Natural Channel Design Review Checklist

Project Design Checklist

Reviewer: _____
Date: _____

Project: _____
Engineer: _____

Item	Submitted (Y/N)	Acceptable (Y/N)	Page #	Comments
1.0 Watershed and Geomorphic Assessment				
1.1 Watershed Assessment				
1.1a Was the watershed assessment methodology described?				
1.1b Was the project drainage area provided?				
1.1c Was the percent impervious cover for the watershed provided?				
1.1d Was the current land use described along with future conditions?				
1.1e Were watershed hydrology calculations performed?				
1.2 Basemapping				
1.2a Does the project include basemapping?				
1.3 Hydraulic Assessment				
1.3a Was a hydraulic assessment completed?				
1.3b Was stream velocity, shear stress and stream power shown in relation to stage and discharge?				
1.4 Bankfull Verification				
1.4a Were bankfull verification analyses completed?				
1.4b Were USGS gages or regional curves used to validate bankfull discharge and area?				
1.4c If a regional curve was used, were the curve data representative of the project data?				
1.4d If gages or regional curves were not available, were other methods, such as hydrology and hydraulic models used?				
1.5 Project Reach Geomorphic Assessment				
1.5a Was the geomorphic assessment methodology described?				
1.5b Were vertical and lateral stability analyses completed?				
1.5c Was it shown whether the instability was localized or system-wide?				
1.5d Was the cause-and-effect relationship of the instability identified?				
1.5e Was the channel evolution predicted?				
1.5f Were constraints identified that would inhibit restoration?				
1.5g Should this stream reach be a restoration project?				
1.5h Overall Geomorphic Assessment Comment(s)				

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2.0 Preliminary Design				
2.1 Goals and Restoration Potential				
2.1a Does the project have clear goals and objectives?				
2.1b Was the restoration potential based on the assessment data provided?				
2.1c Was a restoration strategy developed and explained based on the restoration potential?				
2.2 Design Criteria				
2.2a Were design criteria provided and explained?				
2.2b Were multiple methods used to prepare design criteria?				
2.2c Are the design criteria appropriate given the site conditions and restoration potential?				
2.3 Conceptual Design				
2.3a Was the conceptual channel alignment provided and developed within the design criteria?				
2.3b Were typical bankfull cross sections provided and developed within the design criteria?				
2.3c Were typical drawings of in-stream structures provided and their use and location explained?				
2.3d Was a draft planting plan provided?				
2.3e Overall Conceptual Design Comment(s)				
3.0 Final Design				
3.1 Natural Channel Design				
3.1a Was a proposed channel alignment provided and developed within the design criteria?				
3.1b Were proposed channel dimensions provided and developed within the design criteria?				
3.1c Do the proposed channel dimensions show the adjacent floodplain or flood prone area?				
3.1d Was a proposed channel profile provided and developed within the design criteria?				
3.1e Were specifications for materials and construction procedures provided and explained for the project (i.e., in-stream structures and erosion control measures)?				

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3.2 Sediment Transport				
3.2a Was a sediment transport analysis necessary?				
3.2b If necessary, was the type of sediment transport analysis explained?				
3.2c Were graphs or relationships created that show shear stress, velocity and stream power as a function of stage or discharge?				
3.2d Did sediment transport capacity analysis show that the stream bed would not aggrade or degrade over time?				
3.2e Did sediment transport competency analysis show what particle sizes would be transported with a bankfull discharge?				
3.2f For gravel/cobble bed streams, does the proposed design move particles that are larger than the D100 of the stream bed?				
3.3 In-Stream Structures				
3.3a Based on the assessment and design, were in-stream structures necessary for lateral stability?				
3.3b Based on the assessment and design, were in-stream structures needed for vertical stability?				
3.3c If needed, was the reason for their location and use explained?				
3.3d Will the in-stream structures provide the intended stability?				
3.3e Were detail drawings provided for each type of in-stream structure?				
3.4 Vegetation Design				
3.4a Was a vegetation design provided?				
3.4b Does the design address the use of permanent vegetation for long term stability?				
3.4c Overall Final Design Comment(s)				

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4.0 Maintenance and Monitoring Plans				
4.1 Maintenance Plan				
4.1a Was a maintenance plan provided?				
4.1b Does it clearly state when maintenance will be required and if so, is it quantifiable?				
4.1c Does it clearly state how erosion will be addressed and by whom?				
4.2 Monitoring Plan				
4.2a Was a monitoring plan provided?				
4.2b Does it state who is required to conduct the monitoring?				
4.2c Does it have measurable performance standards?				
4.2d Is monitoring required for at least 3 years?				
5.0 Overall Design Review				
5.0a Does the design address the project goals and objectives?				
5.0b Are there any design components that are missing or could adversely affect the success of the project?				
5.0c Does the project have a high potential for success?				