Alternative R-4a: Union Mills Reservoir (Proposed – El 610)

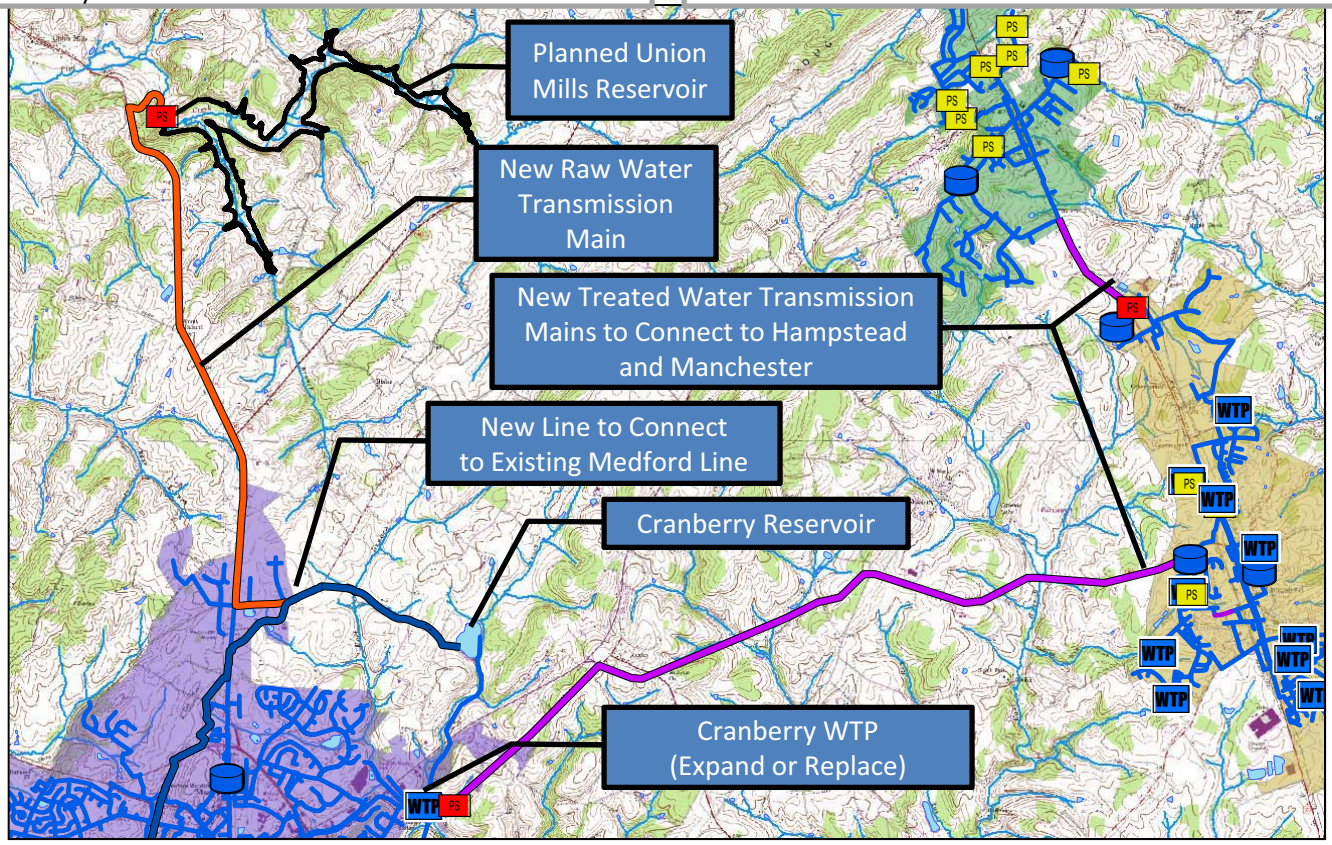
MALCOLM PIRNIE

Description of Alternative:

- Regional reservoir planned to supplement Westminster, Hampstead, Manchester and Taneytown Water Service Areas and provide flood control
- Safe Yield = 3.76 mgd; Total Volume = 2.44 BG
- Drainage Area = 24.86 square miles
- Surface Area = 298 ac. at Normal Pool El. 610 ft
- Average minimum release = 5.48 mgd
- Phased implementation – potential for phased implementation, starting with a groundwater option (G-7) and/or a surface water intake on Big Pipe Creek (S-2). If either project is completed, the raw water pipeline will already be in place for the Union Mills Reservoir.
- Construction of a new 3.2 mgd WTP in vicinity of existing Cranberry WTP or expand Cranberry WTP capacity by 3.2 mgd.
- Installation of approximately 5 miles of 20-inch raw water transmission mains to connect Union Mills Reservoir to Cranberry Reservoir.
- Installation of approximately 7.8 miles of treated water transmission main to connect to Hampstead and Manchester Water Service Areas.
- New intake and three new pump stations
- Taneytown to be served through flow augmentation of Big Pipe Creek and downstream withdrawal. Construction of a new 1.8 mgd WTP in Taneytown. Installation of approximately 1.0 mile of raw water transmission mains in Taneytown to connect intake to new WTP

Key Implementation Steps:

- County complete purchase of approximately 781 acres of land, including +/- 3 residences
- Key Permits Required:
  - USACE Section 404 permit
  - Water Appropriation and Use Permit
  - Water and Sewerage Construction Permit
  - Non-tidal Wetland and Waterways Permit
  - Dam Safety Permit
- Complete surveys for aquatic habitat and cultural resources within the affected project footprint.
- Develop Mitigation Plan:
  - Approx. 8.4 miles of stream impacts
  - Approx. 114 acres of wetland impacts
- Negotiate less restrictive minimum reservoir releases with MDE to increase project safe yield.
- Confirm that any impacts to Whittaker Chambers Farm (National Historic Landmark) can be addressed.
- Confirm that any potential water quality impacts on reservoir from adjacent John Owings Landfill can be addressed.



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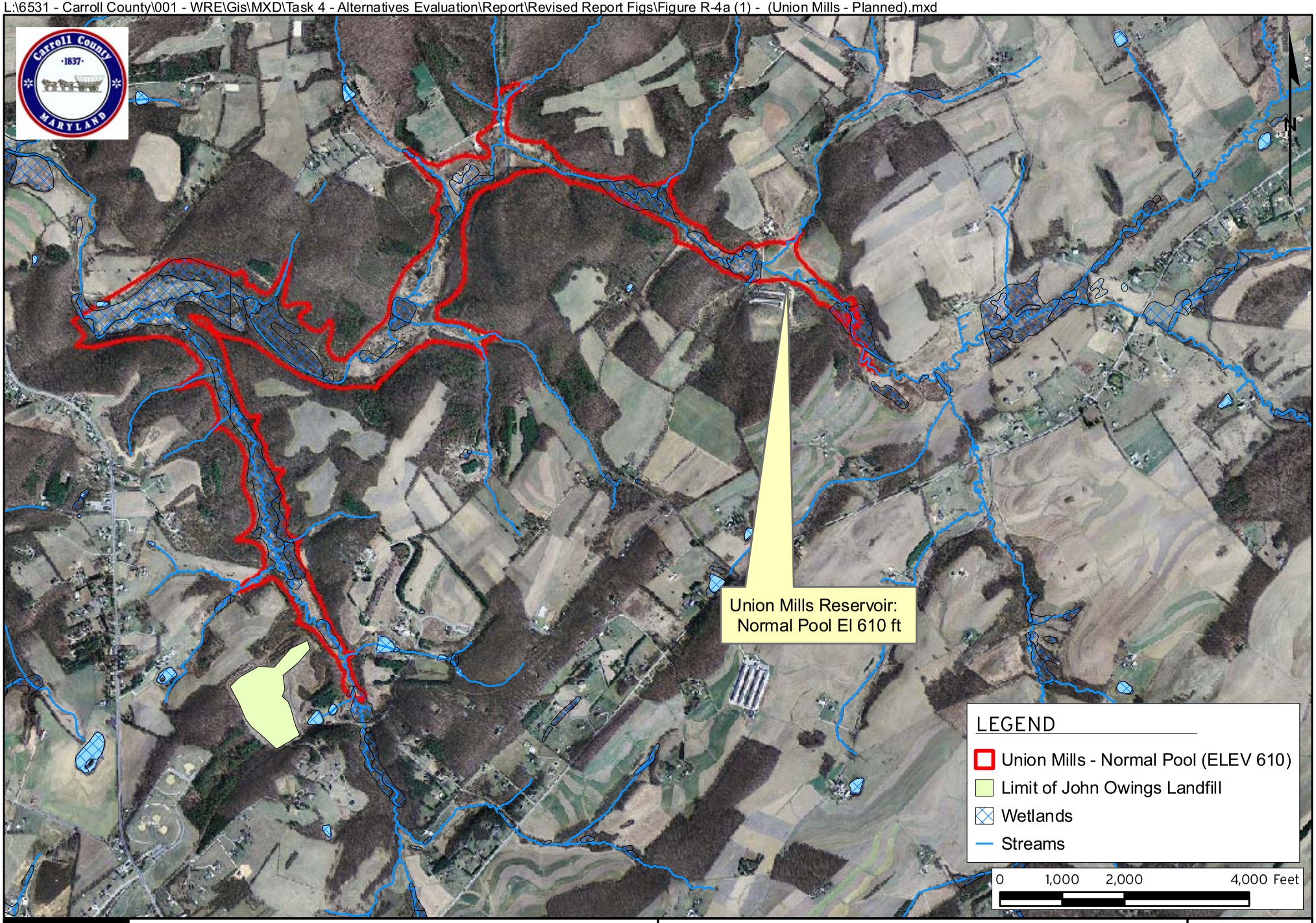


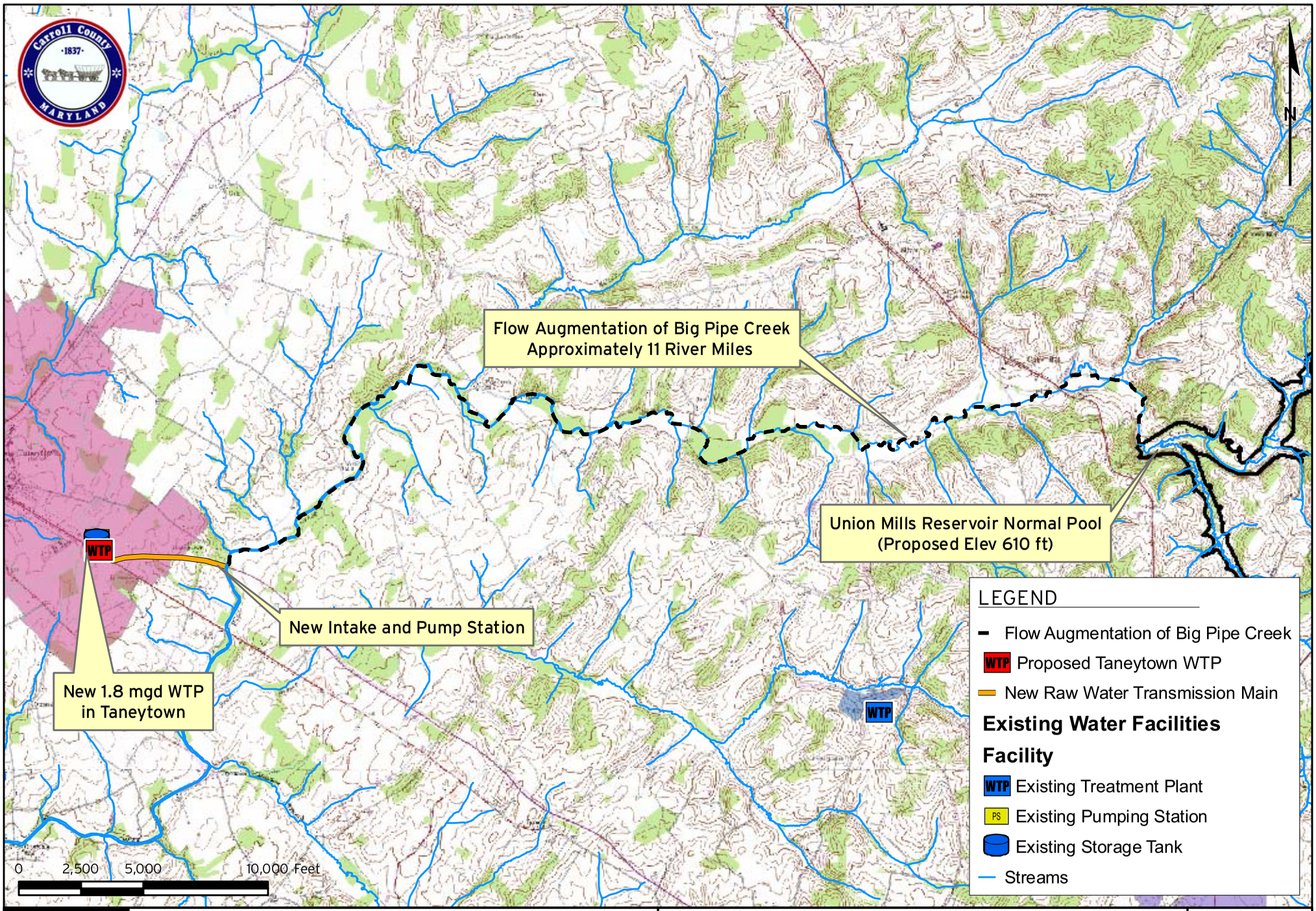
MALCOLM PIRNIE

CARROLL COUNTY, MD
ALTERNATIVES EVALUATION

Alternative R-4a:
Union Mills Reservoir (Proposed)

Aug 2009

Figure R-4a(1)



MALCOLM PIRNIE

CARROLL COUNTY, MD
ALTERNATIVES EVALUATION

Union Mills Reservoir Flow Augmentation of
Big Pipe Creek to Supply Taneytown

Aug 2009

Figure R-4a (2)

Alternative R-4b: Union Mills Reservoir (Expanded – El 630)

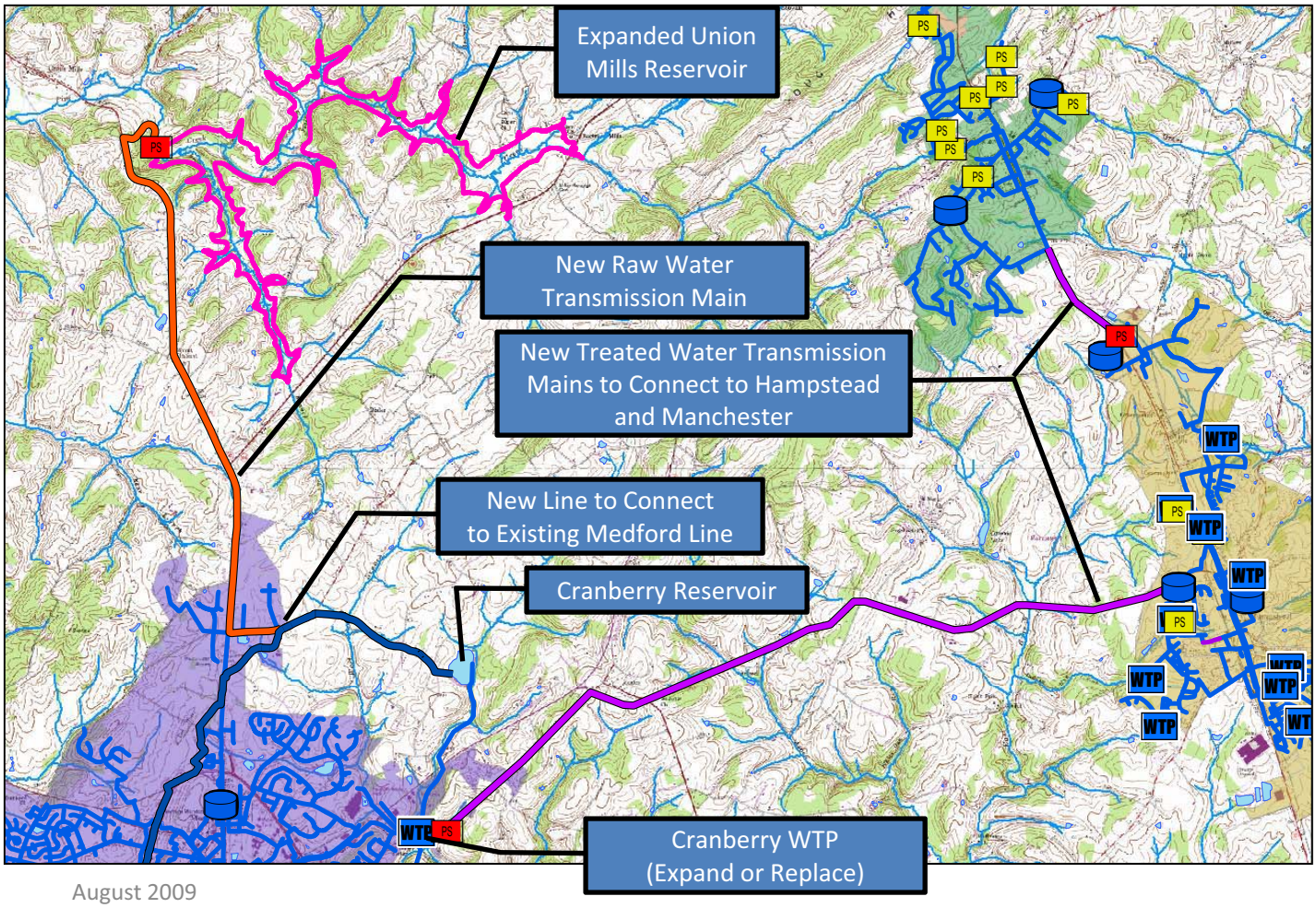
MALCOLM PIRNIE

Description of Alternative:

- Regional reservoir planned to supplement Westminster, Hampstead, Manchester and Taneytown Water Service Areas and provide flood control
- Safe Yield = 7.93 mgd; Total Volume = 5.49 BG
- Drainage Area = 24.86 square miles
- Surface Area = 633 ac. at Normal Pool El. 630 ft
- Average minimum release = 5.48 mgd
- Construction of a new 3.2 mgd WTP in vicinity of existing Cranberry WTP or expand Cranberry WTP capacity by 3.2 mgd.
- Installation of approximately 5 miles of 36-inch raw water transmission mains to connect Union Mills Reservoir to Cranberry Reservoir.
- Installation of approximately 7.8 miles of treated water transmission main to connect to Hampstead and Manchester Water Service Areas.
- New intake and three new pump stations
- Taneytown to be served through flow augmentation of Big Pipe Creek and downstream withdrawal. Construction of a new 1.8 mgd WTP in Taneytown. Installation of approximately 1.0 mile of raw water transmission mains in Taneytown to connect intake to new WTP .

Key Implementation Steps:

- County complete purchase of approximately 1,144 acres of land, including +/- 4 residences
- Key Permits Required:
  - USACE Section 404 permit
  - Water Appropriation and Use Permit
  - Water and Sewerage Construction Permit
  - Non-tidal Wetland and Waterways Permit
  - Dam Safety Permit
- Complete surveys for aquatic habitat and cultural resources within the affected project footprint.
- Develop Mitigation Plan:
  - Approx. 15.1 miles of stream impacts
  - Approx. 165 acres of wetland impacts
- Negotiate less restrictive minimum reservoir releases with MDE to increase project safe yield.
- Confirm that any impacts to Whittaker Chambers Farm (National Historic Landmark) can be addressed.
- Confirm that any potential water quality impacts on reservoir from adjacent John Owings Landfill can be addressed.



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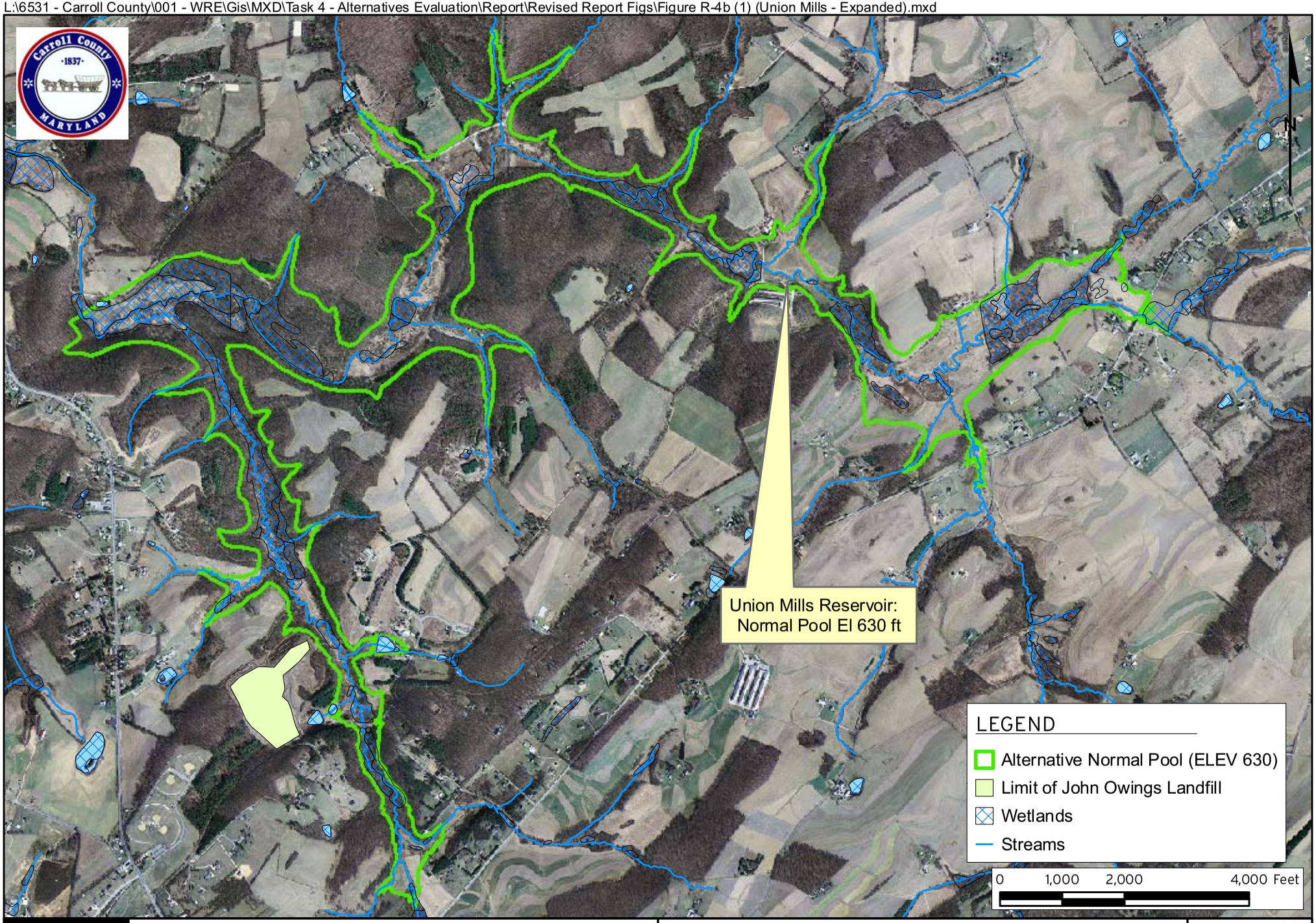

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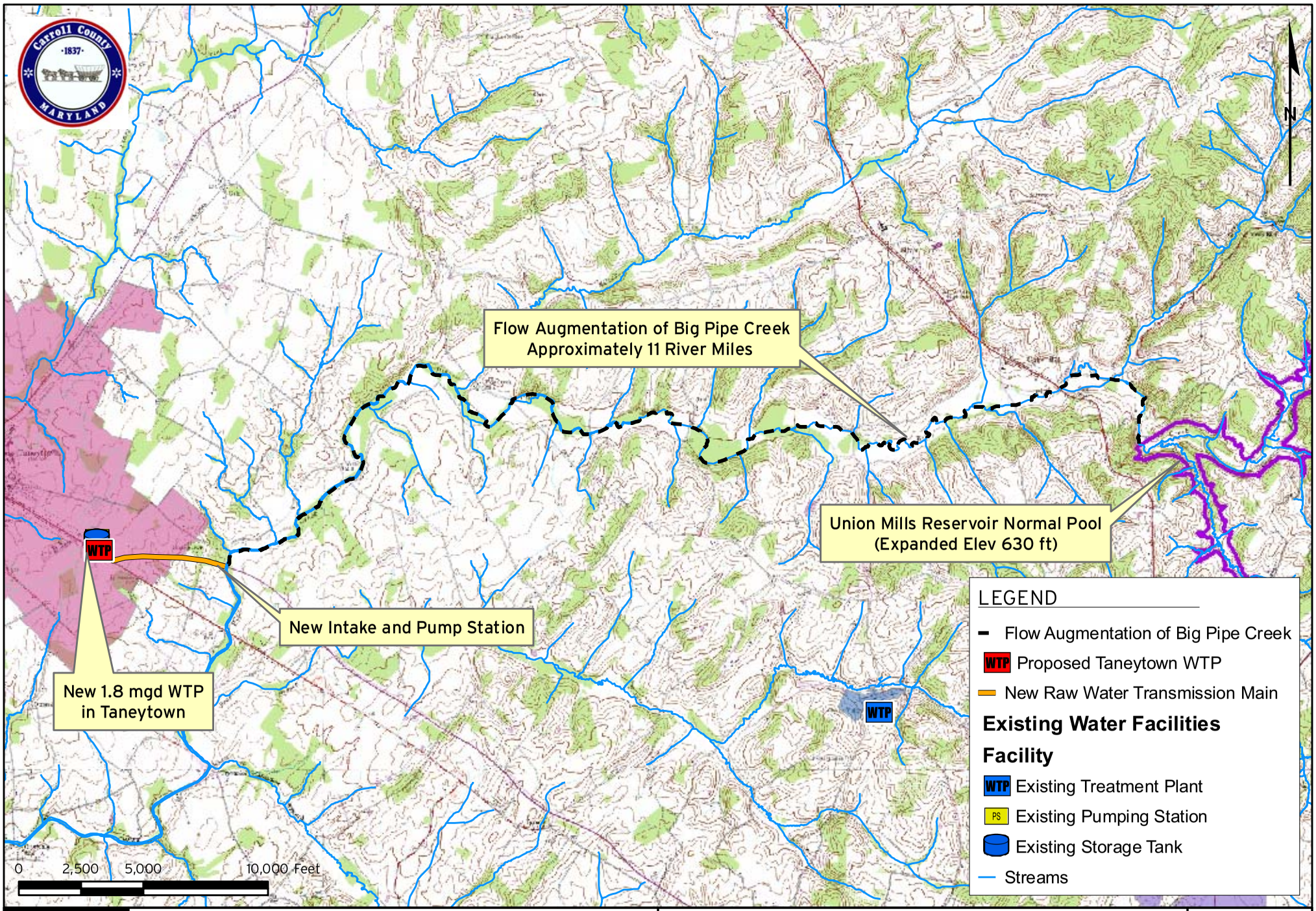
CARROLL COUNTY, MD
ALTERNATIVES EVALUATION

Alternative R-4b:
Union Mills Reservoir (Expanded)

Aug 2009

Figure R-4b(1)



MALCOLM PIRNIE

CARROLL COUNTY, MD
ALTERNATIVES EVALUATION

Union Mills Reservoir Flow Augmentation of
Big Pipe Creek to Supply Taneytown

Aug 2009

Figure R-4b (2)