The County of Prince Edward

Sandy River Reservoir
Water Treatment and Distribution System
February 10, 2011

CROWDER CONSTRUCTION COMPANY

Draper Aden Associates
Engineering • Surveying • Environmental Services

R07649-12

AGENDA

I. Background
- Sandy River Reservoir
- Drought of 2002
- Projected Demands
- Needs

II. PPEA Proposal and Interim Agreement

III. Project Scope

IV. Final Estimate

V. Schedule

VI. Moving Forward

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Location and Description

- 740 Total Acres
- 1,040 Acre Flood Pool
- 3.2 Billion Gallons of Water Stored
- 36 Feet Maximum Water Depth

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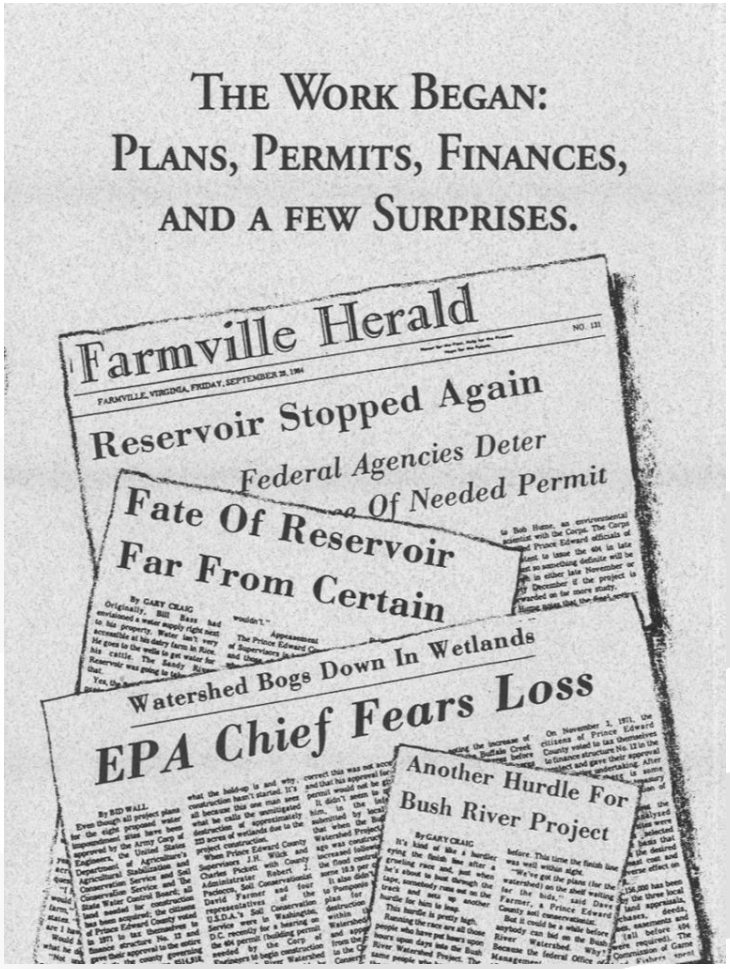
History of the Sandy River Reservoir

- 1967 Bush River Watershed Project initiated by County citizens
  - Flood protection
  - Protection of agricultural land
  - Future water supply for Prince Edward and the Town of Farmville
  - Outdoor recreational opportunities for the region
  - Economic development
- 1970-71 County approval & citizens approve Bond Referendum

History of the Sandy River Reservoir Continued



- 1971-1984
  - 1978 Approval from Congress
  - 1982 Federal funds became available
  - 1983 County citizens approve second bond referendum

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History of the Sandy River Reservoir Continued

- 1984 Permit received from the Army Corp of Engineers
- 1988 Dam construction completed
- 1991 Authorization to fill reservoir (ISTEA)


The Farmville Herald

Transportation Bill Would Fill Sandy River Reservoir

The Farmville Herald

Reservoir Awaits Presidential Signature

Water Will Flow Into Reservoir

Reservoir Won't Be Sandy For Long

History of the Sandy River Reservoir Continued

- 1992-1995 Clearing of Reservoir basin and filling
- 1994 – 2003
  - –Reservoir filled 1995
  - –Boat ramp constructed
  - –Recreational access road completed
  - –Prime recreation facility
  - –Sandy River Reservoir Board Committee

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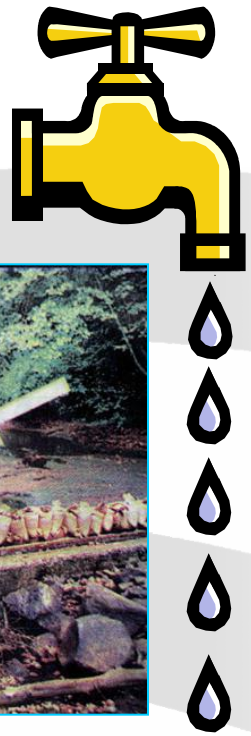
Drought of 2002

- 2002 Drought
  - Appomattox River flow at record low
  - Town of Farmville operating in emergency mode
    - Holiday Lake
    - Wilck's Lake
    - Buffalo Watershed
- State-Wide Drought



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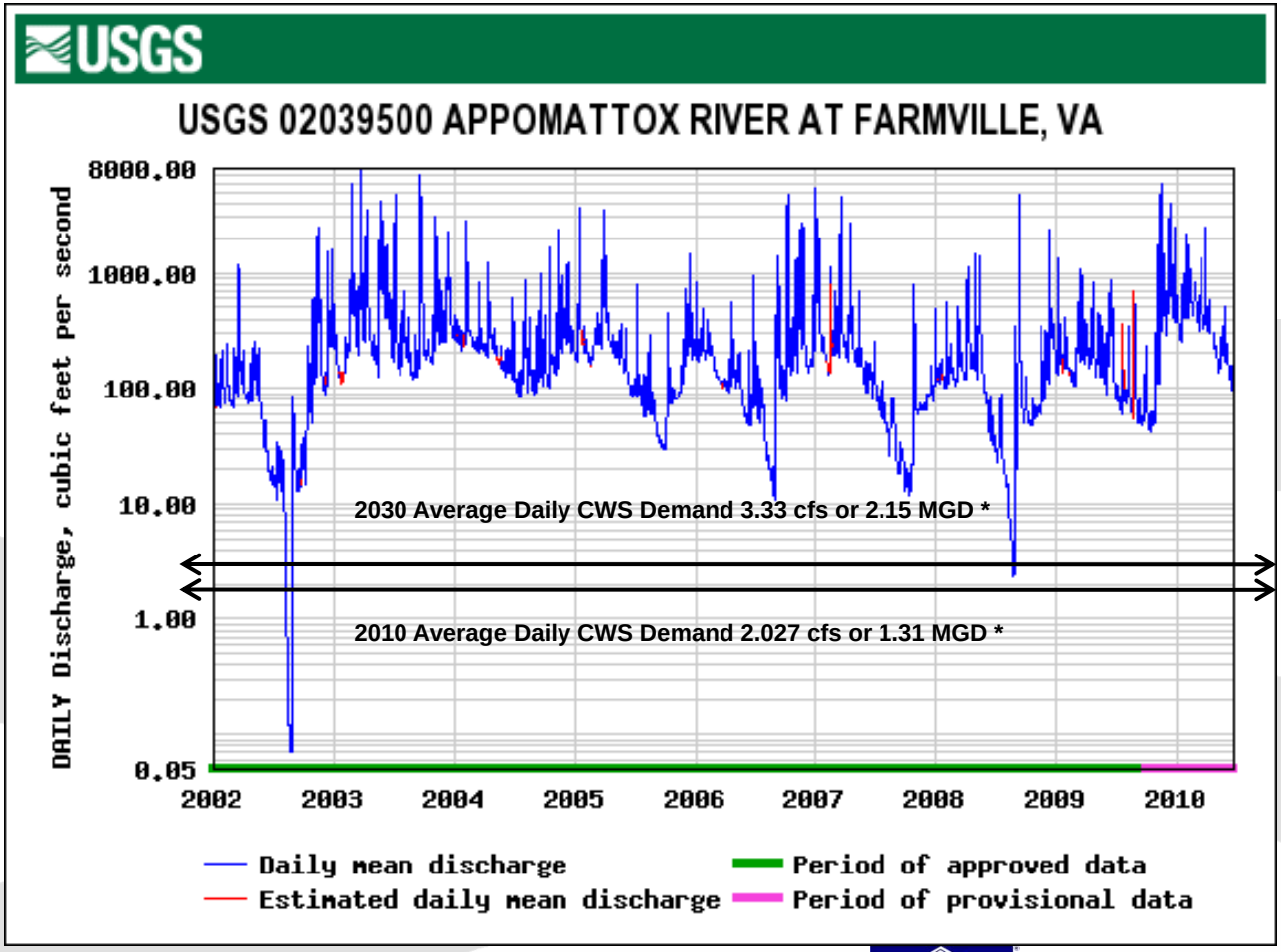
Record of Flow in Appomattox River



* Projected Average Daily Demands for Town of Farmville, adjacent developed areas in Prince Edward County and Hampden-Sydney College

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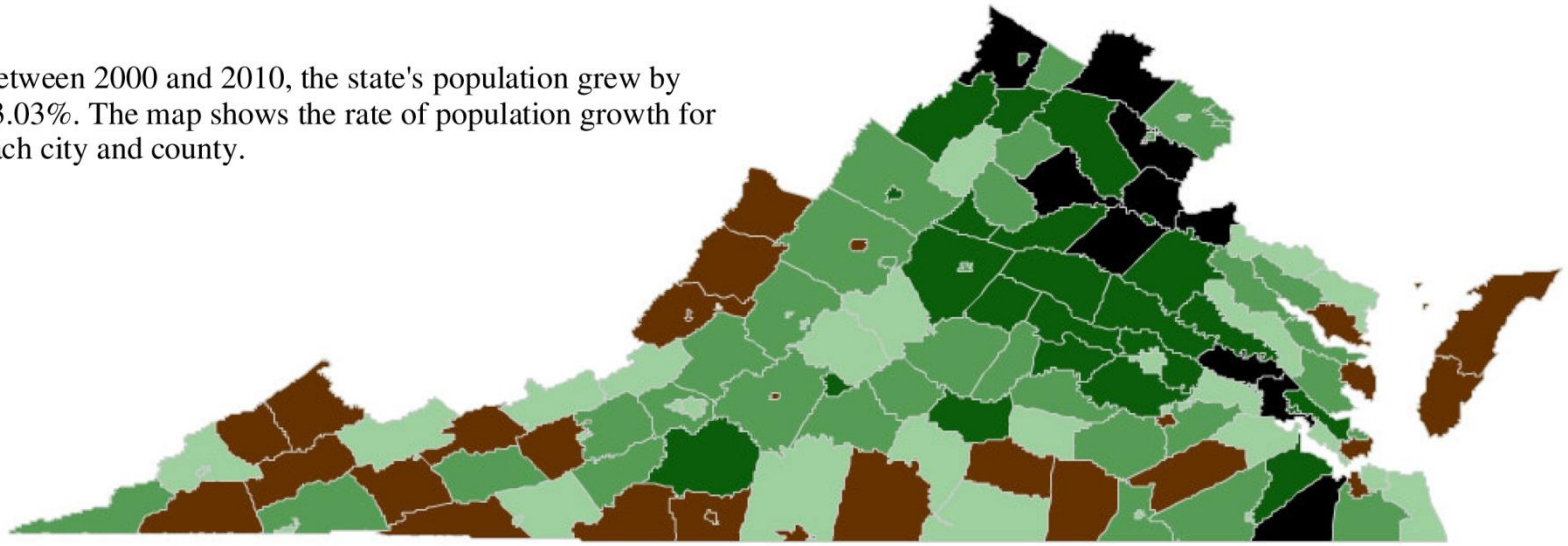
Population Change 2000 – 2010 (Prince Edward: +18.5%)

2010 Census

Between 2000 and 2010, the state's population grew by 13.03%. The map shows the rate of population growth for each city and county.



- 30% or Greater Growth
- 15 to 30% Growth
- 5 to 15% Growth
- 0 to 5% Growth
- Loss in Population

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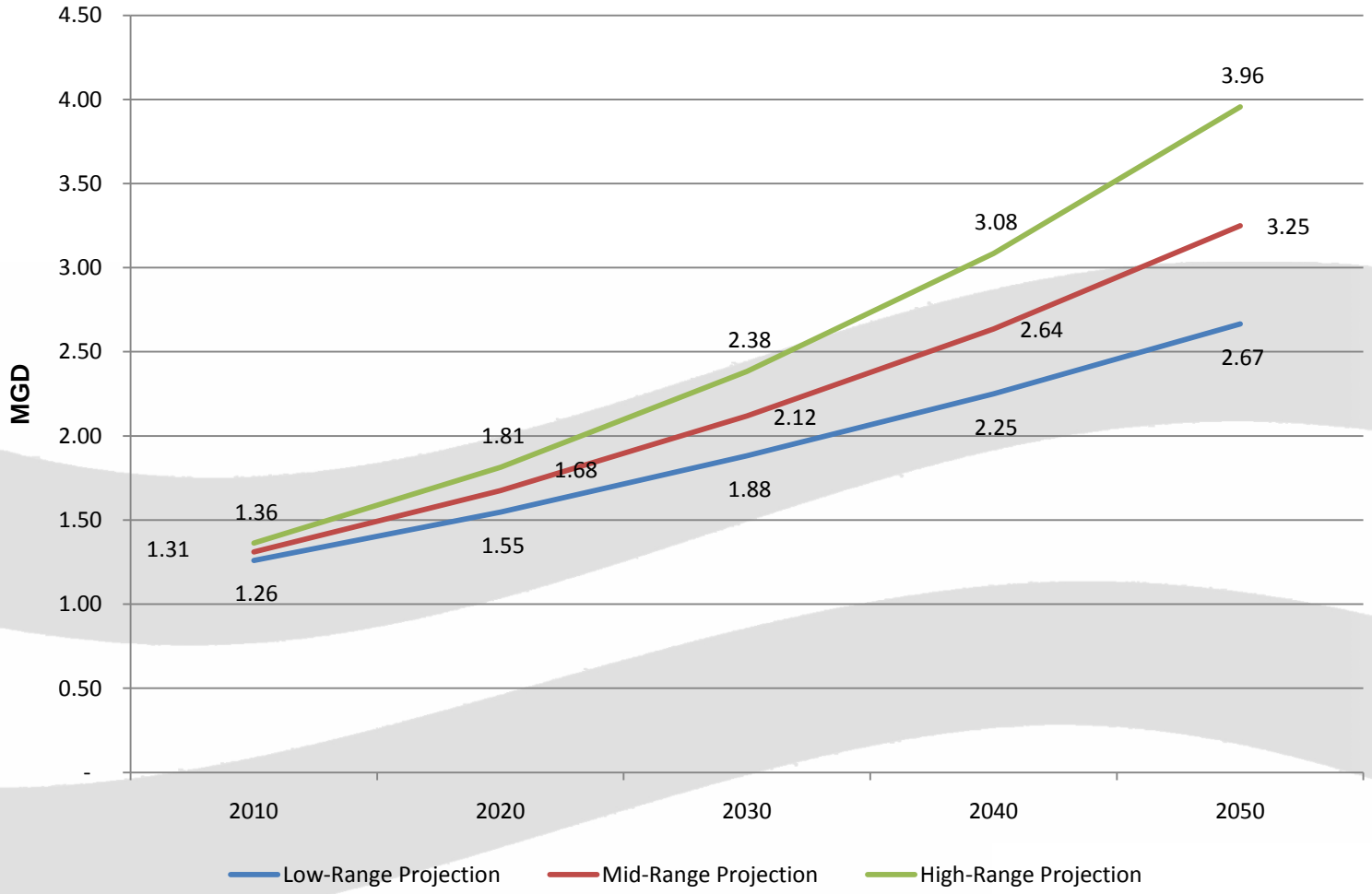
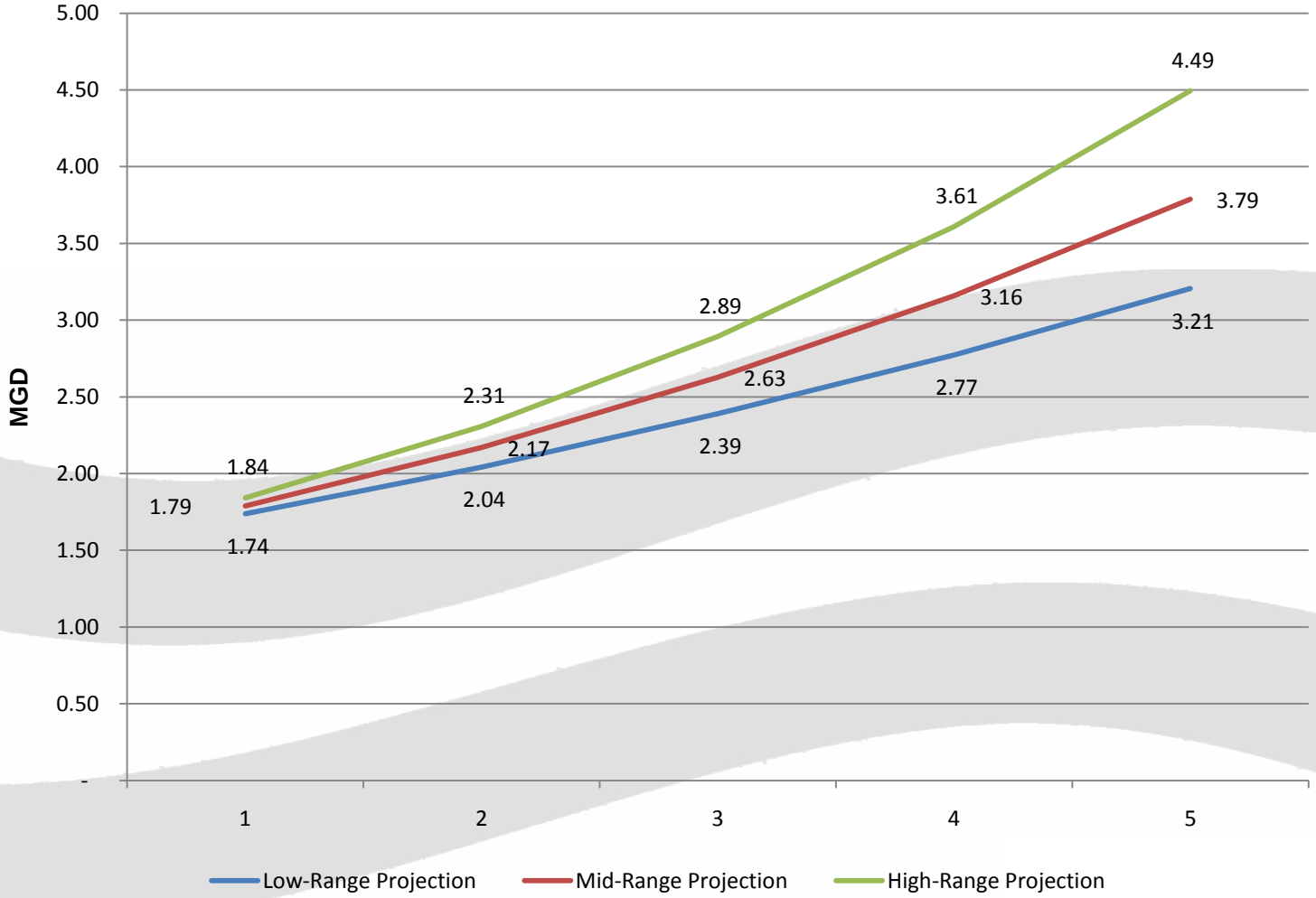
Projected Average Daily Demands Prince Edward and Farmville Only (2010 – 2050)



Projected Average Daily Demands
Prince Edward, Farmville, Crewe and Burkeville
(2010 – 2050)



Other Potential Demands

- Longwood University expansion
- Expanded service area
- Commercial development
- Large water user
- DOC / DBHDS growth
- Growth in Nottoway County

Utilizing Sandy River as a Water Supply

- Discussions with Town of Farmville
- Options evaluated
  - –Raw water to Town
  - –Emergency water to Town-Joint project
  - –County facility at Reservoir
- Safe yield analysis
  - –6.0 mgd at 5’ drawdown (average day)
  - –8.0 mgd at 10’ drawdown (average day)
- Withdrawal permit from VDEQ
  - –Sept 7, 2006 – 6.3 mgd max day
  - –Good for 15 years
  - –Renewal 2021

Utilizing Sandy River as a Water Supply Continued

- Joint project with Town of Farmville – indefinitely postponed
- Town of Farmville evaluating other options
- County decides to move forward
- November 2007, studies authorized
  - –Treatability Study
  - –Intake Structure Study

PPEA Proposal and SRR Interim Agreement

Crowder Construction Company / Draper Aden Associates Team

- To help Prince Edward County move forward with its long term goal.
  - To provide a long-term water supply that provides for growth, economic development, protection from impacts of future droughts and protects the environment.

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PPEA Proposal and SRR Interim Agreement

- October 17, 2008 – Unsolicited proposal submitted
- November 2008 - Board of Supervisors advertised for competing proposals
- January 2009 - Crowder proposal accepted by BOS
- June 2009 – Public presentation to BOS
- September 2009 – BOS authorized the negotiation of Interim Agreement
- December 2009 – BOS approved Interim Agreement
- January 19, 2010 – Team received authorization to proceed
- Additional presentations / Board Workshops
  - June 8, 2010
  - June 29, 2010
  - October 26, 2010
  - November 16, 2010

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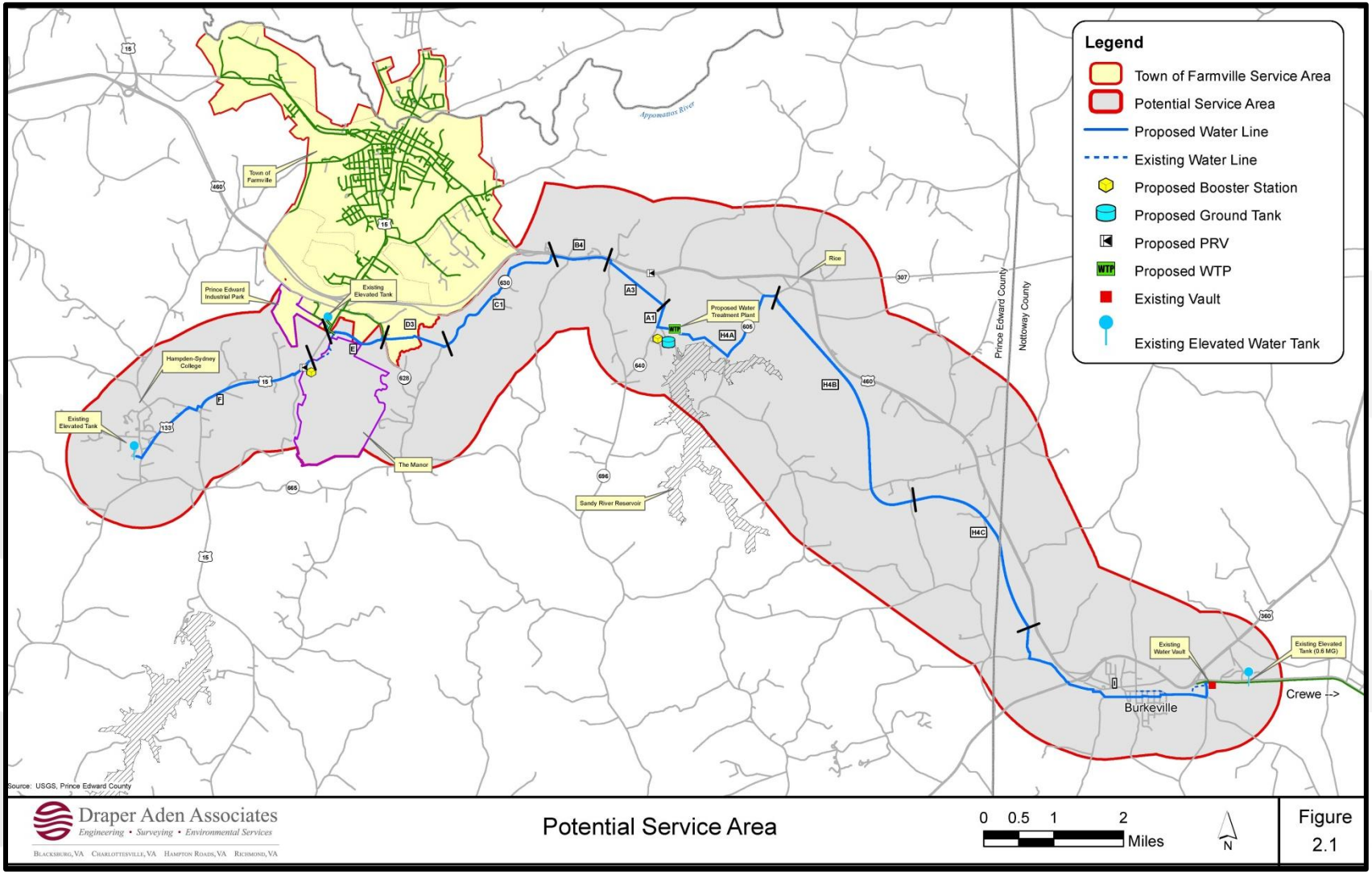
Potential Partners / Customers

- Burkeville, Crewe, and Nottoway
- Hampden-Sydney College
- Emergency connections to Town of Farmville

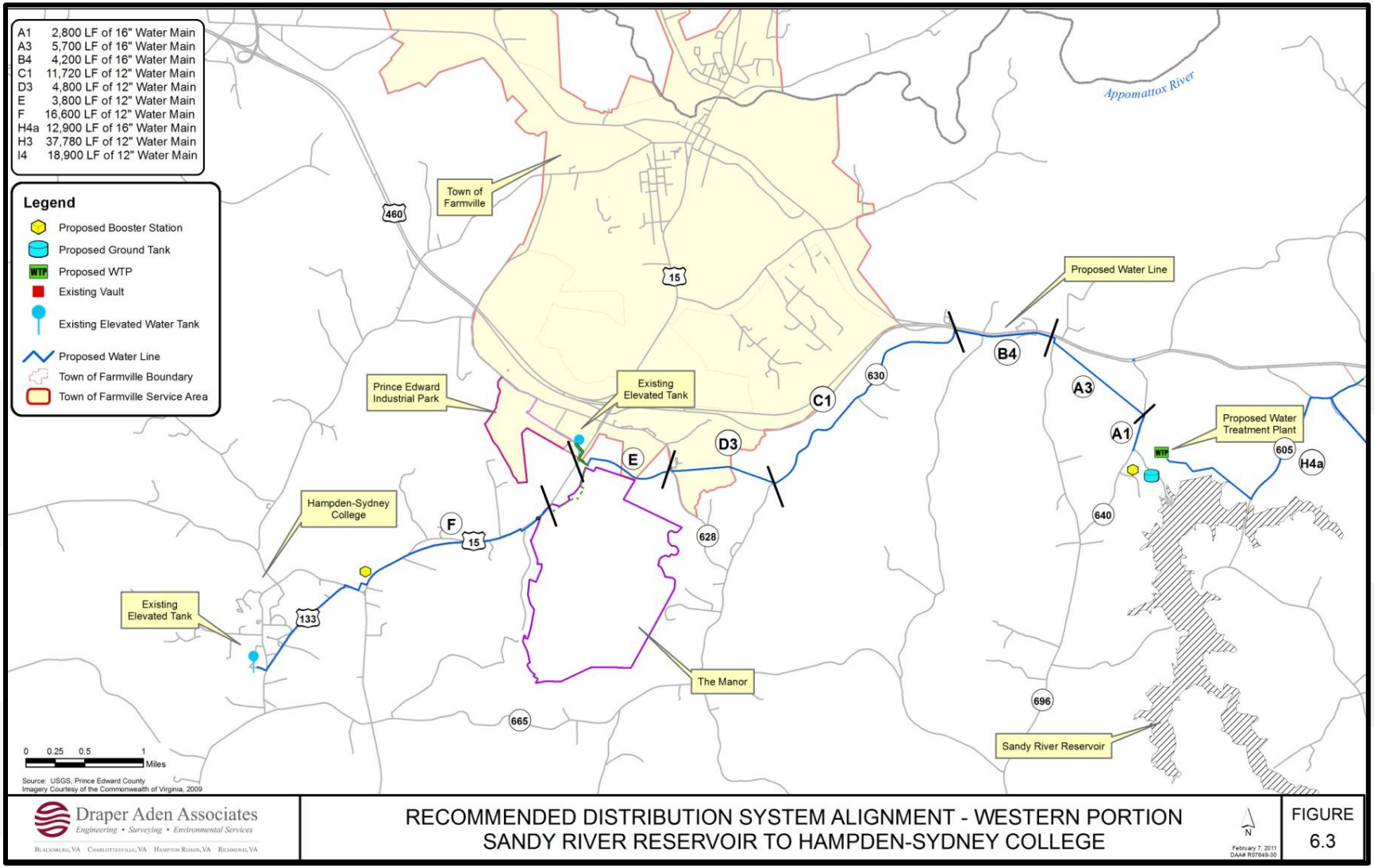
Potential Partner Impacts

- Funding
- Capital and operation cost
- Water quality
- Long-term water supply needs

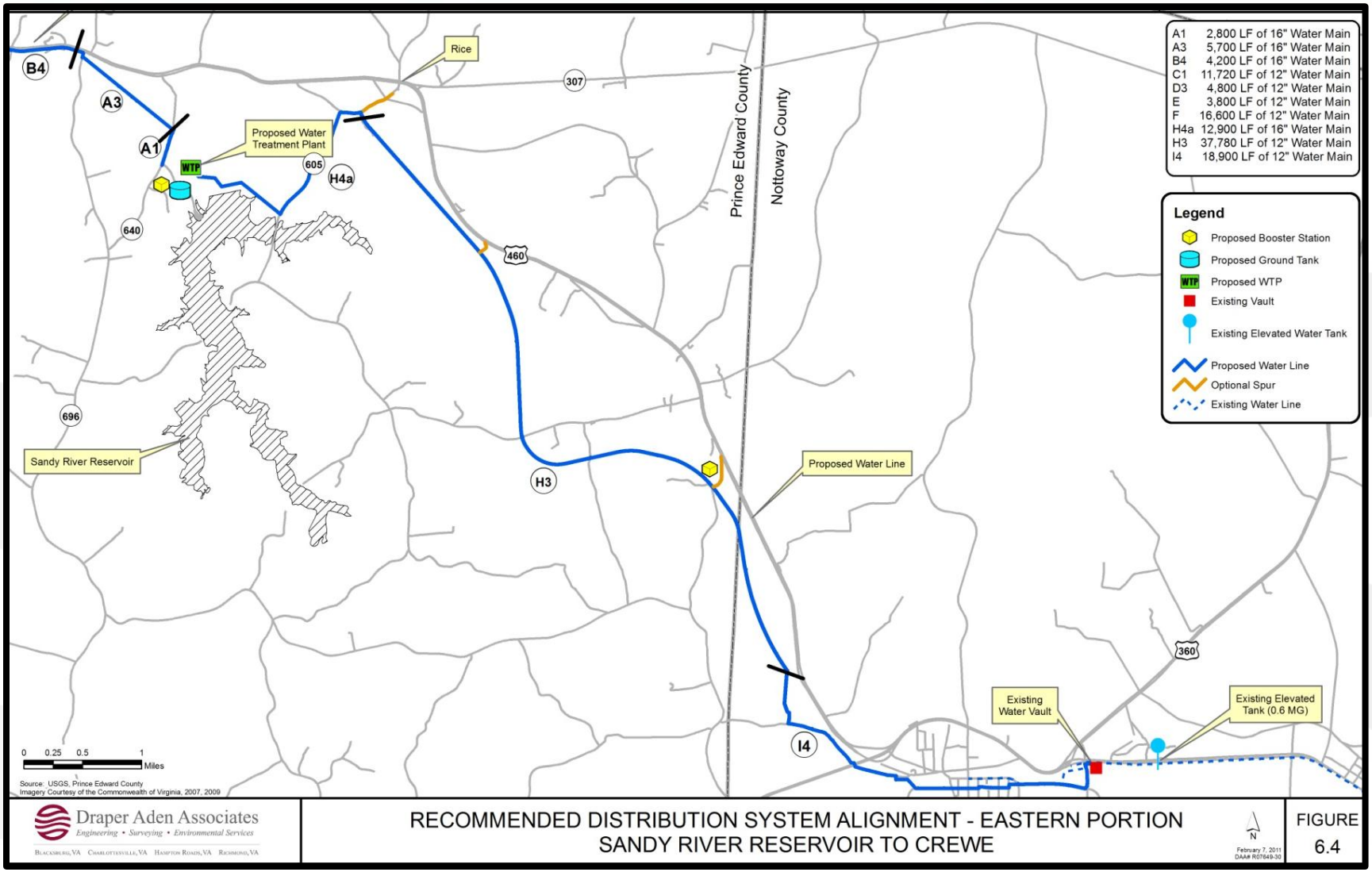
Potential Service Area



Water Distribution System
Western Alignment

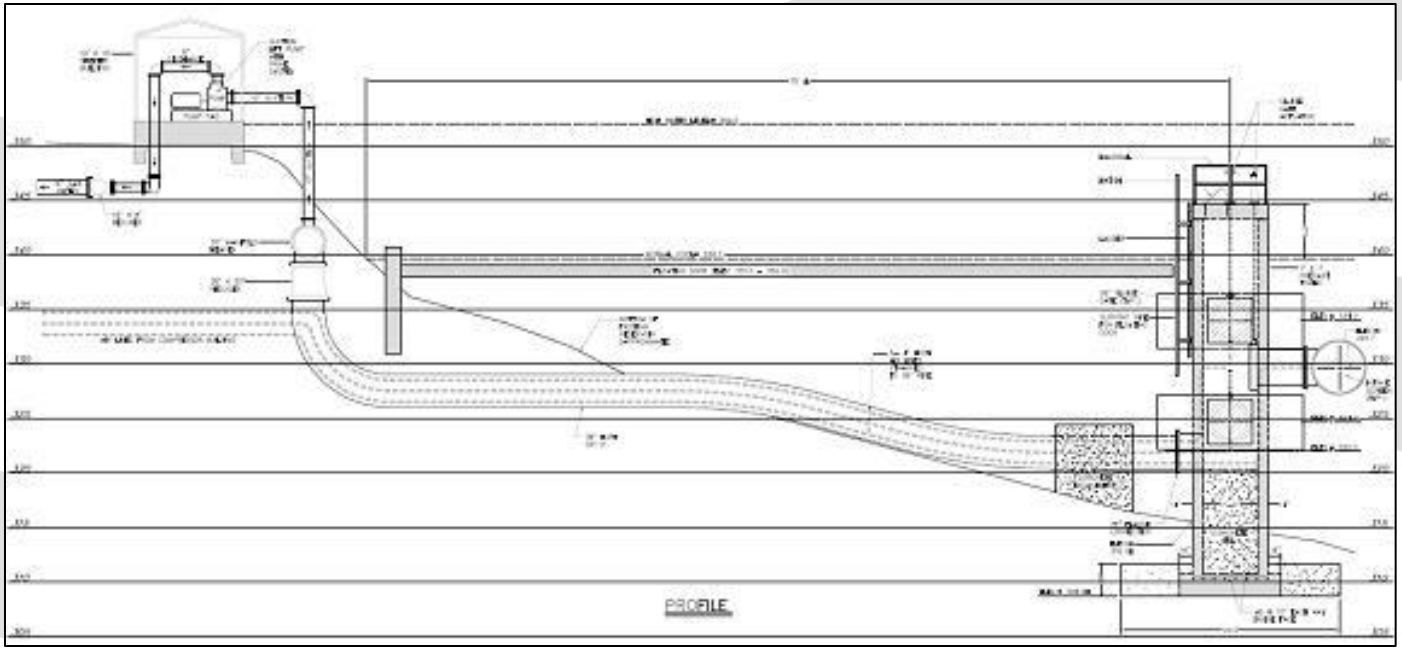


Water Distribution System
Eastern Alignment

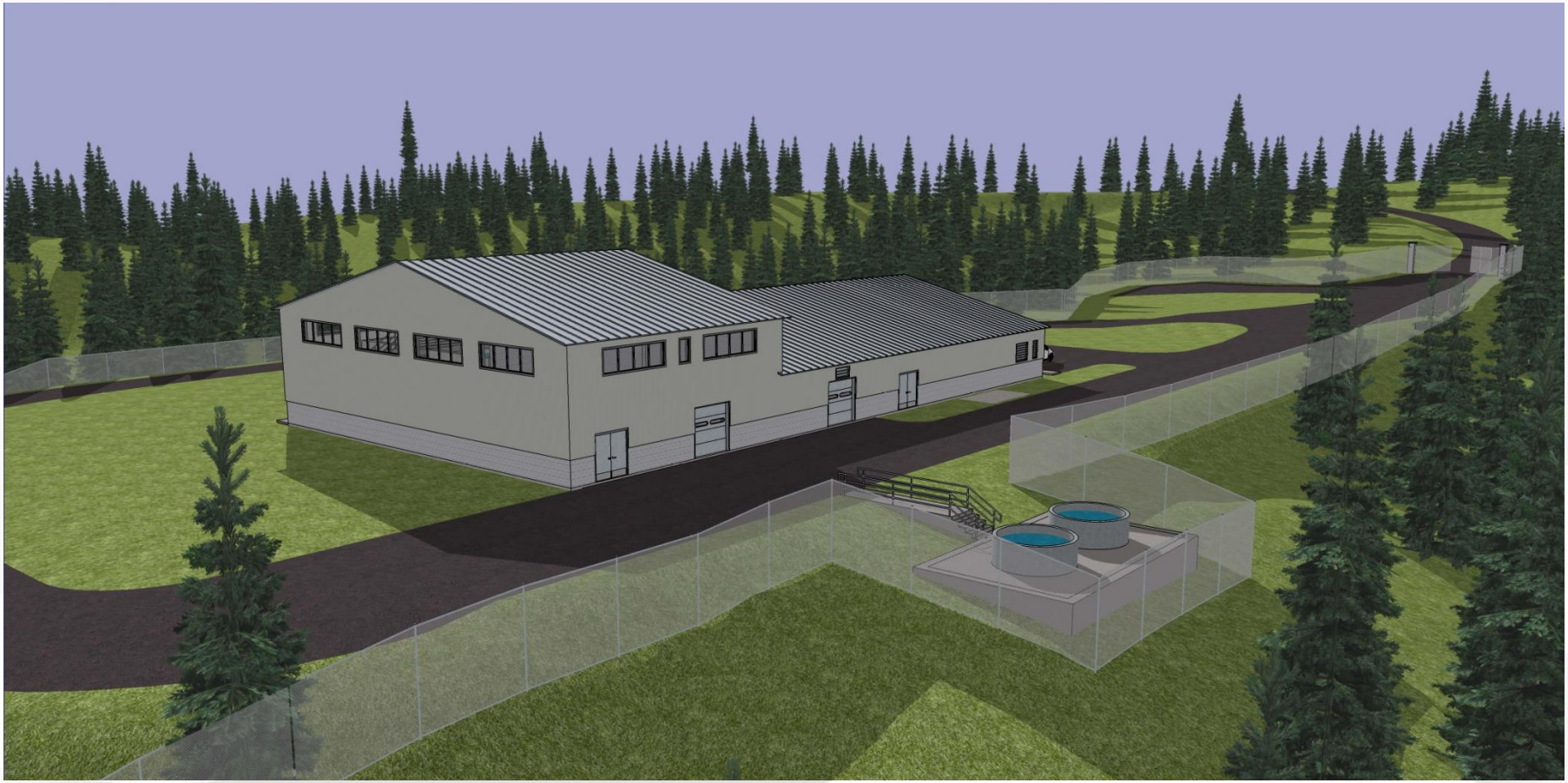


Raw Water Intake

- Intake Structure Located in the Reservoir
- Intake Pumps Located on the Shore Line
- Intake Control Building Located Near Dam Access Road
- Intake Infrastructure Capacity – 8mgd

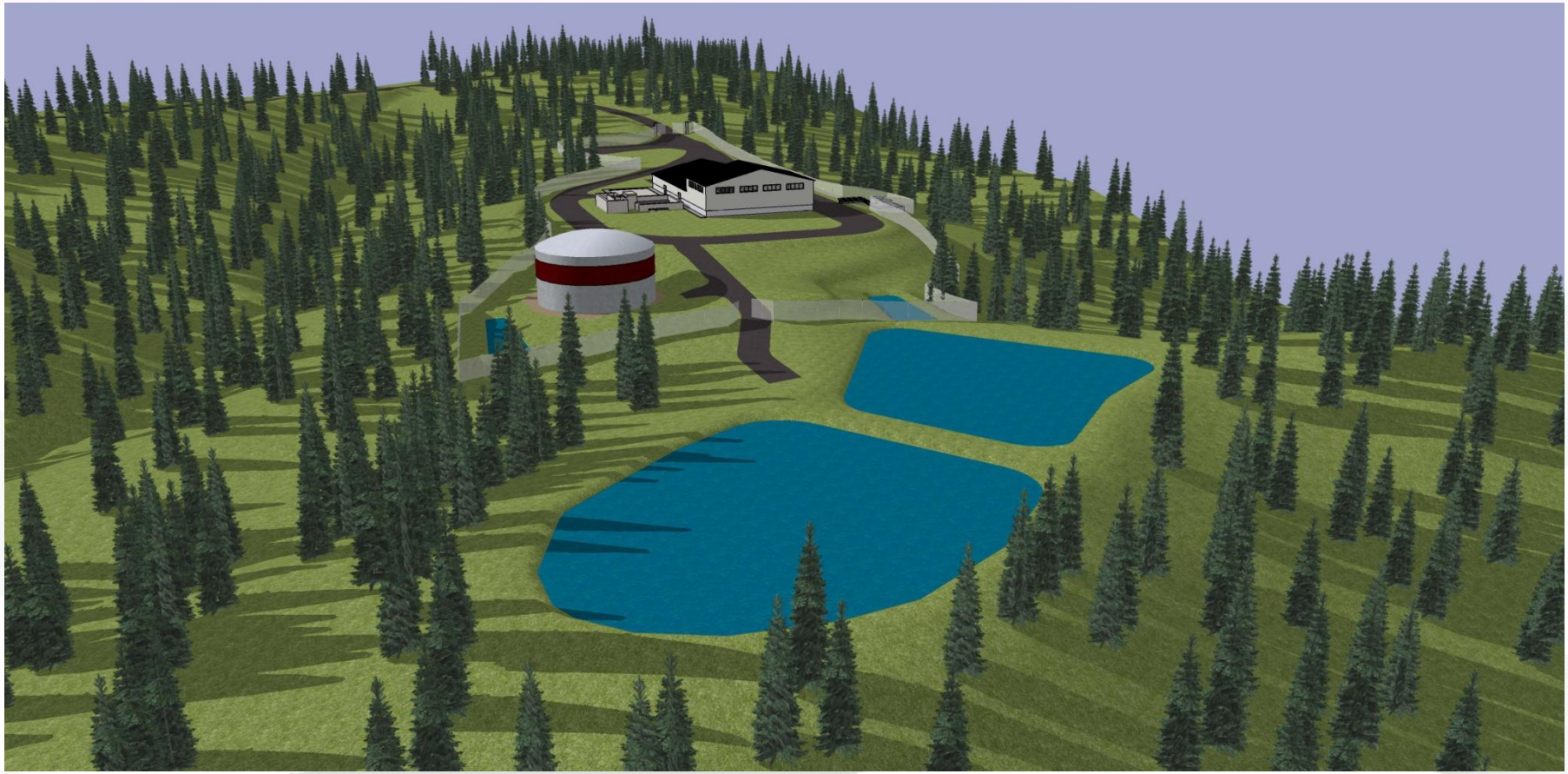


Project Overview



- **2.0 mgd facility**
- **Easily upgraded to 4.0 mgd**
- **8 mgd intake – maximum withdrawal**

Project Overview



- **Conventional filtration**
- **Powdered activated carbon**
- **Proven technology**

Cost Reductions

- 30% Design Documents – Actual Costs
- Competitive Pricing
- Constructability Reviews & Value Engineering Sessions
- Pilot Study – Verification of Treatment Process
  - Significantly Reduced Size of Raw Water Contactor
- Received VDH Comments – Reduced Risk
- Geotechnical Investigations – Reduced Risk
- Identified Multiple Routes for Waterlines
- Reduction of Finished Water Storage

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Competitive Pricing

Site Work	Fencing	Rebar	Paint	Plumbing/HVAC
Asphalt	Landscaping	Concrete	Architectural Components	Instrumentation
Stone	Pipe	Masonry	Process Equipment	Electrical Equipment
Hauling	Valves	Metals	Metal Building	Generators
Underwater Work				

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Local Opportunities

- Local Labor
- Material Suppliers
- Equipment Rental
- Subcontractors –
  - Earthwork, Paving, Fencing
  - Architectural, Masonry, Doors, Windows, Painters
  - Pipelines, Plumbing, HVAC
  - And Others

Estimate Summary

	Initial Estimate October 2008	Presentation Estimate March 2010	Preliminary Estimate July 2010	Final Estimate February 2011
RW Intake and Pump Station	3,924,119	3,723,000	3,700,000	3,525,000
Water Treatment Plant	16,942,379	14,330,000	14,102,000	12,987,000
Water Distribution System	12,906,502	11,722,000	9,116,000	8,367,000
Total	**33,773,000**	**29,775,000**	**26,918,000**	**24,879,000**
Estimated Project Indirect Costs - 841,900				

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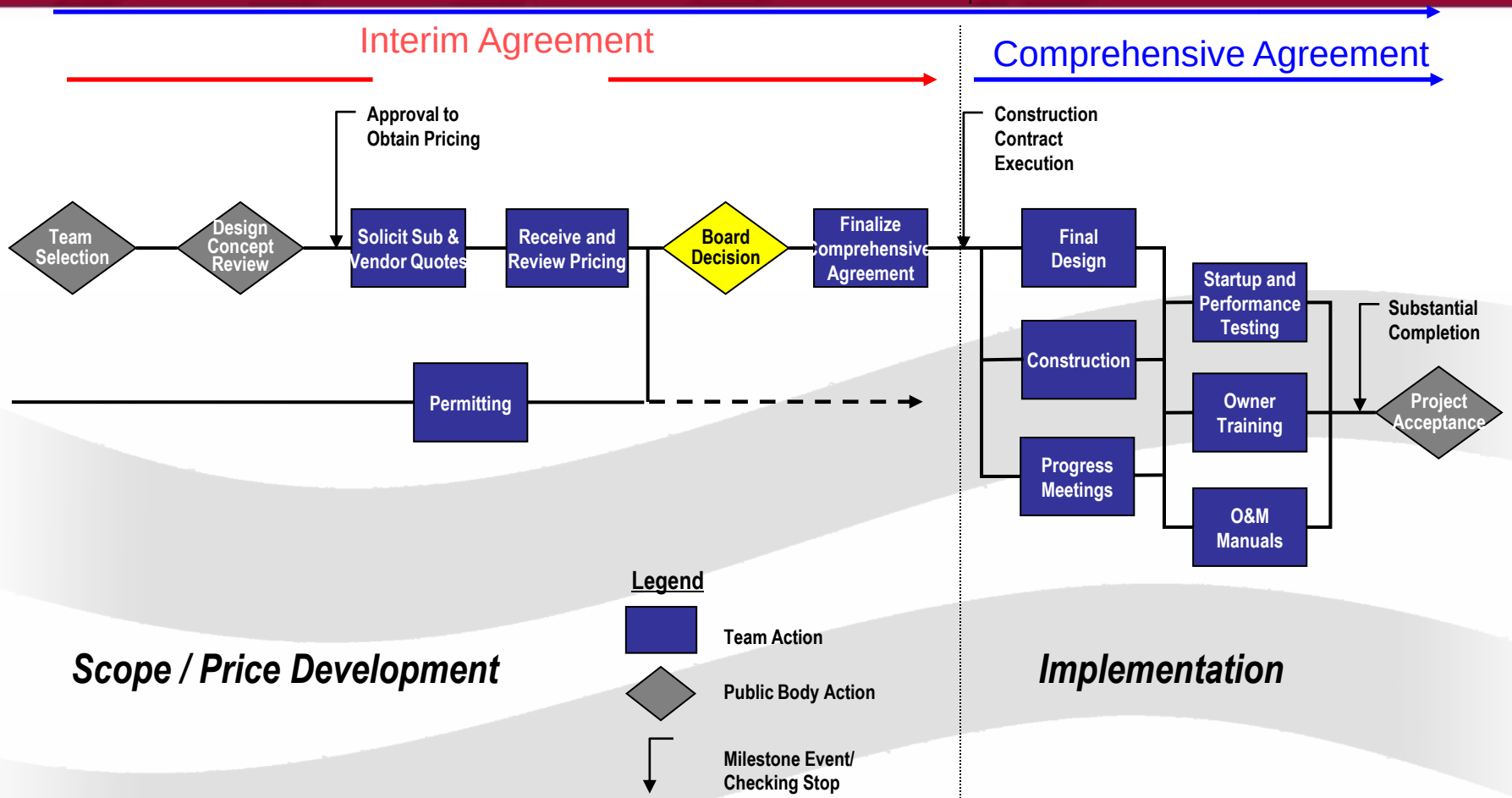
PPEA Process



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Schedule – Moving Forward

Presentation to the Board:	February 10, 2011
Financial Analysis Meeting:	February 11, 2011 – March 25, 2011
Meetings with Potential Partners:	February 11, 2011 – March 25, 2011
Meetings with Funding Agencies:	February 11, 2011 – March 25, 2011
Workshops to Determine Final Scope:	February 11, 2011 – March 25, 2011
Lump Sum Proposal:	March 31, 2011
Decision by Board of Supervisors:	April 12, 2011
Execute Contracts & Issue NTP:	May 12, 2011
Begin Construction:	October 2011

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Benefits – Moving Forward

- Take advantage of current construction market (pricing)
- Take advantage of low interest rates
- Benefit to local contractors, suppliers, and workforce
- Momentum of state agencies
- Investment to assure a safe, reliable, and long-term water supply
- Being prepared for the next drought
- Achieve Prince Edward County's long term goals

Questions and Answers

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