The outlet of the structure is perched. Yes No
 - 2. The structure water velocity is greater than 3 feet/second during baseflow. Yes No
 - 3. The ratio of the structure water depth to stream water depth is less than 0.1. Yes No
- Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- 1. The water depth in the structure is less than 0.2 feet. Yes No
- 2. The structure water velocity is 2-3 feet/second during baseflow. Yes No
- 3. The structure is longer than 30 feet and does not have natural substrate through its entire length. Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- 1. There is a scour pool below the structure. Yes No
 - 2. The ratio of the structure width to stream bankfull width is less than 0.5. Yes No
- Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- 1. The outlet of the structure is not perched. Yes No
- 2. The structure water velocity is less than 2 feet/second during baseflow. Yes No
- 3. The ratio of the structure water depth to stream water depth is greater than 0.1. Yes No
- 4. The water depth in the structure is greater than 0.2 feet. Yes No
- 5. There is not a scour pool below the structure. Yes No
- 6. The ratio of the structure width to stream bankfull width is greater than 0.5. Yes No
- 7. The structure is longer than 30 feet and has natural substrate through its entire length, or Yes No
- The structure is shorter than 30 feet and has natural substrate through its entire length, or
- The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



YLW2-ROAD



UPSTREAM

Stream Crossing Data Sheet

Site ID: Yw 3

General Information

Name of Observer(s): Snell Date: 07/21/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: Marquette Woods

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): 5

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
Round	<u>Metap</u>	None Sand	General Condition: New Good Fair Poor
Square/Rectangle	Concrete	Gravel Rock	Plugged: _____ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	Mixture	Crushed: _____ % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

Structure Interior	Inlet Type		Outlet Type
	Projecting	Mitered	<u>At stream grade</u>
Smooth or <u>Corrugated</u>	Headwall	Apron	Cascade over riprap
	Wingwall 10-30° or 30-70°		Freefall into pool.
	Trashrack		Freefall onto riprap
	Other		Outlet apron
			Other

Structure Water Velocity (ft/sec):¹ 1

Structure Water Depth (ft):¹ inlet 1.0 outlet 0.6

Structure Length (ft):¹ 80

Structure Width (ft):¹ 18 Structure Height (ft):¹ 8

Perch Height (ft):^{1,2} _____ Height of Head (ft):^{1,2} _____

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Stream Information

Stream Name: Yellow Creek Stream Water Velocity (in riffle) (ft/sec): 1.0

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.35 Bankfull Width (in riffle) (ft): 18 Stream Width (in riffle) ft: 17

Scour Pool Length, Width & Depth (ft):² 1 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes	No	Is there ponding upstream?	Yes	No
Is there a scour pool at the outlet?	Yes	No	Is the structure fully backwatered?	Yes	No
Is there substrate through the structure's entire length?	Yes	No	Is there a change in head from the upstream side to downstream side?	Yes	No
Does the structure substrate match the stream substrate?	Yes	No	Is the structure narrower than the bankfull stream width?	Yes	No
Is water in the structure moving faster than in the stream?	Yes	No	Is there debris blocking the inlet?	Yes	No
Is water in the structure shallower than in the stream?	Yes	No	Is there evidence of overtopping or wash-outs?	Yes	No

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

1. The outlet of the structure is perched.
2. The structure water velocity is greater than 3 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is less than 0.1.

- Yes No
- Yes No
- Yes No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

1. The water depth in the structure is less than 0.2 feet.
2. The structure water velocity is 2-3 feet/second during baseflow.
3. The structure is longer than 30 feet and does not have natural substrate through its entire length.

- Yes No
- Yes No
- Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

1. There is a scour pool below the structure.
2. The ratio of the structure width to stream bankfull width is less than 0.5.

- Yes No
- Yes No

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

1. The outlet of the structure is not perched.
2. The structure water velocity is less than 2 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is greater than 0.1.
4. The water depth in the structure is greater than 0.2 feet.
5. There is not a scour pool below the structure.
6. The ratio of the structure width to stream bankfull width is greater than 0.5.
7. The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

- Yes No
- Yes No
- Yes No
- Yes No
- Yes No
- Yes No
- Yes No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



YLW3- DOWNSTREAM



UPSTREAM

Stream Crossing Data Sheet

Site ID: YLW 4

General Information

Name of Observer(s): Snell Date: _____

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: Tilly

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 21 Fill Depth (ft): 1

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
Round	<u>Metal</u>	None Sand	General Condition: New <u>Good</u> Fair Poor
Square/Rectangle	Concrete	Gravel Rock	Plugged: _____ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	Mixture	Crushed _____ % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

Open Bottom Arch

Structure Interior		Inlet Type		Outlet Type	
Ellipse	Smooth or <u>Corrugated</u>	<u>Projecting</u>	Mitered	<u>At stream grade</u>	
Structure Water Velocity (ft/sec): ¹	<u>1</u>	Headwall	Apron	Cascade over riprap	
Structure Water Depth (ft): ¹	inlet <u>1.4</u> outlet <u>0.5</u>	Wingwall 10-30° or 30-70°		Freefall into pool.	
Structure Length (ft): ¹	<u>55</u>	Trashrack		Freefall onto riprap	
Structure Width (ft): ¹	<u>15</u>	Other		Outlet apron	
Perch Height (ft): ^{1,2}				Other	
Buried Depth of Structure (ft): ¹	inlet _____ outlet _____				

Stream Information

Stream Name: Yellow Creek Stream Water Velocity (in riffle) (ft/sec): 0.9

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.5 Bankfull Width (in riffle) (ft): 16 Stream Width (in riffle) (ft): 12

Scour Pool Length, Width & Depth (ft):² 1 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes <u>No</u>	Is there ponding upstream?	Yes <u>No</u>
Is there a scour pool at the outlet?	Yes <u>No</u>	Is the structure fully backwatered?	Yes <u>No</u>
Is there substrate through the structure's entire length?	<u>Yes</u> No	Is there a change in head from the upstream side to downstream side?	<u>Yes</u> No
Does the structure substrate match the stream substrate?	<u>Yes</u> No	Is the structure narrower than the bankfull stream width?	Yes <u>No</u>
Is water in the structure moving faster than in the stream?	Yes <u>No</u>	Is there debris blocking the inlet?	Yes <u>No</u>
Is water in the structure shallower than in the stream?	Yes <u>No</u>	Is there evidence of overtopping or wash-outs?	Yes <u>No</u>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

1. The outlet of the structure is perched.
2. The structure water velocity is greater than 3 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is less than 0.1.

Yes No
 Yes No
 Yes No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

1. The water depth in the structure is less than 0.2 feet.
2. The structure water velocity is 2-3 feet/second during baseflow.
3. The structure is longer than 30 feet and does not have natural substrate through its entire length.

Yes No
 Yes No
 Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

1. There is a scour pool below the structure.
2. The ratio of the structure width to stream bankfull width is less than 0.5.

Yes No
 Yes No

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

1. The outlet of the structure is not perched.
2. The structure water velocity is less than 2 feet/second during baseflow.
3. The ratio of the structure water depth to stream water depth is greater than 0.1.
4. The water depth in the structure is greater than 0.2 feet.
5. There is not a scour pool below the structure.
6. The ratio of the structure width to stream bankfull width is greater than 0.5.
7. The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



YLW4- UPSTREAM

Stream Crossing Data Sheet

Site ID: YLS 5

General Information

Name of Observer(s): Snell Date: 07/21/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: John Beers

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 25 Fill Depth (ft): 0

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
Round	Metal	None	<u>General Condition:</u> <u>New</u> Good Fair Poor
Square/Rectangle	<u>Concrete</u>	<u>Gravel</u> <u>Sand</u> <u>Rock</u>	<u>Plugged:</u> _____ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	Mixture	<u>Crushed:</u> _____ % Inlet Outlet In Pipe
Pipe Arch	Wood		<u>Rusted Through?</u> Yes No

Open <u>Bottom Arch</u>	Structure Interior	<table border="1"> <thead> <tr> <th colspan="2">Inlet Type</th> <th>Outlet Type</th> </tr> </thead> <tbody> <tr> <td>Projecting</td> <td>Mitered</td> <td><u>At stream grade</u></td> </tr> <tr> <td>Headwall</td> <td>Apron</td> <td>Cascade over riprap</td> </tr> <tr> <td>Wingwall 10-30° or <u>30-70°</u></td> <td></td> <td>Freefall into pool.</td> </tr> <tr> <td>Trashrack</td> <td></td> <td>Freefall onto riprap</td> </tr> <tr> <td>Other</td> <td></td> <td>Outlet apron</td> </tr> <tr> <td></td> <td></td> <td>Other</td> </tr> </tbody> </table>	Inlet Type		Outlet Type	Projecting	Mitered	<u>At stream grade</u>	Headwall	Apron	Cascade over riprap	Wingwall 10-30° or <u>30-70°</u>		Freefall into pool.	Trashrack		Freefall onto riprap	Other		Outlet apron			Other
Inlet Type			Outlet Type																				
Projecting	Mitered		<u>At stream grade</u>																				
Headwall	Apron		Cascade over riprap																				
Wingwall 10-30° or <u>30-70°</u>			Freefall into pool.																				
Trashrack			Freefall onto riprap																				
Other		Outlet apron																					
		Other																					
Ellipse	<u>Smooth</u> or Corrugated																						
Structure Water Velocity (ft/sec):¹	<u>0.5</u>																						
Structure Water Depth (ft):¹	inlet <u>1.7</u> outlet <u>1.1</u>																						
Structure Length (ft):¹	<u>42</u>																						
Structure Width (ft):¹	<u>25</u> Structure Height (ft):¹ <u>10</u>																						
Perch Height (ft):^{1,2}	<u>-</u> Height of Head (ft):^{1,2} <u>-</u>																						
Buried Depth of Structure (ft):¹	inlet _____ outlet _____																						

Stream Information

Stream Name: YLS Crk Stream Water Velocity (in riffle) (ft/sec): 0.7

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 1.2 Bankfull Width (in riffle) (ft): 16 Stream Width (in riffle) ft: 11

Scour Pool Length, Width & Depth (ft):² 1 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there ponding upstream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is there a scour pool at the outlet?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the structure fully backwatered?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is there substrate through the structure's entire length?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is there a change in head from the upstream side to downstream side?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Does the structure substrate match the stream substrate?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the structure narrower than the bankfull stream width?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is water in the structure moving faster than in the stream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there debris blocking the inlet?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is water in the structure shallower than in the stream?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is there evidence of overtopping or wash-outs?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

Yes	No
Yes	No
Yes	No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet.
- The structure water velocity is 2-3 feet/second during baseflow.
- The structure is longer than 30 feet and does not have natural substrate through its entire length.

Yes	No
Yes	No
Yes	No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

Yes	No
Yes	No

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Yes	No
Yes	No
Yes	No
Yes	No
Yes	No
Yes	No
Yes	No
Yes	No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



YLW5- UPSTREAM

Stream Crossing Data Sheet

Site ID: YLW 6

General Information

Name of _____
 Observer(s): Snell Date: 07/21/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location _____
 Comments: _____

Road Information

Road Name/Number: Hollywood N of Rocky Weed

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 25 Fill Depth (ft): 6

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
Round	Metal	None <u>Sand</u>	General Condition: New Good Fair Poor
Square/Rectangle	Concrete	Gravel Rock	Plugged: ___ % Inlet Outlet In Pipe
<u>Open Bottom Square/Rectangle</u>	Plastic	Mixture	Crushed: ___ % Inlet Outlet In Pipe
Pipe Arch	<u>Wood</u>		Rusted Through? Yes No

Structure Interior		Inlet Type		Outlet Type	
Open Bottom Arch	Smooth or Corrugated	Projecting	Mitered	<u>At stream grade</u>	
Ellipse	<u>0.3</u>	<u>Headwall</u>	Apron	Cascade over riprap	
Structure Water Velocity (ft/sec): ¹		Wingwall 10-30° or 30-70°		Freefall into pool.	
Structure Water Depth (ft): ¹	inlet <u>0.3</u> outlet <u>0.4</u>	Trashrack		Freefall onto riprap	
Structure Length (ft): ¹	<u>75</u>	Other		Outlet apron	
Structure Width (ft): ¹	<u>6</u>			Other	
Perch Height (ft): ^{1,2}					
Structure Height (ft): ¹	<u>6</u>				
Height of Head (ft): ^{1,2}					
Buried Depth of Structure (ft): ¹	inlet _____ outlet _____				

Stream Information

Stream Name: Yellow Creek Stream Water Velocity (in riffle) (ft/sec): 0.3

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 0.4 Bankfull Width (in riffle) (ft): 9 Stream Width (in riffle) ft: 5

Scour Pool Length, Width & Depth (ft):² + 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	<u>Yes</u>	No	Is there a change in head from the upstream side to downstream side?	Yes	<u>No</u>
Does the structure substrate match the stream substrate?	<u>Yes</u>	No	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	Yes	<u>No</u>	Is there debris blocking the inlet? <u>little</u>	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

YLW 6

Multiple Culverts

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine "passability" for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.

- 1. The outlet of the structure is perched. Yes No
 - 2. The structure water velocity is greater than 3 feet/second during baseflow. Yes No
 - 3. The ratio of the structure water depth to stream water depth is less than 0.1. Yes No
- Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.5.

- 1. The water depth in the structure is less than 0.2 feet. Yes No
- 2. The structure water velocity is 2-3 feet/second during baseflow. Yes No
- 3. The structure is longer than 30 feet and does not have natural substrate through its entire length. Yes No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.9.

- 1. There is a scour pool below the structure. Yes No
 - 2. The ratio of the structure width to stream bankfull width is less than 0.5. Yes No
- Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered "yes", then the crossing barrier score = 1.

- 1. The outlet of the structure is not perched. Yes No
- 2. The structure water velocity is less than 2 feet/second during baseflow. Yes No
- 3. The ratio of the structure water depth to stream water depth is greater than 0.1. Yes No
- 4. The water depth in the structure is greater than 0.2 feet. Yes No
- 5. There is not a scour pool below the structure. Yes No
- 6. The ratio of the structure width to stream bankfull width is greater than 0.5. Yes No
- 7. The structure is longer than 30 feet and has natural substrate through its entire length, or Yes No
- The structure is shorter than 30 feet and has natural substrate through its entire length, or
- The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



YLW6-UPSTREAM

Stream Crossing Data Sheet

Site ID: YCW 7

General Information

Name of

Observer(s): Snell Date: _____

GPS Waypoint: _____

GPS Lat/Long: _____

Additional Location

Comments: _____

Road Information

Road Name/Number: Rocky Weir

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 27 Fill Depth (ft): 3

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape: Round Square/Rectangle Open Bottom Square/Rectangle Pipe Arch Open Bottom Arch Ellipse

Structure Material: Metal Concrete Plastic Wood

Substrate in Structure: None Sand Gravel Rock Mixture

Structure Condition: General Condition: New Good Fair Poor
 Plugged: _____ % Inlet Outlet In Pipe
 Crushed: _____ % Inlet Outlet In Pipe
 Rusted Through? Yes No

Inlet Type		Outlet Type
Projecting	Mitered	<u>At stream grade</u>
Headwall	Apron	Cascade over riprap
Wingwall 10-30°	<u>or 30-70°</u>	Freefall into pool.
Trashrack		Freefall onto riprap
Other		Outlet apron
		Other

Structure Interior: Smooth or Corrugated

Structure Water Velocity (ft/sec):¹ 0.1

Structure Water Depth (ft):¹ inlet 0.5 outlet 0.5

Structure Length (ft):¹ 60

Structure Width (ft):¹ 18 Structure Height (ft):¹ 8

Perch Height (ft):^{1,2} _____ Height of Head (ft):^{1,2} _____

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Stream Information

Stream Name: Yellow Creek Stream Water Velocity (in riffle) (ft/sec): 0.1

Stream Flow: None 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 6.5 Bankfull Width (in riffle) (ft): 10 Stream Width (in riffle) ft: 5

Scour Pool Length, Width & Depth (ft):² 1 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes	<u>No</u>	Is there ponding upstream?	Yes	<u>No</u>
Is there a scour pool at the outlet?	Yes	<u>No</u>	Is the structure fully backwatered?	Yes	<u>No</u>
Is there substrate through the structure's entire length?	<u>Yes</u>	No	Is there a change in head from the upstream side to downstream side?	Yes	<u>No</u>
Does the structure substrate match the stream substrate?	<u>Yes</u>	No	Is the structure narrower than the bankfull stream width?	Yes	<u>No</u>
Is water in the structure moving faster than in the stream?	Yes	<u>No</u>	Is there debris blocking the inlet?	Yes	<u>No</u>
Is water in the structure shallower than in the stream?	Yes	<u>No</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>No</u>

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Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- Site ID
- Road Approach – Left
- Upstream Conditions
- Inlet
- Road Approach – Right
- Downstream Conditions
- Outlet
-
-

Fish Passage Determination

Follow these guidelines to determine "passability" for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

Yes	No
Yes	No
Yes	No

Structure water depth: _____ Stream water depth: _____

Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet.
- The structure water velocity is 2-3 feet/second during baseflow.
- The structure is longer than 30 feet and does not have natural substrate through its entire length.

Yes	No
Yes	No
Yes	No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered "yes", then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

Structure width: _____ Stream bankfull width: _____

Yes	No
Yes	No

Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered "yes", then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

<input checked="" type="radio"/> Yes	No
<input checked="" type="radio"/> Yes	No
<input checked="" type="radio"/> Yes	No
<input checked="" type="radio"/> Yes	No
<input checked="" type="radio"/> Yes	No
<input checked="" type="radio"/> Yes	No
<input checked="" type="radio"/> Yes	No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.
² Fill out, if present.



YLW7-ROAD



UPSTREAM



DOWNSTREAM

Stream Crossing Data Sheet

Site ID: PLW 8

General Information

Name of Observer(s): Snell Date: 07/21/10

GPS Waypoint: _____ GPS Lat/Long: _____

Additional Location Comments: _____

Road Information

Road Name/Number: Hollywood

Road Type: Federal State County Town Tribal Private Other: _____

Road Surface: Paved Gravel Sand Native Surface Other: _____

Road Width (ft): 22 Fill Depth (ft): 5

Crossing Information

Structure Type: Culvert(s) no.: 1 Bridge Ford Dam Other: _____ Structure ID: _____

Structure Shape	Structure Material	Substrate in Structure	Structure Condition
<u>Round</u>	<u>Metal</u>	<u>None sparse</u>	General Condition: New Good Fair Poor
Square/Rectangle	Concrete	Gravel Rock	Plugged: _____ % Inlet Outlet In Pipe
Open Bottom Square/Rectangle	Plastic	Mixture	Crushed _____ % Inlet Outlet In Pipe
Pipe Arch	Wood		Rusted Through? Yes No

Open Bottom Arch Structure Interior Smooth or Corrugated

Structure Water Velocity (ft/sec):¹ 0.4

Structure Water Depth (ft):¹ inlet 1.2 outlet 1.1

Structure Length (ft):¹ 100

Structure Width (ft):¹ 6 Structure Height (ft):¹ 6

Perch Height (ft):^{1,2} _____ Height of Head (ft):^{1,2} _____

Buried Depth of Structure (ft):¹ inlet _____ outlet _____

Inlet Type		Outlet Type
Projecting	Mitered	At stream grade
Headwall	Apron	Cascade over riprap
Wingwall 10-30° or 30-70°		Freefall into pool.
Trashrack		Freefall onto riprap
Other		Outlet apron
		Other

Stream Information

Stream Name: Yellow Creek Stream Water Velocity (in riffle) (ft/sec): 0.4

Stream Flow: None < 1/2 Bankfull < Bankfull = Bankfull > Bankfull

Water Depth (in riffle) (ft): 1 Bankfull Width (in riffle) (ft): 12 Stream Width (in riffle) ft: 3

Scour Pool Length, Width & Depth (ft):² L 1 Upstream Pond Length & Width (ft):² _____

Fish Passage Information

Is the structure perched?	Yes	<u>NO</u>	Is there ponding upstream?	Yes	<u>NO</u>
Is there a scour pool at the outlet?	Yes	<u>NO</u>	Is the structure fully backwatered?	Yes	<u>NO</u>
Is there substrate through the structure's entire length?	Yes	<u>NO</u>	Is there a change in head from the upstream side to downstream side?	Yes	<u>NO</u>
Does the structure substrate match the stream substrate?	Yes	No	Is the structure narrower than the bankfull stream width?	<u>Yes</u>	No
Is water in the structure moving faster than in the stream?	Yes	<u>NO</u>	Is there debris blocking the inlet?	Yes	<u>NO</u>
Is water in the structure shallower than in the stream?	Yes	<u>NO</u>	Is there evidence of overtopping or wash-outs?	Yes	<u>NO</u>

Multiple Culverts

4LWB

Number multiple cells from left to right facing downstream. Include a diagram below indicating which culvert is culvert #1.

Culvert #	Width (ft)	Height (ft)	Length (ft)
2			
3			

Culvert #	Width (ft)	Height (ft)	Length (ft)
4			
5			

Photos

- | | | |
|---|--|---------------------------------|
| <input type="checkbox"/> Site ID | <input type="checkbox"/> Inlet | <input type="checkbox"/> Outlet |
| <input type="checkbox"/> Road Approach – Left | <input type="checkbox"/> Road Approach – Right | <input type="checkbox"/> |
| <input type="checkbox"/> Upstream Conditions | <input type="checkbox"/> Downstream Conditions | <input type="checkbox"/> |

Fish Passage Determination

Follow these guidelines to determine “passability” for a range of fish species. Thresholds may need to be modified if the objective is to evaluate passage for a particular species. Answer all questions.

Passability = 0

Most species and life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.

- The outlet of the structure is perched.
- The structure water velocity is greater than 3 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is less than 0.1.

Yes	No
Yes	No
Yes	No

Structure water depth: _____ Stream water depth: _____ Depth Ratio: _____

Passability = 0.5

Some species and/or life stages cannot pass at most flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.5.

- The water depth in the structure is less than 0.2 feet.
- The structure water velocity is 2-3 feet/second during baseflow.
- The structure is longer than 30 feet and does not have natural substrate through its entire length.

Yes	No
Yes	No
<u>Yes</u>	No

Passability = 0.9

Barrier at high flows.

If any of the following questions can be answered “yes”, then the crossing barrier score = 0.9.

- There is a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is less than 0.5.

Yes	No
Yes	No

Structure width: _____ Stream bankfull width: _____ Constriction Ratio: _____

Passability = 1

Not a barrier.

If all of the following questions can be answered “yes”, then the crossing barrier score = 1.

- The outlet of the structure is not perched.
- The structure water velocity is less than 2 feet/second during baseflow.
- The ratio of the structure water depth to stream water depth is greater than 0.1.
- The water depth in the structure is greater than 0.2 feet.
- There is not a scour pool below the structure.
- The ratio of the structure width to stream bankfull width is greater than 0.5.
- The structure is longer than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and has natural substrate through its entire length, or
 The structure is shorter than 30 feet and does not have natural substrate through its entire length.

Yes	No
Yes	No
Yes	No
Yes	No
Yes	No
Yes	No
Yes	No
Yes	No

Additional Comments

Culvert diagram, erosion, channel condition, evidence of wash-out, beaver, local testimony of frequency of overtopping...

Farm crossing ~ 1000' d/s - appears to be 72" cnp

¹ Fill out for primary culvert (culvert #1). If multiple culverts are used, see reverse.

² Fill out, if present.



YLW8- UPSTREAM



DOWNSTREAM