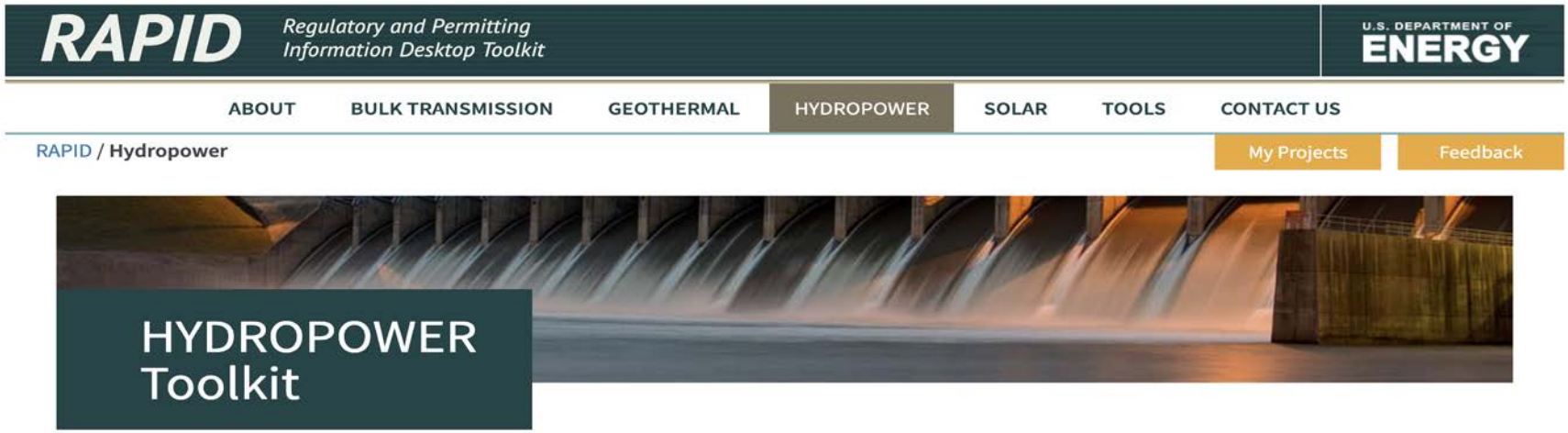

Hydropower Regulatory and Permitting Information Desktop (RAPID) Toolkit

1.4.1.401

Hydropower Program

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National Renewable Energy Laboratory

Project Overview

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Project Summary

The Hydropower Regulatory and Permitting Information Desktop (RAPID) Toolkit project aims to increase the transparency and efficiency of the regulatory process for hydropower projects in the United States. Key aspects of the RAPID Toolkit project include: significant stakeholder outreach and engagement to frame and guide the project for significant impact; reviewing federal and state permits and regulatory processes/approvals required for the development of hydropower projects in the United States; developing/curating a regulatory and permitting database; cataloguing reference material; and documenting hydropower regulatory best practices and lessons learned. Over the course of the project, we have brought together federal and state agencies as well as industry stakeholders to review and provide feedback and input on the permitting process for conventional hydro, non-powered dam (NPD) development, and pumped storage projects.

Project Objective & Impact

Hydropower developers must obtain a number of federal, state, tribal, and local approvals to construct, operate, or maintain a hydropower project. The objective of the Hydropower RAPID Toolkit is to identify and provide understanding of the federal, state, tribal and local permitting and regulatory requirements for conventional hydro, NPD, and pumped storage development projects. To support this objective the RAPID Toolkit includes step-by-step guidance of federal, state, tribal and local permitting and regulatory requirements and related tools (e.g., reference material library, best practices library). The project increases knowledge and transparency of the federal and state regulatory process for developing hydropower projects and provides detailed information for those seeking to better understand the current process, identify areas for regulatory improvement, or review best practices and lessons learned.

Project Information

Project Principal Investigator(s)

Aaron Levine, Esq.

WPTO Lead

Corey Vezina

Project Partners/Subs

Kearns & West
John Herrick, Herrick Solutions

Project Duration

- Start date: FY15
- End date: Ongoing

Alignment with the Program

Hydropower Program Strategic Priorities

Environmental R&D and Hydrologic Systems Science

Big-Data Access and Analysis

Technology R&D for Low-Impact Hydropower Growth

R&D to Support Modernization, Upgrades and Security for Existing Hydropower Fleet

Understand, Enable, and Improve Hydropower's Contributions to Grid Reliability, Resilience, and Integration

Alignment with the Hydro Program

Big-Data Access and Analysis

- Help industry to manage large, disparate and dissimilar datasets relevant for performance, operations, costs, maintenance, permitting, and environmental mitigation
- Support comprehensive reviews of historical regulatory process drivers and outcomes
- Identify information-mechanisms that could increase coordination among permitting agencies
- Develop effective methods of communicating process complexities to non-technical stakeholders

Through documenting regulatory and permitting processes and reviewing historical project and regulatory data, the RAPID Toolkit helps industry understand regulatory and permitting requirements, historical outcomes, and opportunities for increased agency coordination in a user-friendly web platform hosted on OpenEI.

Project Budget

FY17	FY18	FY19 (Q1 & Q2 Only)	Total Project Budget FY17–FY19 Q1 & Q2 (October 2016 – March 2019)	
Costed	Costed	Costed	Total Costed	Total Authorized
[$685K]	[$315K]	[$87K]	[$1,087K]	[$1,211K]

Management Approach

- FY17–FY19 project team:
  - NREL staff provides specialized expertise
    - Substantive experts on law, regulation, and policy
    - Front-end website designers/strategists
    - OpenEI back-end website programmers.
  - Kearns & West provides logistical support
  - John Herrick provides legal review.
- Management areas of focus:
  - Constant communication between the web design team and the legal/regulatory analysis team
  - Integrating the substantive legal, regulatory, and policy data
  - Creating an easy-to-use web format designed for all user types
  - Balancing technical information and website searchability.
- The project was on track and met milestones throughout the FY17–FY19 review period.

Technical Approach

Technical approach varied by task, which included:

- Developing new regulatory process pages
  - Researched publicly available information (statutes, regulations, policies, guidance documents)
  - Drafted a flowchart and narrative of the regulatory process, including thresholds for required compliance
  - Reviewed draft material with regulatory agency, hydropower industry stakeholders, and legal subcontractor
  - Revised and finalized material for inclusion on the RAPID Toolkit website.
- Updating existing regulatory process pages
  - Developed wiki-java scripts to query information on the website to automate review (including identify broken external weblinks and substantive hydropower pages on the RAPID Toolkit)
  - Reviewed all pages to identify substantive changes
  - Tracked changes in law, regulation, and policy via Westlaw, news services, and interaction with the regulatory community to integrate changes into the RAPID Toolkit.

Technical Approach

- Developing best practices, lessons learned, and regulatory analysis publications
  - Collected input on industry issues, best practices, and lessons learned from hydropower stakeholders through in-person meetings, webinars, and industry events
  - Reviewed and prioritized list with DOE-WPTO
  - Researched and analyzed issues through extensive interviews, dialogue, and review with hydropower industry stakeholders.
  - Reviewed draft publication with NREL and DOE management
  - Published as NREL Technical Reports
  - Posted to the RAPID Toolkit Best Practice Library with high-level summaries and links to full reports.

End-User Engagement and Dissemination Strategy

- Project beneficiaries:
  - Federal and state policymakers and decisionmakers (Congress, state legislatures, regulatory agency personnel) who are:
    - Determining potential areas to focus regulatory reform
    - Streamlining initiatives
    - Determining staff training needs.
  - Hydropower industry stakeholders (developers, consultants, trade associations, NGOs) seeking:
    - Better understanding of regulatory processes
    - The interconnection between statutes and regulations required for hydropower development.
- Other benefits:
  - Increase transparency in the regulatory and permitting process
  - Identify issues warranting further research and analysis.

End-User Engagement and Dissemination Strategy

End-User Engagement FY17–FY19

- FY17: In-person meeting in Pittsburgh, Pennsylvania, on required federal and state regulatory processes for hydropower projects at U.S. Army Corps of Engineers' non-powered dams.
- FY17–18: Sector-focused webinar series, including targeted webinars for:
  - Development interests (in conjunction with the National Hydropower Association)
  - Federal regulators (via in the Federal Inland Hydropower Working Group)
  - State environmental regulators
  - Non-governmental organizations
  - Academia.
- Publication and dissemination of best practices, lessons learned, and analysis via RAPID Toolkit, NREL publication library, and OSTI
- Project updates via a Hydropower RAPID Toolkit listserv
- Demonstrations at Water Power Week in Washington, HydroVision International, and the Northwest Hydroelectric Association Annual Conference
- Presentations at regional conferences (MHUG, NWHA Small Hydro)
- Factsheets, bookmarks, and other project material to inform industry
- Search engine optimization to increase website traffic.

Technical Accomplishments

- Developed and maintained a Regulatory and Permitting Database with information on applicable Federal processes and state processes in 21 states
- Developed seven (7) published best practice documents as NREL Technical Reports:
  - State Models to Incentivize and Streamline Small Hydropower Development (2017)
  - Regulatory Approaches for Adding Capacity to Existing Hydropower Facilities (2017)
  - Energy Recovery Hydropower: Prospects for Off-Setting Electricity Costs for Agricultural, Municipal, and Industrial Water Providers and Users (2017)
  - Negotiating Terms and Conditions: An Overview of the Federal Energy Regulatory Commission Hydropower Settlement Agreement Process (2018)
  - FERC Hydropower Licensing: A Review of Utilization of the ILP, TLP and ALP (2018)
  - Bureau of Reclamation Hydropower Lease of Power Privilege: Case Studies and Considerations (2018)
  - Basin-wide Approaches to Hydropower Relicensing: Case Studies and Considerations (2019)
- Developed advanced website features, including a project management dashboard, feedback widget, and improved search and usability (e.g., ability to filter by hydropower sub-technology).

Technical Accomplishments (Cont.)

Website metrics help the team understand:

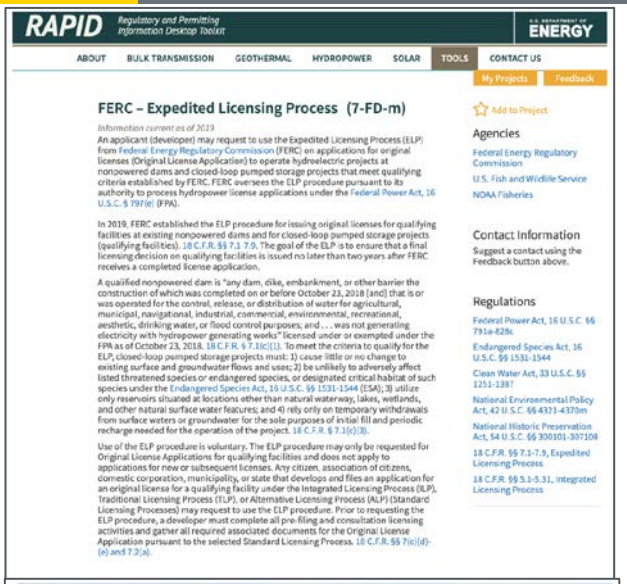
- Number of unique users, pageviews
- Who is using the website (IP Address identification)
- Location of users of the website
- Types of pages viewed
- General usage trends within the RAPID Toolkit.

Lifetime RAPID Pageviews	Lifetime Hydropower RAPID Pageviews	NREL Technical Report Unique Downloads through FY18 - FY19, Q3
250,000	50,000	2,300

Progress Since Project Summary Submittal

Recent progress on the RAPID Toolkit includes:

- Development of the FERC Expedited Licensing Process (ELP), including the ability to toggle between the ILP, TLP, and ALP processes pre-filing process with the ELP post-filing process.
- Presentation of the RAPID Toolkit at the Midwest HUG/Regional NHA meeting in Minneapolis, Minnesota.



Future Work

Planned future work (FY20):

- Maintain/update content within the RAPID Toolkit
- Maintain website security and functionality
- Develop a new Google Analytics dashboard to customize and easily identify website usage trends
- Conduct a hydropower stakeholder-focused RAPID Toolkit webinar to provide updates on the toolkit's content, features, and recently completed best practice and lesson learned reports.