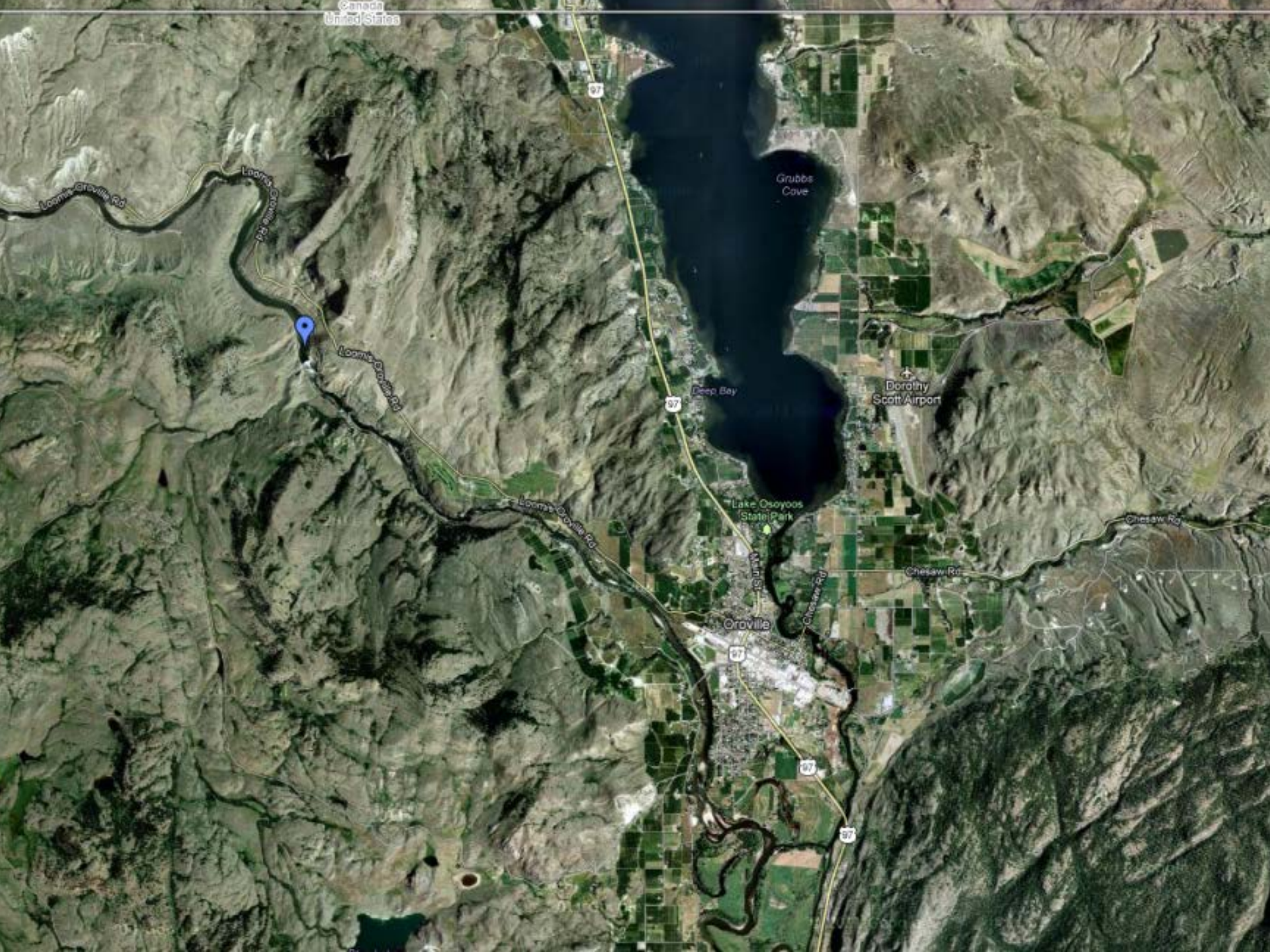




Public Utility District No. 1 of Okanogan County

Board of Commissioners Meeting Enloe Hydroelectric Project

November 17, 2014



Loomis Grove Rd

Loomis Grove Rd

Loomis Grove Rd

Loomis Grove Rd

Oroville

Main St

97

97

97

Grubbs Cove

Deep Bay

Dorothy Scott Airport

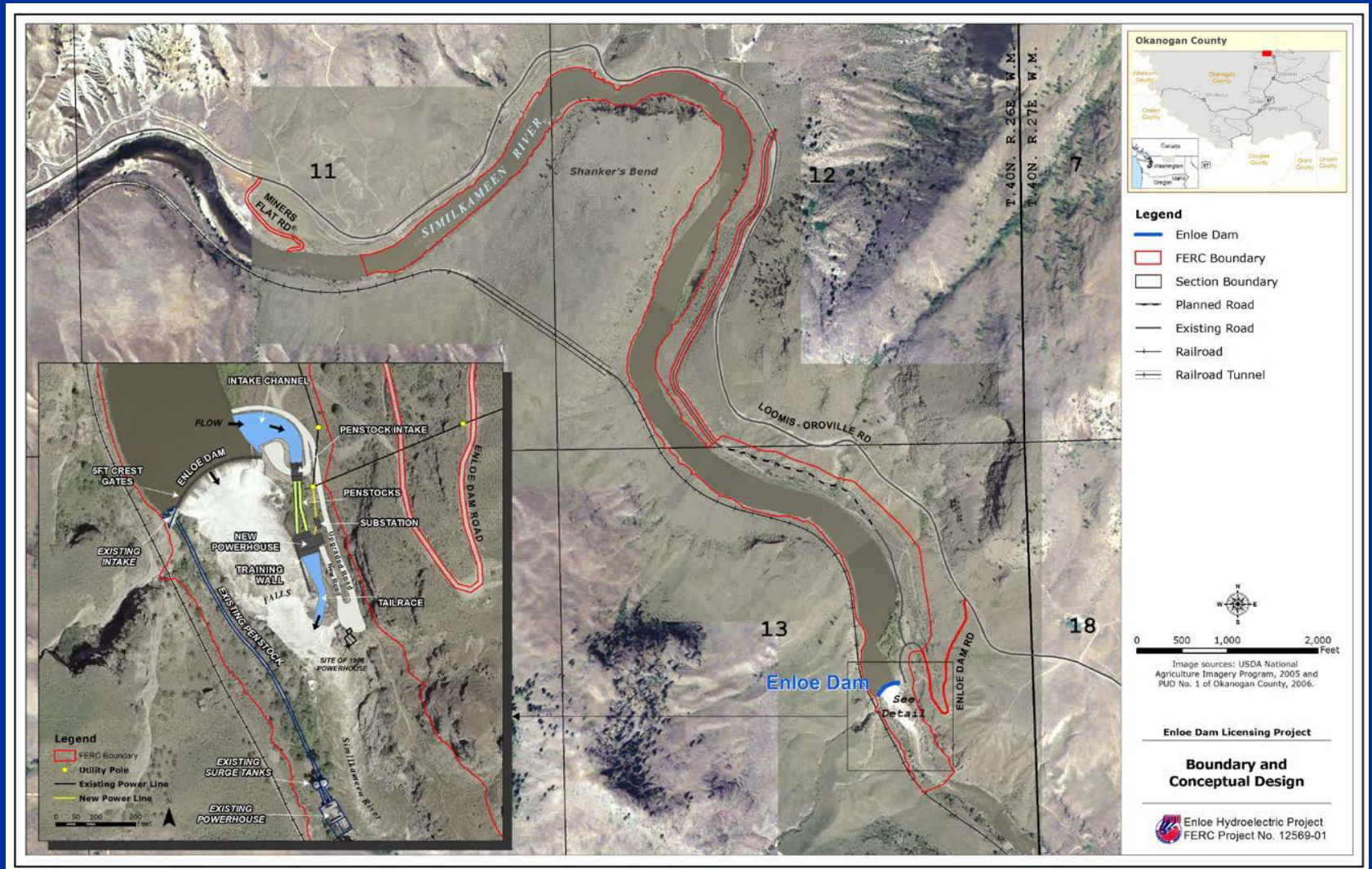
Lake Oroville State Park

Chesaw Rd

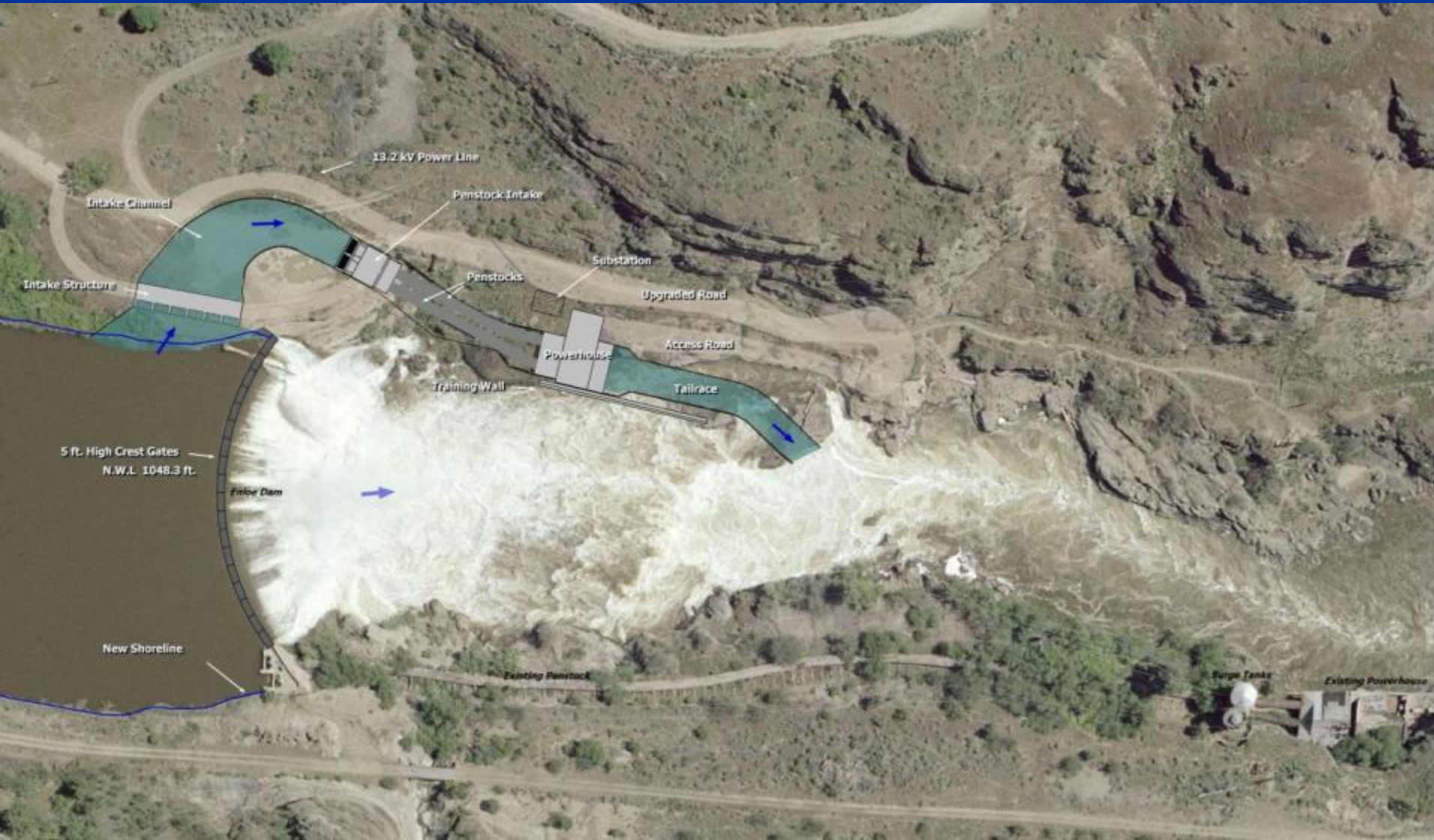
Chesaw Rd

Chesaw Rd

Project Vicinity and Boundary Map



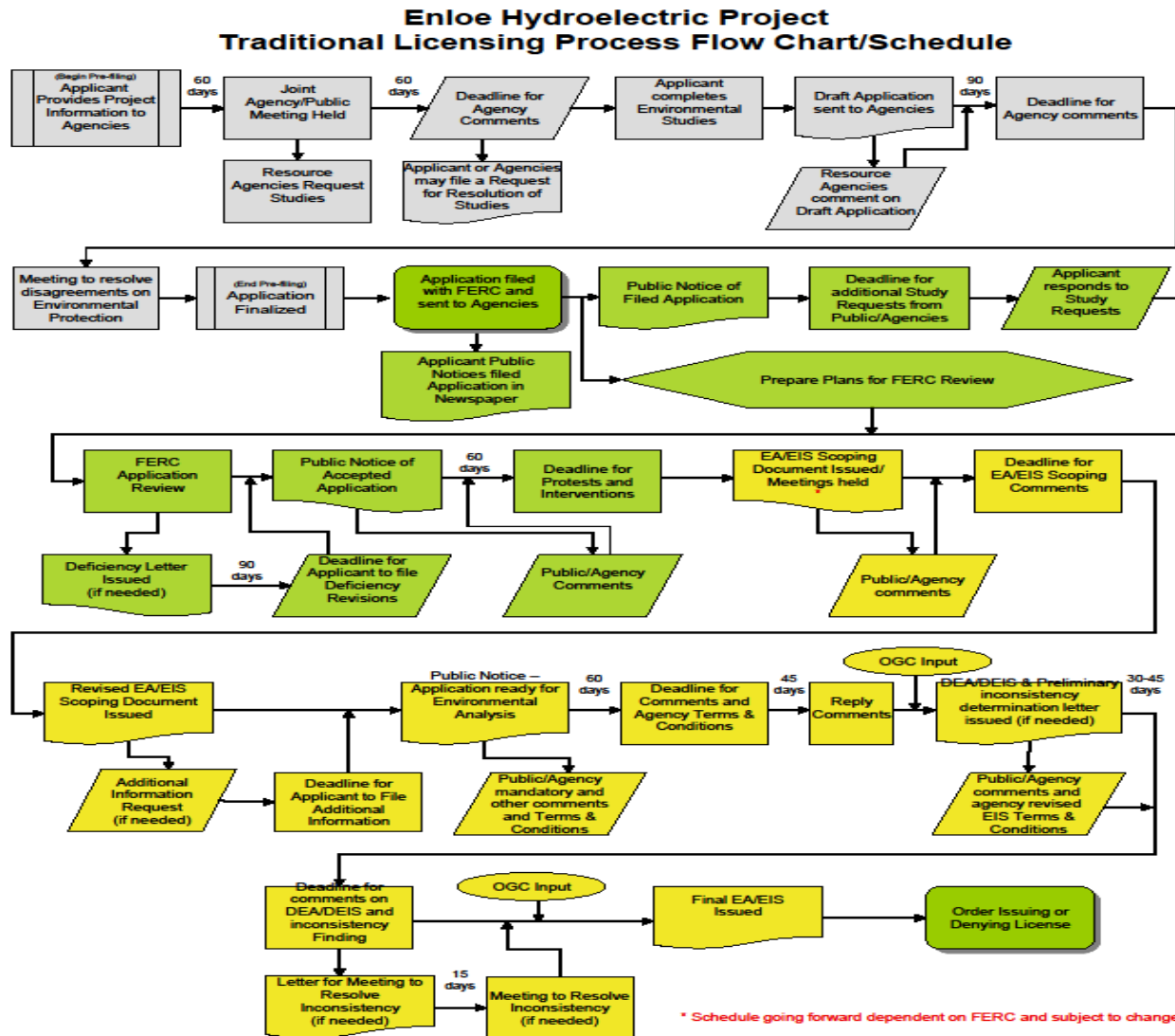
New Powerhouse, Intake and Tailrace



Comparison of Old and New Power Plants

Power Plant	Old	New
Year Completed	1923	2018
No of Units	2	2
Type of Unit	Francis	Kaplan
Axis	Horizontal	Vertical
Generating Capacity (MW)	3.2	9
Rated Net Head (ft)	78	77
Annual Generation (GWh)	22.5	45

FERC Licensing Process



FERC Process By Year - Major Highlights

- Traditional Licensing Process
- Initial Consultation Meeting
 - November 2005
- Studies Performed
 - Entire year 2006
- Draft License Application
 - November 2007
- Revise and File License Application with FERC
 - August 2008
- FERC Initiates NEPA Scoping and AIR's
 - Entire Year 2009

FERC Process By Year - Major Highlights

- Submittals – 401, BLM R/W, Water Rights, etc.
 - Entire Year 2010
- Draft and Final EA's Published
 - May and August 2011
- Issuance of Permits and Certifications – 401, Bi-op, Programmatic Agreement & 401 Appeal
 - Entire Year 2012
- Final FERC License
 - July 2013
- FERC License Implementation and Compliance
 - Entire Year 2014

Regulatory Compliance

- **FERC License – 97 Pages**
 - ▶ Issued - July 9, 2013
 - ▶ Effective - July 1, 2013
 - ▶ Expires - June 30, 2062
- **Terms and Conditions – Called Articles**
 - ▶ 202-206
 - Finalize Exhibits F & G, Headwater Benefits, Land Rights, Financing
 - ▶ 301-307
 - Construction, Dam Safety, Public Safety Plans, etc.
 - ▶ 400-416
 - Update Ecology Plans, Spoils Plans, Revegetation, Recreation Plans, Fire , Aesthetics Plans, Programmatic Agreement, etc.
 - ▶ Form L-2 General Articles 1 – 32
 - ▶ Appendix A – 401 Water Quality Certificate Conditions
 - ▶ Appendix B – NOAA Fisheries Terms and Conditions

License Articles and Conditions

- The FERC license contains 61 Articles.
- Currently we have identified approximately 350 tasks for the life of the project (50 years).
- Approximately 120 tasks have been identified that have compliance deadlines between July 2013 and July 2015.
- The 350 and 120 tasks identified above do not include tasks associated with the BLM R/W, 401 rulings, ACOE 404 conditions, HPA conditions or any pre, during or post Engineering or Operations assignments.
- It's anticipated that there will be at a minimum 1000 tasks associated with construction, operations, maintenance and environmental.

Revised Cost Figure - Summary

The estimated Capital Cost of implementing a 9-MW small hydropower plant at Enloe Dam has been updated to **mid-2014 price levels**. A summary of the updated cost estimate is shown on Table 1.

Table 1 – Updated Capital Cost Estimates

Cost Item	Cost Scenario	
	Probable (\$Million)	Adverse (\$Million)
■ Direct Costs	\$28.1	\$32.2
■ Indirect Costs	\$22.1	\$24.3
■ Total Capital Cost	\$50.2	\$56.5
■ Cost to Complete	\$39.1	\$45.5

Two cost estimate scenarios are provided. The “Probable” case represents the most likely capital cost scenario based on the project configuration in the FERC license, the present level of knowledge regarding site conditions, license terms and conditions, other permitting requirements and includes typical cost allowances for contingencies. The “Adverse” case includes larger, more conservative cost allowances for contingencies and shows the sensitivity of the capital cost estimate to allowances provided to account for residual uncertainties and cost risks.



Revised Cost Figure – D-1

FERC Electric Plant Account		SCENARIO	
		Probable (2014\$)	Adverse (2014\$)
DIRECT COSTS			
PRODUCTION PLANT			
Hydraulic Production			
330	Land and Land Rights	\$0	\$0
331	Structures and Improvements	\$3,649,775	\$4,311,077
332	Reservoirs Dams and Waterways	\$9,493,349	\$11,074,282
333	Waterwheels Turbines and Generators	\$9,674,444	\$10,553,939
334	Accessory Electrical Equipment	\$767,811	\$897,820
335	Miscellaneous Powerplant Equipment	\$279,204	\$326,480
336	Roads Railroads and Bridges	\$451,871	\$554,873
<i>Sub total - Hydraulic Production Plant</i>		<i>\$24,316,454</i>	<i>\$27,718,472</i>
TRANSMISSION PLANT			
352	Transmission Structures and Improvements	\$125,642	\$156,456
353	Station Equipment	\$0	\$0
<i>Sub total - Transmission Plant</i>		<i>\$125,642</i>	<i>\$156,456</i>
OTHER COSTS			
Environmental Protection, Mitigation and Enhancement (PM&E) measures		\$1,877,609	\$2,438,109
Removal of Existing Power Facilities		\$1,760,448	\$1,907,152
<i>Sub total - Other Costs</i>		<i>\$3,638,057</i>	<i>\$4,345,261</i>
SUBTOTAL - DIRECT COSTS		\$28,080,153	\$32,220,189
INDIRECT COSTS (To Complete)			
ENGINEERING, ENVIRONMENTAL, LEGAL AND ADMINISTRATIVE COSTS			
Sunk Costs			
Sunk Project Licensing Costs - Excluding AFUDC (Through 9/2014)		\$11,058,637	\$11,058,637
Final Engineering Design & Construction Management (2015-2018)		\$5,272,591	\$5,960,320
Environmental Studies and Compliance (2015 - 2018)		\$2,902,371	\$3,482,846
Owners Administrative, Legal and Other Costs (2015-2018)		\$906,250	\$1,650,000
Allowance for Interest During Construction Period		\$1,936,515	\$2,183,579
SUBTOTAL - INDIRECT COSTS		\$22,076,364	\$24,335,382
ESTIMATED CAPITAL COST (rounded)		\$50,160,000	\$56,560,000
ESTIMATED COST TO COMPLETE (excluding sunk costs - rounded)		\$39,100,000	\$45,500,000



Cost Figure – 2007 D-2

Item		Qty	Cost		
			(\$)	(\$/kW)	(\$/kWh)
Generation Data					
	Plant Capacity (MW)	9			
	Net Average Annual Generation (GWh)	45			
	Capacity Factor (%)	57.0%			
Plant Investment					
	Plant Investment Cost		\$30,980,000	\$3,442	
Annual Cost					
I. Capital Costs					
	a. Interest on Capital	4.50%	\$1,394,100	\$155	\$0.0310
	b. Capital recovery cost (40yr, 4.5%)	0.93%	\$289,451	\$32	\$0.0064
	Total Capital Costs		\$1,683,551	\$187	\$0.0374
	II. Insurance	0.20%	\$61,960	\$7	\$0.0014
	III. Taxes - Privilege Tax (% of first 4 mills/kWh)	5.35%	\$9,630	\$1	\$0.0002
	IV. Operation and Maintenance		\$600,000	\$67	\$0.0133
	V. Environmental Measures (40yr, 4.5%)		\$34,624	\$4	\$0.0008
	VI. Administrative and General/Contingency	35%	\$222,118	\$25	\$0.0049
	Total Generation Cost		\$2,611,883	\$290	\$0.0580



Revised Cost Figure – 2014 D-2 (including sunk costs)

Item	SCENARIO							
	Qty	Probable			Qty	Adverse		
		Cost (\$2014)				Cost (\$2014)		
		(\$K)	(\$/kW)	(\$/kWh)		(\$K)	(\$/kW)	(\$/kWh)
Generation Data								
Plant Capacity (MW)	9.0				9.0			
Net Average Annual Generation (GWh)	45.0				45.0			
Capacity Factor (%)	57%				57%			
Plant Investment								
Plant Investment Cost		\$50,160	\$5,573			\$56,560	\$6,284	
Annual Cost								
I. Capital Costs								
a. Interest on capital	4.00%	\$2,006	\$223	\$0.045	4.00%	\$2,262	\$251	\$0.050
b. Amortization of capital	1.78%	\$582	\$65	\$0.013	1.78%	\$656	\$73	\$0.015
Capital Costs		\$2,589	\$288	\$0.058		\$2,919	\$324	\$0.065
Insurance	0.20%	\$100	\$11	\$0.002	0.20%	\$113	\$13	\$0.003
Privilege Tax	5.35%	\$10	\$1	\$0.000	5.35%	\$10	\$1	\$0.000
Operation and Maintenance (levelized)		\$985	\$109	\$0.022		\$1,182	\$131	\$0.026
Environmental Measures (levelized)		\$223	\$25	\$0.005		\$406	\$45	\$0.009
Administrative/Contingency (levelized)	35%	\$423	\$47	\$0.009	35%	\$556	\$62	\$0.012
Operating Expenses		\$1,741	\$193	\$0.039		\$2,267	\$252	\$0.050
Total Cost		\$4,330	\$769	\$0.096		\$5,186	\$901	\$0.115
Levelized Cost of Energy				\$0.088				\$0.106



Revised Cost Figure – 2014 D-2 (excluding sunk costs)

Item	SCENARIO							
	Qty	Probable			Qty	Adverse		
		Cost (\$2014)				Cost (\$2014)		
		(\$K)	(\$/kW)	(\$/kWh)		(\$K)	(\$/kW)	(\$/kWh)
Generation Data								
Plant Capacity (MW)	9.0				9.0			
Net Average Annual Generation (GWh)	45.0				45.0			
Capacity Factor (%)	57%				57%			
Plant Investment								
Plant Investment Cost		\$39,100	\$4,344			\$45,500	\$5,056	
Annual Cost								
I. Capital Costs								
a. Interest on capital	4.00%	\$1,564	\$174	\$0.035	4.00%	\$1,820	\$202	\$0.040
b. Amortization of capital	1.78%	\$454	\$50	\$0.010	1.78%	\$528	\$59	\$0.012
Capital Costs		\$2,018	\$224	\$0.045		\$2,348	\$261	\$0.052
Insurance	0.20%	\$78	\$9	\$0.002	0.20%	\$91	\$10	\$0.002
Privilege Tax	5.35%	\$10	\$1	\$0.000	5.35%	\$10	\$1	\$0.000
Operation and Maintenance (levelized)		\$985	\$109	\$0.022		\$1,182	\$131	\$0.026
Environmental Measures (levelized)		\$223	\$25	\$0.005		\$406	\$45	\$0.009
Administrative/Contingency (levelized)	35%	\$423	\$47	\$0.009	35%	\$556	\$62	\$0.012
Operating Expenses		\$1,719	\$191	\$0.038		\$2,245	\$249	\$0.050
Total Cost		\$3,737	\$639	\$0.083		\$4,593	\$771	\$0.102
Levelized Cost of Energy				\$0.077				\$0.094



Questions?