

Rapid Permit Checklist

Project:

Address:

Date:

Existing Conditions

I. Describe the Watershed and Reach Influences on Your Project Area.

A. Watershed Influences:

1. Location and Function of Stream

- supply reach
- transport reach
- storage reach
- headwaters
- middle reaches
- lower reaches

{Reference A)Longitudinal View Along the Stream Corridor in the Stream Corridor Restoration Manual }

2. Stream type

- Ephemeral
- Intermittent
- Perrenial

3. Up- Watershed Land Uses designate if long term or short term

- Vineyards, row crops
- Grazing
- Mining
- Forestry
- Dams
- Urban development
- Parks, reserves, open space
- Other

4. Natural Influences

- Changes in land, waterbody or sea level (base level changes)
- Earth movement-fault zone
- Meander or channel type changes
- Landslides, mudslides
- Fire impact areas

B. Reach Influences

1. Natural Influences

- Local fault line
- Meander changes
- Landslides, mudslides

- Fire zone
- Plant community evolution
- Other

2. Human Influences

- Stormwater/site runoff, grade controls
- Weirs, check dams
- Culverts
- Bridges
- Channel straightening
- Vegetation removal
- Gravel removal
- Bank, Channel and floodplain encroachments
- Invasive exotic plants
- Bank protection works and or debris in channel
- Row crops, vineyards and –or orchards adjacent to reach
- Livestock in or near reach
- In-channel trail or road crossings (fords)

3. Dominant Stream Processes (currently acting on the channel)

- Equilibrium between sediment supply entering and leaving the reach
- Excessive erosion
- Incising of channel bottom
- Excessive deposition
- Headcutting
- Meander development
- Channel widening
- Channel narrowing
- Other

C. Status of Channel Evolution

Circle the relevant diagrams that help describe how your site may be evolving towards a different condition

1. Stream adjustments to watershed conditions
(Reference B) River Processes and Morphology, R. D. Hey
2. Stream recovery from Channelization (or headcutting)
(Reference C) Stream Corridor Restoration Manual, Recovery from Channelization in the Stream Corridor Restoration Manual:
3. Channel Incision Adjustments (Reference D) Oregon Fish and Wildlife Office
4. Stream adjustments to in-stream modifications such as culverts, weirs, bank stabilization projects, vegetation removal, etc.
(Reference E) “Common Channel destabilizing Practice” SF Water Board Stream Protection Circular

5. Proper functioning Condition rating developed by BLM:
proper functioning; functional-at risk. nonfunctional, unknown

D. Existing Hydrology, Channel Geometry and Hydraulic Conditions

1. Compute drainage area to project location (square miles)
2. Mean annual precipitation (inches per year)
3. Channel forming discharge (cfs)
4. Bankfull channel depth (mean) (feet) for relevant stream types
5. Bankfull channel width (feet) for relevant stream types
6. Discharges for the 2,5,10,50, 100 year recurrence intervals
7. Flood elevation estimates
8. Estimated area of watershed impervious (percentage of basin developed)

Methods used to estimate these values:

- Field visual estimation
- Field estimation using regional curves
- Reference reaches
- Surveyed cross-sections
- Stream gage data
- High water marks
- Dimensionless rating curves
- Computed effective discharges
- Regional regression analysis, stormwater or watershed models
- HEC-RAS or other hydraulic models
- Topographic maps, aerial photography
- Other

Reference F: Regional Curves, channel shapes

Reference G: Regional Curves, bankfull discharges

Reference H: Computing flood frequency

II. Existing Channel Characteristics

A. Landscape Types

- Unconfined
- Confined by hillslopes with a high terrace
- Incised with widening floodplain

Reference I Channels, Floodplains and Terraces in Stream Corridor Restoration Manual

- Alluvial fan
- Meadow
- Tidal
- Arroyo
- Single thread alluvial
- Braided
- Bedrock

- Other

B. Dominant Streambed Materials

- Silt, clays
- Sand
- Gravel
- Cobbles
- Boulders
- Bedrock

Pebble Counts:

Specify D-50, D-84

C. Floodplain and Channel Conditions

- Valley slope
- Channel slope
- Channel sinuosity
- Historic channel type and sinuosity
- Step pool spacing

Reference J: Meander and Slope Restoration, Primer on Stream Protection, S.F. Bay Regional Water Board

Channel classification systems can be used to describe channel types such as Rosgen, Montgomery-Buffington, etc.

D. Vegetation Functions

- Vegetation communities: pioneer species (willow, cottonwood, alder, dogwood, ninebark); mixed woodland habitat (maple, bay, elderberry, buckeye); mature-climax habitat (oak, redwood, sycamore)
- Channel shade
- Bank stability, sediment transport and deposition
- Live and dead in-stream habitat structure
- Wildlife habitat
- No functions
- Listed Federal or State species of concern

E. Fish and Aquatic Species Habitat

- Native fish present/not present
- Salmonid stream (–upstream, in reach or downstream)
- Federal or state species of concern (frogs, snakes, turtles, other)
- Barriers to fish or other aquatic species
- Instream habitat complexity or lack of; (note vegetative cover, woody debris, pool frequency and depths)

III. Proposed Conditions

A. Project Design Objectives

(May include multiple objectives such as flood damage reduction, habitat restoration, stream bank restoration, stormwater management)

B. Ecological Restoration Objectives

- Instream habitat
- Stream corridor native riparian restoration
- Invasive exotic plants removal
- Sediment reduction or storage
- Enhance floodplain functions
- Water temperature modification
- Nutrient uptake
- Other

C. Methods Used to Estimate Equilibrium Conditions

- Historic conditions
- Reference reaches (visual, surveyed cross-sections)
- Regional hydraulic geometry (regional curves on channel shapes and drainage area)
- Stream gage data on 1.5 yr r.i. discharges
- Flood frequency curves from stream gage data
- Dimensionless rating curves to determine channel forming discharges
- Computed effective discharges to determine channel forming discharges
- Regional regression analysis, stormwater or watershed models
- HEC-RAS or other hydraulic models
- Other

IV. Describe How the Project Protects or Restores the Floodplain

- Existing Channel cross-section protect
- Remove levees, berms or structures encroaching floodplain
- Existing levees or berms set back
- Restore floodplain vegetation
- Native vegetated buffer added to landside of stream corridor
- Floodplain area excavated at bankfull elevation
- Pond and plug or other methods of re-watering floodplain

V. Describe How the Project Protects or Restores the Native Streamside Vegetation

- Invasive exotics not present
- Invasives sparse
- Invasives dominant in riparian corridor
- Invasives clogging channel

Non-native and invasive control methods:

- Hand tools
- Mulch, geotextile fabric
- Burn
- Mow
- Herbicides

Revegetation Method

- Seed
- Hydro-seed
- plugs
- container stock, bare root
- soil bioengineering systems:
proceed to number VII

VI. Describe How the Project Protects and/or Restores the Stream Channel Slope

- Existing slope retained
- Informed by historic channel sinuosity:
- Proposed channel sinuosity
- Design slope = Valley slope/sinuosity
- Step pools or weirs added to create calculated design slope
- Channel lengthened ---feet
- Reference reaches
- Spacing of step pools:
(Reference K: Chin, Papanicolaou equations or other)
Step- Pool Hydraulic geometry (2-4 x bankfull width)
- Meandering channel types: hydraulic geometry (channel length= 5-7 x bankfull width)

VII. Describe How the Project Restores Stream Banks

A. Fencing and Vegetated Buffers

- Livestock exclusions fencing
- New livestock water supplies
- Runoff and drainage improvements
- Stormwater treatment landscaping (vegetated swales, infiltration galleries, etc.)
- Other

B Soil Bioengineering Systems and Permissible Shear Stress and Permissible Velocities (Reference L: on permissible shear stress for soil bioengineering USACE Fischenich)

- Shear stress acting on stream channel

- Stakes, cuttings
- Poles
- Posts
- Live fascines
- Brush layering
- Brush matting
- Grass
- Tree plantings
- Geotextile fabric

VIII. How Will the Project Protects or Restores Aquatic Habitat

A. Habitat Enhancement for Native Wildlife

1. Salmonids present
 - In reach
 - Upstream
 - Downstream
2. Other native fish
3. Native reptiles, amphibians
4. Birds
5. Mammals

B. Proposed Exotic Wildlife Controls

1. Invertebrates
2. Fish
3. Reptiles, amphibians
4. Birds
5. Mammals

C. How will the project protect or enhance habitat complexity for different life Stages

- Diversity of vegetative cover
- Habitat connectivity
- Stream channel grain size distribution
- Shelter from predators, high flows, undercut banks, roots, woody debris, etc.)
- Instream bedforms including pools, pool depths