

# **Appendix K**

**U.S. Army Corps of Engineers TDG  
TMDL 2006 Implementation Summary**



## U.S. Army Corps of Engineers TDG TMDL Implementation Summary

The following summary tables provide an overview of the status of U.S. Army Corps of Engineers TDG TMDL Implementation activities, both short-term and long-term. These activities were recommended in the “Total Maximum Daily Load (TMDL) for Lower Columbia River Total Dissolved Gas (Sept 2002),” and the “Total Maximum Daily Load (TMDL) for Lower Snake River Total Dissolved Gas (Aug 2003).”

### SHORT TERM – PHASE I TMDL IMPLEMENTATION

#### A. Structural Implementation Actions:

<u>2000 Biological Opinion Action Item Description</u>	<u>Action Item #</u>	<u>Status</u>	<u>Actual/Estimated Completion Date</u>
Ice Harbor Deflectors	134	Constructed.	2002
John Day Deflectors	134	Constructed	2002
Survival based spill caps at all dams (e.g. 40% at The Dalles).	68, 82	Studies are on-going	N/A
Bonneville Endbay Deflectors	134	Constructed	2002
McNary Endbay Deflectors	134	Constructed	2002
Lower Monumental Endbay Deflectors	134	Constructed. Preliminary studies have been completed. Additional studies to be completed after RSW installed.	2003
Little Goose Endbay Deflectors	134	Evaluate after RSW installed.	2009
Chief Joseph Deflectors	136	Phase 1 (of 3) under construction.	2008
The Dalles Deflectors	134	Not planned at this time, spillway survival still under investigation	N/A
John Day Endbay Deflectors	140	Not planned at this time.	N/A
Divider Walls at Appropriate Dams	135	The Dalles: Constructed – Biological Evaluations Continue No other divider walls planned at this time.	2004
Bonneville Powerhouse 2 Corner Collector (B2CC)	66	Constructed. Biological Evaluations Continue. Currently investigating a Behavioral Guidance System (BGS) for improved guidance for yearling and subyearling chinook to the B2CC.	2004
Bonneville Powerhouse 2 Fish Guidance Efficiency Improvement	67	Decision Document Completed FY05 – Recommendation for FGE improvements In-take improvements. Modifying vertical barrier screens. Installing turning vanes on Submerged traveling screens (STS). Installing ceiling gap closure device.	2008
Lower Granite Removable Spillway Weir (RSW)	80	Constructed. Evaluations of spring and summer migrants continue	2003
The Dalles Turbine Intake Blocks	69	Evaluation Complete – Not warranted Removed (J-blocks removed). Turned out to be harmful.	N/A
Lower Monumental Bypass Outfall Relocation	76	Currently under evaluation	Unknown

The Dalles Sluiceway Outfall Relocation	70	Not being investigated at this time. Current sluiceway being used as is.	N/A
Bonneville Powerhouse 1 Surface Bypass or Extended Screens	61, 62	Biological evaluations continue – FY06 for alternatives Finishing letter report for modification of B1 sluiceway chaingates. Surface bypass or extended screens not being investigated at this time.	Unknown

B. Operational Implementation Actions:

<b>Operational Action</b>	<b>Status</b>
Scheduling routine turbine maintenance and repair during low-power load and river flow periods.	On-going
Preventative maintenance of turbines to prevent breakdown	On-going
System management of water release from upstream storage reservoirs to minimize involuntary spill at dams in the TMDL area.	On-going
Optimizing power purchasing to allow maximum use of powerhouse capacity and minimization of involuntary spill.	On-going

II. LONG TERM – PHASE II TMDL IMPLEMENTATION

<b>2000 Biological Opinion Action Item Description</b>	<b>Status</b>	<b>Expected Completion Date</b>
John Day Surface Bypass (may be Removable Spillway Weir or similar structure)	Configuration and Operations Plan in progress. Recommendations for further action pending. Evaluations continue.	Unknown
Removable Spillway Weirs (or similar structures) at Lower Monumental, Little Goose, Ice Harbor and McNary	<b>LMN:</b> Under construction. <b>LGS:</b> Under development. <b>IHR:</b> Construction completed, testing continues. <b>MCN:</b> Under development, temporary spillway weir to be tested in 2007.	Spring-2007 2009 March 2005 2012
McNary Bypass Improvements (outfall, temperature)	Temperature improvements are currently being evaluated. No investigations concerning outfall improvements are on-going.	Unknown
Lower Monumental Extended Screens	On Hold pending decision document	Unknown
John Day Extended Screens	On Hold pending decision document on future bypass designs.	Unknown
Spill Effectiveness Studies	Ongoing, site specific as warranted	Site specific
<u>Predator Removal and Abatement:</u> SLED at BON (Sea Lion Exclusion Device).	Constructed.	March 2006
Predator Removal Program at TDA (allow access to fish Pike	Ongoing - funded by BPA	Unknown

Minnow)		
Improved Operation and Maintenance	Ongoing	N/A
Bonneville Powerhouse 1 Minimum Gap Runners	Units 1,3,4,5,6,9 completed. Under Construction: Units 2 and 10 Still planned: Units 7 and 8.	Unit 2 - Dec 2006 Unit 7 – Oct 07 Unit 8 – FY 08 Unit 10 – Mar 07
McNary Modernization, Turbine Runner Prototype.	Ongoing. Biological testing to follow after completion	March 2009
Implement Turbine Survival Program Results	Ongoing	Unknown