

# SMALL HYDRO UPDATE AND RECOMMENDATIONS FOR 2014 COLORADO LEGISLATURE

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Colorado Legislature Meeting  
Denver, CO  
October 7, 2013 DRAFT IN PROGRESS



## Key Message: Small Hydro Job Growth Opportunity

- Local jobs created in project construction
- Ongoing revenue from electricity sales for farmers, ranchers, towns, water districts, etc.



## Items for Discussion

- About COSHA
- Current Status of Hydro in CO
- Opportunity to Create Jobs
- CO Hydropower History
- Recent CO Small Hydro Achievements in Federal and State Policy
- New Federal Small Hydro Permitting Legislation
- CO Small Hydro Projects Currently Under Construction
- Suggestions for 2014 Legislation
- Contact Information



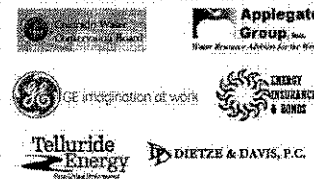
"Congress finally found an energy source everyone likes – hydropower"  
*Washington Post*, August 2, 2013



## Colorado Small Hydro Association

- Volunteer, sponsor-supported organization promoting development of small hydro in Colorado
- Annual conference to highlight statewide progress  
 – 2013 conference held July 23<sup>rd</sup> in Denver
- 2013 conference sponsors, cosponsors and partners

### SPONSORS



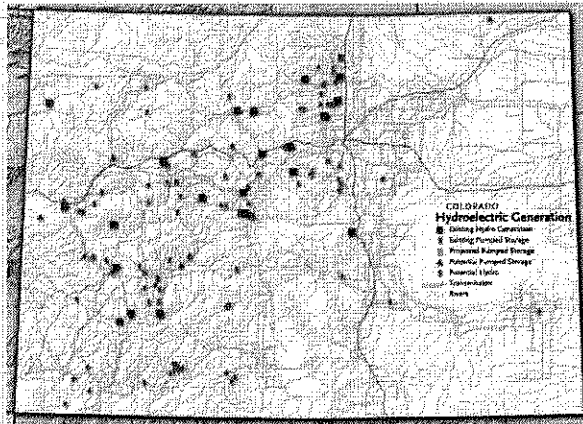
### COSPONSORS



### PARTNERS



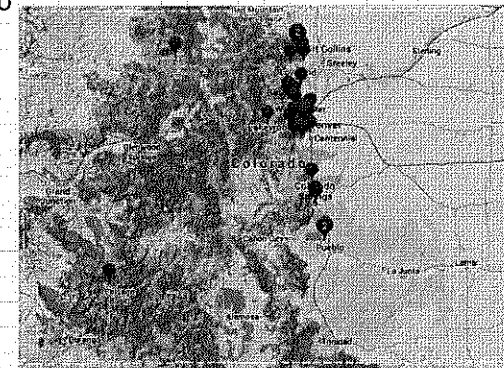
## Current Status of Hydropower in Colorado



Source: Colorado Energy Office

## Small Hydro Jobs Opportunity

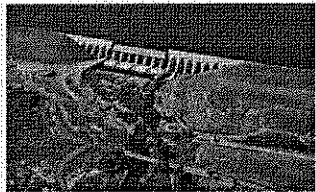
- Colorado currently has hundreds of hydropower jobs at companies across the state
- The right policies can create additional new hydro jobs in Colorado



Source: National Hydropower Association



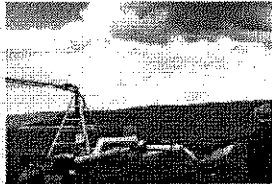
# Untapped Small Hydro Potential at Existing Dams, Canals and Center Pivots



Pueblo Dam



Towaoc Highline Canal

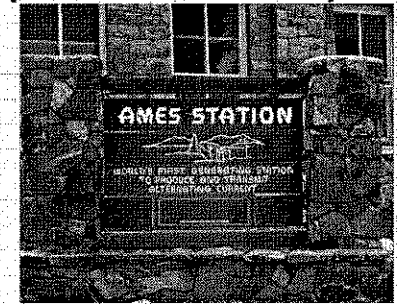


Bear River Ranch

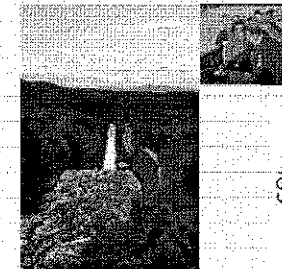


# Colorado's Hydropower History

Nikola Tesla engineered the Ames Hydro Plant near Telluride, CO in 1891



President Taft recognized the hydro potential of Western Colorado's South Canal in 1909



## Recent Colorado State Leadership in Small Hydro Policy

- CO Energy Office FERC Pilot Program, Small Hydro Handbook
- CWCB loan funding for hydro
- CWRPDA feasibility grants and loan funding for hydro
- CO Department of Agriculture small hydro initiative



## Colorado Small Hydro Handbook

- Available for download under "Resources" tab at [www.colorado.gov/energy](http://www.colorado.gov/energy)



Small Hydropower Handbook.....

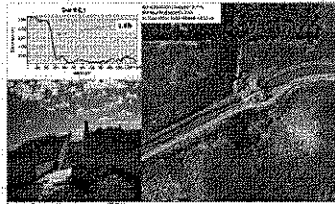
THE COLORADO ENERGY OFFICE  
1500 Engle Street, 4th Fl. 1901  
Denver, CO 80202-1713  
[www.colorado.gov/energy](http://www.colorado.gov/energy)



## Colorado Department of Agriculture Small Hydro Effort

- Assessing opportunities for cost-effective opportunities for installation of agricultural hydropower utilizing existing infrastructure

- Existing dams
- Center pivots
- Ditch drops



- Results in 2014



## Recent Bipartisan Colorado Federal Leadership in Small Hydro

### Hydropower Regulatory Efficiency Act

- **New Conduit Hydro Exemption:** Creates an "offramp" for conduit projects under 5 MW
- **2 Year Licensing:** Directs FERC to explore a potential two-year licensing process for hydropower development at existing non-powered dams and closed-loop pumped storage projects
- **Small Hydro Exemption Increase:** Increases the FERC small hydro exemption from 5 to 10 MW
- **Preliminary Permits:** Authorizes FERC to grant developers preliminary permit extensions
- **DOE Studies:** Directs DOE to study pumped storage project opportunities as well as hydropower potential from existing conduits

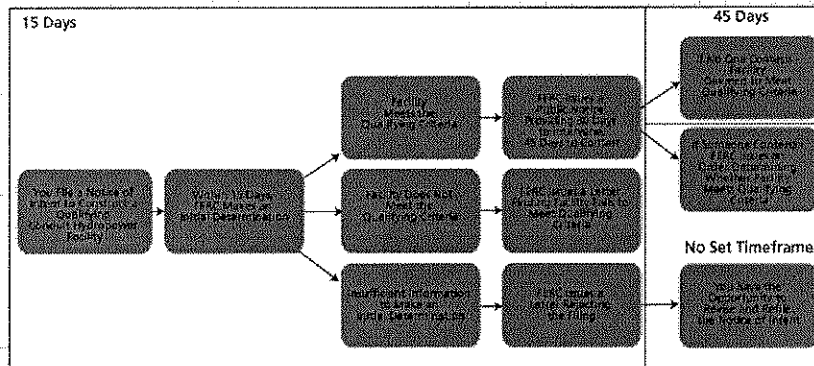


### Hydropower and Rural Jobs Act

- Accelerated approval for projects on Bureau of Reclamation facilities



# New FERC Timeline/Process for Conduit Small Hydro Permitting



# Silverton Project Recently Received FERC Approval Per New Law

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

San Juan County Historical Society

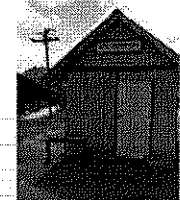
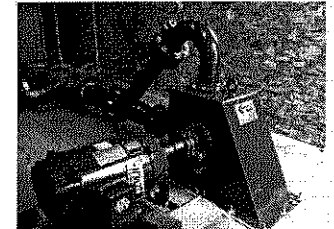
Docket No. CD13-4-000

## NOTICE OF PRELIMINARY DETERMINATION OF A QUALIFYING CONDUIT HYDROPOWER FACILITY AND SOLICITING COMMENTS AND MOTIONS TO INTERVENE

(September 30, 2013)

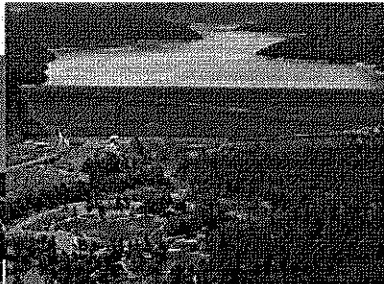
On September 20, 2013, San Juan County Historical Society filed a notice of intent to construct a qualifying conduit hydropower facility, pursuant to section 10 of the Federal Power Act, as amended by section 1 of the Hydropower Regulatory Efficiency Act of 2013 (HREA). The 11 kW Silverton Mayflower Mill Hydro Project would utilize excess flow from the six-inch-diameter Arastra Gash Pipeline, which serves the Mayflower Mill treatment plant, located in San Juan County, Colorado.

Applicant Contact: Beverly Rich, San Juan County Historical Society, P.O. Box 151, Silverton, CO 81433, Phone No. (970) 387-5488.



Silverton, CO

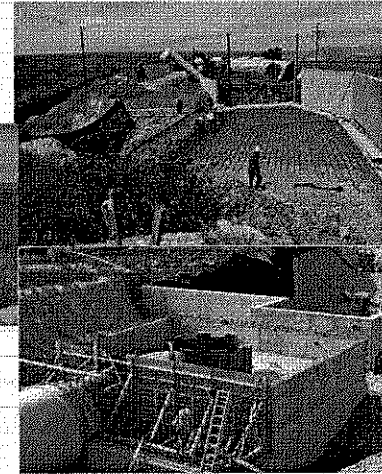
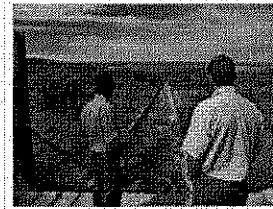
## Tri-County Water Project at Ridgway Dam



- Total Plant Capacity of 8 Megawatts (MW)
- Powerhouse will be connected to existing infrastructure
- One 7.2 MW unit plus one 0.8 MW unit
- Both units operate during high releases (summer)
- Smaller unit will operate during low releases (winter)
- Power will be generated using historic release patterns



## Delta Montrose Electric Association South Canal Project





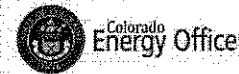
## Summary of Suggestions for 2014

- Create a one-stop process for state agencies to review proposed projects implemented commensurate with new federal FERC 45 day review process
- Require fairness for QF rates for small hydro projects
- Allow use of motors as generators for electrical inspection
- Raise the net metering cap for municipalities
- Expand "Solar Garden" concept to include hydropower
- Create a finance mechanism for small hydro
- Incorporate hydro analysis into state water plan



## Ask One State Agency to Circulate FERC Applications to All State Agencies for Review

- Precedent previously established with CO FERC Streamlining Pilot Program
- Ask one state agency to distribute FERC notices
  - State of Idaho does this now
- If any State agencies have comments, file them with FERC once on behalf of ALL state agencies within 45 day FERC comment period



Colorado Department  
of Public Health  
and Environment



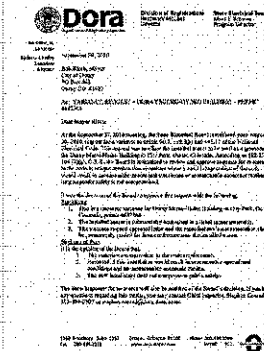
## Require Fairness for Avoided Cost Rates for QF Small Hydro

- Some utilities have already established hydro rates which can make hydro development economically feasible
- Wholesale utility costs currently low
- Require annual review of avoided costs and make sure internal and external costs for payment for small hydro are the same



## Ask State Electrical Board to Allow Use of Motors as Generators

- Electrical code requires all components to be used in a manner commensurate with nameplate
- Motors and generators are identical
- State Electrical Board has already allowed this for a project in Ouray



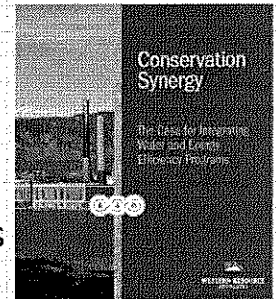
## Raise Net Metering Cap for Municipalities

- Under current state law, non-IOU utilities don't have to net meter beyond 25 kW.
- Raising the cap for municipalities will make economically feasible hydro projects larger than 25 kW that otherwise will not get built.



## Incorporate Hydro Analysis into State Water Plan

- Consider the energy-water nexus
- When developing the state water plan, consider how hydropower development fits logically with water development



## Expand “Solar Garden” Concept to Include Small Hydro

- Note California’s “Shared Renewables” Bill, SB 43, recently signed into law
- Build upon momentum with community-funded solar gardens already underway in Colorado



## Create a Financing Mechanism for Small Hydro Systems

- Given low wholesale electricity prices, the most economically-feasible projects are small, net-metered systems
  - Currently available state financing programs don’t apply to small systems
- Repackage existing federal and state loan programs to make them accessible to developers of small projects

## Contact

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