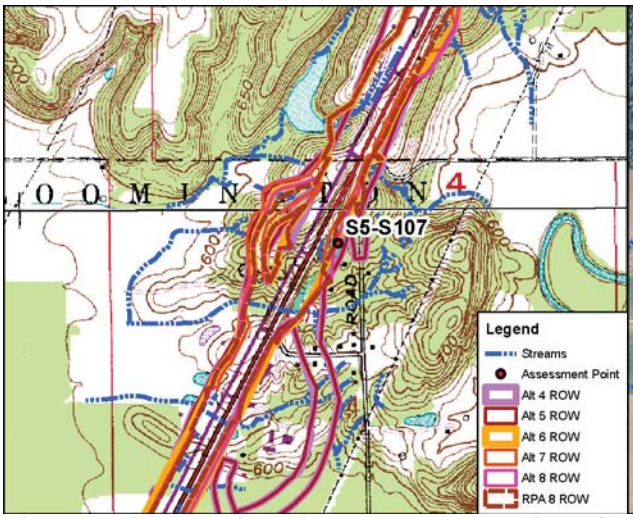
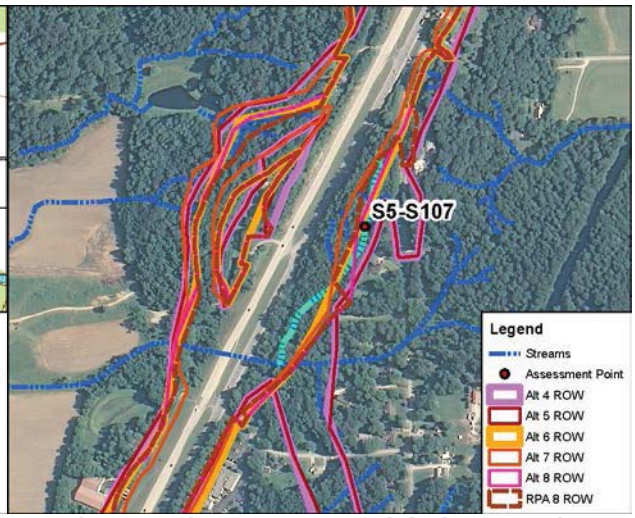
APPENDIX M
DRAFT STREAM ASSESSMENT REPORT

TECHNICAL REPORT APPENDICES	
APPENDIX A	Stream Impacts and Stream Relocation Lengths by Alternative
APPENDIX B	**Stream Site Reports and Data Sheets**

Stream Impacts S5-S107



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington, Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	4
Quarter:	NW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	5.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	1.3 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	33	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/silt
UTME: 1773491 ft	**UTMN:** 14253639 ft		

Stream S5-S107 - Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	1282	0.16	5.18
5	1282	0.16	5.23
6	765	0.10	3.48
7	520	0.07	2.36
8	942	0.12	4.02
RPA 8	576	0.07	3.24

Description of Potential Impact:

Impacts to S5-S107 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of sand and silt. There is a wide riparian buffer associated with this stream. The floodplain consists of the immature forest on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S107 are on the second page of this form.

Stream Impacts S5-S107

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 33

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S107 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.24903 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/17/11 SCORER: DEW/KSS COMMENTS: (Long: -86.52993) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	25%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	10%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	60%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 13 (A + B)

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☑ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 5.5'/1.3' **AVERAGE BANKFULL WIDTH (meters):** 1.70

Bankfull Width Max=30: 20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☑ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Bloomington / Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Bloomington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

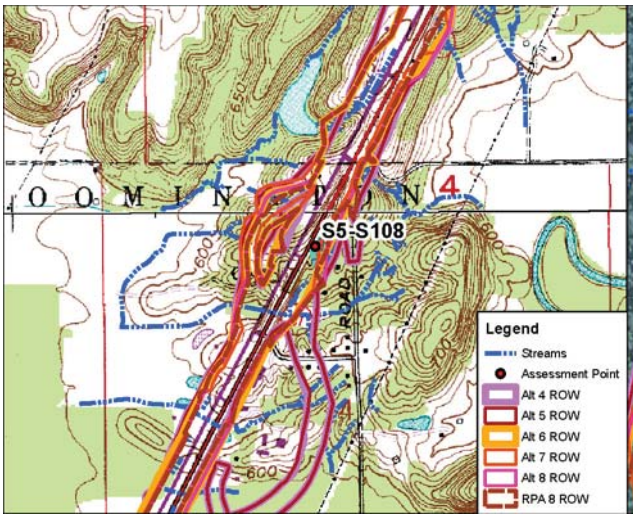
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

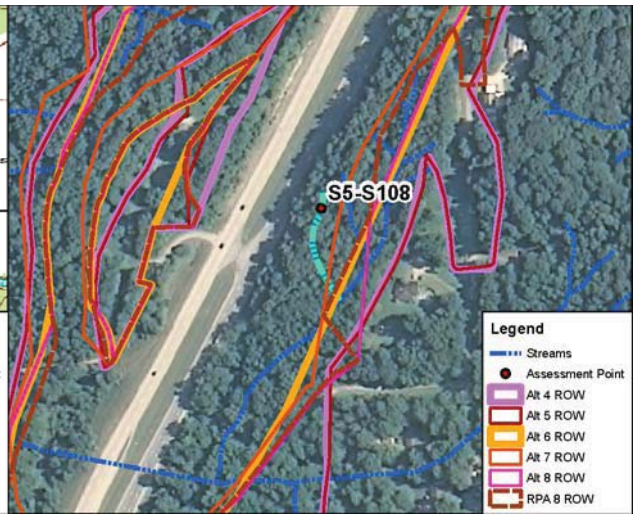
See Stream Assessment Form
S5-S107 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S108



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	4
Quarter:	NW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.3 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	30	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/grand
UTME: 1773319 ft	**UTMN:** 14253637 ft		

Stream S5-S108 - Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	302	0.01	0.40
5	302	0.01	0.40
6	288	0.01	0.40
7	245	0.01	0.40
8	302	0.01	0.40
RPA 8	280	0.01	0.40

Description of Potential Impact:
Impacts to S5-S108 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of gravel and sand. There is a wide riparian buffer associated with this stream. The floodplain consists of the immature forest on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S108 are on the second page of this form.

Stream Impacts S5-S108

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 30

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S108 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.24903 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.53054) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE			PERCENT	TYPE			PERCENT
☐	☐	BLDR SLABS [16 pts]	0%	☐	☐	SILT [3 pt]	0%
☐	☐	BOULDER (>256 mm) [16 pts]	0%	☐	☐	LEAF PACK/WOODY DEBRIS [3 pts]	3%
☐	☐	BEDROCK [16 pt]	0%	☐	☐	FINE DETRITUS [3 pts]	2%
☐	☐	COBBLE (65 256 mm) [12 pts]	5%	☐	☐	CLAY or HARDPAN [0 pt]	0%
☑	☐	GRAVEL (2 64 mm) [9 pts]	50%	☐	☐	MUCK [0 pts]	0%
☐	☑	SAND (<2 mm) [6 pts]	40%	☐	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 5

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 30 cm [30 pts]	☑	< 5 cm [5 pts]
☐	> 10 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ MAXIMUM POOL DEPTH (centimeters): 3

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 1.3' / .2' AVERAGE BANKFULL WIDTH (meters): 0.50

HHEI Metric Points

Substrate Max = 40	20	A + B
Pool Depth Max = 30	5	
Bankfull Width Max=30	5	

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None ☐ 1.0 ☐ 2.0 ☐ 3.0
☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Bloomington NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Bloomington

MISCELLANEOUS

Base Flow Conditions? (Y/N): n Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts:

Flows only during storm events.

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

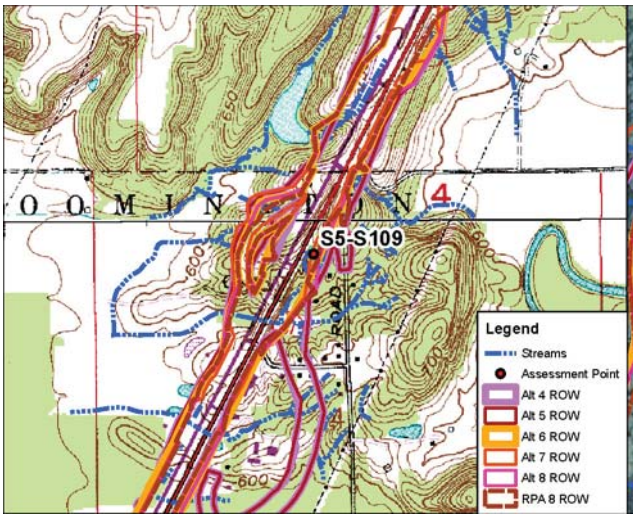
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

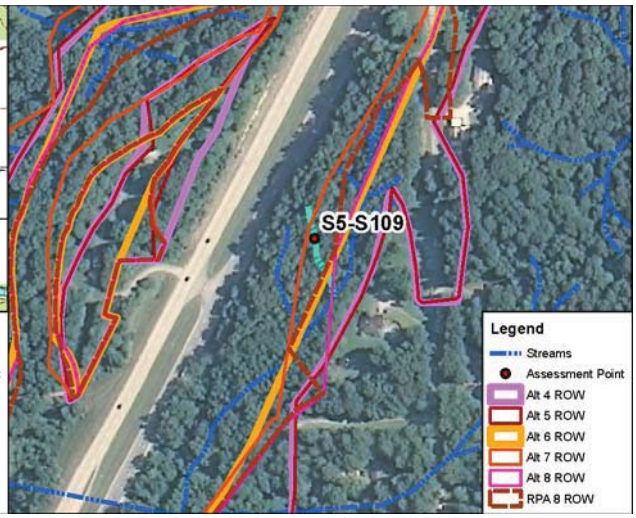
See Stream Assessment Form
S5-S108 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S109



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	4
Quarter:	NW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.2 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	30	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1773392 ft	**UTMN:** 14253644 ft		

Stream S5-S109 - Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	247	0.01	0.60
5	247	0.01	0.60
6	184	0.01	0.60
7	43	0.01	0.52
8	229	0.01	0.60
RPA 8	179	0.01	0.60

Description of Potential Impact:
Impacts to S5-S109 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of gravel and sand. There is a wide riparian buffer associated with this stream. The floodplain consists of the immature forest on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S109 are on the second page of this form.

Stream Impacts S5-S109

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 30

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S109 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.24905 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.53028) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	3%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	2%
☐	COBBLE (65 256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	50%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	40%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 3

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 1.2' / 0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.50

HHEI Metric Points

Substrate Max = 40	20
A + B	
Pool Depth Max = 30	5
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Bloomington NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Bloomington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

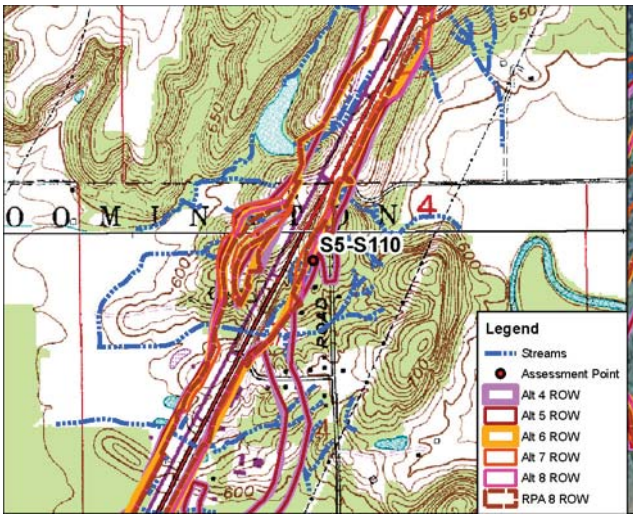
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

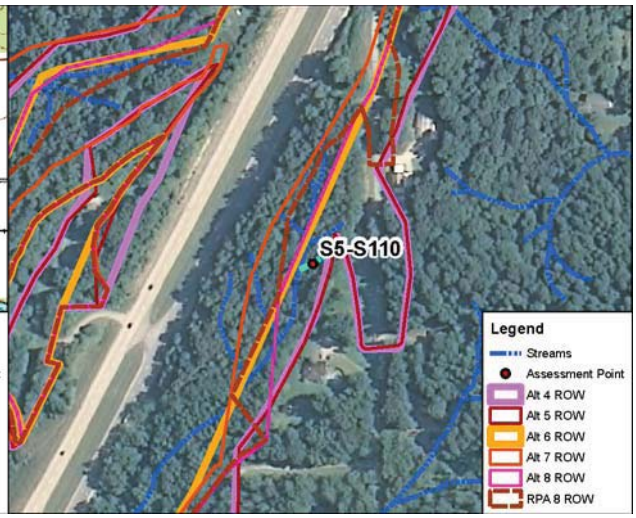
See Stream Assessment Form
S5-S109 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S110



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	4
Quarter:	NW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	0.8 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	29	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1773536 ft	**UTMN:** 14253699 ft		

Stream S5-S110 - Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	86	0.01	0.00
5	96	0.01	0.00
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S110 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of gravel and sand. There is a wide riparian buffer where this stream crosses Alternatives 4 and 5. The floodplain consists of the immature forest on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S110 are on the second page of this form.

Stream Impacts S5-S110

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S110 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 120 LAT.: 39.24920 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52977) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	5%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	50%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	35%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 2

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 0.8' / .2' **AVERAGE BANKFULL WIDTH (meters):** 0.50

HHEI Metric Points

Substrate Max = 40	A + B	19
Pool Depth Max = 30		5
Bankfull Width Max=30		5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Bloomington NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Bloomington

MISCELLANEOUS

Base Flow Conditions? (Y/N): n Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts:

Flows only during storm events.

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

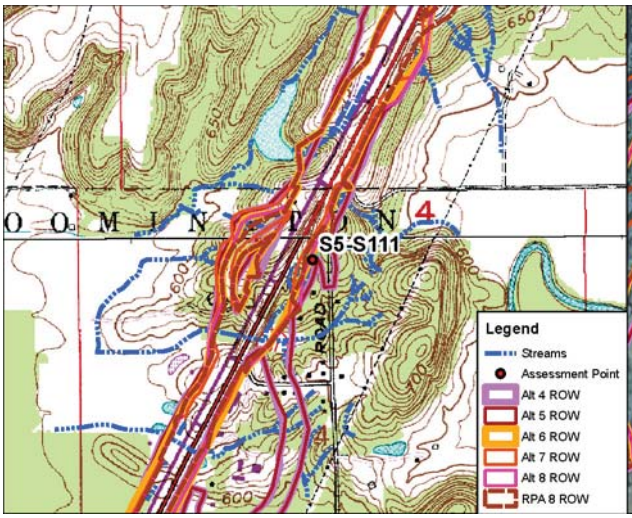
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

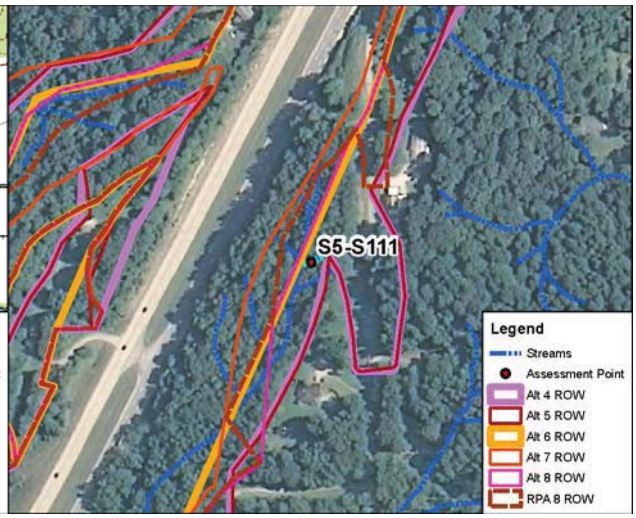
See Stream Assessment Form
S5-S110 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S111



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	4
Quarter:	NW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.1 feet
Channelized/Type:	No/	**OHWM Depth:**	0.1 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	29	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1773547 ft	**UTMN:** 14253761 ft		

Stream S5-S111 - Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	103	0.01	0.08
5	103	0.01	0.08
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S111 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of gravel and sand. There is a wide riparian buffer where this stream crosses Alternatives 4 and 5. The floodplain consists of the immature forest on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S111 are on the second page of this form.

Stream Impacts S5-S111

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S111 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 100 LAT.: 39.24937 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52973) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	5%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	50%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	40%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 1

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 1.1' / 0.1' **AVERAGE BANKFULL WIDTH (meters):** 0.50

HHEI Metric Points

	Max	Points
Substrate (A + B)	40	19
Pool Depth	30	5
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Bloomington NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Bloomington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts:

Flows only during storm events.

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

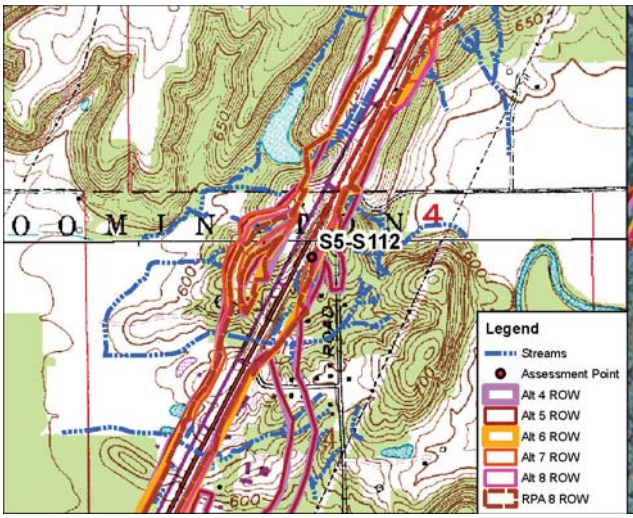
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

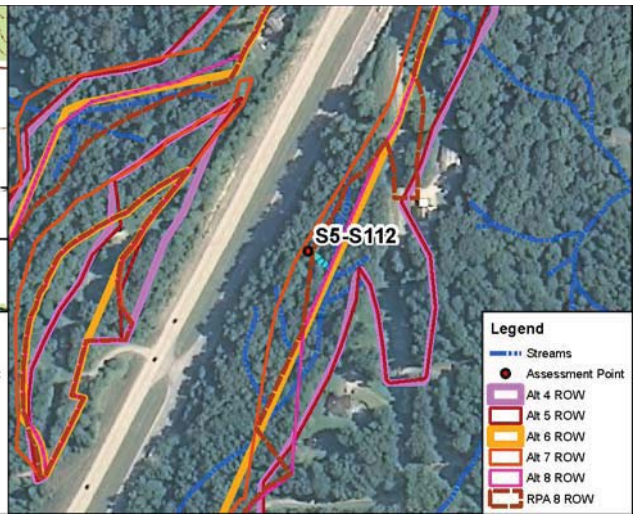
See Stream Assessment Form
S5-S111 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S112



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	4
Quarter:	NW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	0.4 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	29	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1773460 ft	**UTMN:** 14253820 ft		

Stream S5-S112 - Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	94	0.01	0.10
5	94	0.01	0.10
6	88	0.01	0.10
7	0	0.00	0.10
8	81	0.01	0.10
RPA 8	26	0.01	0.10

Description of Potential Impact:
Impacts to S5-S112 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of gravel and sand. There is a wide riparian buffer where the Alternatives cross this stream. The floodplain consists of the immature forest on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S112 are on the second page of this form.

Stream Impacts S5-S112

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S112 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 94 LAT.: 39.24953 LONG.: RIVER CODE: RIVER MILE:

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.53003) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	5%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	50%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	40%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 3

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 0.4' / 0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.50

HHEI Metric Points

	Max	Score
Substrate (A + B)	40	19
Pool Depth	30	5
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Bloomington NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Bloomington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts:

Flows only during storm events.

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

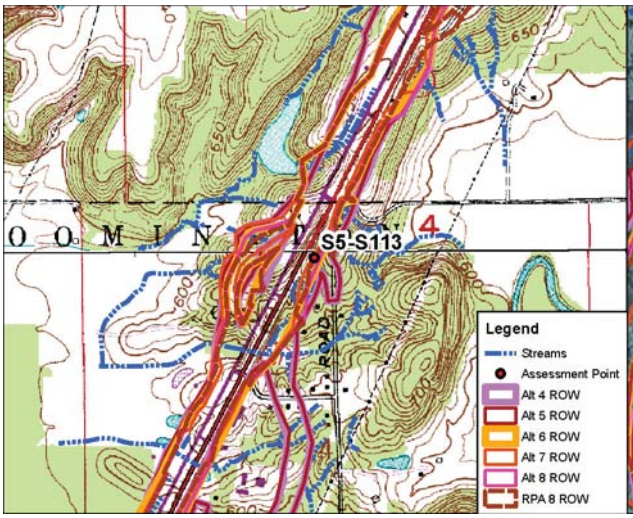
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

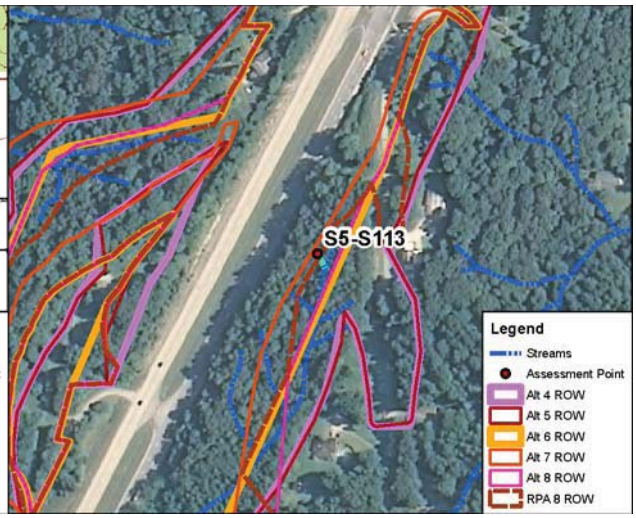
See Stream Assessment Form
S5-S112 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S113



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	4
Quarter:	NW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	0.4 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.3 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	29	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1773522 ft	**UTMN:** 14253927 ft		

Stream S5-S113 - Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	51	0.01	0.06
5	51	0.01	0.06
6	51	0.01	0.06
7	0	0.00	0.06
8	51	0.01	0.06
RPA 8	20	0.01	0.06

Description of Potential Impact:
Impacts to S5-S113 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of gravel and sand. There is a wide riparian buffer where the Alternatives cross this stream. The floodplain consists of the immature forest on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S113 are on the second page of this form.

Stream Impacts S5-S113

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S113 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 50 LAT.: 39.24982 LONG.: RIVER CODE: RIVER MILE:

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52981) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE			PERCENT	TYPE			PERCENT
☐	☐	BLDR SLABS [16 pts]	0%	☐	☐	SILT [3 pt]	0%
☐	☐	BOULDER (>256 mm) [16 pts]	0%	☐	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	☐	BEDROCK [16 pt]	0%	☐	☐	FINE DETRITUS [3 pts]	5%
☐	☐	COBBLE (65 256 mm) [12 pts]	0%	☐	☐	CLAY or HARDPAN [0 pt]	0%
☑	☐	GRAVEL (2 64 mm) [9 pts]	50%	☐	☐	MUCK [0 pts]	0%
☐	☑	SAND (<2 mm) [6 pts]	40%	☐	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 1

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 0.4' / 0.3' **AVERAGE BANKFULL WIDTH (meters):** 0.12

HHEI Metric Points

Substrate Max = 40	19
A + B	
Pool Depth Max = 30	5
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Bloomington NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Bloomington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

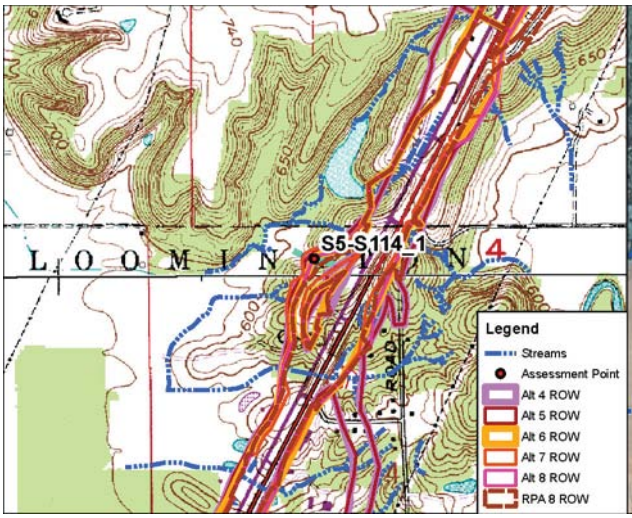
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

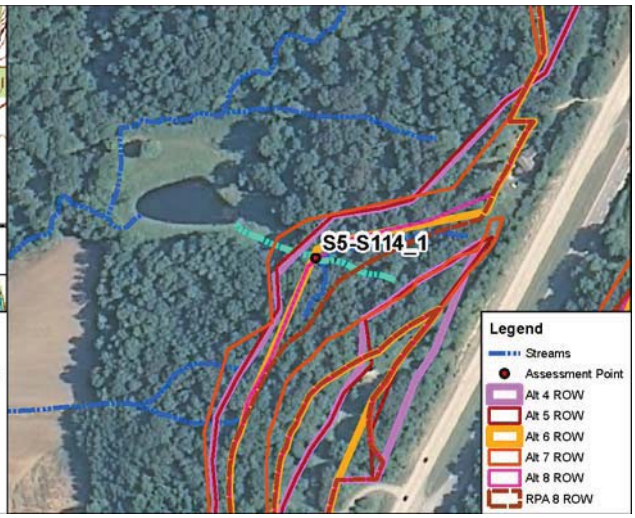
See Stream Assessment Form
S5-S113 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S114_1



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	4
Quarter:	NW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.2 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	39	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/bedrock
UTME: 1772827 ft	**UTMN:** 14254164 ft		

Stream S5-S114_1 - Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	267	0.01	1.39
5	277	0.01	1.42
6	222	0.01	1.27
7	330	0.01	1.61
8	211	0.01	1.25
RPA 8	101	0.01	0.78

Description of Potential Impact:
Impacts to S5-S114_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of gravel and bedrock. There is a wide riparian buffer where the Alternatives cross this stream. The floodplain consists of immature forest on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S114_1 are on the second page of this form.

Stream Impacts S5-S114_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 39

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S114_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.25048 LONG.: RIVER CODE: RIVER MILE:

DATE: 05/11/06 SCORER: J Meeker COMMENTS: (Long: -86.53226) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☑	BEDROCK [16 pt]	30%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	15%
☑	GRAVEL (2 64 mm) [9 pts]	40%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 30.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25 TOTAL NUMBER OF SUBSTRATE TYPES: 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (centimeters): 4

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 1.2' / 0.5' AVERAGE BANKFULL WIDTH (meters): 0.60

HHEI Metric Points

	Max	Points
Substrate (A + B)	40	29
Pool Depth	30	5
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 18 NRCS Soil Map Stream Order 1

County: Monroe Township / City: Bloomington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: 66 Upstream / 67 Downstream / 68 Right bank / 69 Left bank

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

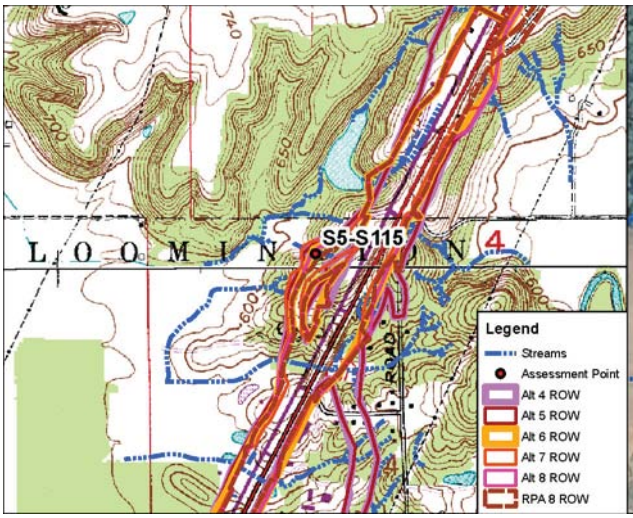
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

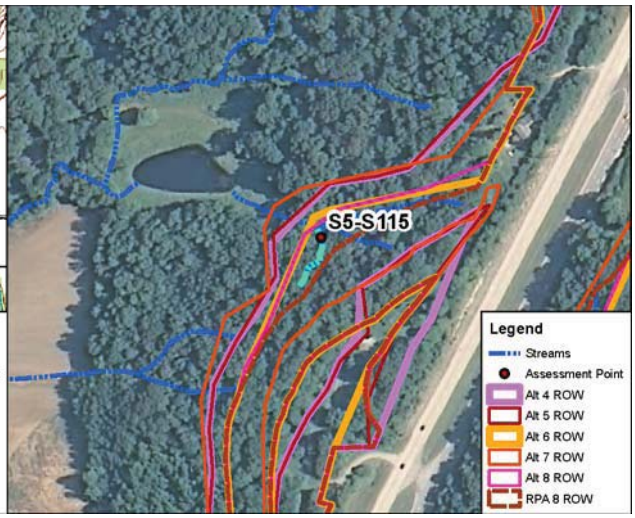
See Stream Assessment Form
S5-S114_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S115



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	4
Quarter:	NW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	0.6 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.1 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	39	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/bedrock
UTME: 1772850 ft	**UTMN:** 14254135 ft		

Stream S5-S115 - Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	177	0.01	0.60
5	177	0.01	0.60
6	177	0.01	0.49
7	177	0.01	0.61
8	177	0.01	0.49
RPA 8	0	0.00	0.30

Description of Potential Impact:
Impacts to S5-S115 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of gravel and bedrock. There is a wide riparian buffer where the Alternatives cross this stream. The floodplain consists of immature forest on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S115 are on the second page of this form.

Stream Impacts S5-S115

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 39

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S115 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 175 LAT.: 39.25040 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.53218) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☑	BEDROCK [16 pt]	30%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	15%
☑	GRAVEL (2 64 mm) [9 pts]	40%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 30.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25 TOTAL NUMBER OF SUBSTRATE TYPES: 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ MAXIMUM POOL DEPTH (centimeters): 1

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 0.6' / 0.1' AVERAGE BANKFULL WIDTH (meters): 0.50

HHEI Metric Points

	Max	Points
Substrate (A + B)	40	29
Pool Depth	30	5
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 18 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Bloomington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

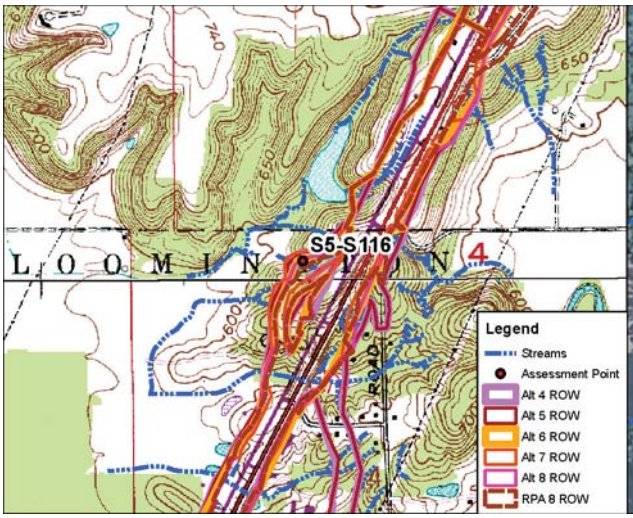
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

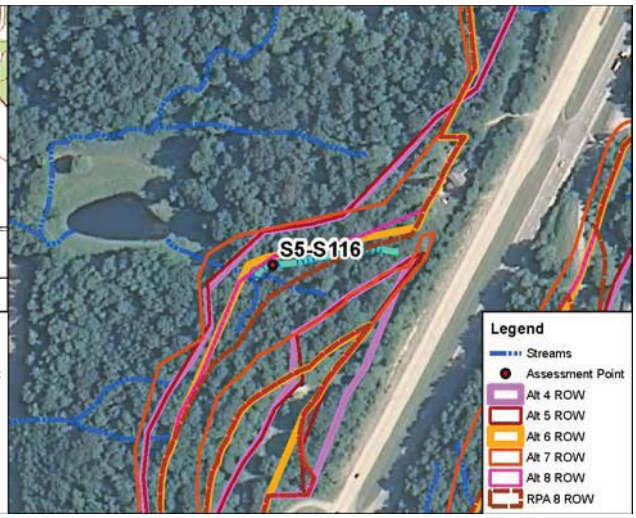
See Stream Assessment Form
S5-S115 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S116



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	4
Quarter:	NW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.9 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	39	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/bedrock
UTME: 1772895 ft	**UTMN:** 14254186 ft		

Stream S5-S116 - Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	387	0.02	1.08
5	387	0.02	1.06
6	387	0.02	0.65
7	387	0.02	1.07
8	387	0.02	0.74
RPA 8	83	0.01	0.49

Description of Potential Impact:
Impacts to S5-S116 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of gravel and bedrock. There is a wide riparian buffer where the Alternatives cross this stream. The floodplain consists of immature forest on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S116 are on the second page of this form.

Stream Impacts S5-S116

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 39

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S116 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.25055 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.53202) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☑	BEDROCK [16 pt]	30%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	15%
☑	GRAVEL (2 64 mm) [9 pts]	40%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 30.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25

TOTAL NUMBER OF SUBSTRATE TYPES: 4

HHEI Metric Points

Substrate Max = 40: 29

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ MAXIMUM POOL DEPTH (centimeters): 3

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 1.9' / 0.2' AVERAGE BANKFULL WIDTH (meters): 0.75

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 18 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Bloomington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

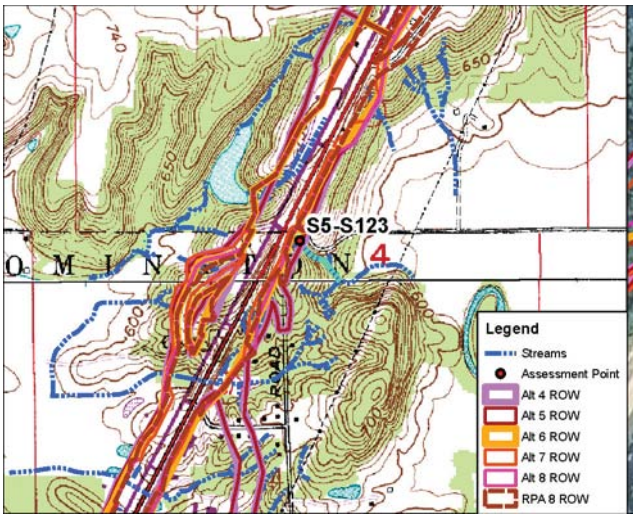
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

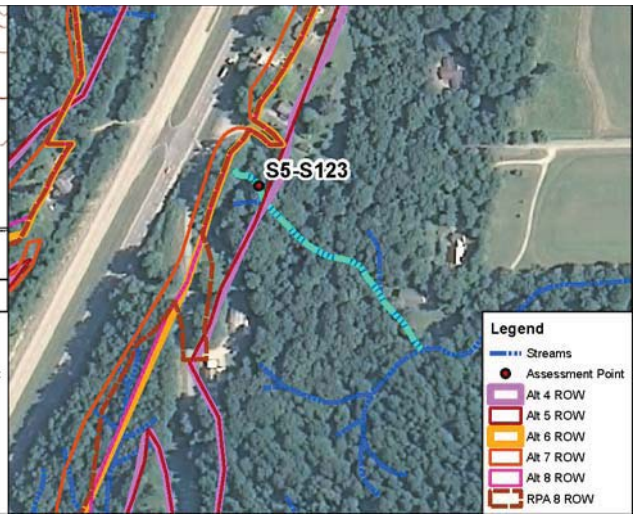
See Stream Assessment Form
S5-S116 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S123



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto, Bloomington
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	4
Quarter:	NE	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	3.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.8 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	28	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/silt
UTME: 1773881 ft	**UTMN:** 14254409 ft		

Stream S5-S123 - Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	131	0.01	0.68
5	121	0.01	0.64
6	0	0.00	0.09
7	0	0.00	0.00
8	0	0.00	0.09
RPA 8	0	0.00	0.09

Description of Potential Impact:
Impacts to S5-S123 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate is predominately sand and silt. There is a wide riparian corridor on both banks where Alternatives 4 and 5 cross this stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S123 are on the second page of this form.

Stream Impacts S5-S123

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 28

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S123 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.25114 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/17/11 SCORER: DEW/KSS COMMENTS: (Long: -86.52854) (Natural-Class 1)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE			PERCENT	TYPE			PERCENT
☐	☐	BLDR SLABS [16 pts]	0%	☐	☑	SILT [3 pt]	20%
☐	☐	BOULDER (>256 mm) [16 pts]	0%	☐	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	☐	BEDROCK [16 pt]	0%	☐	☐	FINE DETRITUS [3 pts]	5%
☐	☐	COBBLE (65 256 mm) [12 pts]	0%	☐	☐	CLAY or HARDPAN [0 pt]	0%
☐	☐	GRAVEL (2 64 mm) [9 pts]	10%	☐	☐	MUCK [0 pts]	0%
☑	☐	SAND (<2 mm) [6 pts]	65%	☐	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 13 (A + B)

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 3.5'/0.8' **AVERAGE BANKFULL WIDTH (meters):** 1.07

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☑ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Bloomington / Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Bloomington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 15%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

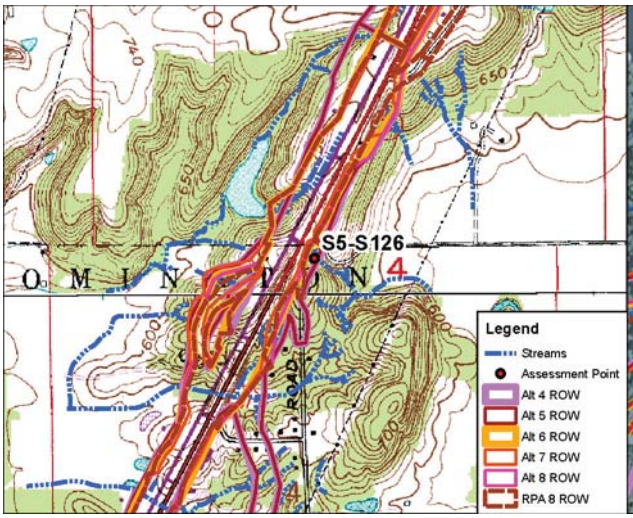
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

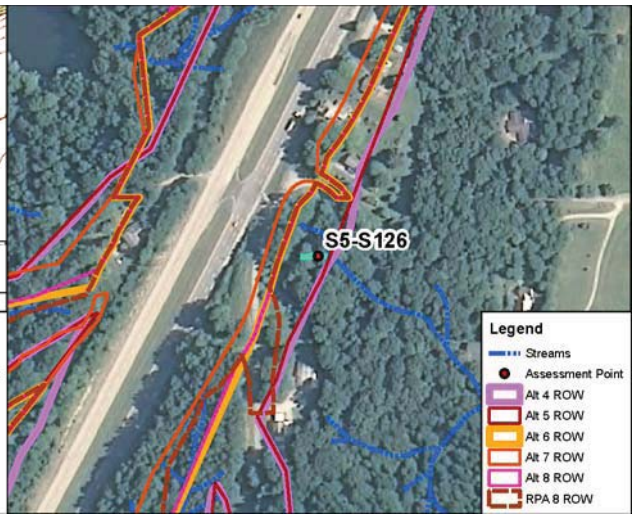
See Stream Assessment Form
S5-S123 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S126



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	4
Quarter:	NE	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	0.6 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	28	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1773860 ft	**UTMN:** 14254366 ft		

Stream S5-S126 - Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	86	0.01	0.02
5	77	0.01	0.02
6	0	0.00	0.01
7	0	0.00	0.00
8	0	0.00	0.01
RPA 8	0	0.00	0.01

Description of Potential Impact:
Impacts to S5-S126 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of gravel and sand. There is a wide riparian buffer where Alternatives 4 and 5 cross this stream. The floodplain consists of immature forest on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S126 are on the second page of this form.

Stream Impacts S5-S126

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 28

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S126 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 85 LAT.: 39.25102 LONG.: RIVER CODE: RIVER MILE:

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52861) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE			PERCENT	TYPE			PERCENT
☐	☐	BLDR SLABS [16 pts]	0%	☐	☐	SILT [3 pt]	0%
☐	☐	BOULDER (>256 mm) [16 pts]	0%	☐	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	☐	BEDROCK [16 pt]	0%	☐	☐	FINE DETRITUS [3 pts]	0%
☐	☐	COBBLE (65 256 mm) [12 pts]	0%	☐	☐	CLAY or HARDPAN [0 pt]	0%
☑	☐	GRAVEL (2 64 mm) [9 pts]	50%	☐	☐	MUCK [0 pts]	0%
☐	☑	SAND (<2 mm) [6 pts]	40%	☐	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 3

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 0.6' / 0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.60

HHEI Metric Points

Substrate Max = 40	18
A + B	
Pool Depth Max = 30	5
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 18 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Bloomington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

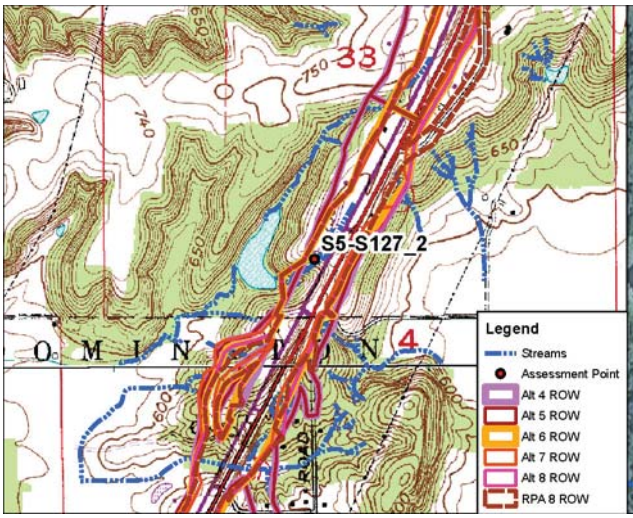
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

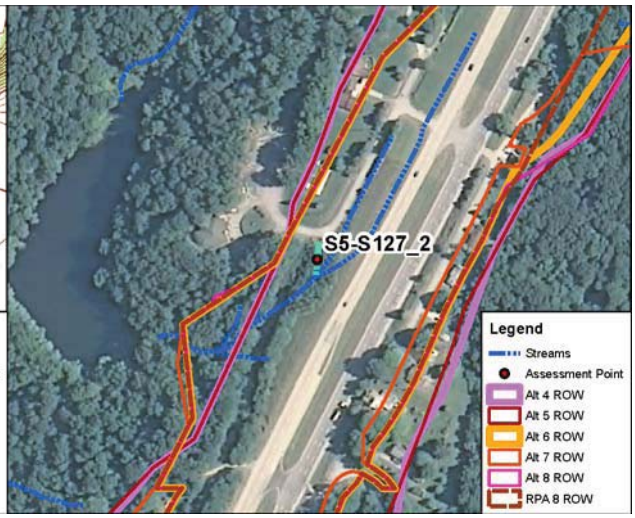
See Stream Assessment Form
S5-S126 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S127_2



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.0 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1773741 ft	**UTMN:** 14255106 ft		

Stream S5-S127_2 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	87	0.01	0.02
5	87	0.01	0.02
6	87	0.01	0.02
7	87	0.01	0.02
8	87	0.01	0.02
RPA 8	87	0.01	0.02

Description of Potential Impact:
Impacts to S5-S127_2 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter. There is a narrow riparian buffer associated with this artificial channel. The floodplain consists of immature forest adjacent to the right bank and new field on the left. Photographs taken upstream and downstream where these Alternatives cross S5-S127_2 are on the second page of this form.

Stream Impacts S5-S127_2

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S127_2 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 85 LAT.: 39.25306 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/25/12 SCORER: KSS/DEW COMMENTS: (Long: -86.52902) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW 1.0'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.30

HHEI Metric Points

Substrate Max = 40 (A + B)	7
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☑	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☑	☑	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 65%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

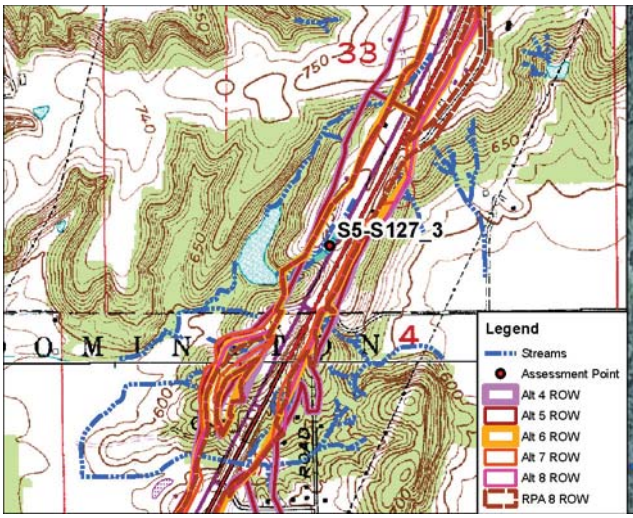
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

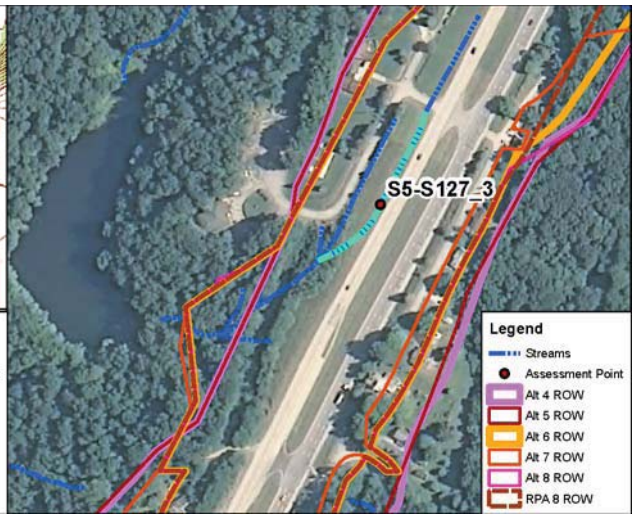
See Stream Assessment Form
S5-S127_2 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S127_3



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.2 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.1 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1773895 ft	**UTMN:** 14255203 ft		

Stream S5-S127_3 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	486	0.02	0.00
5	486	0.02	0.00
6	486	0.02	0.00
7	486	0.02	0.00
8	486	0.02	0.00
RPA 8	486	0.02	0.00

Description of Potential Impact:
Impacts to S5-S127_3 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S127_3 are on the second page of this form.

Stream Impacts S5-S127_3

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S127_3 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.25332 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/25/12 SCORER: KSS/DEW COMMENTS: (Long: -86.52847) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW 2.2'/0.1' **AVERAGE BANKFULL WIDTH (meters):** 0.70

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

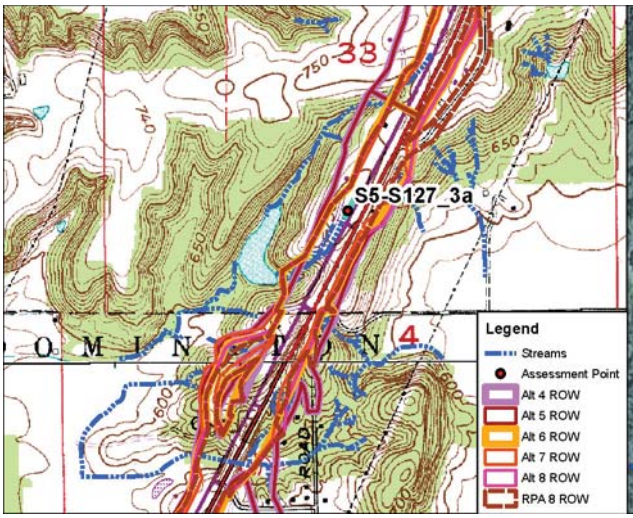
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

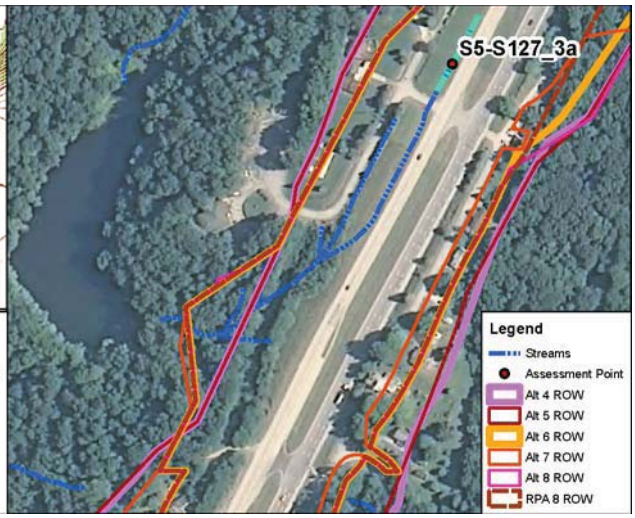
See Stream Assessment Form
S5-S127_3 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S127_3a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.2 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.1 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1771080 ft	**UTMN:** 14255564 ft		

Stream S5-S127_3a – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	226	0.01	0.00
5	226	0.01	0.00
6	226	0.01	0.00
7	226	0.01	0.00
8	226	0.01	0.00
RPA 8	226	0.01	0.00

Description of Potential Impact:
Impacts to S5-S127_3a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S127_3a are on the second page of this form.

Stream Impacts S5-S127_3a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S127_3a RIVER BASIN: White River DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.25431 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/25/12 SCORER: KSS/DEW COMMENTS: (Long: -86.52781) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW 1.2'/0.1' **AVERAGE BANKFULL WIDTH (meters):** 0.36

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

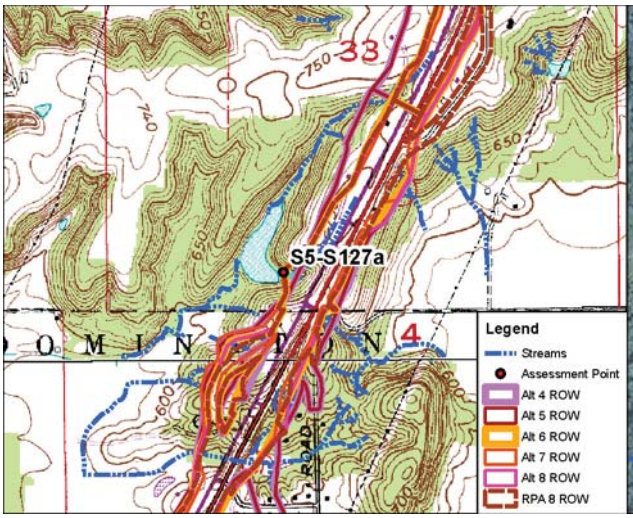
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

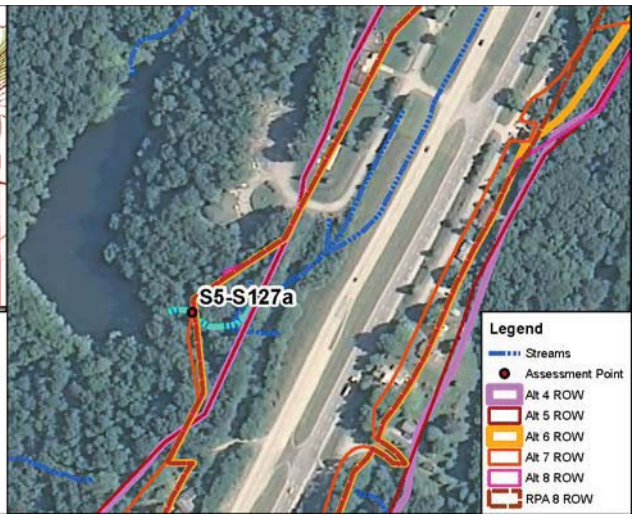
See Stream Assessment Form
S5-S127_3a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S127a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	3.1 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	51	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/boulders
UTME: 1773393 ft	**UTMN:** 14254905 ft		

Stream S5-S127a – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	0	0.00	0.19
5	0	0.00	0.19
6	173	0.01	0.74
7	186	0.01	0.81
8	173	0.01	0.74
RPA 8	173	0.01	0.74

Description of Potential Impact:
Impacts to S5-S127a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of gravel and boulders. This stream feed into a pond. There is a wide riparian corridor along both banks of this stream. The floodplain consists of mature forest along both banks. Photographs taken upstream and downstream where the Alternatives cross S5-S127a are on the second page of this form.

Stream Impacts S5-S127a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 51

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S127a RIVER BASIN: White River DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.25251 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.53025) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☑	BOULDER (>256 mm) [16 pts]	15%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	5%
☐	COBBLE (65 256 mm) [12 pts]	10%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	50%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	10%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 25.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25 **TOTAL NUMBER OF SUBSTRATE TYPES:** 6

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 7

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 3.1' / 0.5' **AVERAGE BANKFULL WIDTH (meters):** 0.95

HHEI Metric Points

	Max	Points
Substrate (A + B)	40	31
Pool Depth	30	15
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☑ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 13 NRCS Soil Map Stream Order 1

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: 57 Upstream / 58 Downstream / 59 Right Bank / 60 Left Bank

Elevated Turbidity? (Y/N): N Canopy (% open): 25%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

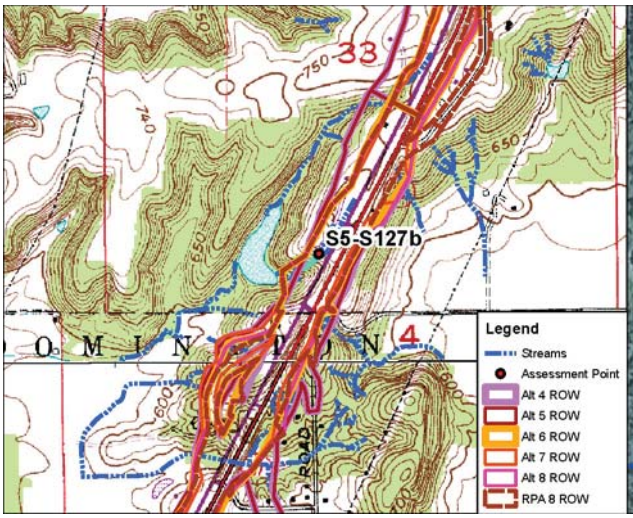
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

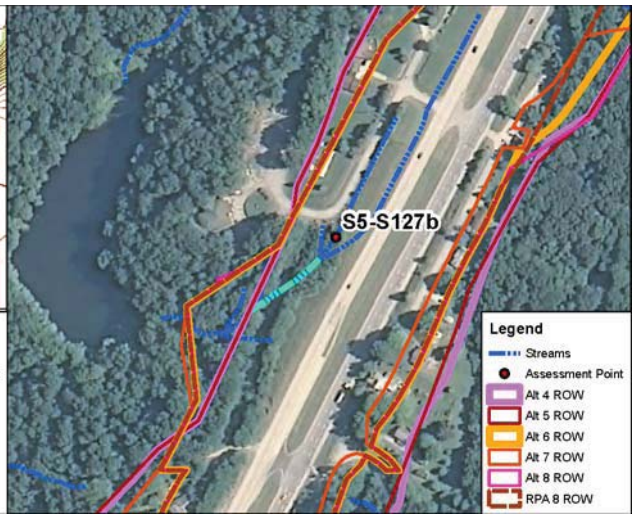
See Stream Assessment Form
S5-S127a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S127b



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.0 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	12	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1773779 ft	**UTMN:** 14255117 ft		

Stream S5-S127b– Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	226	0.01	0.95
5	226	0.01	0.95
6	239	0.01	1.15
7	239	0.01	1.15
8	239	0.01	1.15
RPA 8	239	0.01	1.15

Description of Potential Impact:
Impacts to S5-S127b for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter beginning along Stone Belt Drive and feeding S5-S127a, 655 feet later. The riparian buffer associated with this artificial channel ranges from none (upper reach) to wide (lower reach). The floodplain habitat along the upper reach is all transportation, while the lower reach is immature forest. Photographs taken upstream and downstream where these Alternatives cross S5-S127b are on the second page of this form.

Stream Impacts S5-S127b

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S127b RIVER BASIN: White River DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.25309 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/25/12 SCORER: KSS/DEW COMMENTS: (Long: -86.52889) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	0%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65 256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2 64 mm) [9 pts]	0%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	0%	☑ ☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ MAXIMUM POOL DEPTH (centimeters): 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW 1'/0.2' AVERAGE BANKFULL WIDTH (meters): 0.30

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

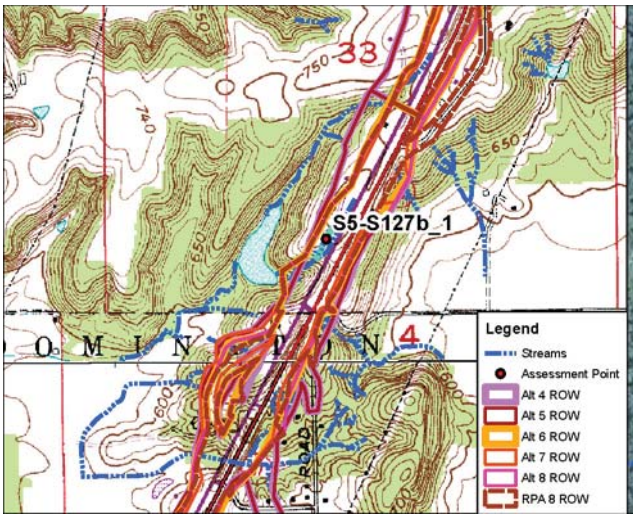
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

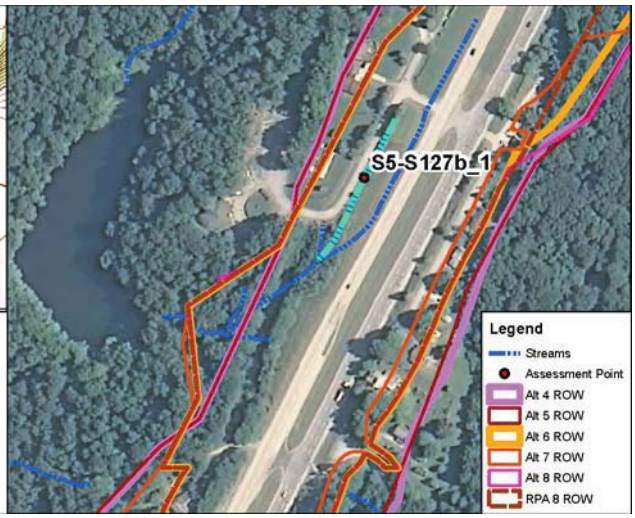
See Stream Assessment Form
S5-S127b for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S127b_1



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.0 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1773854 ft	**UTMN:** 14255271 ft		

Stream S5-S127b_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	415	0.01	0.00
5	415	0.01	0.00
6	415	0.01	0.00
7	415	0.01	0.00
8	415	0.01	0.00
RPA 8	415	0.01	0.00

Description of Potential Impact:
Impacts to S5-S127b_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter. No riparian buffer is associated with this artificial channel. The floodplain habitat along this segment of concrete gutter is all transportation. Photographs taken upstream and downstream where these Alternatives cross S5-S127b_1 are on the second page of this form.

Stream Impacts S5-S127b_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S127b_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.25342 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/25/12 SCORER: KSS/DEW COMMENTS: (Long: -86.5286) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (centimeters): 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW 1'/0.2' AVERAGE BANKFULL WIDTH (meters): 0.30

HHEI Metric Points

	Max	Points
Substrate (A + B)	40	7
Pool Depth	30	0
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

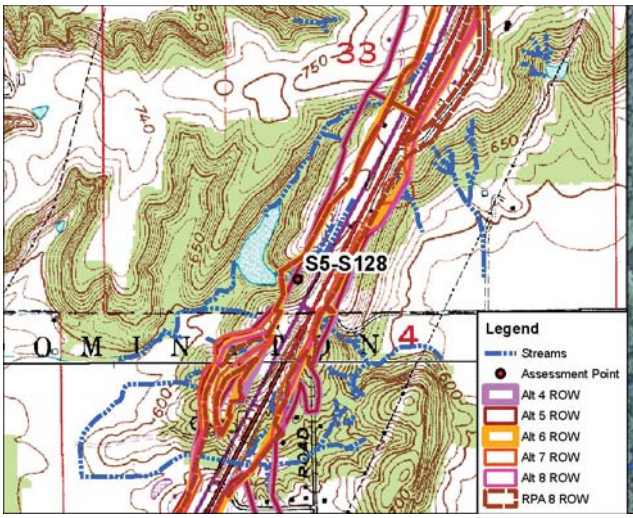
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

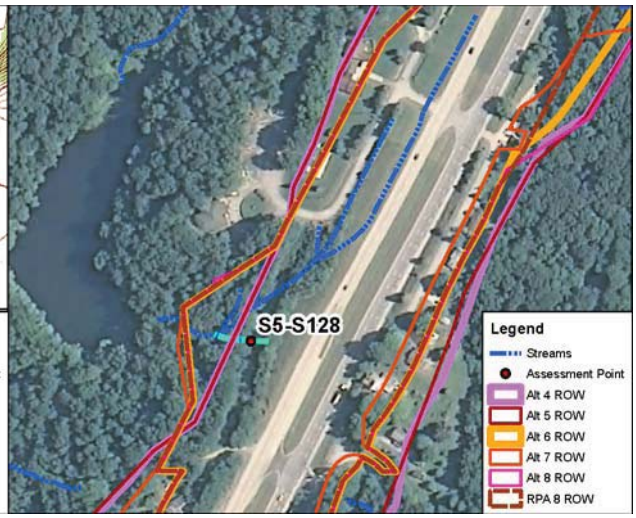
See Stream Assessment Form
S5-S127b_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S128



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.8 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	40	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1773570 ft	**UTMN:** 14254853 ft		

Stream S5-S128 – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	92	0.01	0.18
5	92	0.01	0.18
6	141	0.01	0.18
7	141	0.01	0.18
8	141	0.01	0.18
RPA 8	141	0.01	0.18

Description of Potential Impact:
Impacts to S5-S128 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of gravel and sand. There is a wide riparian corridor along both banks of this stream. The floodplain consists of immature forest along both banks. Photographs taken upstream and downstream where the Alternatives cross S5-S128 are on the second page of this form.

Stream Impacts S5-S128

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 40

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S128 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 140 LAT.: 39.25237 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52963) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE			PERCENT	TYPE			PERCENT
☐	☐	BLDR SLABS [16 pts]	0%	☐	☐	SILT [3 pt]	0%
☐	☐	BOULDER (>256 mm) [16 pts]	0%	☐	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	☐	BEDROCK [16 pt]	0%	☐	☐	FINE DETRITUS [3 pts]	5%
☐	☐	COBBLE (65 256 mm) [12 pts]	10%	☐	☐	CLAY or HARDPAN [0 pt]	0%
☑	☐	GRAVEL (2 64 mm) [9 pts]	50%	☐	☐	MUCK [0 pts]	0%
☐	☑	SAND (<2 mm) [6 pts]	25%	☐	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15

TOTAL NUMBER OF SUBSTRATE TYPES: 5

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ MAXIMUM POOL DEPTH (centimeters): 6

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 1.8' / 0.5' AVERAGE BANKFULL WIDTH (meters): 0.90

HHEI Metric Points

Substrate Max = 40	20
A + B	
Pool Depth Max = 30	15
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 45%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

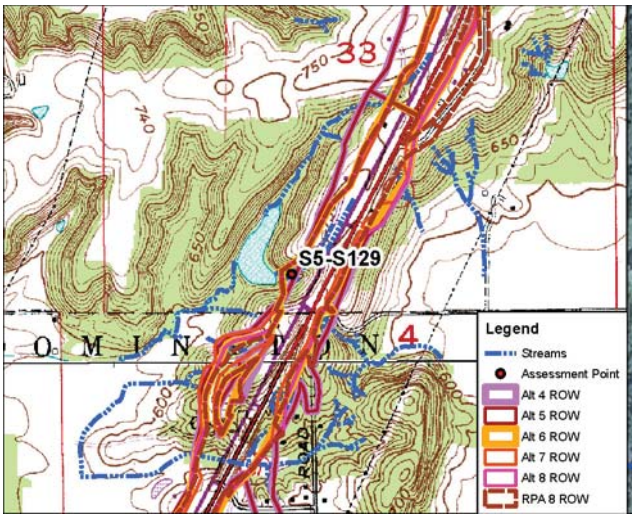
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

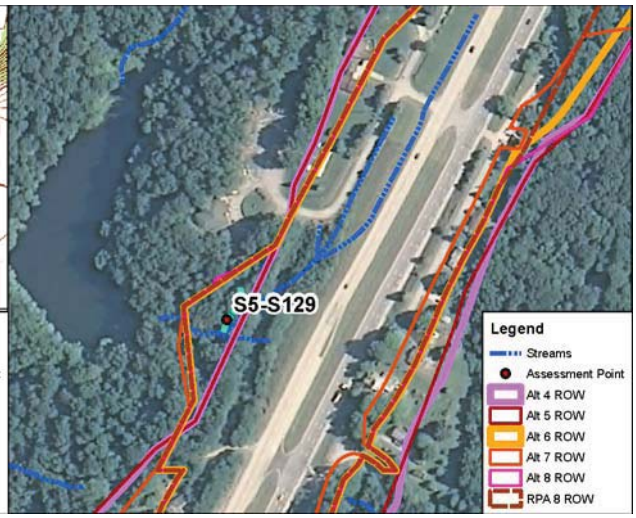
See Stream Assessment Form
S5-S128 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S129



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.1 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	39	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1773506 ft	**UTMN:** 14254904 ft		

Stream S5-S129 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	0	0.00	0.00
5	0	0.00	0.00
6	124	0.01	0.01
7	124	0.01	0.01
8	124	0.01	0.01
RPA 8	124	0.01	0.01

Description of Potential Impact:
Impacts to S5-S129 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of gravel and sand. There is a wide riparian corridor along both banks of this stream. The floodplain consists of immature forest along both banks. Photographs taken upstream and downstream where the Alternatives cross S5-S129 are on the second page of this form.

Stream Impacts S5-S129

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 39

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S129 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 120 LAT.: 39.25251 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52985) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	5%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	50%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	35%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 6

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 1.5' / 0.1' **AVERAGE BANKFULL WIDTH (meters):** 0.90

HHEI Metric Points

	Max	Points
Substrate (A + B)	40	19
Pool Depth	30	15
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☑ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 40%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

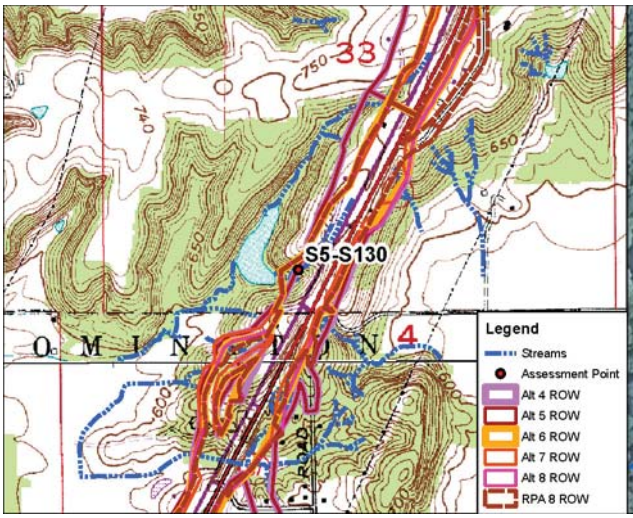
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

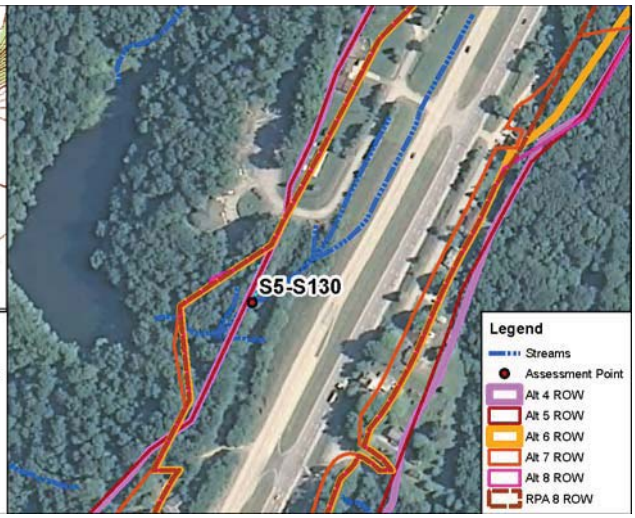
See Stream Assessment Form
S5-S129 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S130



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.9 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	40	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1773582 ft	**UTMN:** 14254949 ft		

Stream S5-S130 – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	59	0.01	0.01
5	58	0.01	0.01
6	108	0.01	0.01
7	108	0.01	0.01
8	108	0.01	0.01
RPA 8	108	0.01	0.01

Description of Potential Impact:
Impacts to S5-S130 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of sand and gravel. There is a wide riparian corridor along both banks of this stream. The floodplain consists of immature forest along both banks. Photographs taken upstream and downstream where the Alternatives cross S5-S130 are on the second page of this form.

Stream Impacts S5-S130

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 40

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S130 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 100 LAT.: 39.25263 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52959) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	5%
☐	COBBLE (65 256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	35%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	45%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 7

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 1.9' / 0.2' **AVERAGE BANKFULL WIDTH (meters):** 1.00

HHEI Metric Points

	Max	Points
Substrate (A + B)	40	20
Pool Depth	30	15
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 40%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

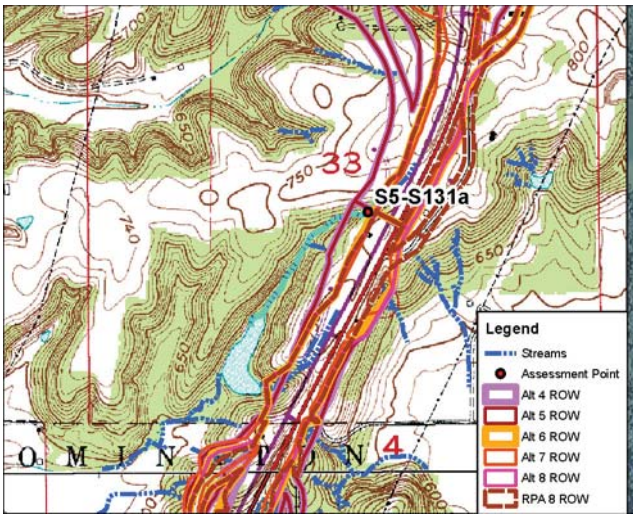
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

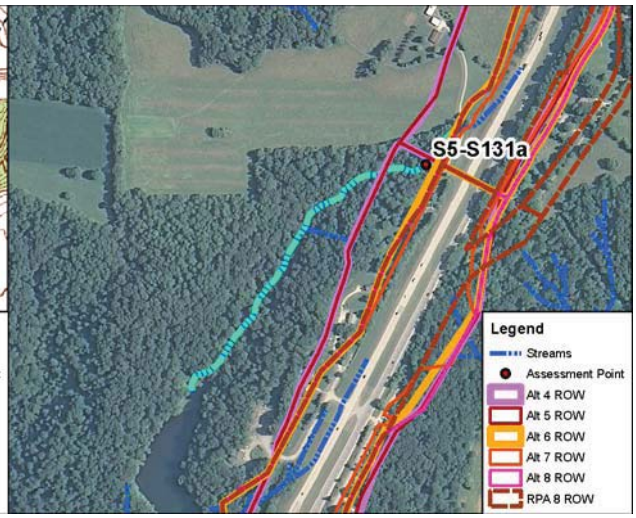
See Stream Assessment Form
S5-S130 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S131a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	4.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	41	**Watershed Area:**	0.03 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/boulders
UTME: 1774456 ft	**UTMN:** 14256697 ft		

Stream S5-S131a – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	478	0.04	1.81
5	467	0.04	1.77
6	3	0.01	0.17
7	0	0.00	0.00
8	0	0.00	0.04
RPA 8	0	0.00	0.04

Description of Potential Impact:
Impacts to S5-S131a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of sand and boulders. There is a wide riparian corridor along both banks where Alternatives 4 and 5 cross this stream. The floodplain consists of immature forest along both banks. Photographs taken upstream and downstream where the Alternatives cross S5-S131a are on the second page of this form.

Stream Impacts S5-S131a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 41

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S131a RIVER BASIN: White River DRAINAGE AREA (mi²): 0.03

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.25742 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/17/11 SCORER: DEW/KSS COMMENTS: (-86.52647) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	10%
☑	BOULDER (>256 mm) [16 pts]	35%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	5%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	50%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 35.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 22 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW = 4'/0.5' **AVERAGE BANKFULL WIDTH (meters):** 1.22

HHEI Metric Points

Substrate	Max = 40	26
A + B		
Pool Depth	Max = 30	0
Bankfull Width	Max=30	15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☑ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 5%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

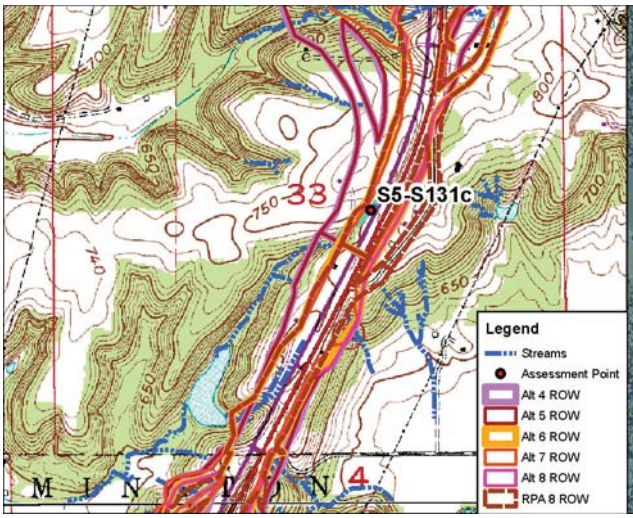
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

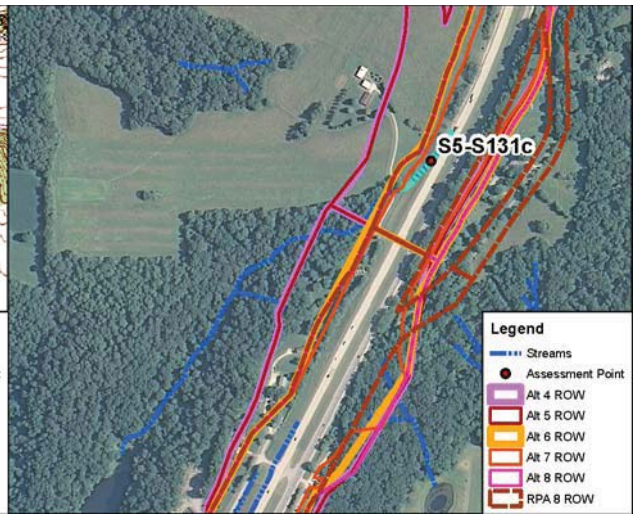
See Stream Assessment Form
S5-S131a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S131c



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.0 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.03 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1774842 ft	**UTMN:** 14257040 ft		

Stream S5-S131c – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	414	0.01	0.00
5	414	0.01	0.00
6	414	0.01	0.00
7	414	0.01	0.00
8	414	0.01	0.00
RPA 8	414	0.01	0.00

Description of Potential Impact:
Impacts to S5-S131c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S131c are on the second page of this form.

Stream Impacts S5-S131c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S131c RIVER BASIN: White River DRAINAGE AREA (mi²): 0.03

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.25836 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/25/12 SCORER: KSS/DEW COMMENTS: (Long: -86.52510) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW 1'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.30

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

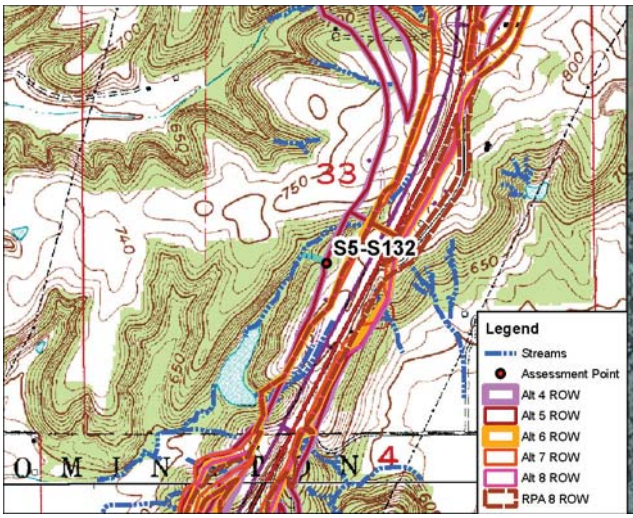
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

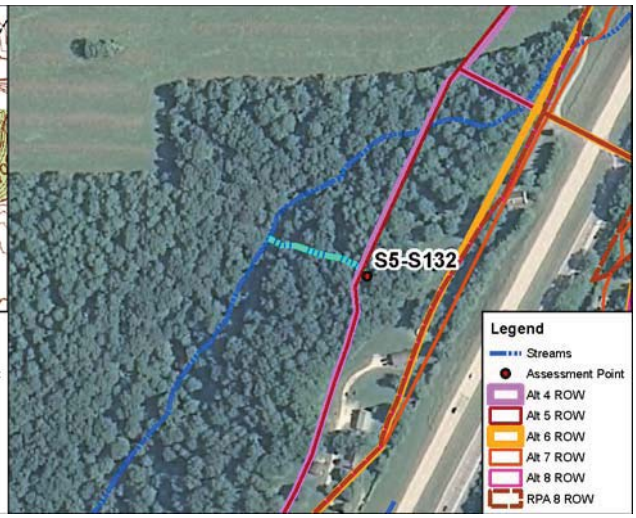
See Stream Assessment Form
S5-S131c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S132



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	52	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/boulder slabs
UTME: 1774079 ft	**UTMN:** 14256274 ft		

Stream S5-S132 – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	30	0.01	0.47
5	24	0.01	0.44
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S132 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate consists of gravel, boulder slabs, sand, and leaf pack. There is a wide riparian corridor where Alternatives 4 and 5 cross this stream. The floodplain consists of immature forest along both banks. Photographs taken upstream and downstream where the Alternatives cross S5-S132 are on the second page of this form.

Stream Impacts S5-S132

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 52

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S132 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.25626 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52780) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☑	BLDR SLABS [16 pts]	12%	☐ ☐	SILT [3 pt]	5%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐ ☐	BEDROCK [16 pt]	9%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65 256 mm) [12 pts]	9%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☑ ☐	GRAVEL (2 64 mm) [9 pts]	45%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	10%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 30.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25 **TOTAL NUMBER OF SUBSTRATE TYPES:** 7

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 9

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 2.0' / 0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.90

HHEI Metric Points

Substrate Max = 40	32
A + B	
Pool Depth Max = 30	15
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 25%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

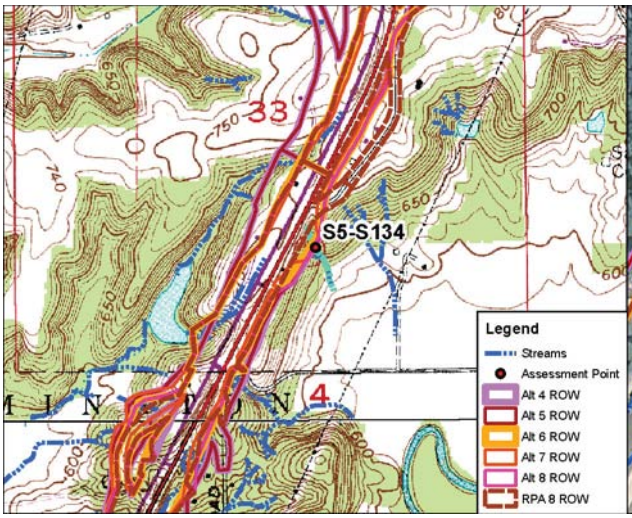
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➔

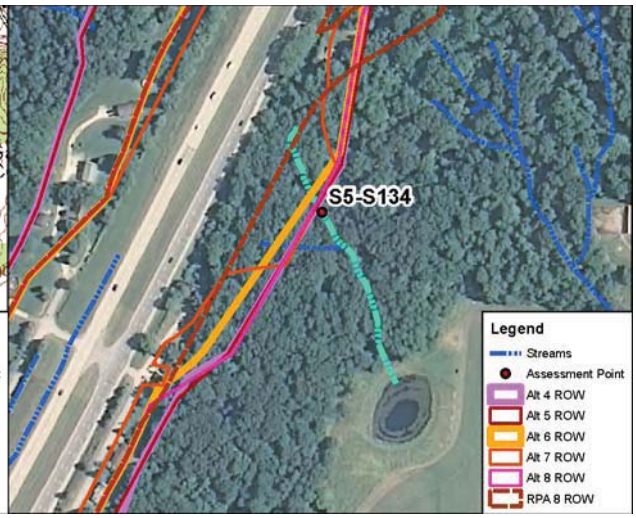
See Stream Assessment Form
S5-S132 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S134



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	UNT Beanblossom Ck	**Section:**	33
Quarter:	SE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	3.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.6 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	38	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Cobble/boulders
UTME: 1774673 ft	**UTMN:** 14255794 ft		

Stream S5-S134 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	223	0.02	1.30
5	222	0.02	1.30
6	190	0.01	1.15
7	217	0.01	1.20
8	217	0.01	1.28
RPA 8	59	0.01	0.49

Description of Potential Impact:
Impacts to S5-S134 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of cobble, boulders, and sand. There is a wide riparian corridor along both banks of this stream. The floodplain consists of immature forest along both banks. Photographs taken upstream and downstream where the Alternatives cross S5-S134 are on the second page of this form.

Stream Impacts S5-S134

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 38

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S134 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.25493 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/17/11 SCORER: DEW/KSS COMMENTS: (Long: -86.52571) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE			PERCENT	TYPE			PERCENT
☐	☐	BLDR SLABS [16 pts]	0%	☐	☐	SILT [3 pt]	5%
☑	☐	BOULDER (>256 mm) [16 pts]	30%	☐	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	☐	BEDROCK [16 pt]	0%	☐	☐	FINE DETRITUS [3 pts]	0%
☐	☑	COBBLE (65 256 mm) [12 pts]	40%	☐	☐	CLAY or HARDPAN [0 pt]	0%
☐	☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	☐	MUCK [0 pts]	0%
☐	☐	SAND (<2 mm) [6 pts]	20%	☐	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 70.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 28

TOTAL NUMBER OF SUBSTRATE TYPES: 5

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ MAXIMUM POOL DEPTH (centimeters): 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 3'/0.6' AVERAGE BANKFULL WIDTH (meters): 0.90

HHEI Metric Points

Substrate Max = 40	33
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 0%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

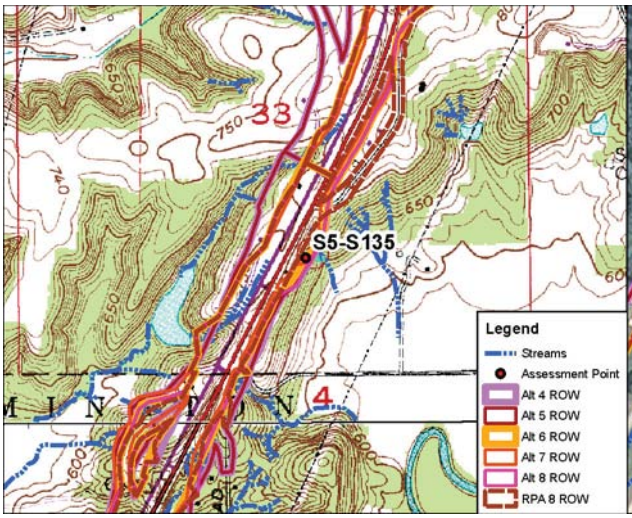
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➔

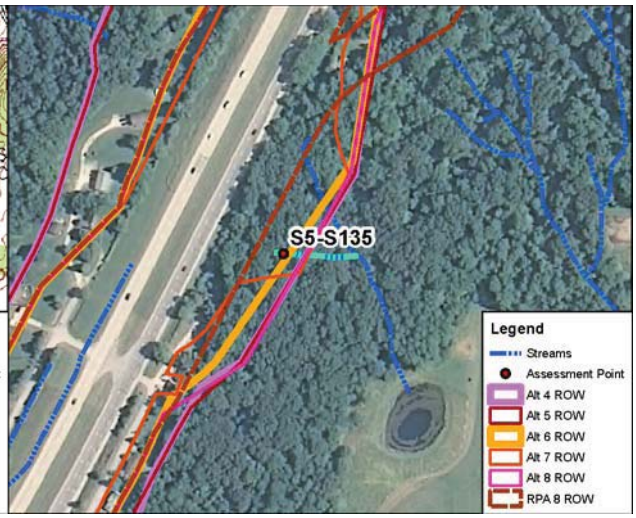
See Stream Assessment Form
S5-S134 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S135



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.1 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.3 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	35	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/cobble
UTME: 1774539 ft	**UTMN:** 14255710 ft		

Stream S5-S135 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	83	0.01	0.63
5	82	0.01	0.62
6	39	0.01	0.49
7	88	0.01	0.56
8	81	0.01	0.63
RPA 8	0	0.00	0.16

Description of Potential Impact:
Impacts to S5-S135 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of gravel and cobble. There is a wide riparian corridor along both banks of this stream. The floodplain consists of immature forest along both banks. Photographs taken upstream and downstream where the Alternatives cross S5-S135 are on the second page of this form.

Stream Impacts S5-S135

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 35

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S135 RIVER BASIN: White River DRAINAGE AREA (mi^2): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.25471 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52619) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☑	COBBLE (65 256 mm) [12 pts]	20%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	60%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 20.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 4

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 1.1' / 0.3' **AVERAGE BANKFULL WIDTH (meters):** 0.60

HHEI Metric Points

Substrate Max = 40	A + B	25
Pool Depth Max = 30		5
Bankfull Width Max=30		5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

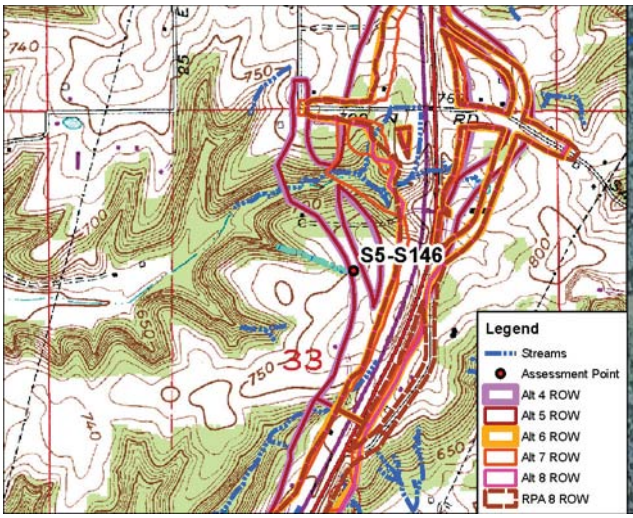
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➔

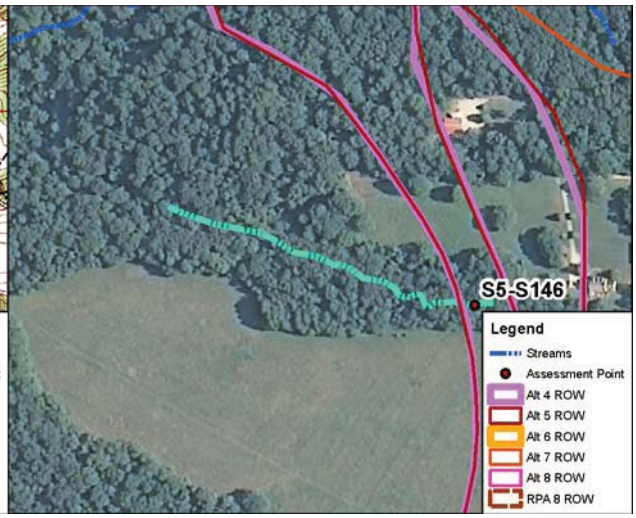
See Stream Assessment Form
S5-S135 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S146



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	SE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.6 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	28	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Boulder slabs/silt
UTME: 1774707 ft	**UTMN:** 14258133 ft		

Stream S5-S146 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	87	0.01	0.50
5	90	0.01	0.51
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S146 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of boulder slabs and silt. There is a wide riparian corridor along the left bank and a narrow buffer along the right bank of this stream. The floodplain consists of immature forest along the left bank and residential land along the right. Photographs taken upstream and downstream where the Alternatives cross S5-S146 are on the second page of this form

Stream Impacts S5-S146

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 28

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S146 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.26136 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/17/11 SCORER: DEW/KSS COMMENTS: (Long: -86.52555) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	☑ BLDR SLABS [16 pts]	70%	☑	☐ SILT [3 pt]	20%
☐	☐ BOULDER (>256 mm) [16 pts]	0%	☐	☐ LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	☐ BEDROCK [16 pt]	0%	☐	☐ FINE DETRITUS [3 pts]	0%
☐	☐ COBBLE (65 256 mm) [12 pts]	0%	☐	☐ CLAY or HARDPAN [0 pt]	0%
☐	☐ GRAVEL (2 64 mm) [9 pts]	0%	☐	☐ MUCK [0 pts]	0%
☐	☐ SAND (<2 mm) [6 pts]	5%	☐	☐ ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 70.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 19

TOTAL NUMBER OF SUBSTRATE TYPES: 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ MAXIMUM POOL DEPTH (centimeters): 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 2'/0.6' AVERAGE BANKFULL WIDTH (meters): 0.60

HHEI Metric Points

	Max	Points
Substrate (A + B)	40	23
Pool Depth	30	0
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☑	☐	Narrow <5m	☑	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☑ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 60%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

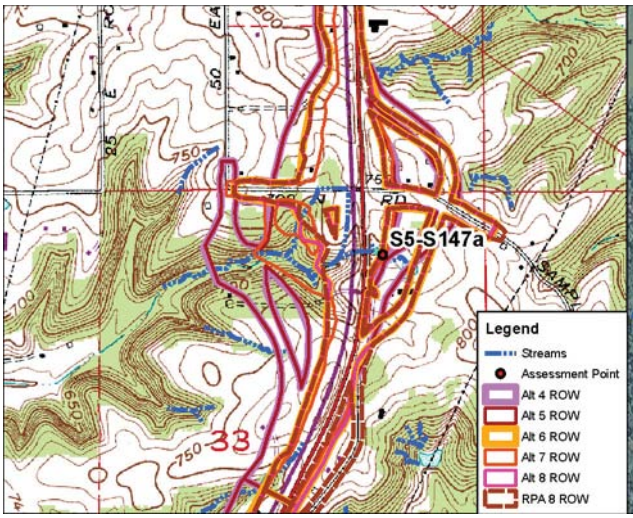
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

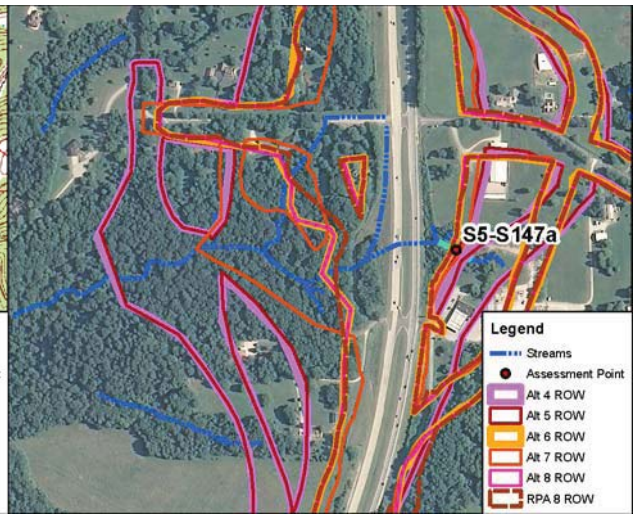
See Stream Assessment Form
S5-S146 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S147a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	4.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.6 feet
Stream Type:	Intermittent	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	51	**Watershed Area:**	0.17 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Boulder slabs/cobble
UTME: 1775767 ft	**UTMN:** 14259139 ft		

Stream S5-S147a – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	159	0.01	0.81
5	137	0.01	0.76
6	76	0.01	0.33
7	121	0.01	0.48
8	75	0.01	0.32
RPA 8	76	0.01	0.33

Description of Potential Impact:
Impacts to S5-S147a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of boulder slabs and cobble. There is a wide riparian corridor on the left bank and a moderately-wide riparian buffer along the right. The adjacent floodplain consists of a commercial use to the left and barren land to the right used as a spoil area. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S147a are on the second page of this form.

Stream Impacts S5-S147a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 51

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S147a RIVER BASIN: White River DRAINAGE AREA (mi²): 0.17

LENGTH OF STREAM REACH (ft): 190 LAT.: 39.26411 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/23/12 SCORER: KSS COMMENTS: (Long: -86.52179) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE			PERCENT	TYPE			PERCENT
☑	☐	BLDR SLABS [16 pts]	85%	☐	☐	SILT [3 pt]	0%
☐	☐	BOULDER (>256 mm) [16 pts]	0%	☐	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	☐	BEDROCK [16 pt]	0%	☐	☐	FINE DETRITUS [3 pts]	0%
☐	☑	COBBLE (65 256 mm) [12 pts]	10%	☐	☐	CLAY or HARDPAN [0 pt]	0%
☐	☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	☐	MUCK [0 pts]	0%
☐	☐	SAND (<2 mm) [6 pts]	5%	☐	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 95.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 28 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 4

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW = 4.0'/0.6' **AVERAGE BANKFULL WIDTH (meters):** 1.22

HHEI Metric Points

	Max	Points
Substrate	40	31
A + B		
Pool Depth	30	5
Bankfull Width	30	15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☑	Moderate 5 10m	☑	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☑	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☑ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream 2.04

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/19/12 Quantity: 0.20

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 65%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

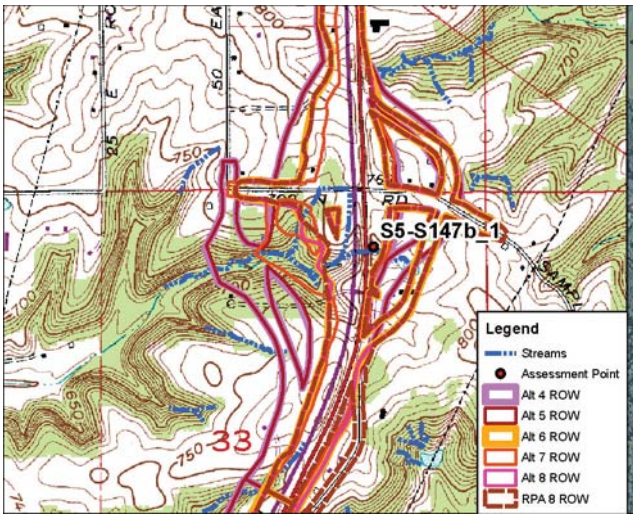
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

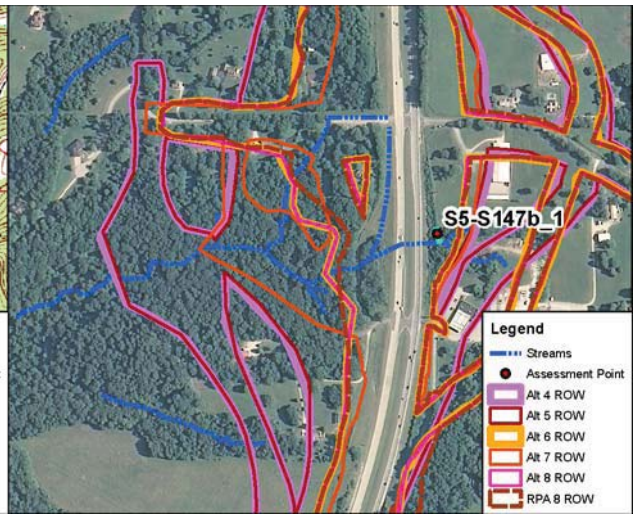
See Stream Assessment Form
S5-S147a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S147b_1



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.2 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1775655 ft	**UTMN:** 14259227 ft		

Stream S5-S147b_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	95	0.01	0.11
5	95	0.01	0.11
6	95	0.01	0.11
7	95	0.01	0.11
8	95	0.01	0.11
RPA 8	95	0.01	0.11

Description of Potential Impact:
Impacts to S5-S147b_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter that flows into a culvert (S5-S147b). There is a wide riparian buffer associated with this artificial channel along both banks. The floodplain consists of the immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S147b_1 are on the second page of this form.

Stream Impacts S5-S147b_1

Photograph Taken Upstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S147b_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 95 LAT.: 39.26435 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/25/12 SCORER: KSS/DEW COMMENTS: (Long: -86.52218) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	0%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65 256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2 64 mm) [9 pts]	0%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	0%	☑ ☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ MAXIMUM POOL DEPTH (centimeters): 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW 2.2'/0.2' AVERAGE BANKFULL WIDTH (meters): 0.67

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 5%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

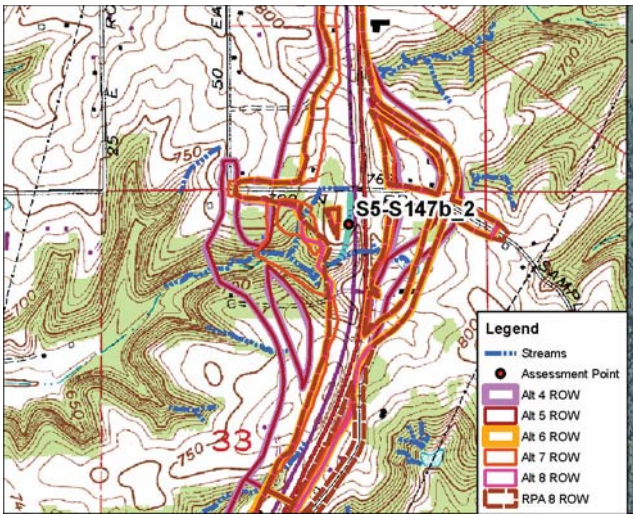
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

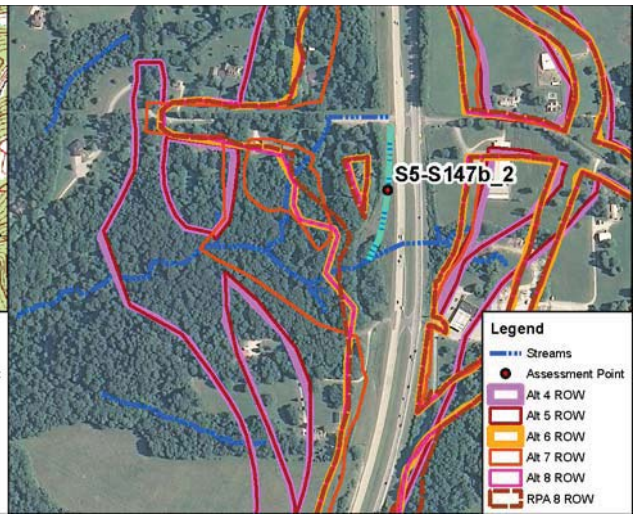
FLOW ➜ See Stream Assessment Form S5-S147b_1 for site topographic map, aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S147b_2



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.0 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1775394 ft	**UTMN:** 14259451 ft		

Stream S5-S147b_2 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	708	0.02	0.48
5	708	0.02	0.48
6	708	0.02	0.48
7	708	0.02	0.48
8	708	0.02	0.48
RPA 8	708	0.02	0.48

Description of Potential Impact:
Impacts to S5-S147b_2 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S147b_2 are on the second page of this form.

Stream Impacts S5-S147b_2

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S147b_2 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.26497 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/25/12 SCORER: KSS/DEW COMMENTS: (Long: -86.52310) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW 1'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.30

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

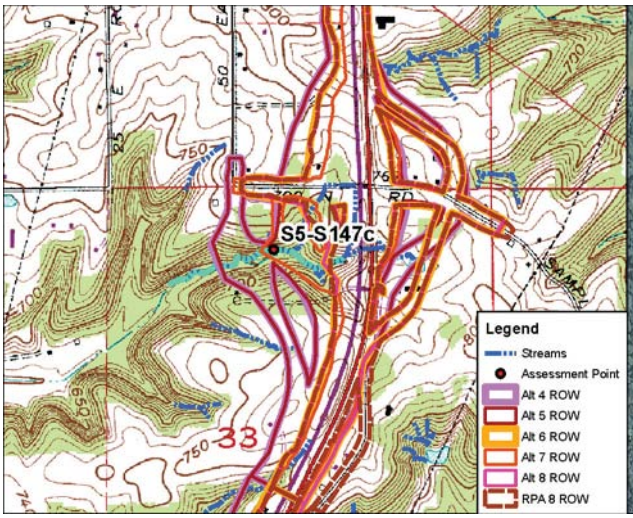
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

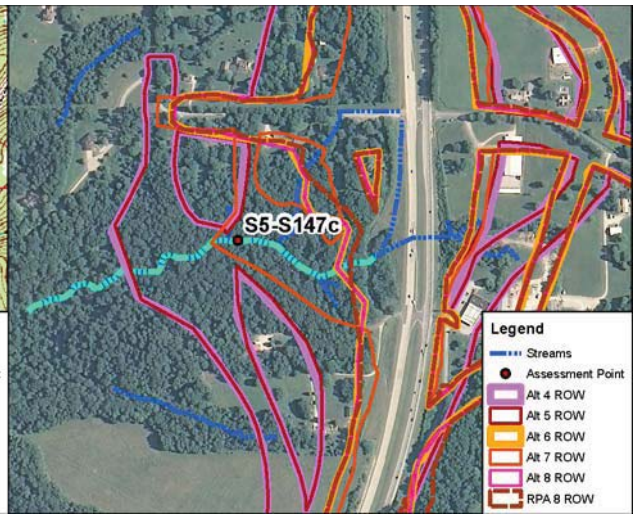
See Stream Assessment Form
S5-S147b_2 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S147c



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	10.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.8 feet
Stream Type:	Intermittent	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	66	**Watershed Area:**	0.17 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Bedrock/boulder slabs
UTME: 1774557 ft	**UTMN:** 14259159 ft		

Stream S5-S147c – Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	1482	0.34	6.66
5	1454	0.33	6.53
6	218	0.05	0.88
7	951	0.22	4.07
8	217	0.05	0.89
RPA 8	144	0.03	0.63

Description of Potential Impact:
Impacts to S5-S147c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate consists primarily of bedrock and boulder slabs. There is a wide riparian corridor associated with this stream. The floodplain consists primarily of mature forest adjacent to both banks of the stream. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S147c are on the second page of this form.

Stream Impacts S5-S147c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 66

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S147c RIVER BASIN: White River DRAINAGE AREA (mi²): 0.17

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.26418 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/17/11 SCORER: DEW/KSS COMMENTS: (Long: -86.52606) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	20%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☑	BEDROCK [16 pt]	70%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 95.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 32 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 4

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☑ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 10'/0.8' **AVERAGE BANKFULL WIDTH (meters):** 3.05

HHEI Metric Points

	Max	Points
Substrate (A + B)	40	36
Pool Depth	30	5
Bankfull Width	30	25

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☑ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 0%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

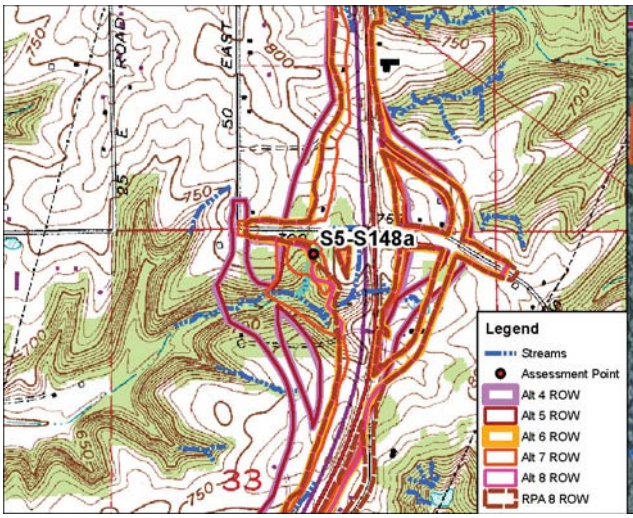
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

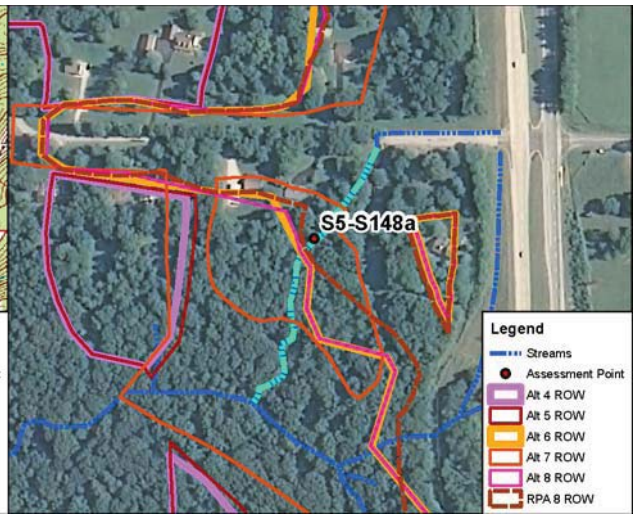
See Stream Assessment Form
S5-S147c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S148a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.2 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	63	**Watershed Area:**	0.04 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Cobble/bedrock
UTME: 1774923 ft	**UTMN:** 14259558 ft		

Stream S5-S148a – Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	797	0.04	2.16
5	797	0.04	2.16
6	340	0.02	0.78
7	453	0.02	0.90
8	340	0.02	0.78
RPA 8	325	0.02	0.54

Description of Potential Impact:
Impacts to S5-S148a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate consists primarily of cobble, bedrock, and gravel. There is a wide riparian corridor on both banks of the stream. The floodplain consists primarily of mature forest where the Alternatives cross this stream. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S148a are on the second page of this form.

Stream Impacts S5-S148a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 63

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S148a RIVER BASIN: White River DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.26527 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52476) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	15%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	14%
☑	BEDROCK [16 pt]	16%	☐	FINE DETRITUS [3 pts]	0%
☑	COBBLE (65 256 mm) [12 pts]	40%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	15%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 56.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 28 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

HHEI Metric Points

Substrate Max = 40: 33

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 8

Pool Depth Max = 30: 15

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 2.2' / 0.2' **AVERAGE BANKFULL WIDTH (meters):** 1.30

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☑ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

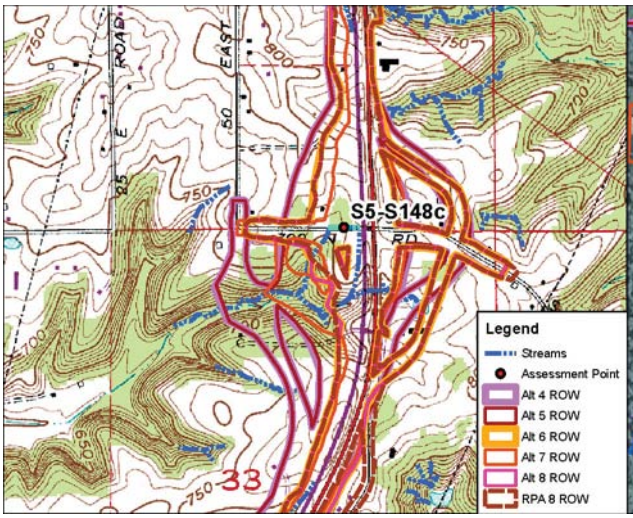
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

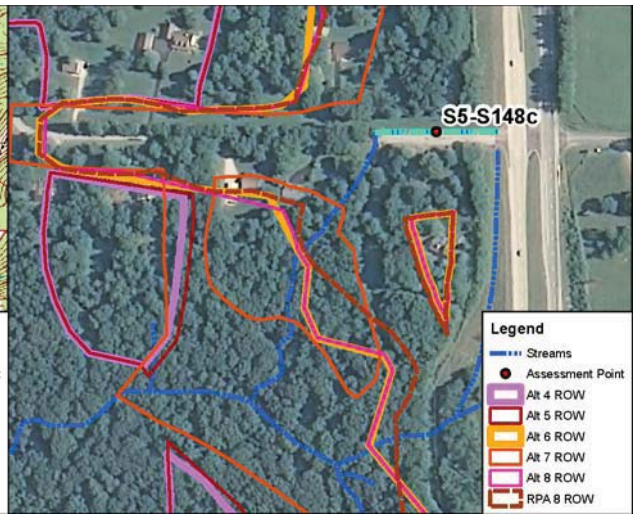
See Stream Assessment Form
S5-S148a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S148c



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	28
Quarter:	SE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.0 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.04 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1775247 ft	**UTMN:** 14259832 ft		

Stream S5-S148c – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	320	0.01	0.46
5	320	0.01	0.46
6	320	0.01	0.46
7	320	0.01	0.46
8	320	0.01	0.46
RPA 8	320	0.01	0.46

Description of Potential Impact:
Impacts to S5-S148c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located along West Sample Road. This channel flows to S5-S147b_2 via a pipe under West Sample Road. There is no riparian buffer associated with this artificial channel. The floodplain consists of new field on the left bank and a roadway on the right. No photographs are available at this time.

Stream Impacts S5-S148c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S148c RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.26602 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/25/12 SCORER: KSS/DEW COMMENTS: (Long: -86.52361) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	0%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65 256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2 64 mm) [9 pts]	0%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	0%	☑ ☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ MAXIMUM POOL DEPTH (centimeters): 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW 1'/0.2' AVERAGE BANKFULL WIDTH (meters): 0.30

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☑	Urban or Industrial
☐	☐	Narrow <5m	☑	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

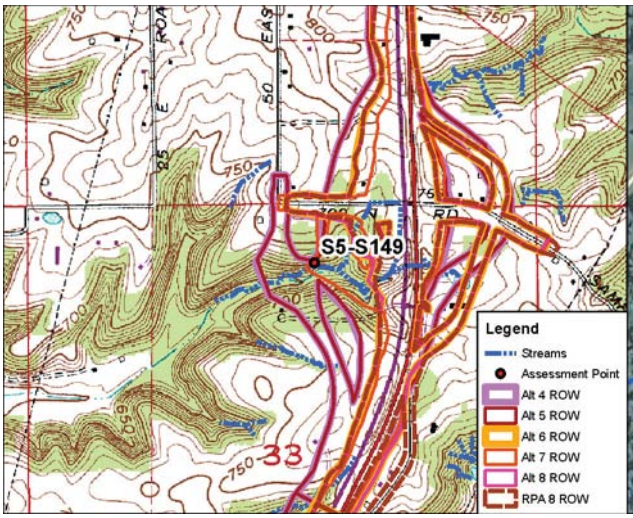
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

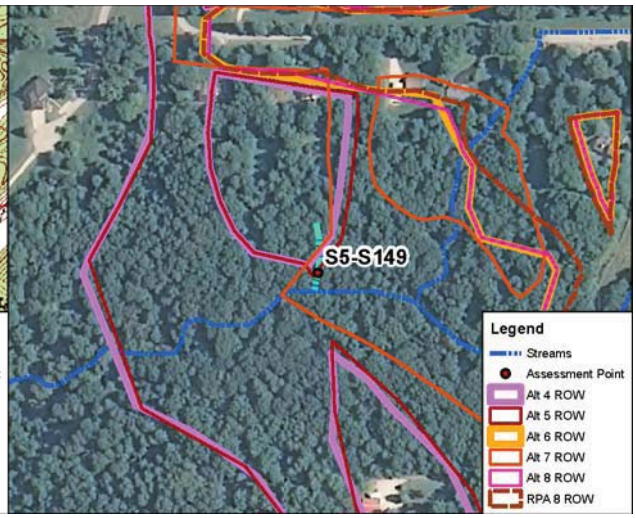
See Stream Assessment Form
S5-S148c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S149



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.1 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	36	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Cobble/gravel
UTME: 1774512 ft	**UTMN:** 14259205 ft		

Stream S5-S149 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	102	0.01	0.20
5	57	0.01	0.10
6	0	0.00	0.00
7	109	0.01	0.24
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S149 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of cobble and gravel. There is a wide riparian corridor along both banks of this stream. The floodplain consists of immature forest along both banks. Photographs taken upstream and downstream where the Alternatives cross S5-S149 are on the second page of this form.

Stream Impacts S5-S149

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 36

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S149 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 175 LAT.: 39.26431 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52622) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE			PERCENT	TYPE			PERCENT
☐	☐	BLDR SLABS [16 pts]	0%	☐	☐	SILT [3 pt]	10%
☐	☐	BOULDER (>256 mm) [16 pts]	0%	☐	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	☐	BEDROCK [16 pt]	0%	☐	☐	FINE DETRITUS [3 pts]	0%
☑	☐	COBBLE (65 256 mm) [12 pts]	40%	☐	☐	CLAY or HARDPAN [0 pt]	0%
☐	☑	GRAVEL (2 64 mm) [9 pts]	30%	☐	☐	MUCK [0 pts]	0%
☐	☐	SAND (<2 mm) [6 pts]	10%	☐	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 40.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 4

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 1.5' / 0.1' **AVERAGE BANKFULL WIDTH (meters):** 1.00

HHEI Metric Points

	Max	Points
Substrate (A + B)	40	26
Pool Depth	30	5
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

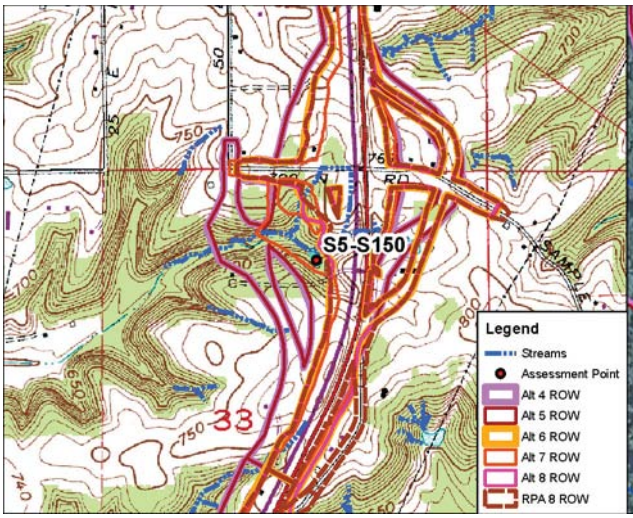
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

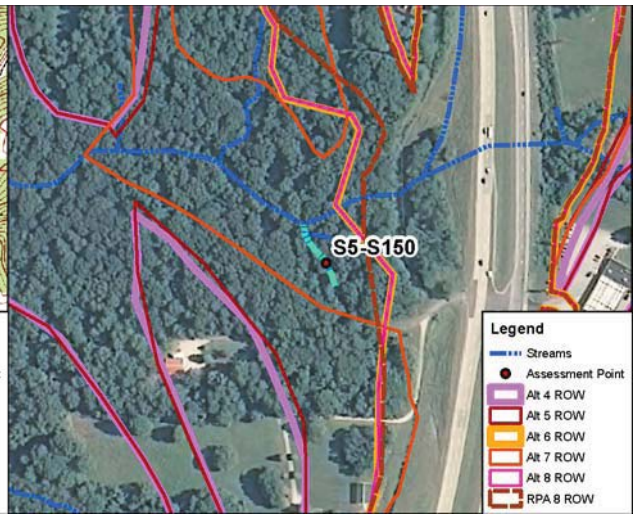
See Stream Assessment Form
S5-S149 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S150



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	36	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Cobble/gravel
UTME: 1775046 ft	**UTMN:** 14258868 ft		

Stream S5-S150 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	182	0.01	0.49
5	182	0.01	0.49
6	0	0.00	0.00
7	182	0.01	0.39
8	0	0.00	0.00
RPA 8	0	0.00	0.01

Description of Potential Impact:
Impacts to S5-S150 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of cobble, gravel, and leaf pack. There is a wide riparian corridor along both banks of this stream. The floodplain consists of immature forest along both banks. Photographs taken upstream and downstream where the Alternatives cross S5-S150 are on the second page of this form.

Stream Impacts S5-S150

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 36

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S150 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 180 LAT.: 39.26337 LONG.: RIVER CODE: RIVER MILE:

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52434) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE			PERCENT	TYPE			PERCENT
☐	☐	BLDR SLABS [16 pts]	0%	☐	☐	SILT [3 pt]	5%
☐	☐	BOULDER (>256 mm) [16 pts]	0%	☐	☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐	☐	BEDROCK [16 pt]	0%	☐	☐	FINE DETRITUS [3 pts]	0%
☑	☐	COBBLE (65 256 mm) [12 pts]	40%	☐	☐	CLAY or HARDPAN [0 pt]	0%
☐	☑	GRAVEL (2 64 mm) [9 pts]	30%	☐	☐	MUCK [0 pts]	0%
☐	☐	SAND (<2 mm) [6 pts]	10%	☐	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 40.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

HHEI Metric Points

Substrate Max = 40: 26

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS **MAXIMUM POOL DEPTH (centimeters):** 3

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 1.0' / 0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.75

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: 66 Upstream / 67 Downstream / 68 Right bank / 69 Left bank

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

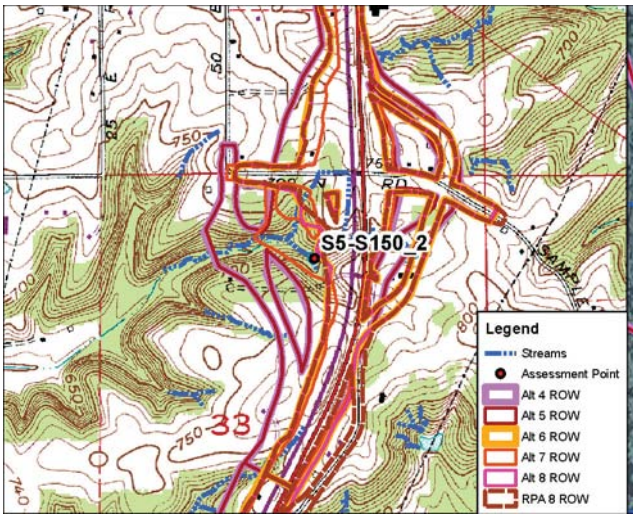
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

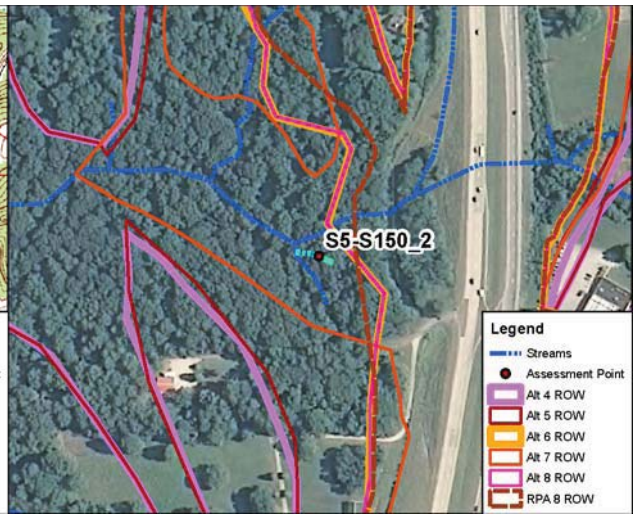
See Stream Assessment Form
S5-S150 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S150_2



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	3.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	21	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/clay
UTME: 1775049 ft	**UTMN:** 14258934 ft		

Stream S5-S150_2 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	100	0.01	0.34
5	100	0.01	0.34
6	0	0.00	0.03
7	100	0.01	0.34
8	0	0.00	0.03
RPA 8	0	0.00	0.05

Description of Potential Impact:
Impacts to S5-S150_2 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate consists of clay overlain with sand. There is a wide riparian corridor along both banks of this stream. The floodplain consists of immature forest along both banks. Photographs taken upstream and downstream where the Alternatives cross S5-S150_2 are on the second page of this form.

Stream Impacts S5-S150_2

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 21

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S150_2 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 100 LAT.: 39.26356 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/30/12 SCORER: JDP COMMENTS: (Long: -86.52433) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	5%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐ ☐	BEDROCK [16 pt]	5%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65 256 mm) [12 pts]	0%	☐ ☑	CLAY or HARDPAN [0 pt]	25%
☐ ☐	GRAVEL (2 64 mm) [9 pts]	5%	☐ ☐	MUCK [0 pts]	0%
☑ ☐	SAND (<2 mm) [6 pts]	60%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6

TOTAL NUMBER OF SUBSTRATE TYPES: 5

HHEI Metric Points

Substrate Max = 40: 11

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ MAXIMUM POOL DEPTH (centimeters): 4

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 3'/0.5' AVERAGE BANKFULL WIDTH (meters): 0.91

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/28/12 Quantity: 0.14

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 5%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

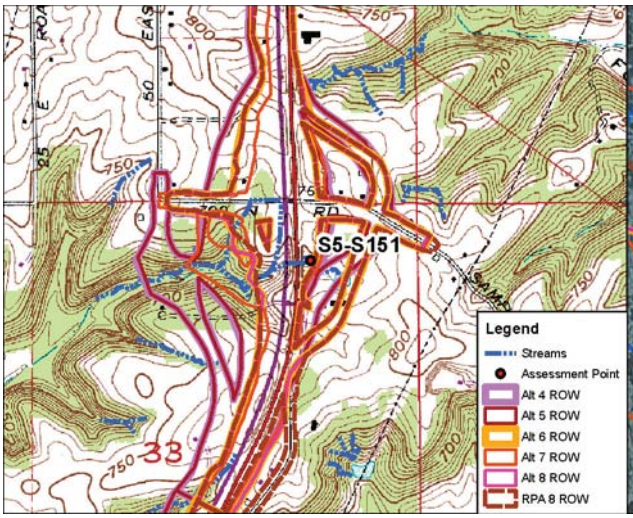
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

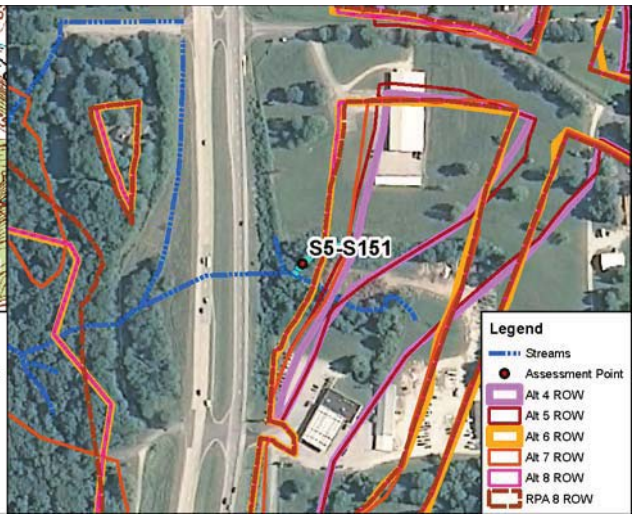
See Stream Assessment Form
S5-S150_2 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S151



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.9 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	33	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/silt
UTME: 1775716 ft	**UTMN:** 14259202 ft		

Stream S5-S151– Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	175	0.01	0.11
5	166	0.01	0.08
6	103	0.01	0.02
7	167	0.01	0.08
8	102	0.01	0.02
RPA 8	103	0.01	0.02

Description of Potential Impact:
Impacts to S5-S151 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of sand and silt. There is a moderately-wide riparian corridor along both banks of this stream. The adjacent floodplain consists of new field to the right and barren land to the left, used as a spoil area. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S151 are on the second page of this form.

Stream Impacts S5-S151

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 33

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S151 RIVER BASIN: White River DRAINAGE AREA (mi^2): 0.01

LENGTH OF STREAM REACH (ft): 170 LAT.: 39.26428 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52196) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	35%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	10%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	40%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 9

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 1.9' / 0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.58

HHEI Metric Points

Substrate Max = 40	13
A + B	
Pool Depth Max = 30	15
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☑	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 50%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

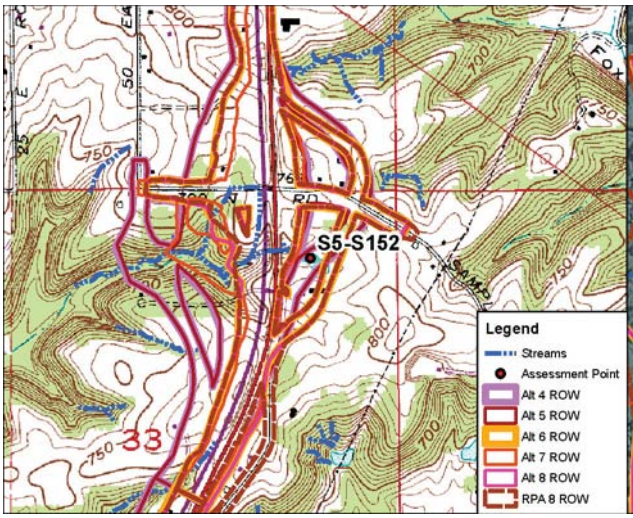
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

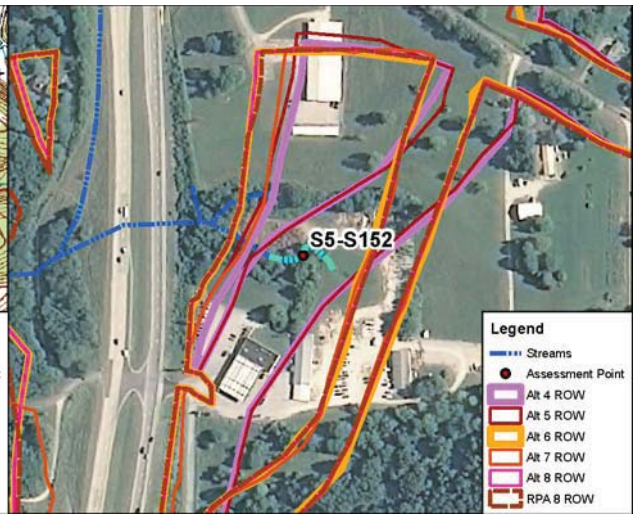
See Stream Assessment Form
S5-S151 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S152



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	33
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.9 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	41	**Watershed Area:**	0.17 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1775933 ft	**UTMN:** 14259093 ft		

Stream S5-S152 – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	213	0.01	0.14
5	213	0.01	0.14
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S152 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of gravel, sand, and leaf pack. There is a moderately-wide riparian corridor on the left bank and a narrow riparian buffer along the right. The adjacent floodplain consists of a commercial use to the left and barren land to the right used as a spoil area. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S152 are on the second page of this form.

Stream Impacts S5-S152

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 41

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S152 RIVER BASIN: White River DRAINAGE AREA (mi^2): 0.17

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.26398 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52120) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	10%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	5%
☐	COBBLE (65 256 mm) [12 pts]	10%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	40%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	20%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 6

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 9

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 1.9' / 0.4' **AVERAGE BANKFULL WIDTH (meters):** 0.58

HHEI Metric Points

	Max	Points
Substrate (A + B)	40	21
Pool Depth	30	15
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☐	Moderate 5 10m	☑	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☑	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☑	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

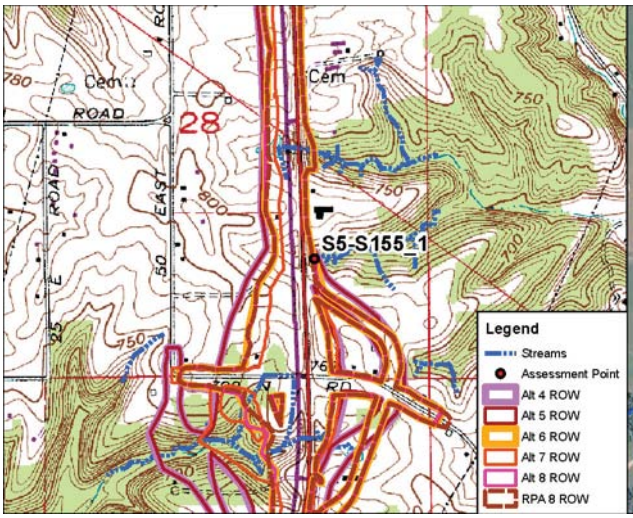
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

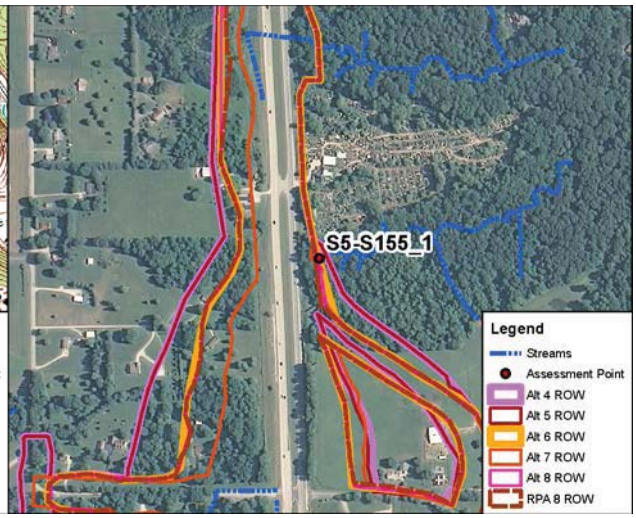
See Stream Assessment Form
S5-S152 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S155_1



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Fox Hollow	**Section:**	28
Quarter:	SE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	3.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	28	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Detritus/sand
UTME: 1775625 ft	**UTMN:** 14261037 ft		

Stream S5-S155_1 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	82	0.01	0.14
5	82	0.01	0.14
6	39	0.01	0.14
7	14	0.01	0.12
8	27	0.01	0.12
RPA 8	14	0.01	0.10

Description of Potential Impact:
Impacts to S5-S155_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of fine detritus and sand. There is a moderately-wide riparian corridor along the left bank and a wide buffer along the right bank. The adjacent floodplain consists of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S155_1 are on the second page of this form.

Stream Impacts S5-S155_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 28

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S155_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 80 LAT.: 39.26932 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/17/11 SCORER: DEW/KSS COMMENTS: (Long: -86.52225) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	9%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☑	FINE DETRITUS [3 pts]	75%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	11%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 13 (A + B)

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 3.5'/.5' **AVERAGE BANKFULL WIDTH (meters):** 1.07

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Fox Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 5%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

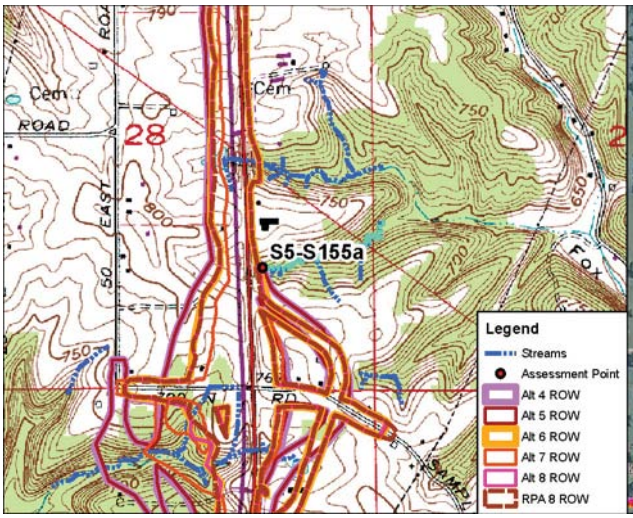
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

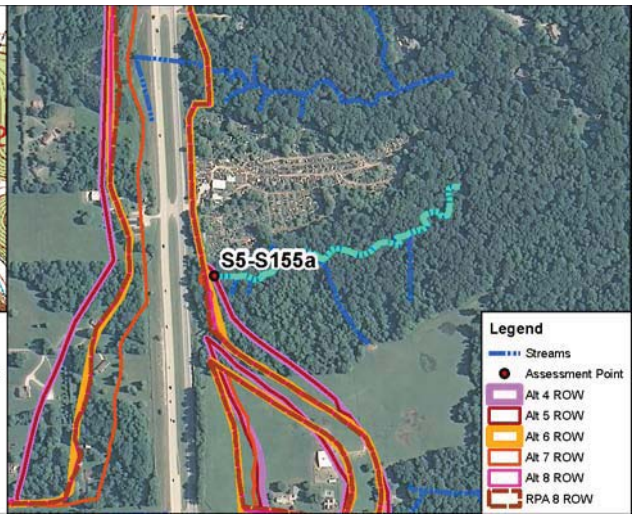
FLOW ➜ See Stream Assessment Form S5-S155_1 for site topographic map, aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S155a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Fox Hollow	**Section:**	28
Quarter:	SE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	11.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	1.0 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	86	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Boulder/gravel
UTME: 1775655 ft	**UTMN:** 14261071 ft		

Stream S5-S155a – Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	95	0.03	0.46
5	96	0.03	0.47
6	22	0.01	0.31
7	11	0.01	0.24
8	19	0.01	0.29
RPA 8	16	0.01	0.26

Description of Potential Impact:
Impacts to S5-S155a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of boulders, gravel, and sand. There is a wide riparian corridor along both banks of this stream. The adjacent floodplain consists of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S155a are on the second page of this form.

Stream Impacts S5-S155a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 86

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S155a RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.26941 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/17/11 SCORER: DEW/KSS COMMENTS: (Long: -86.52215) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☑	BOULDER (>256 mm) [16 pts]	50%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	10%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	20%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	10%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 60.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25 TOTAL NUMBER OF SUBSTRATE TYPES: 6

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☑ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ MAXIMUM POOL DEPTH (centimeters): 29

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☑ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 11.5'/1' AVERAGE BANKFULL WIDTH (meters): 3.50

HHEI Metric Points

	Max	Score
Substrate (A + B)	40	31
Pool Depth	30	30
Bankfull Width	30	25

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☑ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Fox Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 5%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

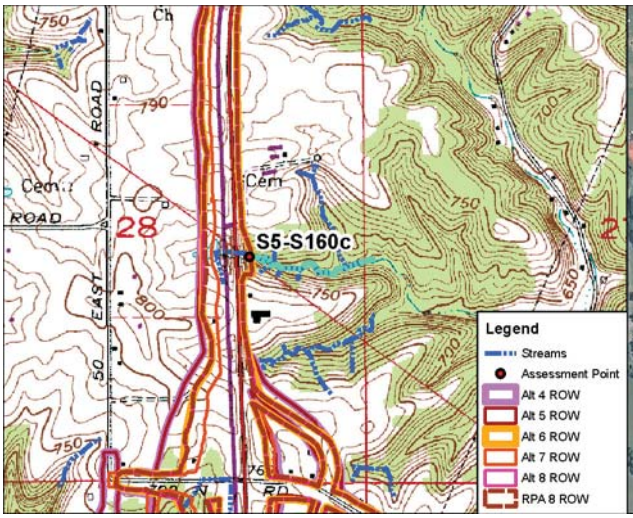
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

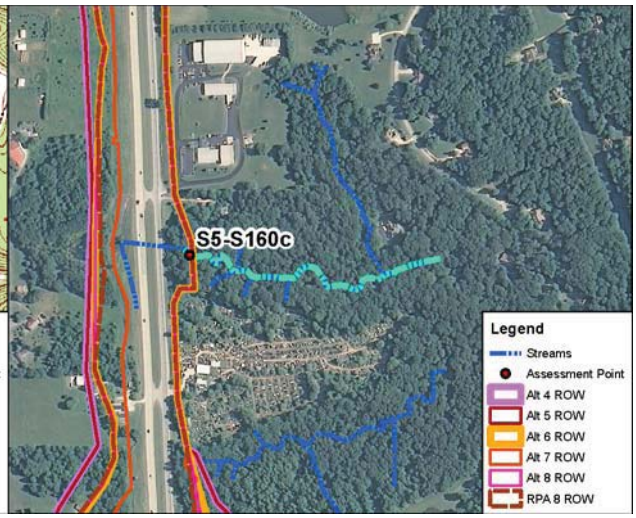
See Stream Assessment Form
S5-S155a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S160c



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Fox Hollow	**Section:**	28
Quarter:	SE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Intermittent	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	38	**Watershed Area:**	0.06 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Detritus/silt
UTME: 1775606 ft	**UTMN:** 14262140 ft		

Stream S5-S160c – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	56	0.01	0.24
5	59	0.01	0.25
6	59	0.01	0.25
7	59	0.01	0.25
8	59	0.01	0.25
RPA 8	59	0.01	0.25

Description of Potential Impact:
Impacts to S5-S160c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of fine detritus and silt. There is a wide riparian corridor associated with the left bank, while the right bank consists of a moderately-wide riparian buffer. The adjacent floodplain consists of an old field. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S160c are on the second page of this form.

Stream Impacts S5-S160c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 38

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S160c RIVER BASIN: White River DRAINAGE AREA (mi²): 0.06

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.27235 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/15/11 SCORER: DEW/KSS COMMENTS: (Long: -86.52230) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	10%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☑	FINE DETRITUS [3 pts]	90%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 2

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☑ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 15

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW = 2'/0.5' **AVERAGE BANKFULL WIDTH (meters):** 0.60

HHEI Metric Points

Substrate Max = 40	8
A + B	
Pool Depth Max = 30	25
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☑	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Fox Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 95%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

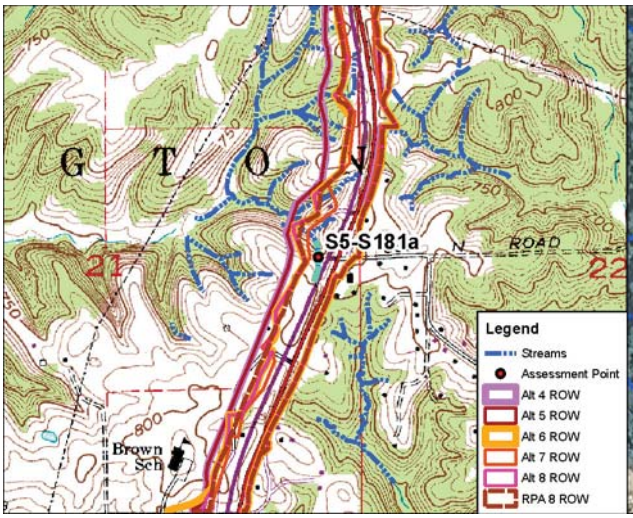
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

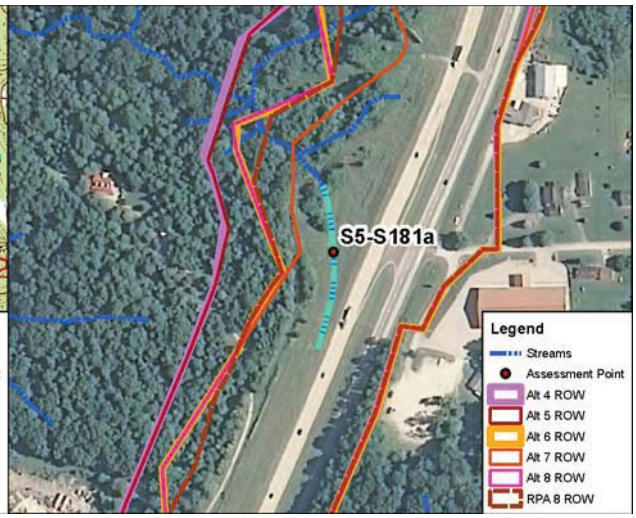
FLOW ➜ See Stream Assessment Form S5-S160c for site topographic map, aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S181a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	21
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.2 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1776319 ft	**UTMN:** 14267743 ft		

Stream S5-S181a – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	432	0.01	0.27
5	432	0.01	0.27
6	432	0.01	0.27
7	432	0.01	0.24
8	432	0.01	0.27
RPA 8	432	0.01	0.27

Description of Potential Impact:
Impacts to S5-S181a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with either bank of this artificial channel. The floodplain consists of maintained INDOT ROW along the right bank and new field along the left bank. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S181a are on the second page of this form.

Stream Impacts S5-S181a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S181a RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.28773 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/26/12 SCORER: KSS/DEW COMMENTS: (Long: -86.51967) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW 1.2'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.36

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

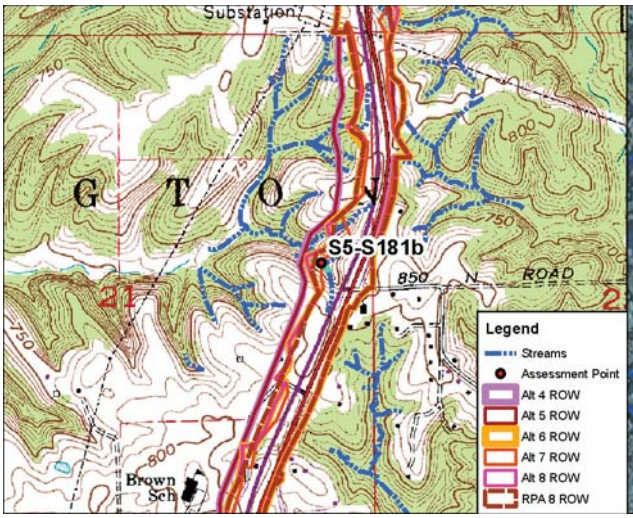
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

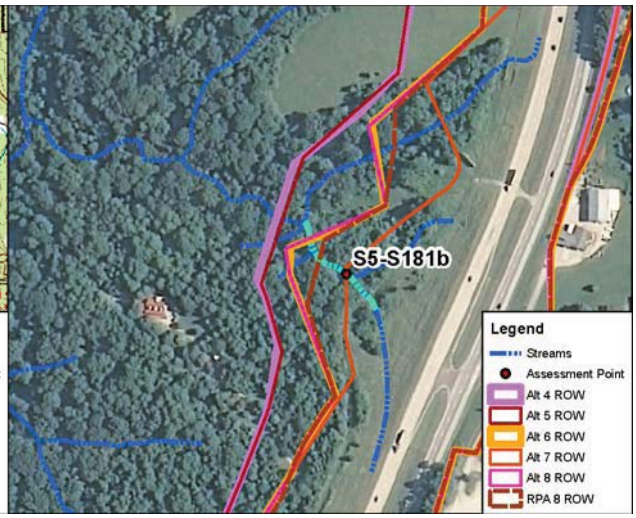
See Stream Assessment Form
S5-S181a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S181b



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	21
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	3.2 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	2.3 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	57	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1776215 ft	**UTMN:** 14268008 ft		

Stream S5-S181b – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	309	0.02	0.79
5	309	0.02	0.79
6	260	0.02	0.78
7	122	0.01	0.32
8	264	0.02	0.78
RPA 8	199	0.01	0.70

Description of Potential Impact:
Impacts to S5-S181b for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of gravel and sand. There is a wide riparian corridor along both banks of this stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S181b are on the second page of this form.

Stream Impacts S5-S181b

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 57

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S181b RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.28846 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52004) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	1%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	2%	☐	FINE DETRITUS [3 pts]	2%
☐	COBBLE (65 256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	65%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	20%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 7.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 7

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☑ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 28

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 3.2' / 2.3' **AVERAGE BANKFULL WIDTH (meters):** 0.98

HHEI Metric Points

Substrate Max = 40	22
A + B	
Pool Depth Max = 30	30
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 8 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: 30 Upstream / 31 Downstream / 32 Right Bank / 33 Left Bank

Elevated Turbidity? (Y/N): N Canopy (% open): 70%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

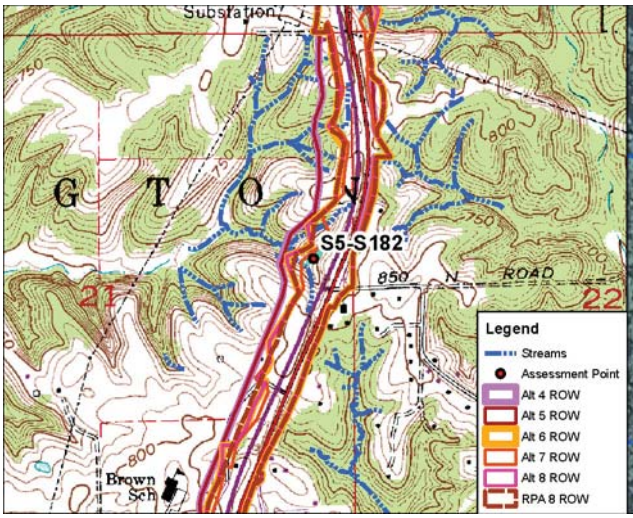
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

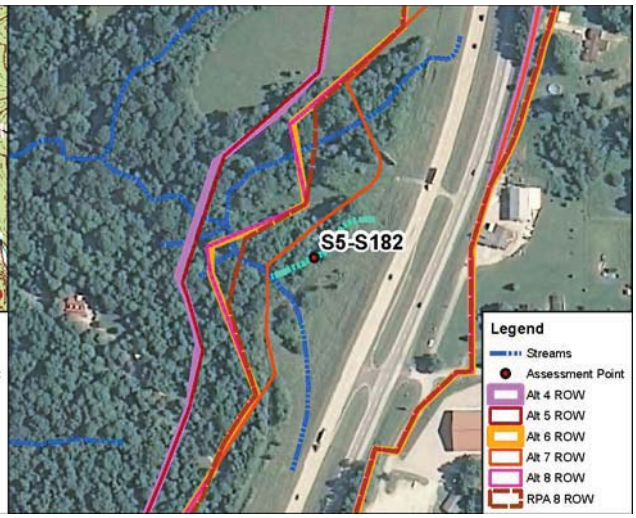
See Stream Assessment Form
S5-S181b for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S182



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	21
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
valuation Score:	52	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1776337 ft	**UTMN:** 14268046 ft		

Stream S5-S182 – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	322	0.01	0.27
5	322	0.01	0.27
6	322	0.01	0.27
7	322	0.01	0.23
8	322	0.01	0.27
RPA 8	322	0.01	0.27

Description of Potential Impact:
Impacts to S5-S182 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of gravel and sand. There is a wide riparian corridor along the right bank and a narrow riparian buffer along the left. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S182 are on the second page of this form.

Stream Impacts S5-S182

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 52

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S182 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.28856 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.51961) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE			PERCENT	TYPE			PERCENT
☐	☐	BLDR SLABS [16 pts]	0%	☐	☐	SILT [3 pt]	2%
☐	☐	BOULDER (>256 mm) [16 pts]	0%	☐	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	☐	BEDROCK [16 pt]	5%	☐	☐	FINE DETRITUS [3 pts]	3%
☐	☐	COBBLE (65 256 mm) [12 pts]	5%	☐	☐	CLAY or HARDPAN [0 pt]	0%
☑	☐	GRAVEL (2 64 mm) [9 pts]	60%	☐	☐	MUCK [0 pts]	0%
☐	☑	SAND (<2 mm) [6 pts]	20%	☐	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 7

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☑ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 20

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 2.0' / 0.4' **AVERAGE BANKFULL WIDTH (meters):** 0.80

HHEI Metric Points

	Max	Score
Substrate (A + B)	40	22
Pool Depth	30	25
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☑	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 40%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

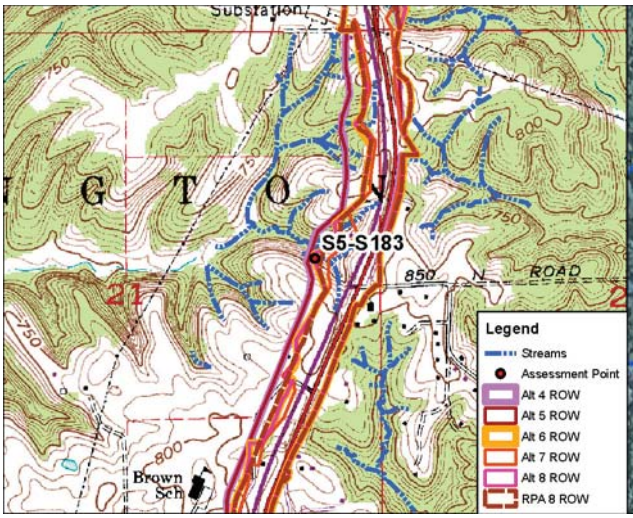
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

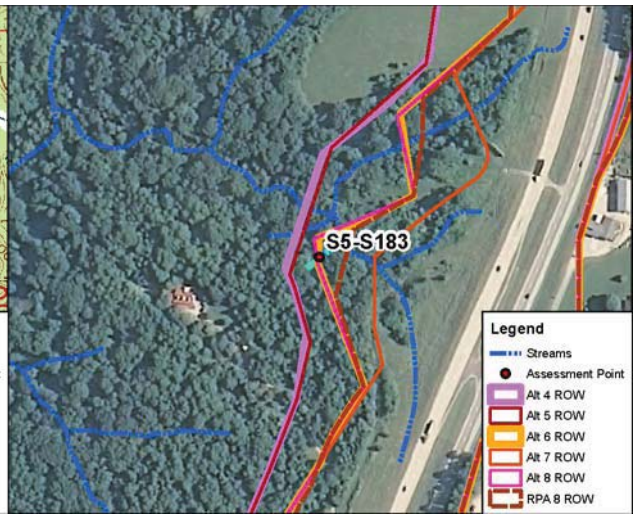
See Stream Assessment Form
S5-S182 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S183



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	21
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	0.9 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.3 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	52	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1776070 ft	**UTMN:** 14268026 ft		

Stream S5-S183 – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	116	0.01	0.19
5	116	0.01	0.18
6	80	0.01	0.02
7	0	0.00	0.00
8	83	0.01	0.02
RPA 8	0	0.00	0.01

Description of Potential Impact:
Impacts to S5-S183 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of gravel and sand. There is a wide riparian corridor along both banks of this stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S183 are on the second page of this form.

Stream Impacts S5-S183

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 52

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S183 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 100 LAT.: 39.28851 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52055) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	2%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	5%	☐	FINE DETRITUS [3 pts]	3%
☐	COBBLE (65 256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	60%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	20%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 7

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☑ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 14

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 0.9' / 0.3' **AVERAGE BANKFULL WIDTH (meters):** 0.40

HHEI Metric Points

Substrate Max = 40	22
A + B	
Pool Depth Max = 30	25
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 13 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 40%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

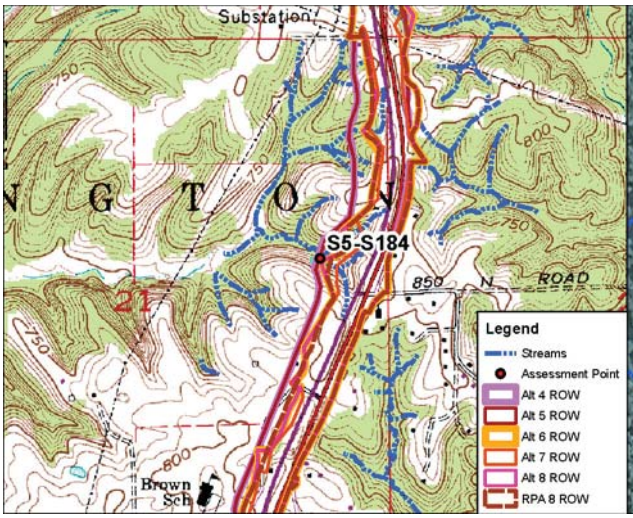
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

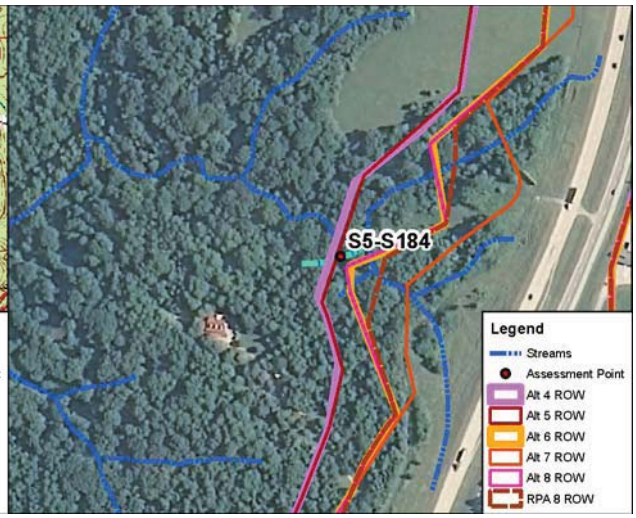
See Stream Assessment Form
S5-S183 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S184



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	21
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	0.8 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	46	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Bedrock/leaf pack
UTME: 1776042 ft	**UTMN:** 14268100 ft		

Stream S5-S184 – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	111	0.01	0.17
5	92	0.01	0.14
6	0	0.00	0.06
7	0	0.00	0.00
8	0	0.00	0.07
RPA 8	0	0.00	0.02

Description of Potential Impact:
Impacts to S5-S184 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of bedrock and leaf pack. There is a wide riparian corridor along both banks of this stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S184 are on the second page of this form.

Stream Impacts S5-S184

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 46

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S184 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 180 LAT.: 39.28871 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52065) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	1%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☑	LEAF PACK/WOODY DEBRIS [3 pts]	20%
☑ ☐	BEDROCK [16 pt]	60%	☐ ☐	FINE DETRITUS [3 pts]	2%
☐ ☐	COBBLE (65 256 mm) [12 pts]	10%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2 64 mm) [9 pts]	5%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	2%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 70.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 19 **TOTAL NUMBER OF SUBSTRATE TYPES:** 7

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☑	> 5 cm - 10 cm [15 pts]
☐	> 22.5 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 10

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS OHW - 0.8' / 0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.50

HHEI Metric Points

Substrate Max = 40	26
A + B	
Pool Depth Max = 30	15
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☐	Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 8 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 60%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

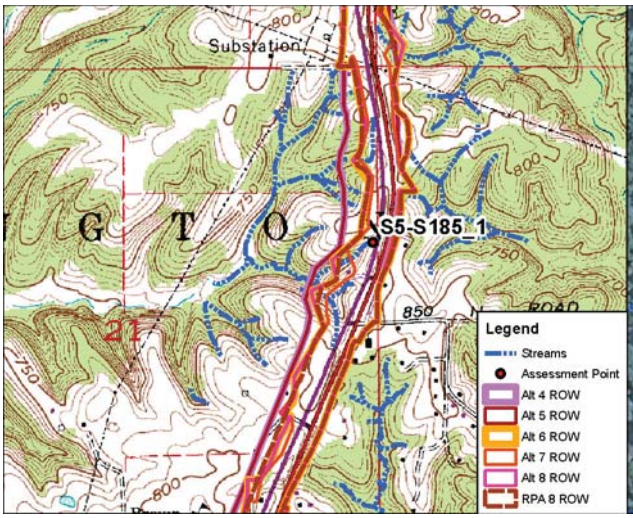
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

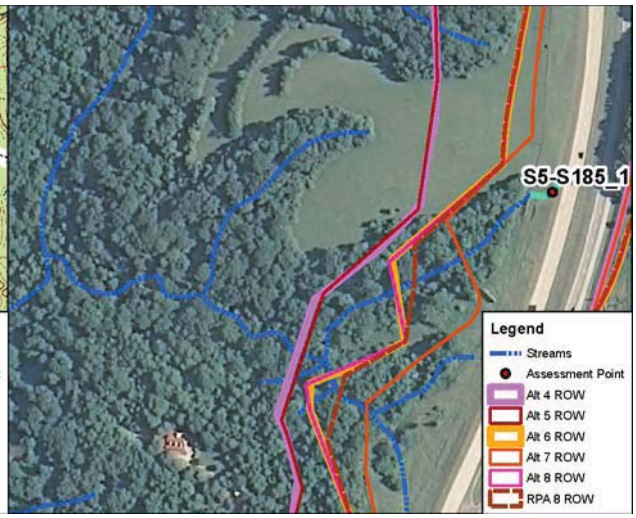
See Stream Assessment Form
S5-S184 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S185_1



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	21
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.2 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.04 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1776698 ft	**UTMN:** 14268573 ft		

Stream S5-S185_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	114	0.01	0.00
5	114	0.01	0.00
6	114	0.01	0.00
7	114	0.01	0.00
8	114	0.01	0.00
RPA 8	114	0.01	0.00

Description of Potential Impact:
Impacts to S5-S185_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S185_1 are on the second page of this form.

Stream Impacts S5-S185_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S185_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 110 LAT.: 39.29000 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/26/12 SCORER: KSS/DEW COMMENTS: (Long: -86.51832) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW 1.2'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.36

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

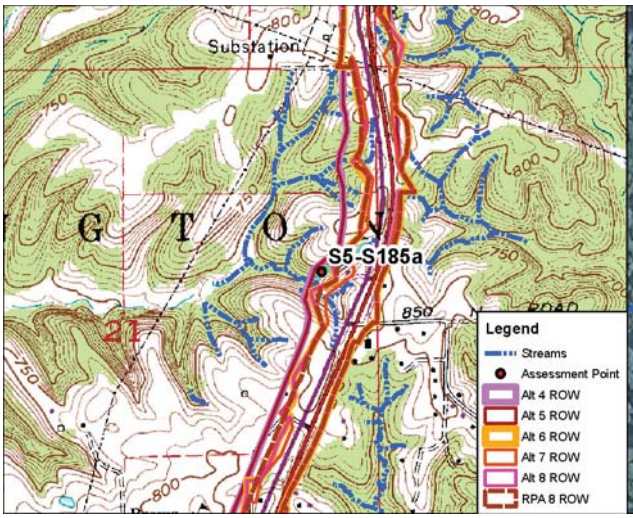
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

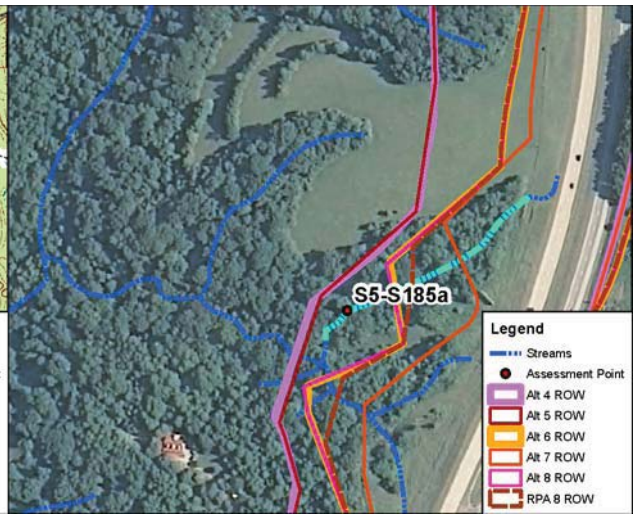
See Stream Assessment Form
S5-S185_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S185a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	21
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.8 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.1 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	57	**Watershed Area:**	0.04 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Cobble/sand
UTME: 1776170 ft	**UTMN:** 14268272 ft		

Stream S5-S185a – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	666	0.03	2.43
5	666	0.03	2.42
6	434	0.02	1.53
7	243	0.01	0.67
8	439	0.02	1.55
RPA 8	380	0.02	1.32

Description of Potential Impact:
Impacts to S5-S185a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of cobble, sand, gravel, and silt. There is a wide riparian corridor along both banks of this stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S185a are on the second page of this form.

Stream Impacts S5-S185a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 57

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S185a RIVER BASIN: White River DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.28918 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52019) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	19%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☑	COBBLE (65 256 mm) [12 pts]	40%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	19%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	22%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 40.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 18 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 6

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☑ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 1.8' / 0.1' **AVERAGE BANKFULL WIDTH (meters):** 2.10

HHEI Metric Points

	Max	Points
Substrate (A + B)	40	22
Pool Depth	30	15
Bankfull Width	30	20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 8 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 60%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

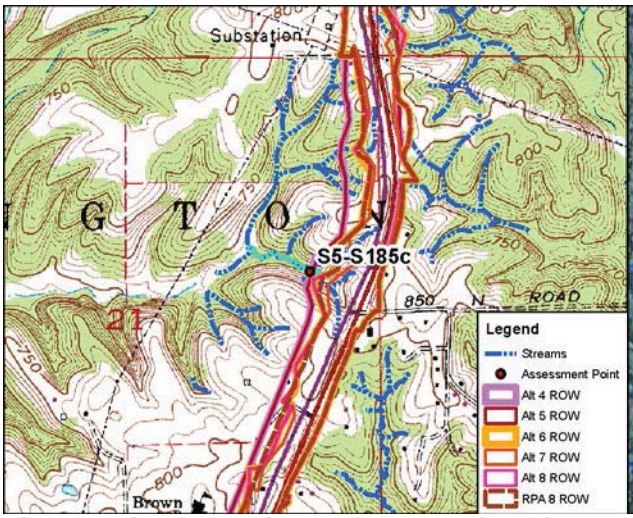
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

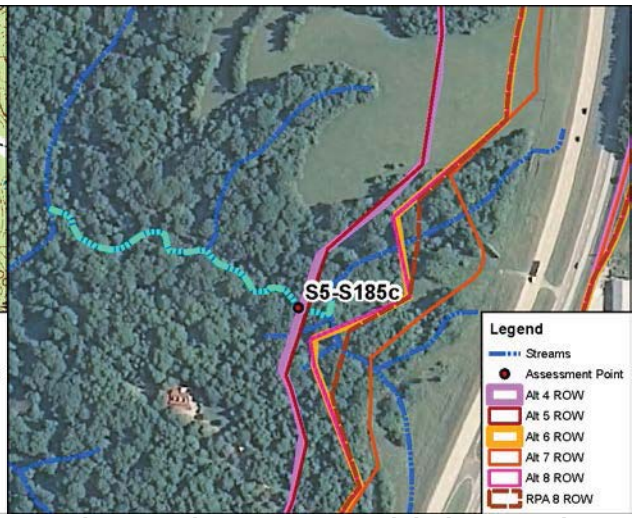
See Stream Assessment Form
S5-S185a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S185c



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	21
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.8 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.1 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	57	**Watershed Area:**	0.04 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Cobble/sand
UTME: 1776026 ft	**UTMN:** 14268157 ft		

Stream S5-S185c – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	110	0.01	0.44
5	94	0.01	0.36
6	0	0.00	0.11
7	0	0.00	0.00
8	0	0.00	0.13
RPA 8	0	0.00	0.01

Description of Potential Impact:

Impacts to S5-S185c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of cobble, sand, gravel, and silt. There is a wide riparian corridor along both banks of this stream where Alternatives 4 and 5 cross this stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S185c are on the second page of this form.

Stream Impacts S5-S185c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 57

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S185c RIVER BASIN: White River DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.28887 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.52070) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	19%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☑	COBBLE (65 256 mm) [12 pts]	40%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	19%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	22%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 40.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 18 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 6

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☑ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 1.8' / 0.1' **AVERAGE BANKFULL WIDTH (meters):** 2.10

HHEI Metric Points

	Max	Score
Substrate (A + B)	40	22
Pool Depth	30	15
Bankfull Width	30	20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 8 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 60%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

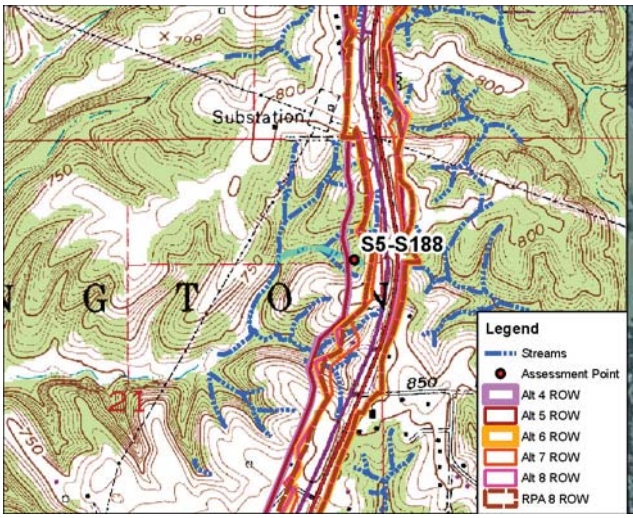
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

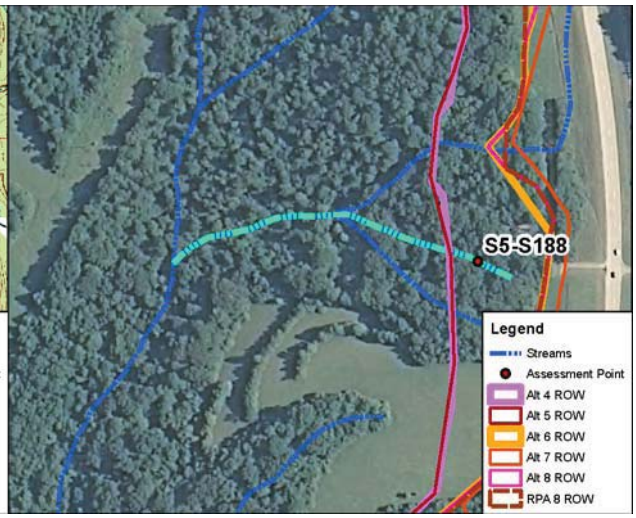
FLOW ➜ See Stream Assessment Form S5-S185c for site topographic map, aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S188



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	21
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	37	**Watershed Area:**	0.09 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/leaf pack
UTME: 1776461 ft	**UTMN:** 14269132 ft		

Stream S5-S188 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	177	0.01	1.15
5	174	0.01	1.16
6	0.00	0.00	0.01
7	0.00	0.00	0.00
8	0.00	0.00	0.01
RPA 8	0.00	0.00	0.01

Description of Potential Impact:
Impacts to S5-S188 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate is predominately gravel, leaf pack, and sand. There is a wide riparian corridor on both banks of the stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S188 are on the second page of this form.

Stream Impacts S5-S188

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 37

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S188 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.29154 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.51915) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	10%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☑	LEAF PACK/WOODY DEBRIS [3 pts]	21%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65 256 mm) [12 pts]	10%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☑ ☐	GRAVEL (2 64 mm) [9 pts]	40%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	19%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☑	> 5 cm - 10 cm [15 pts]
☐	> 22.5 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 6

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS OHW - 1.5' / 0.4' **AVERAGE BANKFULL WIDTH (meters):** 0.46

HHEI Metric Points

Substrate Max = 40	17
A + B	
Pool Depth Max = 30	15
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS 2nd growth woods + shrubs layer

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☑	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☐	Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 8 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 60%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

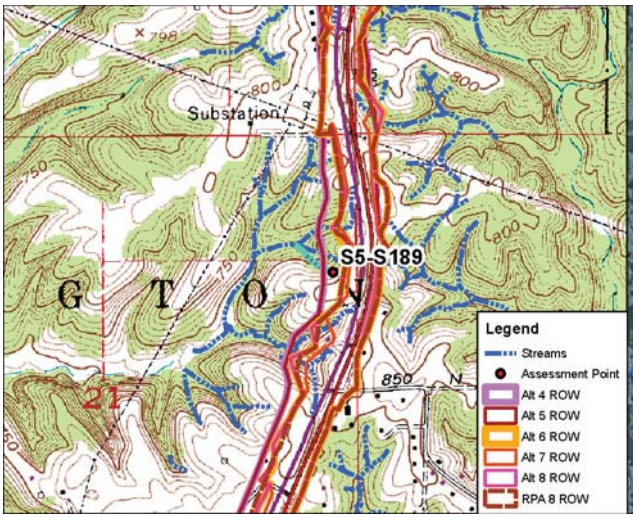
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

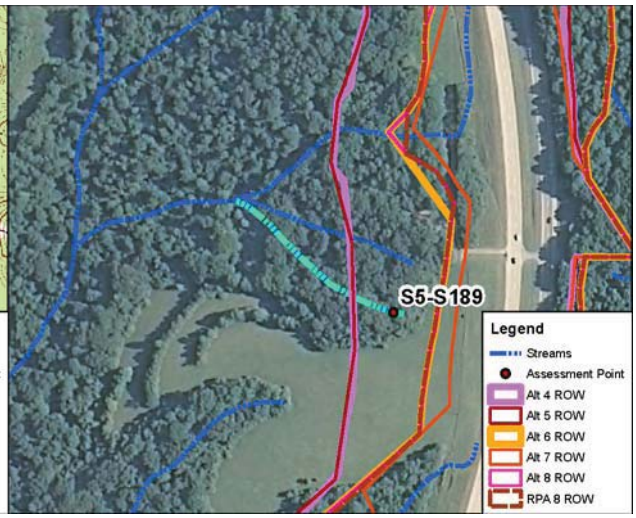
See Stream Assessment Form
S5-S188 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S189



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	21
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	29	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1776500 ft	**UTMN:** 14268962 ft		

Stream S5-S189 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	142	0.01	0.46
5	140	0.01	0.46
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S189 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate is predominately sand, gravel, and silt. There is a wide riparian corridor on both banks of the stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S189 are on the second page of this form.

Stream Impacts S5-S189

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S189 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.29107 LONG.: RIVER CODE: RIVER MILE:

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.51901) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	19%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	19%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	22%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	40%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 19.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15

TOTAL NUMBER OF SUBSTRATE TYPES: 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (centimeters): 2

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 1.5' / 0.4' AVERAGE BANKFULL WIDTH (meters): 0.70

HHEI Metric Points

Substrate Max = 40	19
A + B	
Pool Depth Max = 30	5
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: 2nd growth woods + shrubs layer

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 8 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 50%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

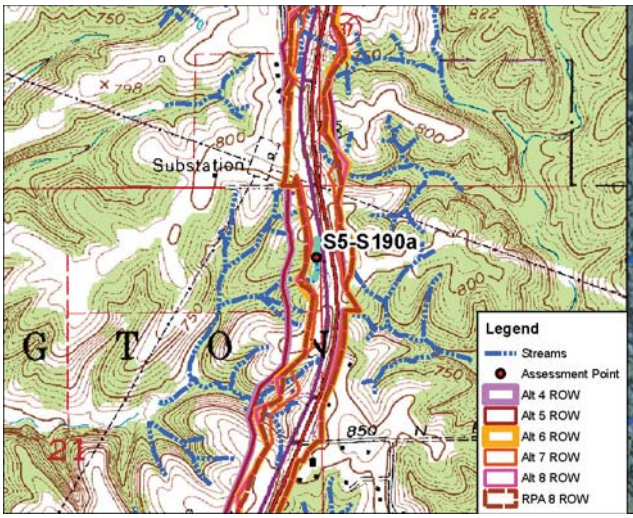
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

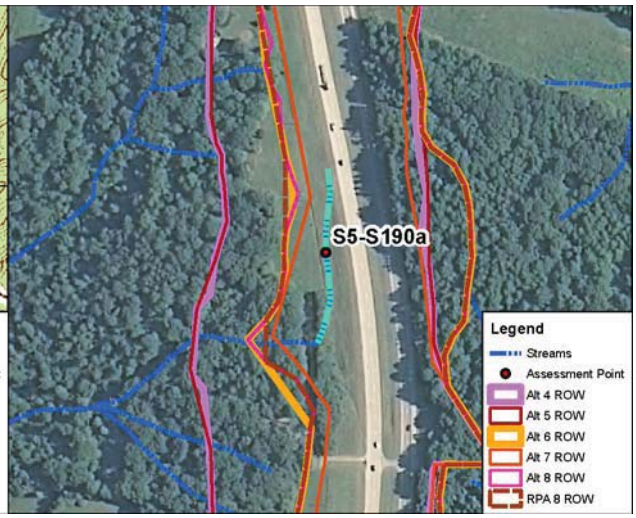
FLOW ➜ See Stream Assessment Form S5-S189 for site topographic map, aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S190a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	21
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.2 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1776690 ft	**UTMN:** 14269657 ft		

Stream S5-S190a – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	459	0.01	0.37
5	459	0.01	0.37
6	459	0.01	0.37
7	459	0.01	0.33
8	459	0.01	0.37
RPA 8	459	0.01	0.37

Description of Potential Impact:
Impacts to S5-S190a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S190a are on the second page of this form.

Stream Impacts S5-S190a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S190a RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.29298 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/26/12 SCORER: KSS/DEW COMMENTS: (Long: -86.51833) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	0%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65 256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2 64 mm) [9 pts]	0%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	0%	☑ ☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ MAXIMUM POOL DEPTH (centimeters): 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW 1.2'/0.2' AVERAGE BANKFULL WIDTH (meters): 0.36

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

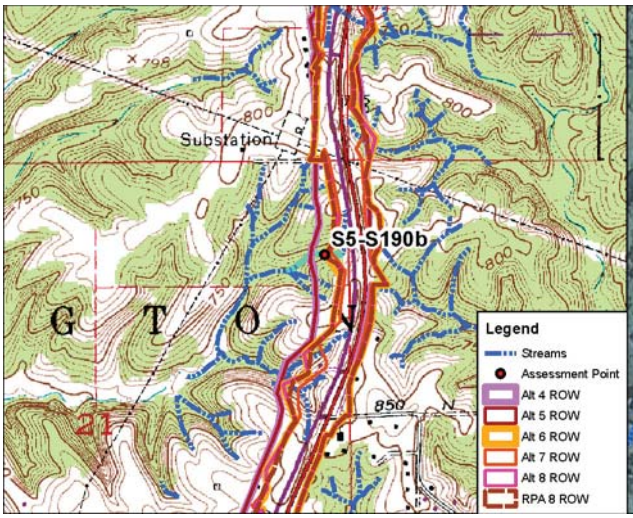
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

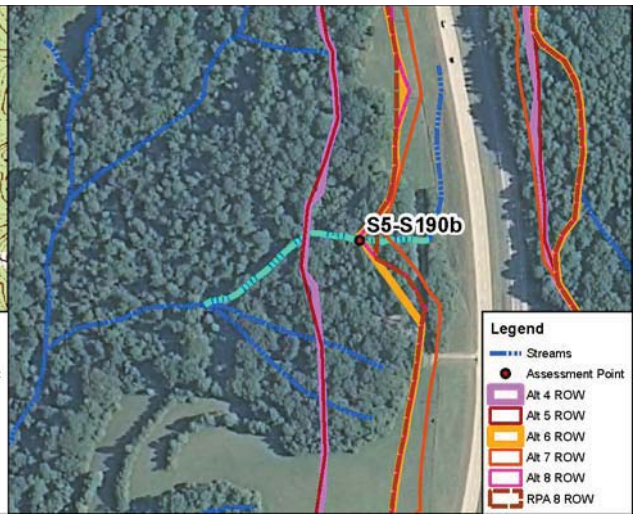
See Stream Assessment Form
S5-S190a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S190b



Site Location on Modesto USGS Quadrangle



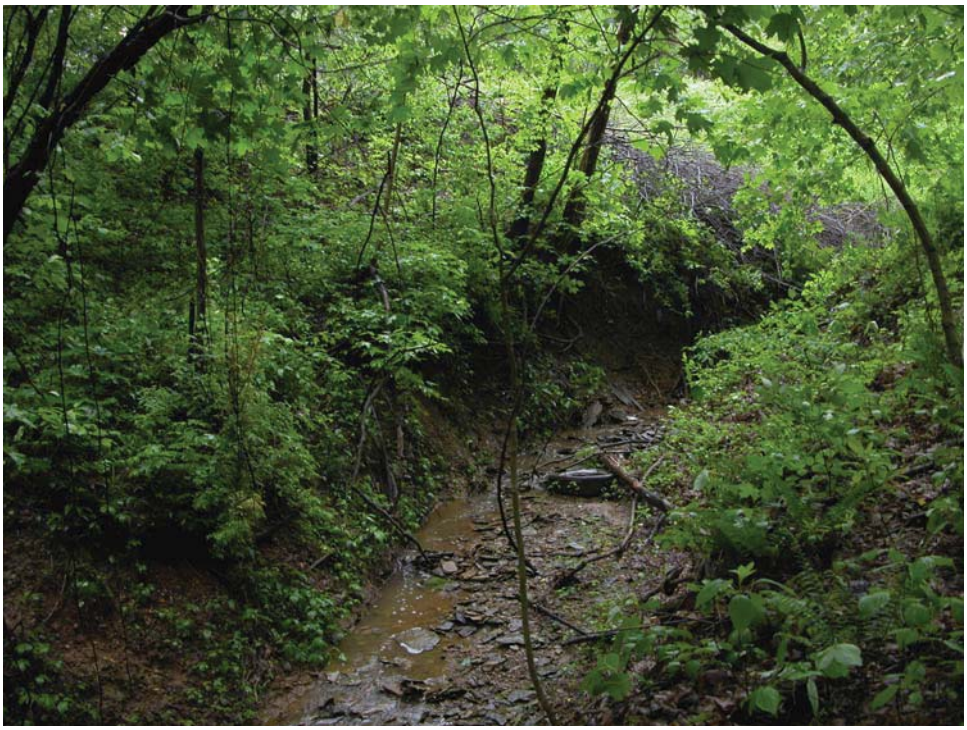
Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	21
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	6.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	1.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	77	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Boulders/boulder slabs
UTME: 1776489 ft	**UTMN:** 14269420 ft		

Stream S5-S190b – Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	327	0.05	1.46
5	331	0.05	1.48
6	175	0.02	0.63
7	102	0.01	0.35
8	176	0.02	0.59
RPA 8	135	0.02	0.52

Description of Potential Impact:
Impacts to S5-S190b for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate consists of boulders, boulder slabs, and sand. There is a wide riparian corridor on both banks of the stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S190b are on the second page of this form.

Stream Impacts S5-S190b



Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 77

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S190b | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.29233 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 10/17/11 | SCORER: DEW/KSS | COMMENTS: (Long: -86.51904) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE			PERCENT	TYPE			PERCENT
☑	☐	BLDR SLABS [16 pts]	26%	☐	☐	SILT [3 pt]	5%
☐	☑	BOULDER (>256 mm) [16 pts]	35%	☐	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	☐	BEDROCK [16 pt]	0%	☐	☐	FINE DETRITUS [3 pts]	0%
☐	☐	COBBLE (65 256 mm) [12 pts]	0%	☐	☐	CLAY or HARDPAN [0 pt]	0%
☐	☐	GRAVEL (2 64 mm) [9 pts]	10%	☐	☐	MUCK [0 pts]	0%
☐	☐	SAND (<2 mm) [6 pts]	24%	☐	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 61.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 32 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

HHEI Metric Points

Substrate Max = 40: 37

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☑ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS | **MAXIMUM POOL DEPTH (centimeters):** 35

Pool Depth Max = 30: 20

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☑ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW = 6'/1.2' | **AVERAGE BANKFULL WIDTH (meters):** 1.83

Bankfull Width Max=30: 20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☑ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 5%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

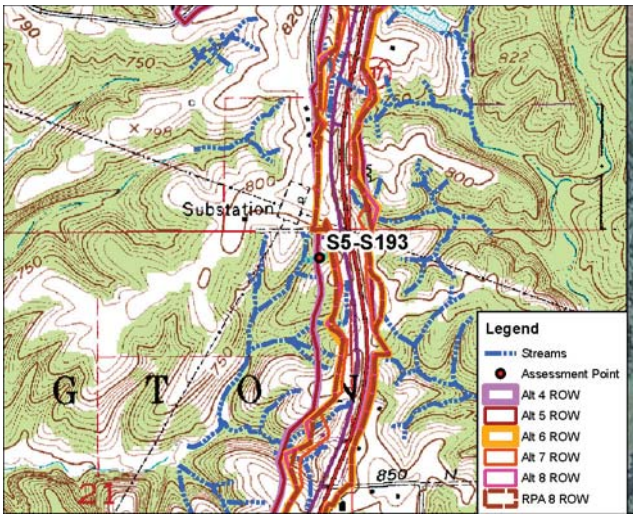
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

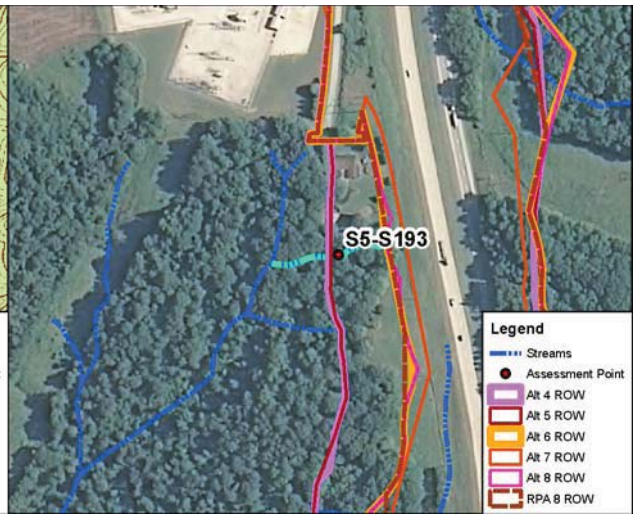
FLOW ➜ See Stream Assessment Form S5-S190b for site topographic map, aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S193



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib Beanblossom Ck	**Section:**	21
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.8 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	48	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/silt
UTME: 1776412 ft	**UTMN:** 14270108 ft		

Stream S5-S193 – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	145	0.01	0.70
5	140	0.01	0.68
6	0	0.00	0.05
7	0	0.00	0.00
8	0	0.00	0.04
RPA 8	0	0.00	0.03

Description of Potential Impact:
Impacts to S5-S193 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate is predominately sand, silt, and fine detritus. There is a wide riparian corridor on the left bank and a narrow riparian buffer along the right bank where Alternatives 4 and 5 cross this stream. The adjacent floodplain consists of immature forest on the left and residential on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S193 are on the second page of this form.

Stream Impacts S5-S193

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 48

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S193 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.29422 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/17/11 SCORER: DEW/KSS COMMENTS: (Long: -86.51930) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	34%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	25%
☐	COBBLE (65 256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	36%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☑ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 25

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW = 2.5'/0.8' **AVERAGE BANKFULL WIDTH (meters):** 0.80

HHEI Metric Points

	Max	Score
Substrate (A + B)	40	13
Pool Depth	30	30
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☑	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☑ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Beanblossom Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

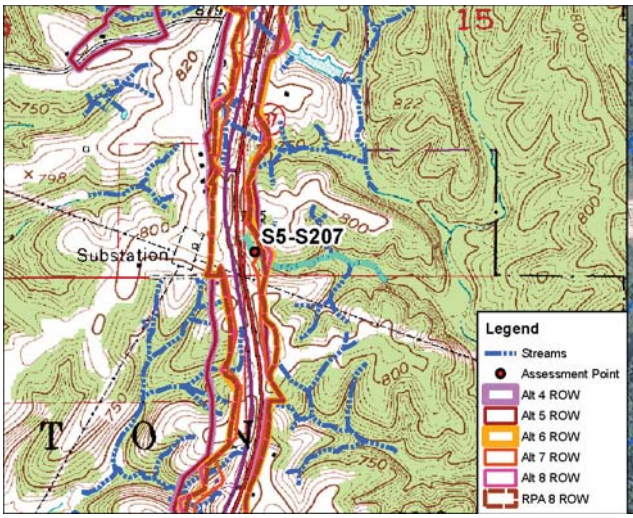
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

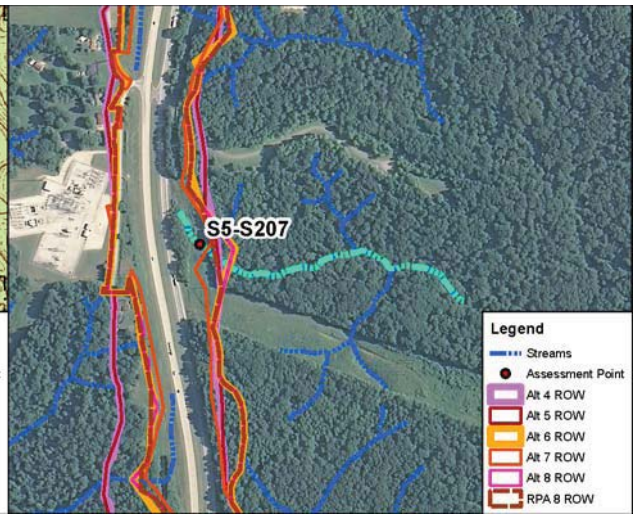
See Stream Assessment Form
S5-S193 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S207



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Payne Hollow	**Section:**	15
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	5.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.9 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	33	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/silt
UTME: 1776838 ft	**UTMN:** 14270651 ft		

Stream S5-S207 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	326	0.04	0.58
5	315	0.04	0.55
6	400	0.05	0.89
7	251	0.03	0.44
8	399	0.05	0.87
RPA 8	302	0.03	0.50

Description of Potential Impact:
Impacts to S5-S207 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of sand, silt, and gravel. There is a wide riparian corridor associated with this stream along both banks. The adjacent floodplain consists of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S207 are on the second page of this form.

Stream Impacts S5-S207

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 33

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S207 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.29571 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/17/11 SCORER: DEW/KSS COMMENTS: (Long: -86.51779) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	20%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	15%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	60%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 13

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☑ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 5'/0.9' **AVERAGE BANKFULL WIDTH (meters):** 1.52

Bankfull Width Max=30: 20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: Power Lines

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☑ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Payne Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

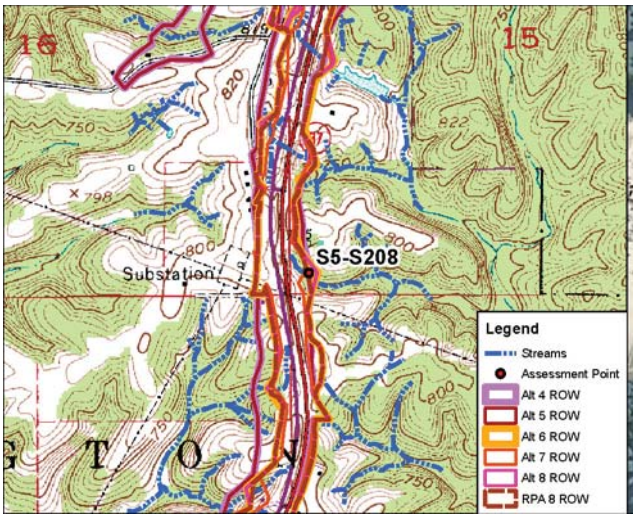
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

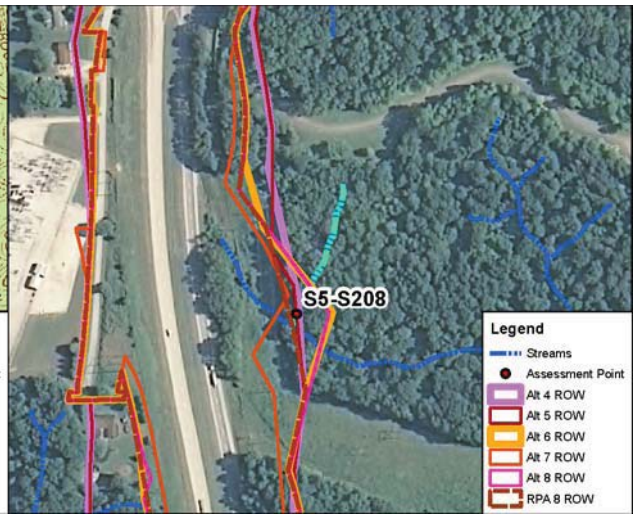
See Stream Assessment Form
S5-S207 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S208



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Payne Hollow	**Section:**	15
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	3.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.3 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	21	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/silt
UTME: 1776929 ft	**UTMN:** 14270626 ft		

Stream S5-S208 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	41	0.01	0.01
5	25	0.01	0.00
6	109	0.01	0.04
7	0	0.00	0.00
8	106	0.01	0.04
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S208 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of gravel, silt, and sand. There is a wide riparian corridor associated with this stream along both banks. The adjacent floodplain consists of mature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S208 are on the second page of this form.

Stream Impacts S5-S208

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 21

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S208 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.29564 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/17/11 SCORER: DEW/KSS COMMENTS: (Long: -86.51747) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	30%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	40%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	20%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 16

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 3'/0.3' **AVERAGE BANKFULL WIDTH (meters):** 1.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☑ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Payne Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

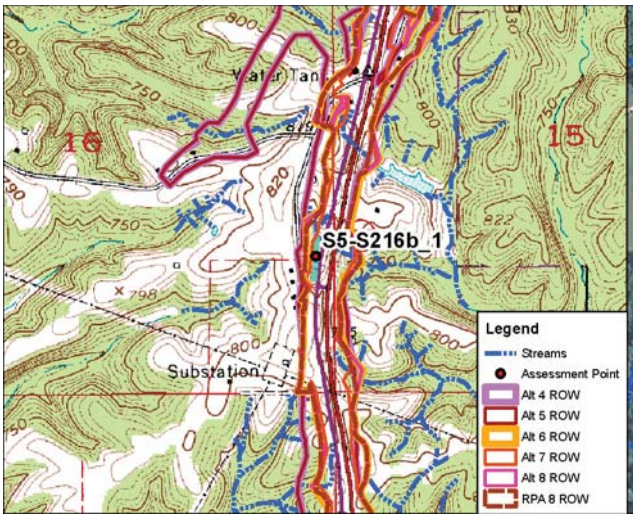
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

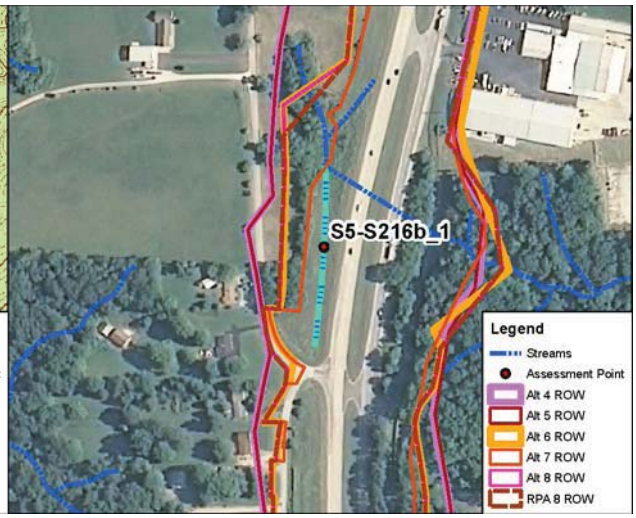
See Stream Assessment Form
S5-S208 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S216b_1



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Payne Hollow	**Section:**	16
Quarter:	SE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.2 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1776531 ft	**UTMN:** 14271815 ft		

Stream S5-S216b_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	472	0.01	0.33
5	472	0.01	0.33
6	472	0.01	0.33
7	465	0.01	0.16
8	472	0.01	0.33
RPA 8	472	0.01	0.33

Description of Potential Impact:
Impacts to S5-S216b_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located in between SR 37 and North Crossover Road. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW along both sides of this artificial channel. No photographs are available at this time.

Stream Impacts S5-S216b_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S216b_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.29891 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/26/12 SCORER: KSS/DEW COMMENTS: (Long: -86.51885) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (centimeters): 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW 1.2'/0.2' AVERAGE BANKFULL WIDTH (meters): 0.36

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Payne Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

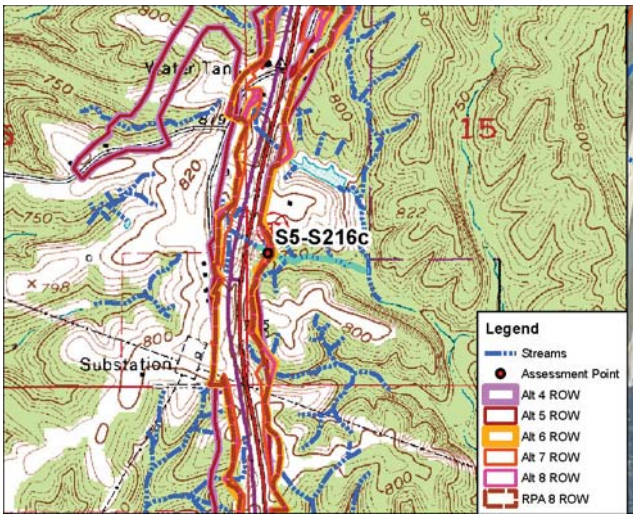
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

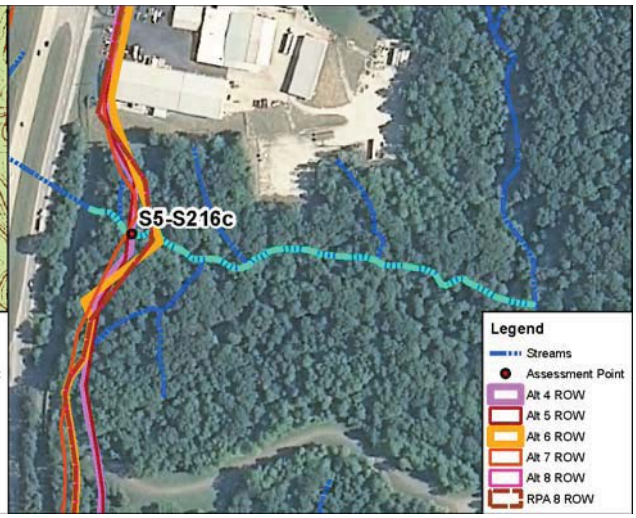
See Stream Assessment Form
S5-S216b_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S216c



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Payne Hollow	**Section:**	15
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	6.1 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	1.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	76	**Watershed Area:**	0.03 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Bedrock/gravel
UTME: 1776941 ft	**UTMN:** 14271774 ft		

Stream S5-S216c – Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	138	0.02	0.59
5	130	0.02	0.57
6	206	0.03	0.81
7	125	0.02	0.53
8	193	0.03	0.81
RPA 8	193	0.03	0.80

Description of Potential Impact:
Impacts to S5-S216c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate is predominately bedrock and gravel. There is a wide riparian corridor associated with both banks of this stream, downslope of the utility line ROW. The adjacent floodplain consists primarily of mature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S216c are on the second page of this form.

Stream Impacts S5-S216c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 76

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: SS-S216c RIVER BASIN: White River DRAINAGE AREA (mi²): 0.03

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.29879 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/11/06 SCORER: A Rogers COMMENTS: (Long: -86.51740) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	3%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☑	BEDROCK [16 pt]	60%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	10%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	20%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	2%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 70.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25 **TOTAL NUMBER OF SUBSTRATE TYPES:** 6

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☑ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 21

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☑ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 6.1' / 1.5' **AVERAGE BANKFULL WIDTH (meters):** 2.50

HHEI Metric Points

	Max	Score
Substrate (A + B)	40	31
Pool Depth	30	25
Bankfull Width	30	20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Payne Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 8 NRCS Soil Map Stream Order 1

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/11/06 Quantity: 0.60

Photograph Information: 17 Upstream / 18 Downstream / 19 Right Bank / 20 Left Bank

Elevated Turbidity? (Y/N): N Canopy (% open): 40%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

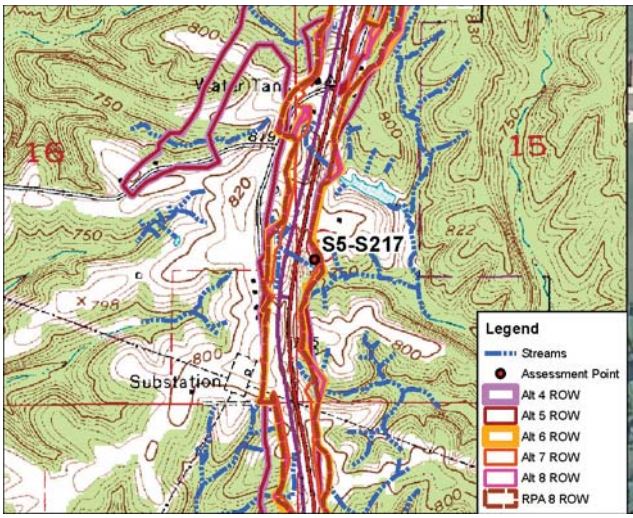
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

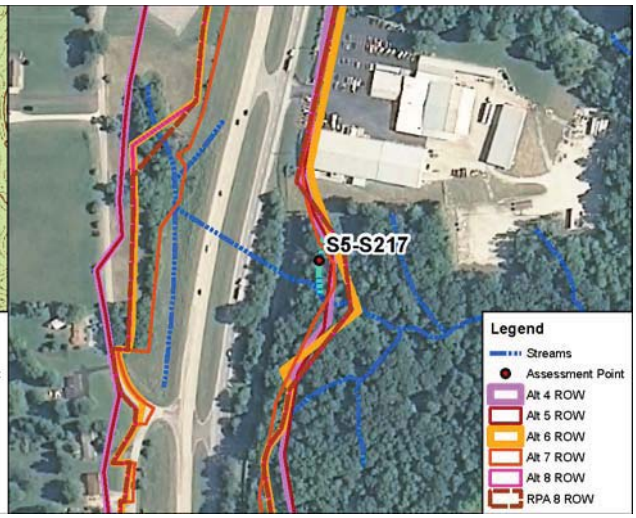
See Stream Assessment Form
S5-S216c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S217



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Payne Hollow	**Section:**	15
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.6 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	70	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Bedrock/gravel
UTME: 1776911 ft	**UTMN:** 14271885 ft		

Stream S5-S217 – Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	159	0.01	0.12
5	164	0.01	0.13
6	179	0.01	0.17
7	126	0.01	0.08
8	179	0.01	0.19
RPA 8	179	0.01	0.19

Description of Potential Impact:
Impacts to S5-S217 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of bedrock and gravel. There is a wide riparian corridor associated with this stream along both banks. The adjacent floodplain consists of mature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S217 are on the second page of this form.

Stream Impacts S5-S217

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 70

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S217 RIVER BASIN: White River DRAINAGE AREA (mi^2): 0.01

LENGTH OF STREAM REACH (ft): 175 LAT.: 39.29910 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/10/06 SCORER: A Rogers COMMENTS: (Long: -86.51750) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE			PERCENT	TYPE			PERCENT
☐	☐	BLDR SLABS [16 pts]	0%	☐	☐	SILT [3 pt]	0%
☐	☐	BOULDER (>256 mm) [16 pts]	0%	☐	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☑	☐	BEDROCK [16 pt]	50%	☐	☐	FINE DETRITUS [3 pts]	0%
☐	☐	COBBLE (65 256 mm) [12 pts]	5%	☐	☐	CLAY or HARDPAN [0 pt]	0%
☐	☑	GRAVEL (2 64 mm) [9 pts]	35%	☐	☐	MUCK [0 pts]	0%
☐	☐	SAND (<2 mm) [6 pts]	5%	☐	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 55.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☑ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 13

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 2.6' / 0.4' **AVERAGE BANKFULL WIDTH (meters):** 1.40

HHEI Metric Points

Substrate Max = 40	30	A + B
Pool Depth Max = 30	25	
Bankfull Width Max=30	15	

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☑ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Payne Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 3 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/10/06 Quantity: 0.89

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 70%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

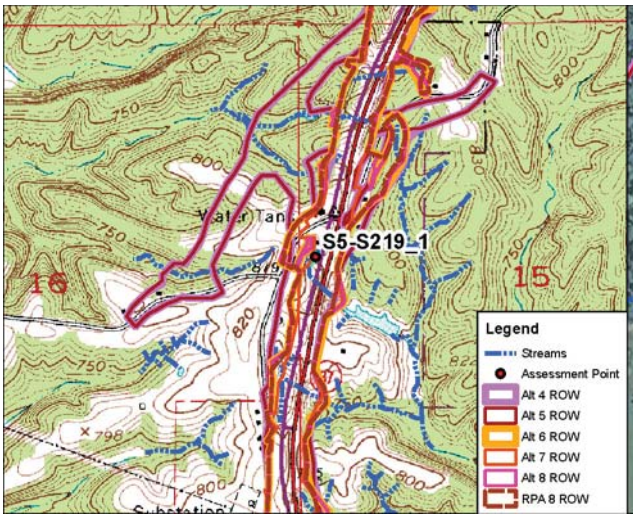
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

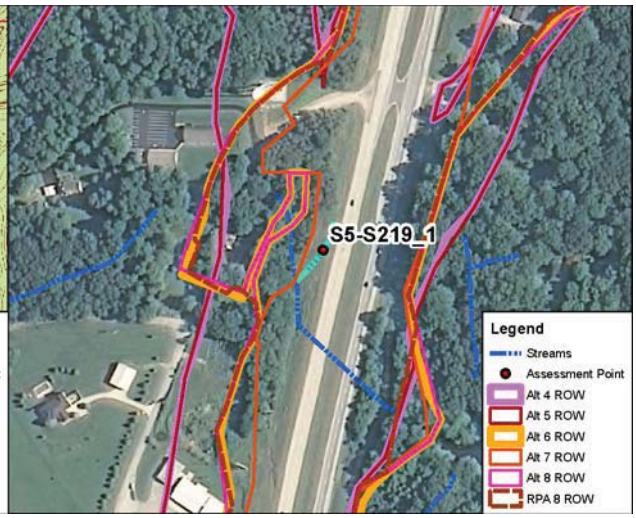
See Stream Assessment Form
S5-S217 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S219_1



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Payne Hollow	**Section:**	15
Quarter:	NW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.2 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1776883 ft	**UTMN:** 14273271 ft		

Stream S5-S219_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	186	0.01	0.05
5	186	0.01	0.05
6	186	0.01	0.05
7	186	0.01	0.05
8	186	0.01	0.05
RPA 8	186	0.01	0.05

Description of Potential Impact:
Impacts to S5-S219_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with either bank of this artificial channel. The floodplain consists of maintained INDOT ROW . Photographs taken upstream and downstream in the area where these Alternatives cross S5-S219_1 are on the second page of this form.

Stream Impacts S5-S219_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S219_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 185 LAT.: 39.30290 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/26/12 SCORER: KSS/DEW COMMENTS: (Long: -86.51758) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW 1.2'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.36

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Payne Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

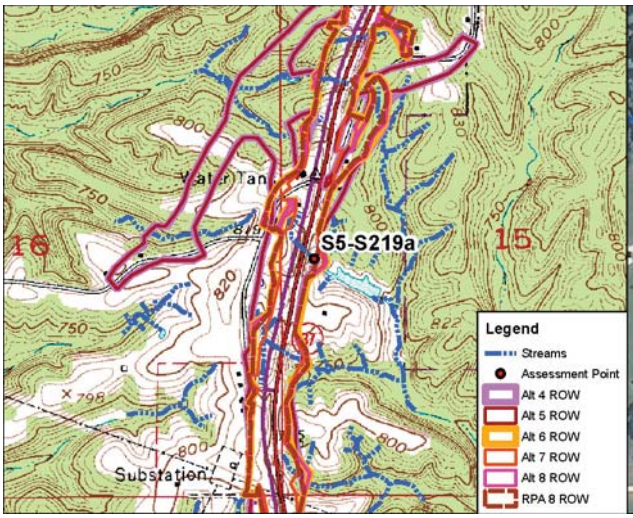
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

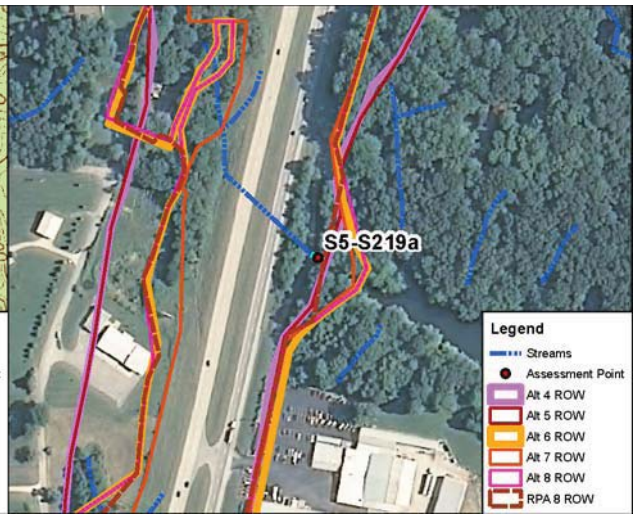
See Stream Assessment Form
S5-S219_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S219a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Payne Hollow	**Section:**	15
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	3.1 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.8 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	57	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/cobble
UTME: 1777061 ft	**UTMN:** 14272858 ft		

Stream S5-S219a – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	39	0.01	0.08
5	39	0.01	0.07
6	39	0.01	0.34
7	39	0.01	0.29
8	39	0.01	0.34
RPA 8	39	0.01	0.06

Description of Potential Impact:
Impacts to S5-S219a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of gravel and cobble. There is a narrow riparian corridor associated with this stream along both banks. The adjacent floodplain consists of old fields within the irregularly maintained utility line ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S219a are on the second page of this form.

Stream Impacts S5-S219a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 57

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S219a RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 35 LAT.: 39.30177 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/10/06 SCORER: A Rogers COMMENTS: (Long: -86.51696) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	15%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	5%
☑	COBBLE (65 256 mm) [12 pts]	20%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	35%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	10%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 20.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21 **TOTAL NUMBER OF SUBSTRATE TYPES:** 6

HHEI Metric Points

Substrate Max = 40: 27

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 8

Pool Depth Max = 30: 15

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 3.1' / 0.8' **AVERAGE BANKFULL WIDTH (meters):** 1.10

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☑	☑	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Payne Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 8 NRCS Soil Map Stream Order 1

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/10/06 Quantity: 0.89

Photograph Information: 209 Upstream / 210 Downstream / 211 Right Bank / 212 Left Bank

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

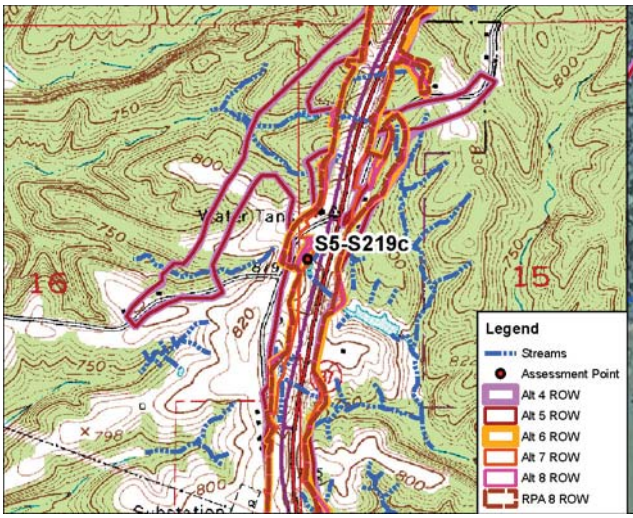
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

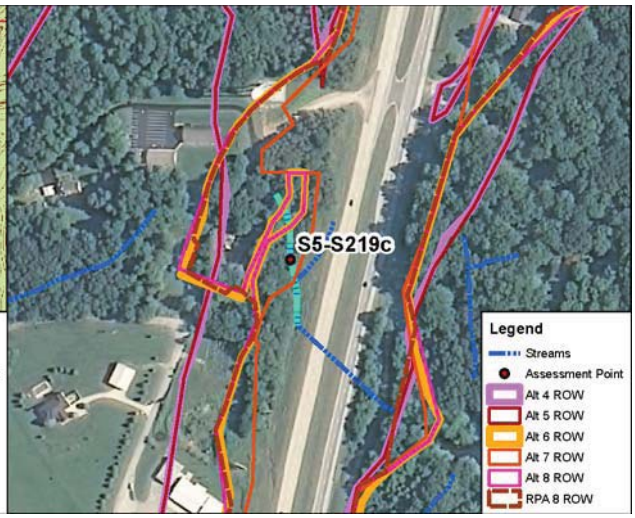
See Stream Assessment Form
S5-S219a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S219c



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Payne Hollow	**Section:**	15
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	3.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	29	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Detritus/leaf pack
UTME: 1776802 ft	**UTMN:** 14273246 ft		

Stream S5-S219c – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	350	0.03	1.12
5	350	0.03	1.12
6	294	0.02	0.97
7	120	0.01	0.37
8	294	0.02	0.97
RPA 8	350	0.03	1.12

Description of Potential Impact:
Impacts to S5-S219c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of detritus and leaf pack. There is a moderately-wide riparian corridor associated with this stream along both banks. The adjacent floodplain consists of an old field and immature forest land. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S219c are on the second page of this form.

Stream Impacts S5-S219c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S219c RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.30284 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/24/12 SCORER: KSS COMMENTS: (Long: -86.51786) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	0%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☑	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐ ☐	BEDROCK [16 pt]	0%	☑ ☐	FINE DETRITUS [3 pts]	75%
☐ ☐	COBBLE (65 256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2 64 mm) [9 pts]	0%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	10%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40: 9

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 5

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 3.5'/0.5' **AVERAGE BANKFULL WIDTH (meters):** 1.07

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Payne Hollow Distance from Evaluated Stream 0.57

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/19/12 Quantity: 0.20

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 90%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

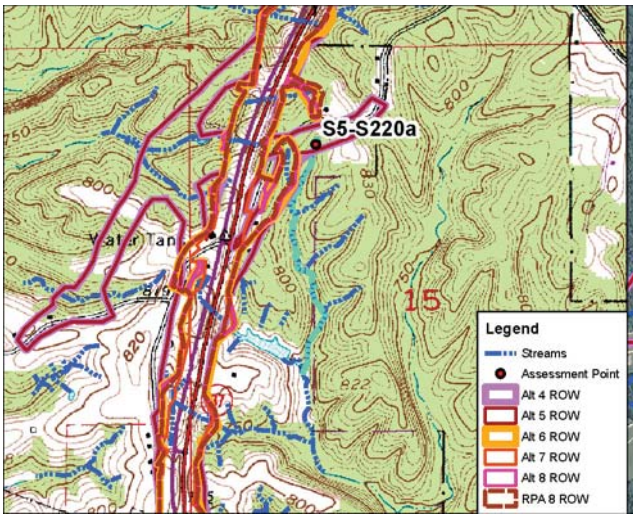
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

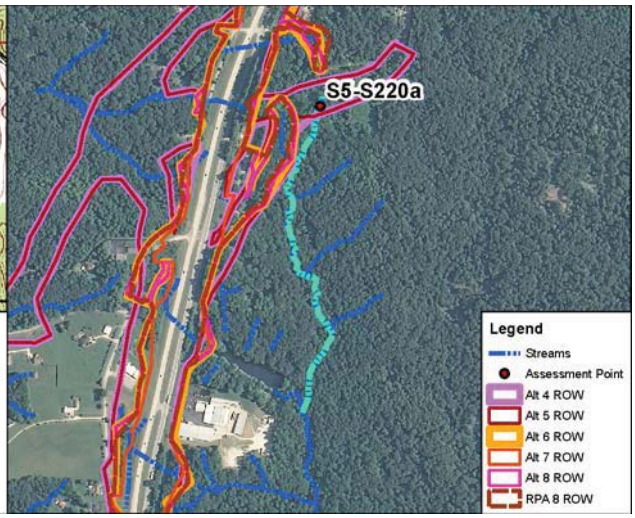
See Stream Assessment Form
S5-S219c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S220a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Payne Hollow	**Section:**	15
Quarter:	NW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.2 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	29	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1778019 ft	**UTMN:** 14274685 ft		

Stream S5-S220a – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	163	0.01	1.54
5	162	0.01	1.49
6	0	0.00	0.26
7	0	0.00	0.00
8	0	0.00	0.18
RPA 8	0	0.00	0.03

Description of Potential Impact:
Impacts to S5-S220a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of gravel and sand in the headwaters of this stream, where Alternatives 4 and 5 cross this stream. There is a wide riparian corridor associated with this stream along both banks. The adjacent floodplain consists of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S220a are on the second page of this form.

Stream Impacts S5-S220a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S220a RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.30677 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/10/06 SCORER: A Rogers COMMENTS: (Long: -86.51353) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	20%
☐	BEDROCK [16 pt]	10%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	40%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	30%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 19 (A + B)

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 2

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 1.2' / 0.5' **AVERAGE BANKFULL WIDTH (meters):** 1.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☑ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Payne Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 8 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/10/06 Quantity: 0.89

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 15%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

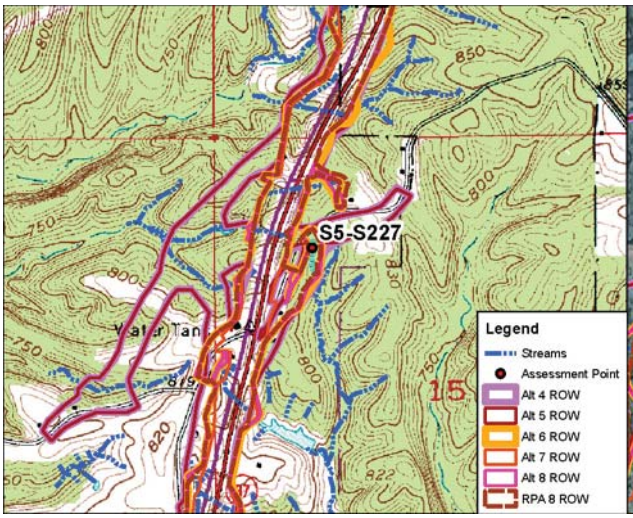
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

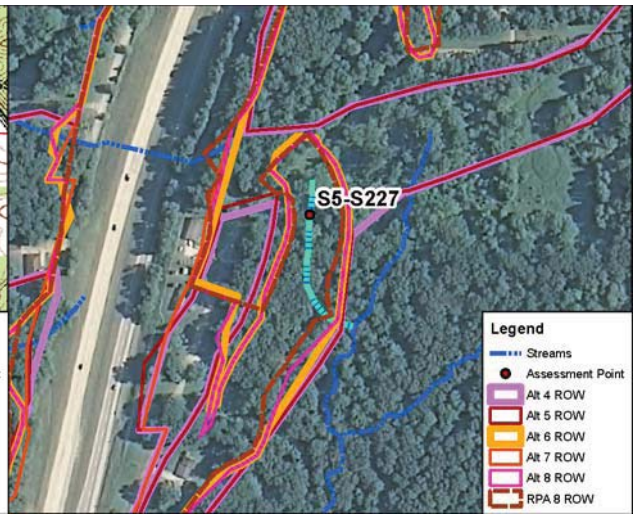
FLOW ➜ See Stream Assessment Form S5-S220a for site topographic map, aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S227



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Payne Hollow	**Section:**	15
Quarter:	NW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	3.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	17	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/silt
UTME: 1777725 ft	**UTMN:** 14274549 ft		

Stream S5-S227 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	413	0.03	1.90
5	416	0.03	1.89
6	401	0.03	1.62
7	0	0.00	0.00
8	399	0.03	1.62
RPA 8	375	0.03	1.42

Description of Potential Impact:
Impacts to S5-S227 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate consists of sand and silt. There is a wide riparian corridor where the Alternatives cross this creek. The floodplain consists primarily of immature forest on both banks of the stream. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S227 are on the second page of this form.

Stream Impacts S5-S227

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 17

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S227 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.30640 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/18/11 SCORER: DEW/KSS COMMENTS: (Long: -86.51458) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	30%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	10%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	60%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40: 12

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 3'/0.5' **AVERAGE BANKFULL WIDTH (meters):** 0.90

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: Power Lines

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Payne Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 25%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

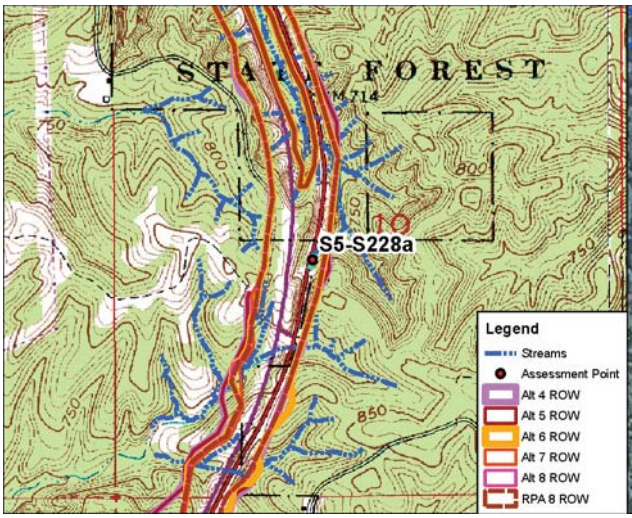
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

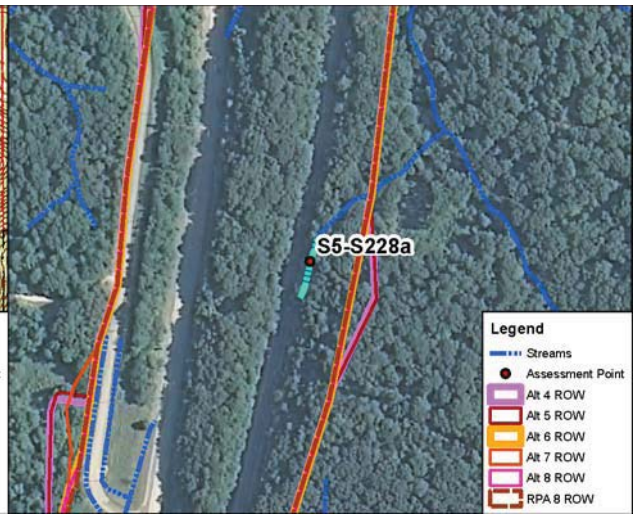
FLOW ➜ See Stream Assessment Form S5-S227 for site topographic map, aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S228a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Bryant Ck	**Section:**	10
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120201180	**OHWM Width:**	1.6 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	17	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1778748 ft	**UTMN:** 14278163 ft		

Stream S5-S228a– Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	162	0.01	0.61
5	162	0.01	0.61
6	162	0.01	0.61
7	162	0.01	0.61
8	162	0.01	0.61
RPA 8	162	0.01	0.61

Description of Potential Impact:
Impacts to S5-S228a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with the left bank of this artificial channel. The floodplain consists of INDOT ROW on the left bank and mature forest on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S228a are on the second page of this form.

Stream Impacts S5-S228a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 17

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S228a | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 160 | LAT.: 39.31631 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 04/26/12 | SCORER: KSS/DEW | COMMENTS: (Long: -86.51089) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	0%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65 256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2 64 mm) [9 pts]	0%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	0%	☑ ☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 | TOTAL NUMBER OF SUBSTRATE TYPES: 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | MAXIMUM POOL DEPTH (centimeters): 1

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW 1.6'/0.2' | AVERAGE BANKFULL WIDTH (meters): 0.50

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	5
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☑	Wide >10m	☐	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Bryant Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 65%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

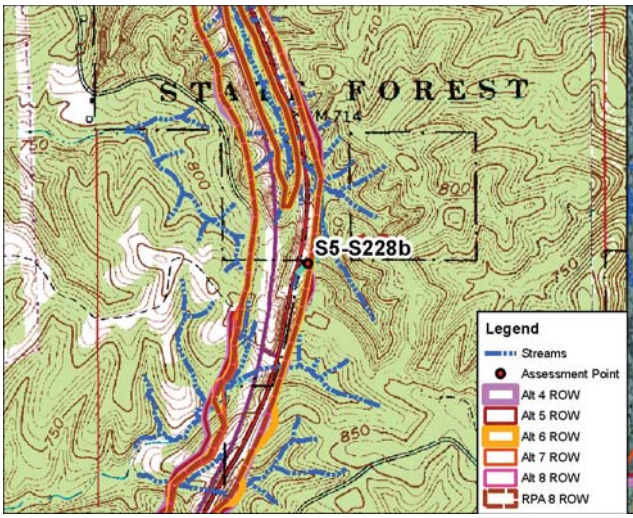
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

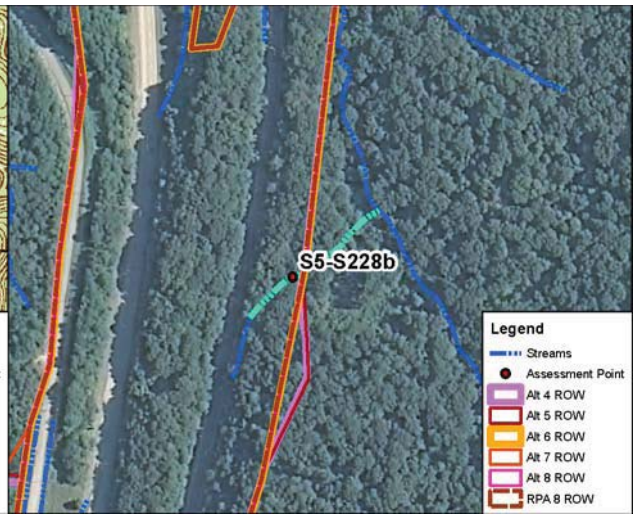
FLOW ➜ See Stream Assessment Form S5-S228a for site topographic map, aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S228b



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Payne Hollow	**Section:**	10
Quarter:	SW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120201180	**OHWM Width:**	3.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	40	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1778879 ft	**UTMN:** 14278329 ft		

Stream S5-S228b – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	187	0.01	0.59
5	190	0.01	0.62
6	190	0.01	0.58
7	190	0.01	0.58
8	190	0.01	0.58
RPA 8	190	0.01	0.58

Description of Potential Impact:
Impacts to S5-S228b for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of gravel and sand. There is a wide riparian corridor along both banks of this stream. The floodplain consists of mature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S228b are on the second page of this form.

Stream Impacts S5-S228b

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 40

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S228b RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.31677 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/18/11 SCORER: DEW/KSS COMMENTS: (Long: -86.51042) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	5%
☐	COBBLE (65 256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	50%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	35%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 6

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 3'/0.5' **AVERAGE BANKFULL WIDTH (meters):** 0.90

HHEI Metric Points

	Max	Points
Substrate (A + B)	40	20
Pool Depth	30	15
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☑ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Bryant Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 0%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

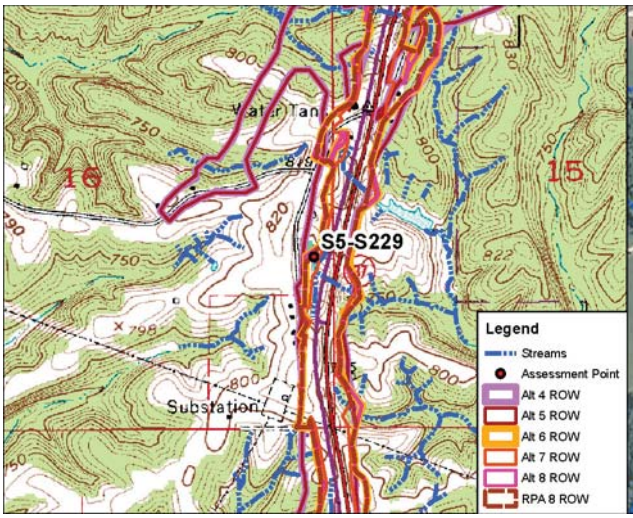
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

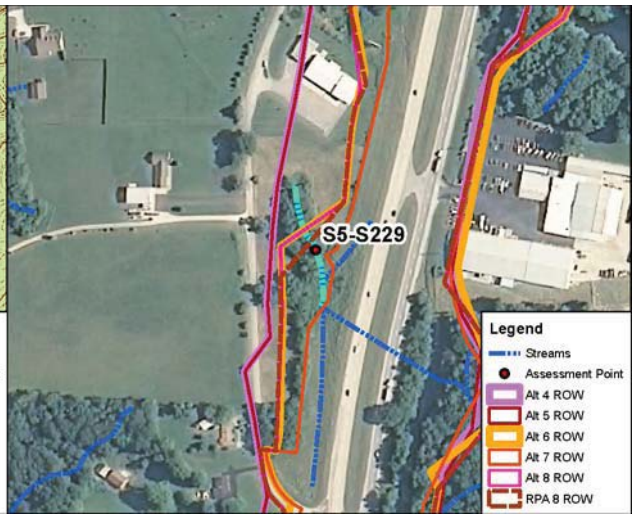
See Stream Assessment Form
S5-S228b for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S229



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Payne Hollow	**Section:**	16
Quarter:	SE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.3 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.1 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	33	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	gravel/clay
UTME: 1776517 ft	**UTMN:** 14221749 ft		

Stream S5-S229 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	329	0.01	0.45
5	329	0.01	0.45
6	214	0.01	0.25
7	0	0.00	0.01
8	213	0.01	0.24
RPA 8	177	0.01	0.16

Description of Potential Impact:
Impacts to S5-S229 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of gravel-overlain clay. There is a moderately-wide riparian corridor on this headwater stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S229 are on the second page of this form.

Stream Impacts S5-S229

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 33

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S229 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.29990 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/10/06 SCORER: A Rogers COMMENTS: (Long: -86.51889) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	25%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	15%	☑	CLAY or HARDPAN [0 pt]	29%
☑	GRAVEL (2 64 mm) [9 pts]	31%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 15.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 7

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 1.3' / 0.1' **AVERAGE BANKFULL WIDTH (meters):** 1.00

HHEI Metric Points

	Max	Score
Substrate (A + B)	40	13
Pool Depth	30	15
Bankfull Width	30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Payne Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 3 NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/10/06 Quantity: 0.89

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 75%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

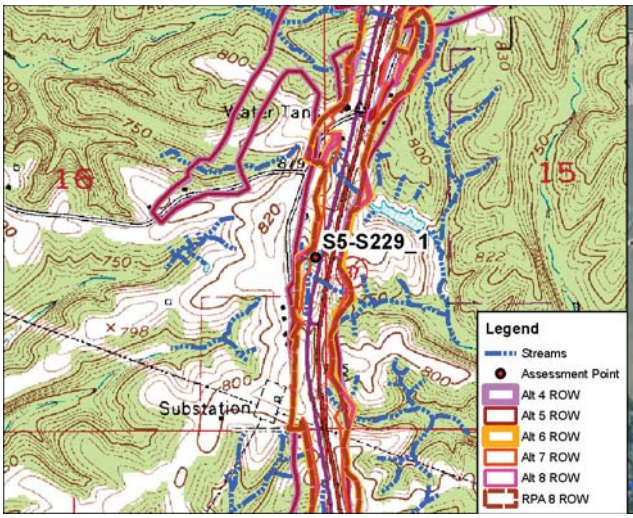
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

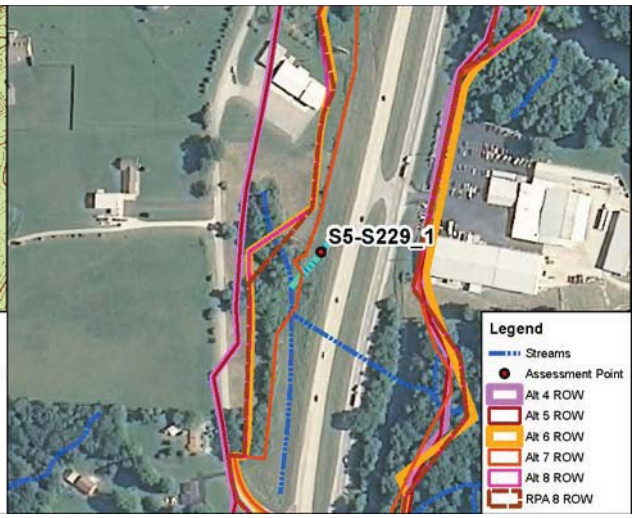
See Stream Assessment Form
S5-S229 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S229_1



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Payne Hollow	**Section:**	16
Quarter:	SE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	0.9 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.1 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1776614 ft	**UTMN:** 14272184 ft		

Stream S5-S229_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	199	0.01	0.00
5	199	0.01	0.00
6	199	0.01	0.00
7	158	0.01	0.00
8	199	0.01	0.00
RPA 8	199	0.01	0.00

Description of Potential Impact:
Impacts to S5-S229_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW adjacent to both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S229_1 are on the second page of this form.

Stream Impacts S5-S229_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S229_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.29992 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/26/12 SCORER: KSS/DEW COMMENTS: (Long: -86.51855) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW 0.9'/0.1' **AVERAGE BANKFULL WIDTH (meters):** 0.27

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Payne Hollow Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

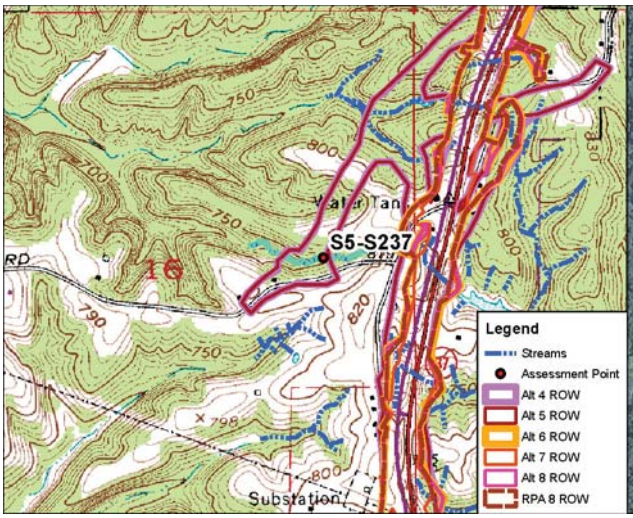
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

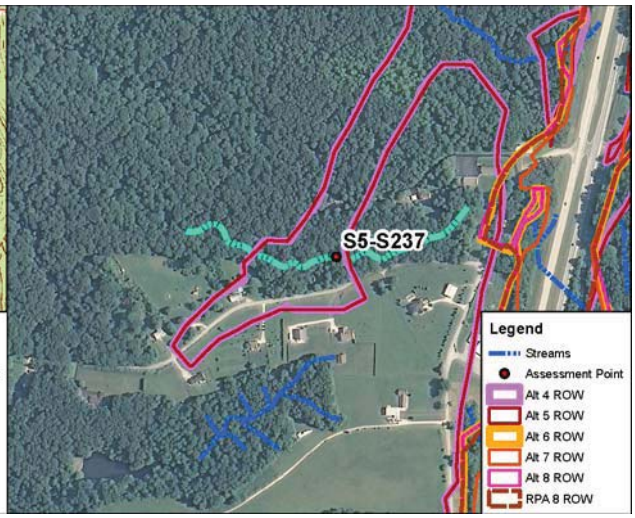
See Stream Assessment Form
S5-S229_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S237



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Indian Ck	**Section:**	16
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	3.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.6 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	24	**Watershed Area:**	0.03 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Clay/sand
UTME: 1775767 ft	**UTMN:** 14273118 ft		

Stream S5-S237 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	528	0.04	2.31
5	550	0.04	2.33
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S237 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate is clay and sand. There is a moderately-wide riparian corridor on the left bank and a wide riparian buffer on the right where Alternatives 4 and 5 cross this stream. The floodplain consists primarily of mature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S237 are on the second page of this form.

Stream Impacts S5-S237

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 24

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S237 RIVER BASIN: White River DRAINAGE AREA (mi^2): 0.03

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.30250 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/18/11 SCORER: DEW/KSS COMMENTS: (Long: -86.52152) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	20%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	0%	☑	CLAY or HARDPAN [0 pt]	50%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	30%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40: 9

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 3.5'/0.6' **AVERAGE BANKFULL WIDTH (meters):** 1.10

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☑	Wide >10m	☐	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☑	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Indian Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 0%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

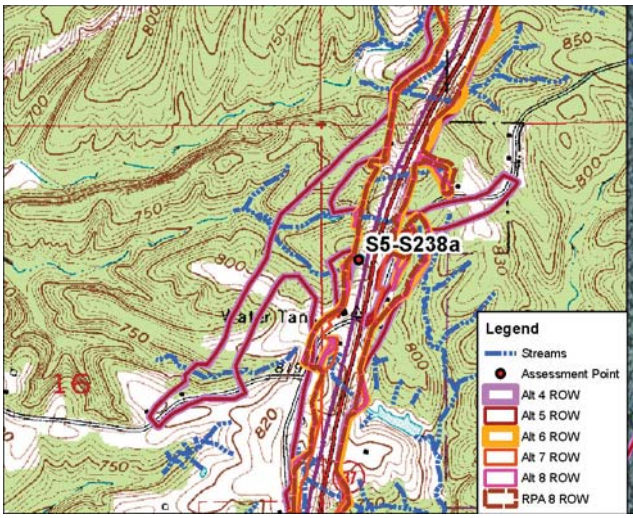
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

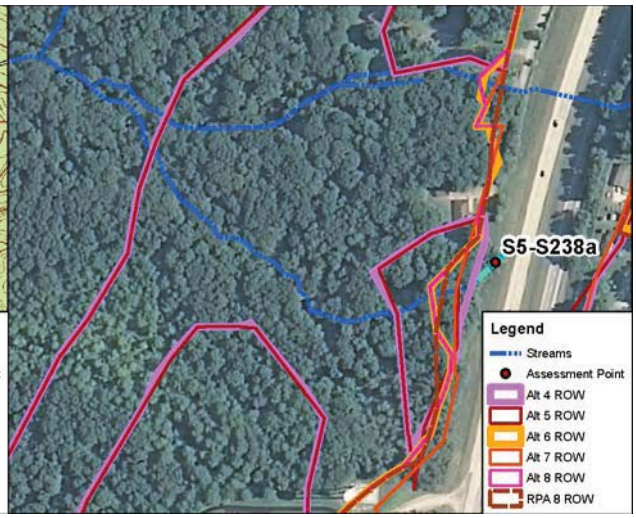
See Stream Assessment Form
S5-S237 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S238a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Indian Ck	**Section:**	15
Quarter:	NW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.2 feet
Channelized/Type:	Yes/ Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	12	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1777095 ft	**UTMN:** 14274284 ft		

Stream S5-S238a – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	142	0.01	0.13
5	142	0.01	0.22
6	142	0.01	0.23
7	142	0.01	0.23
8	142	0.01	0.22
RPA 8	142	0.01	0.22

Description of Potential Impact:
Impacts to S5-S238a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The concrete gutter is located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S238a are on the second page of this form.

Stream Impacts S5-S238a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S238a | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 140 | LAT.: 39.30568 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 04/26/12 | SCORER: KSS/DEW | COMMENTS: (Long: -86.51681) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	0%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65 256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2 64 mm) [9 pts]	0%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	0%	☑ ☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 | TOTAL NUMBER OF SUBSTRATE TYPES: 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | MAXIMUM POOL DEPTH (centimeters): 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW 1.2'/0.2' | AVERAGE BANKFULL WIDTH (meters): 0.36

HHEI Metric Points

Substrate Max = 40	7
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	L R	
☐ ☐	Wide >10m	☐ ☐	Mature Forest, Wetland	☐ ☐	Conservation Tillage
☐ ☐	Moderate 5 10m	☐ ☐	Immature Forest, Shrub or Old Field	☑ ☑	Urban or Industrial
☐ ☐	Narrow <5m	☐ ☐	Residential, Park, New Field	☐ ☐	Open Pasture, Row Crop
☑ ☑	None	☐ ☐	Fenced Pasture	☐ ☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Indian Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/24/12 Quantity: 0.15

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

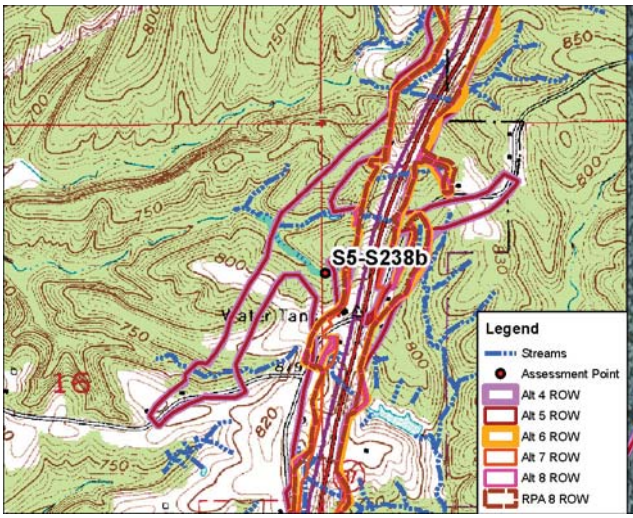
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

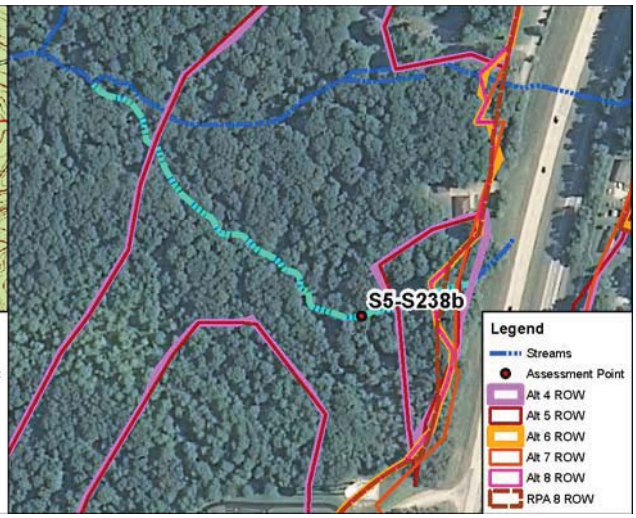
See Stream Assessment Form
S5-S238a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S238b



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Indian Ck	**Section:**	15
Quarter:	NW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	5.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	45	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1776744 ft	**UTMN:** 14274134 ft		

Stream S5-S238b – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	879	0.11	3.67
5	913	0.12	3.77
6	121	0.02	0.43
7	57	0.01	0.21
8	122	0.02	0.43
RPA 8	88	0.01	0.36

Description of Potential Impact:
Impacts to S5-S238b for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate consists of sand, gravel, and silt. There is a wide riparian corridor where the Alternatives cross this creek. The floodplain consists primarily of mature forest on both banks of the stream. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S238b are on the second page of this form.

Stream Impacts S5-S238b

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 45

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S238b RIVER BASIN: White River DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.30528 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/18/11 SCORER: DEW/KSS COMMENTS: (Long: -86.51805) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	5%	☐	SILT [3 pt]	15%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	10%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	25%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	45%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 15.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

HHEI Metric Points — Substrate Max = 40: 20 (A + B)

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 5

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☑ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 5.5'/0.5' **AVERAGE BANKFULL WIDTH (meters):** 1.70

Bankfull Width Max=30: 20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Indian Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

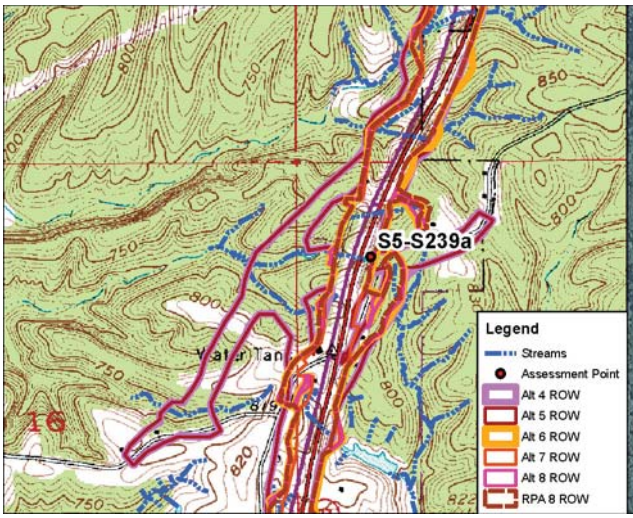
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

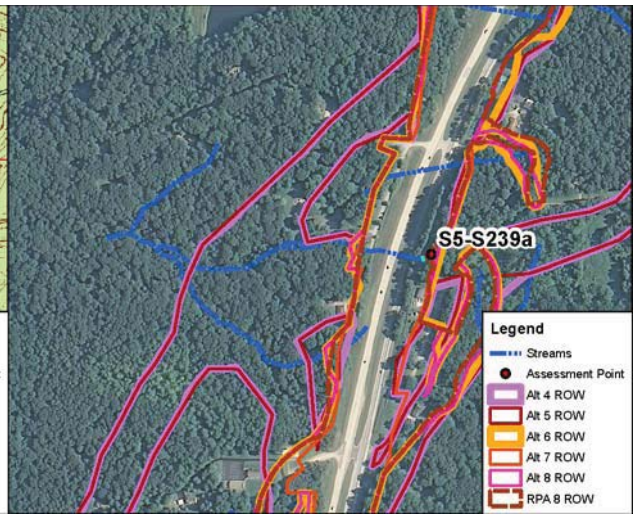
See Stream Assessment Form
S5-S238b for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S239a



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Indian Ck	**Section:**	15
Quarter:	NW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	1.2 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	17	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand
UTME: 1777477 ft	**UTMN:** 14274710 ft		

Stream S5-S239a –Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	121	0.01	0.67
5	121	0.01	0.68
6	121	0.01	0.49
7	100	0.01	0.39
8	104	0.01	0.42
RPA 8	44	0.01	0.32

Description of Potential Impact:
Impacts to S5-S239a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominate substrate consists of sand. There is a narrow riparian corridor where the Alternatives cross this creek. The floodplain consists primarily of old fields adjacent to both banks of the stream. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S239a are on the second page of this form.

Stream Impacts S5-S239a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 17

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S239a RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 120 LAT.: 39.30685 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 04/24/12 SCORER: KSS COMMENTS: (Long: -86.51545) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	30%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	20%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2 64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	50%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40: 12

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☐ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW 1.2' / 0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.40

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☑	☑	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☐ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Indian Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: _____ Quantity: 0.00

Photograph Information: _____

Elevated Turbidity? (Y/N): Y Canopy (% open): 60%

Were samples collected for water chemistry? (Y/N): Y (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): Y (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) Y Voucher? (Y/N) Y Salamanders Observed? (Y/N) Y Voucher? (Y/N) Y

Frogs or Tadpoles Observed? (Y/N) Y Voucher? (Y/N) Y Aquatic Macroinvertebrates Observed? (Y/N) Y Voucher? (Y/N) Y

Comments Regarding Biology: _____

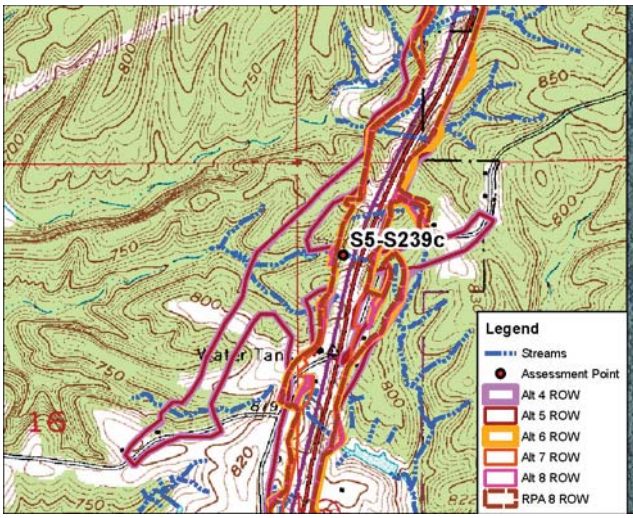
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

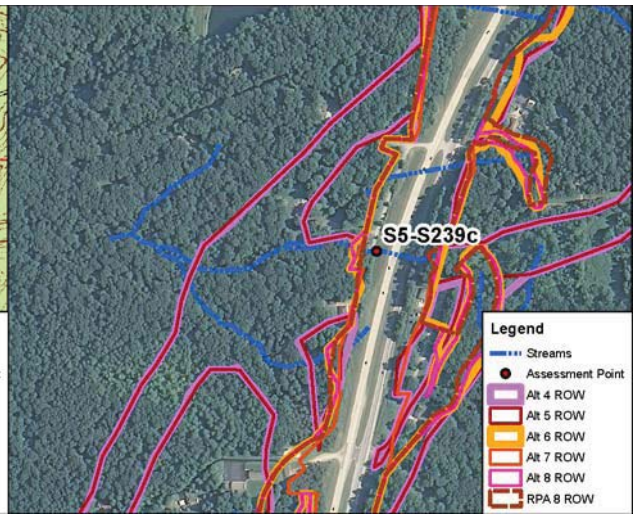
FLOW ➜ See Stream Assessment Form S5-S239a for site topographic map, aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S239c



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Indian Ck	**Section:**	15
Quarter:	NW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	5.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	70	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/boulder
UTME: 1777185 ft	**UTMN:** 14274732 ft		

Stream S5-S239c –Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	17	0.01	0.00
5	17	0.01	0.00
6	17	0.01	0.00
7	17	0.01	0.00
8	17	0.01	0.00
RPA 8	17	0.01	0.00

Description of Potential Impact:
Impacts to S5-S239c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of gravel and boulders. There is no riparian buffer associated with this stream. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S239c are on the second page of this form.

Stream Impacts S5-S239c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 70

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S239c RIVER BASIN: White River DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 15 LAT.: 39.30691 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 10/18/11 SCORER: DEW/KSS COMMENTS: (Long: -86.51648) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☑	BOULDER (>256 mm) [16 pts]	25%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65 256 mm) [12 pts]	15%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	40%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	5%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 40.00% (A) Substrate Percentage Check: 90% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☑ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 15

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW = 4.0'/0.5' **AVERAGE BANKFULL WIDTH (meters):** 1.22

HHEI Metric Points

Substrate	Max = 40	30
A + B		
Pool Depth	Max = 30	25
Bankfull Width	Max=30	15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☑ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Indian Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Quantity: 0.25

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 50%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

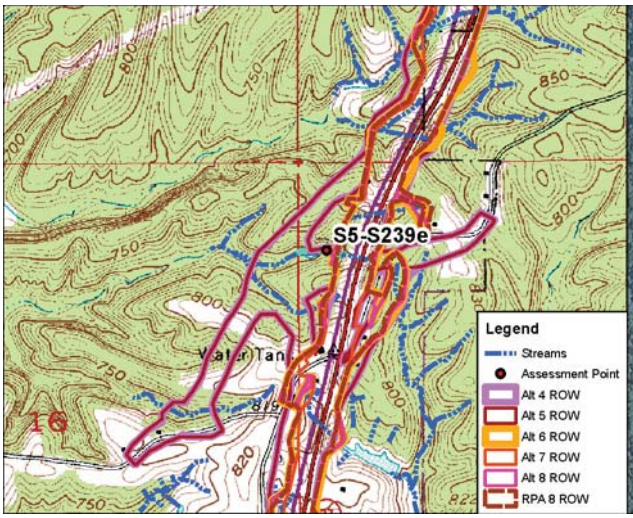
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

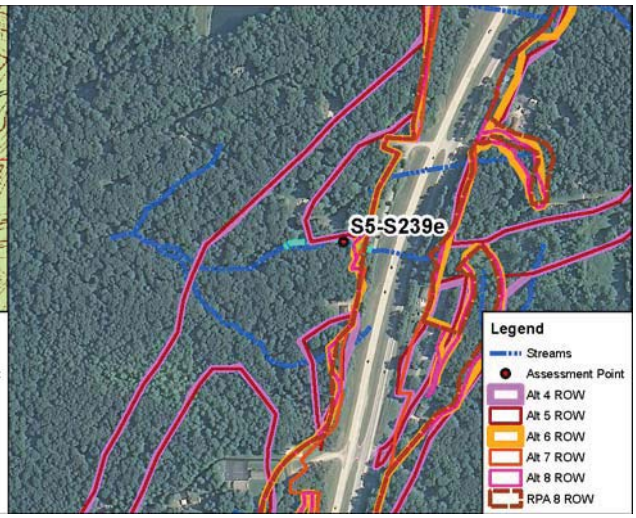
See Stream Assessment Form
S5-S239c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S239e



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Indian Ck	**Section:**	15
Quarter:	NW	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	4.4 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	60	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1777001 ft	**UTMN:** 14274774 ft		

Stream S5-S239e –Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	368	0.04	0.51
5	371	0.04	0.51
6	87	0.01	0.22
7	53	0.01	0.17
8	100	0.01	0.23
RPA 8	35	0.01	0.09

Description of Potential Impact:
Impacts to S5-S239e for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate consists of gravel and sand. There is a wide riparian corridor consisting of mature forest on the right bank and a moderately-wide riparian corridor consisting of residential land along the left floodplain. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S239e are on the second page of this form.

Stream Impacts S5-S239e

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 60

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S239e RIVER BASIN: White River DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.30703 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/10/06 SCORER: A Rogers COMMENTS: (Long: -86.51713) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	5%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	50%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	35%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☑ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 11

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS OHW - 4.4' / 0.4' **AVERAGE BANKFULL WIDTH (meters):** 1.34

HHEI Metric Points

	Max	Score
Substrate (A + B)	40	20
Pool Depth	30	25
Bankfull Width	30	15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☐	Wide >10m	☑	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☑	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Indian Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 8 NRCS Soil Map Stream Order 1

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/10/06 Quantity: 0.89

Photograph Information: 197 Upstream / 195 Downstream / 196 Right bank / 197 Left bank

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

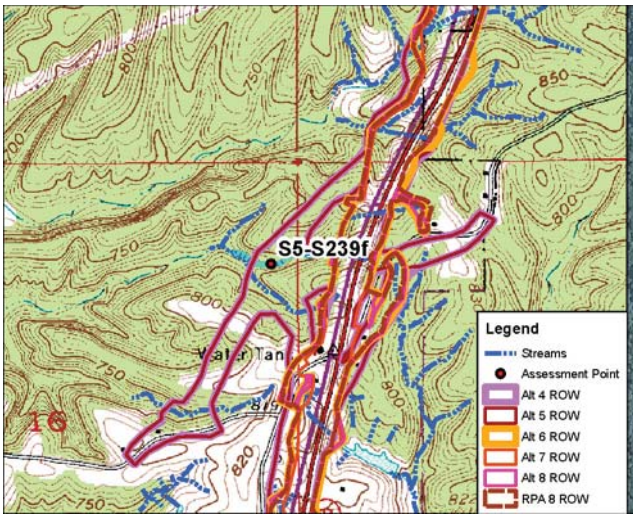
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

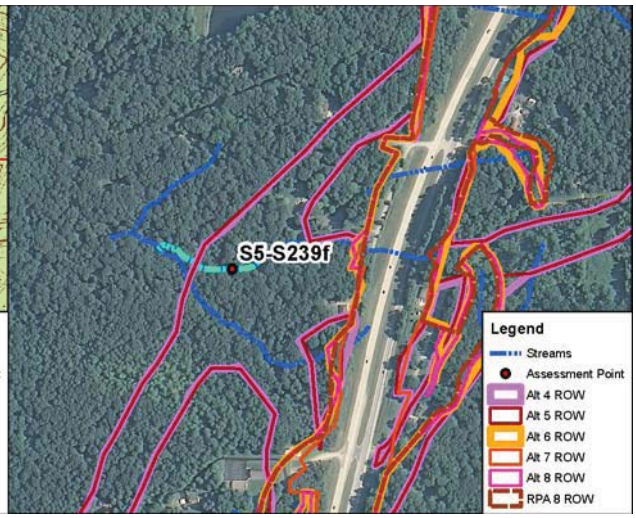
See Stream Assessment Form
S5-S239e for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S239f



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Modesto
Stream Name:	Unnamed Trib. Indian Ck	**Section:**	16
Quarter:	NE	**Township:**	T10N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	4.4 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.8 feet
Stream Type:	Intermittent	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	60	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1776430 ft	**UTMN:** 14274633 ft		

Stream S5-S239f – Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	497	0.05	2.26
5	494	0.05	2.25
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S239f for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate consists of gravel and sand. There is a wide riparian corridor consisting of mature forest on both banks of this stream. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S239f are on the second page of this form.

Stream Impacts S5-S239f

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 60

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S239f RIVER BASIN: White River DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.30665 LONG.: ____ RIVER CODE: ____ RIVER MILE: ____

DATE: 05/10/06 SCORER: A Rogers COMMENTS: (Long: -86.51915) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	5%
☐	COBBLE (65 256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2 64 mm) [9 pts]	50%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	35%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 30 cm [30 pts]
- ☑ > 10 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: ____ **MAXIMUM POOL DEPTH (centimeters):** 11

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 4.4' / 0.8' **AVERAGE BANKFULL WIDTH (meters):** 1.40

HHEI Metric Points

	Max	Score
Substrate (A + B)	40	20
Pool Depth	30	25
Bankfull Width	30	15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5 10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: ____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Indian Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Modesto NRCS Soil Map Page: 8 NRCS Soil Map Stream Order 1

County: Monroe Township / City: Washington

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 05/10/06 Quantity: 0.89

Photograph Information: 197 Upstream / 195 Downstream / 196 Right bank / 197 Left bank

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➜

See Stream Assessment Form
S5-S239f for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form