



Public Meeting #4

Moon Brook Pond Modification Project



City of Rutland | November 30, 2017

Agenda

- | | |
|-------------|--|
| 7:00 – 7:15 | Piedmont Pond – Welcome, introductions, and review of past information |
| 7:15 – 7:45 | Piedmont Pond – Review photo-simulations of alternatives |
| 7:45 – 8:00 | Piedmont Pond – Public comment and voting on preferred alternative |

- | | |
|-------------|---|
| 8:00 – 8:15 | Combination Pond – Welcome, introductions, and review of past information |
| 8:15 – 8:45 | Combination Pond – Review photo-simulations of alternatives |
| 8:45 – 9:00 | Combination Pond – Public comment and voting on preferred alternative |

Public Meetings

- ~~Meeting #1. Introductions, values, and initial information exchange.~~
- ~~Meeting #2. Review values and objectives. Discuss alternatives and preferences. Select options for ANR to model.~~
- ~~Meeting #3. Alternatives analysis model results. Select a preferred alternative to develop visualizations and concept design.~~
- Meeting #4. Present photo-simulations. Seek consensus on the preferred alternative to advance design.
- Meeting #5. Design review.

Staying Involved

1. Attend public meetings.
2. Share information.
3. Request individual meetings.
4. Help reach consensus.
5. Follow information on website.

www.rutlandcity.org/ponds

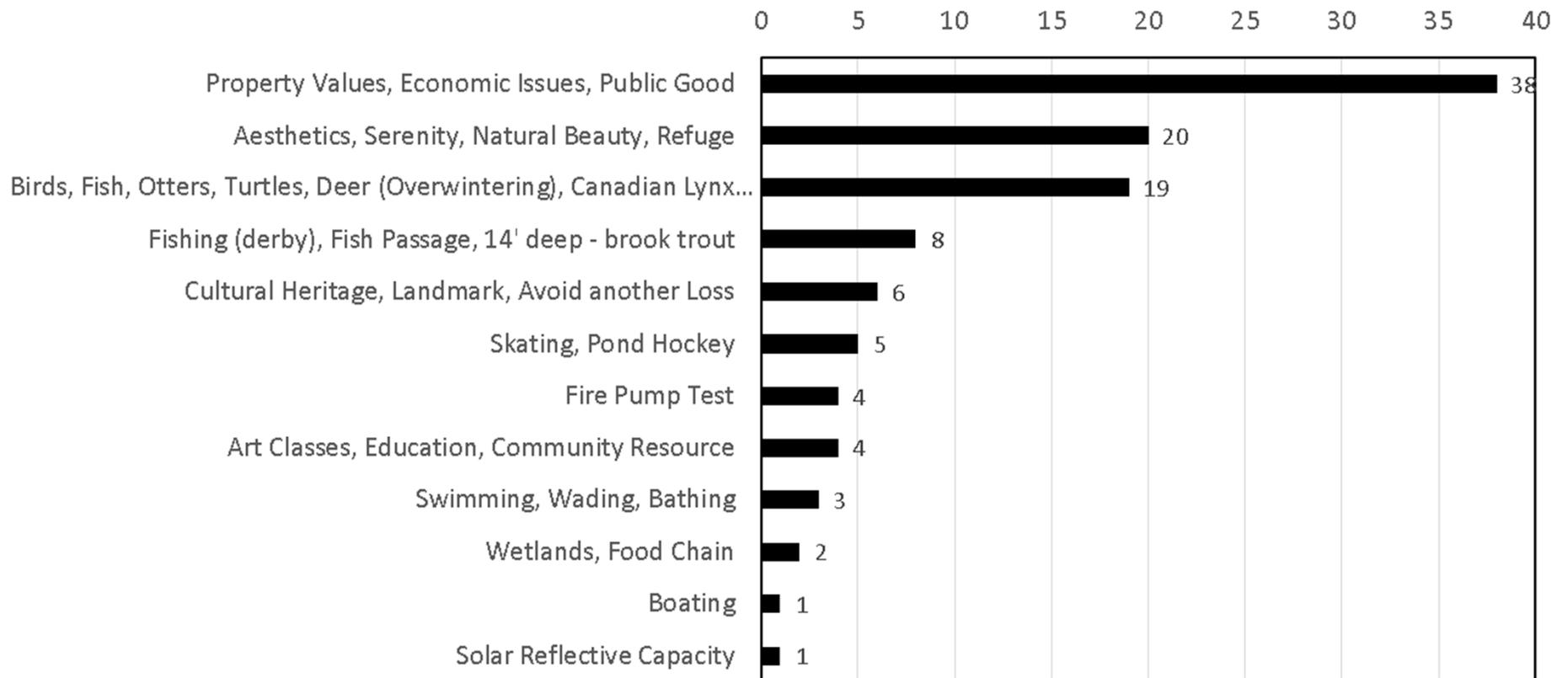
Review Key Project Requirements

1. Improve Moon Brook water quality.
2. Improve dam safety.
3. Treat stormwater runoff.
4. Start construction by October 1, 2018.
5. Create an insurable setting.
6. Reduce financial exposure of City and taxpayers.
7. Inform the state TMDL process.

Landowner Values

Public Values for Combination and Piedmont Ponds

(Collected at a public meeting on October 24, 2016)

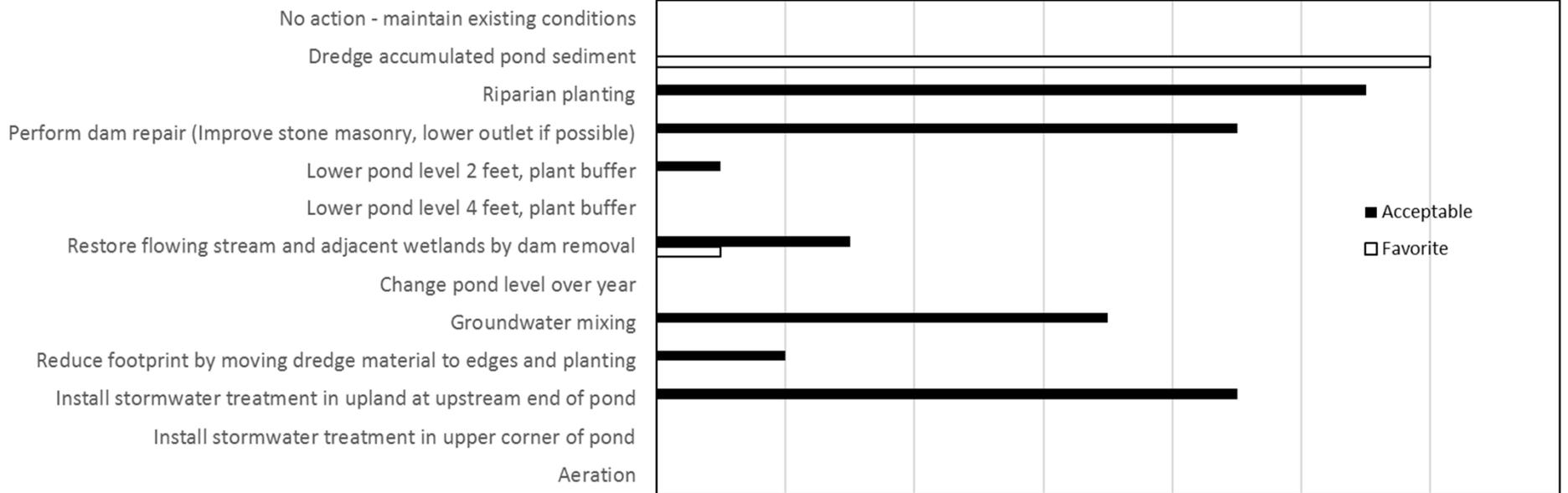


Results of Alternatives Voting

Initial Alternatives Voting for Piedmont Pond

(Collected at a public meeting on February 23, 2017)

0 2 4 6 8 10 12 14



Model Scenarios

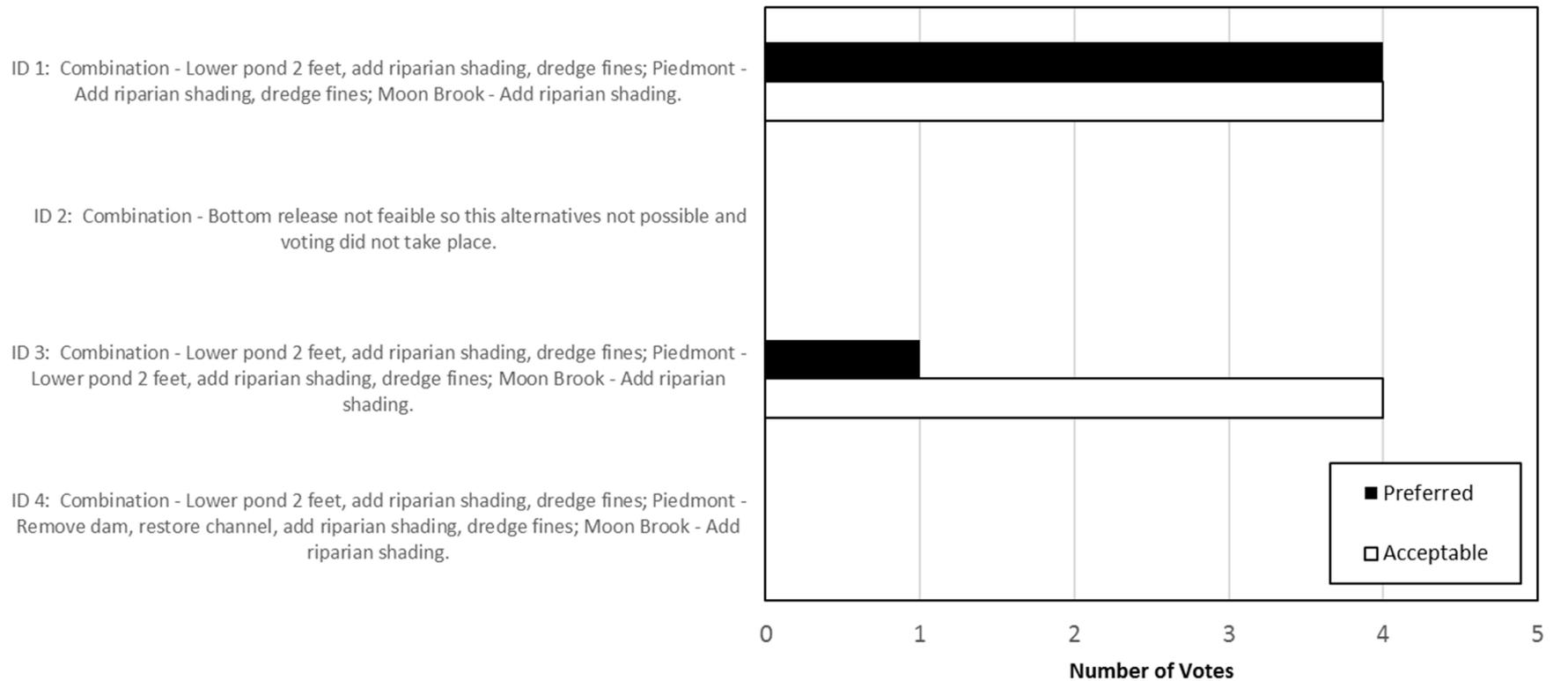
| Model Run ID | Combination Pond* | Piedmont Pond* |
|---------------------|---|---|
| 1 | Lower pond 2 feet, add riparian shading, dredge fine sediment | Add riparian shading, dredge fine sediment |
| 2 | Bottom release, add riparian shading, dredge fine sediment | Add riparian shading, dredge fine sediment |
| 3 | Lower pond 2 feet, add riparian shading, dredge fine sediment | Lower pond 2 feet, add riparian shading, dredge fine sediment |
| 4 | Lower pond 2 feet, add riparian shading, dredge fine sediment | Remove dam, add riparian shading, dredge fine sediment |

*All model runs include adding riparian shading around the Moon Brook channel.

Preferred Alternatives to Simulate

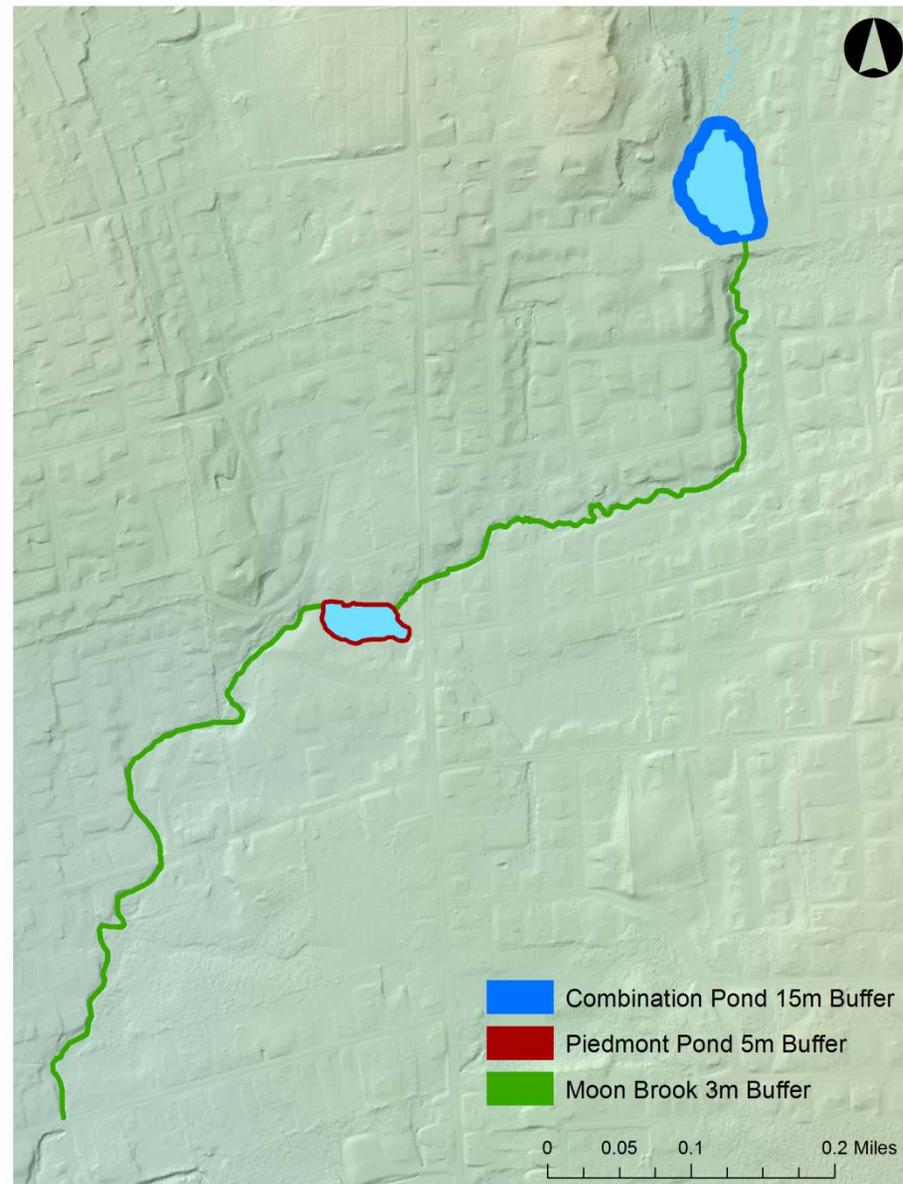
Alternatives Voting by the Piedmont Pond Group

(Collected at a public meeting on July 24, 2017)



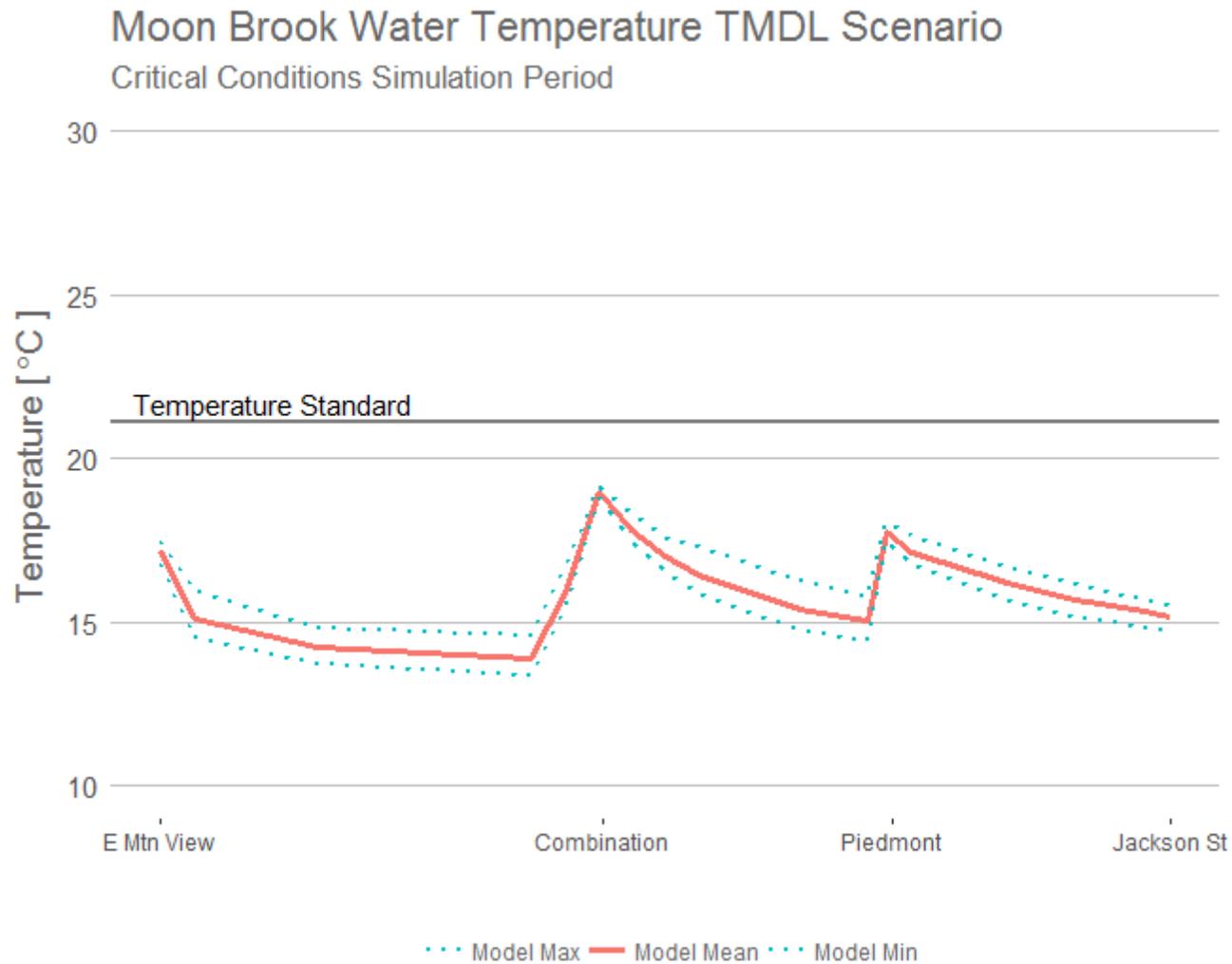
Model Run 1: Definition

- Lower Combination Pond 2 feet and add riparian shading around pond edge with reduced aerial extent.
- Add riparian shading around existing edge of Piedmont Pond.
- Dredge fine sediment from ponds.
- Add riparian shading around existing edge of Moon Brook channel.



(ANR, 2017)

Model Run 1: Results



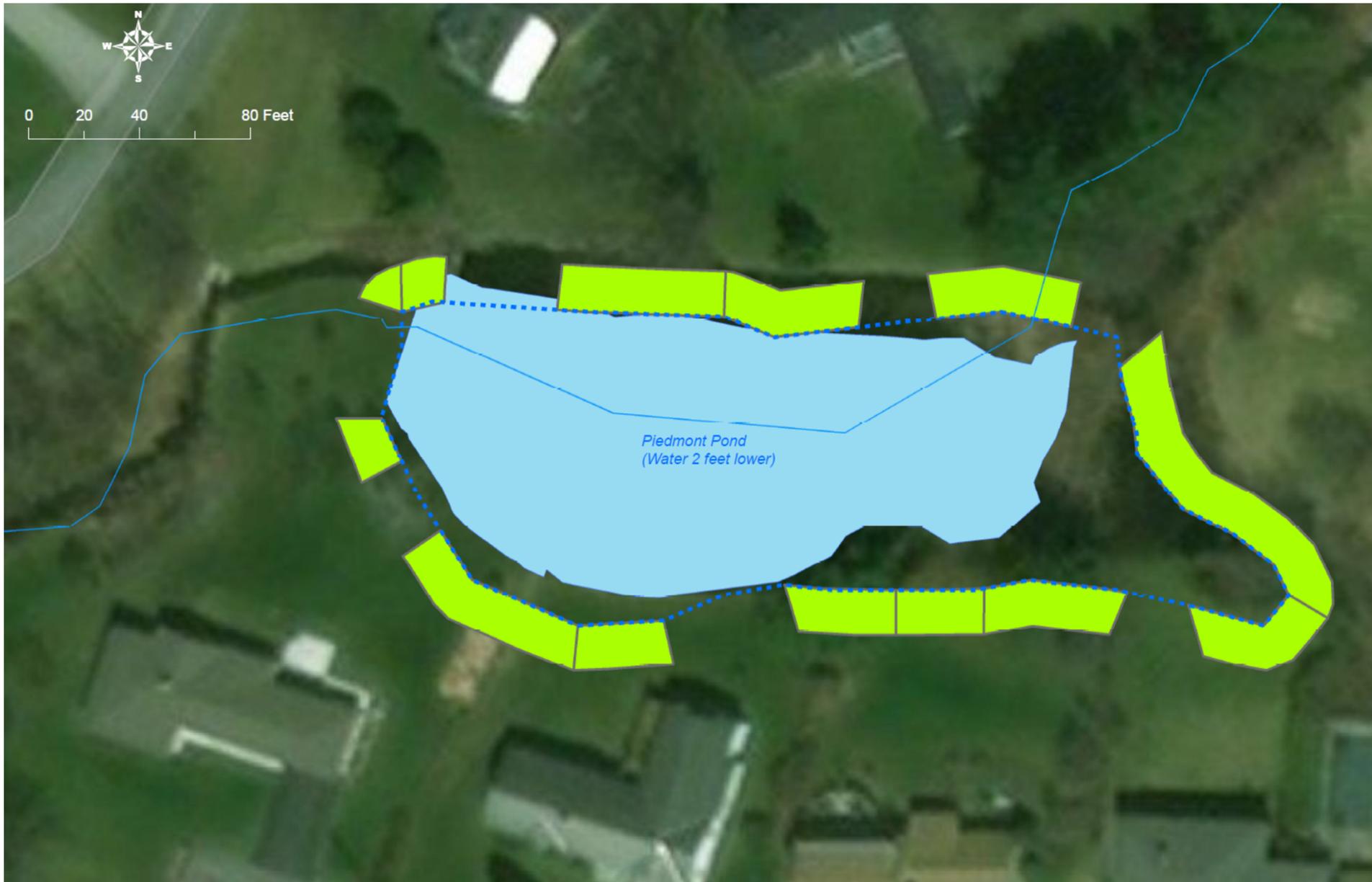
(ANR, 2017)

Model Run 1 (and 2): Definition



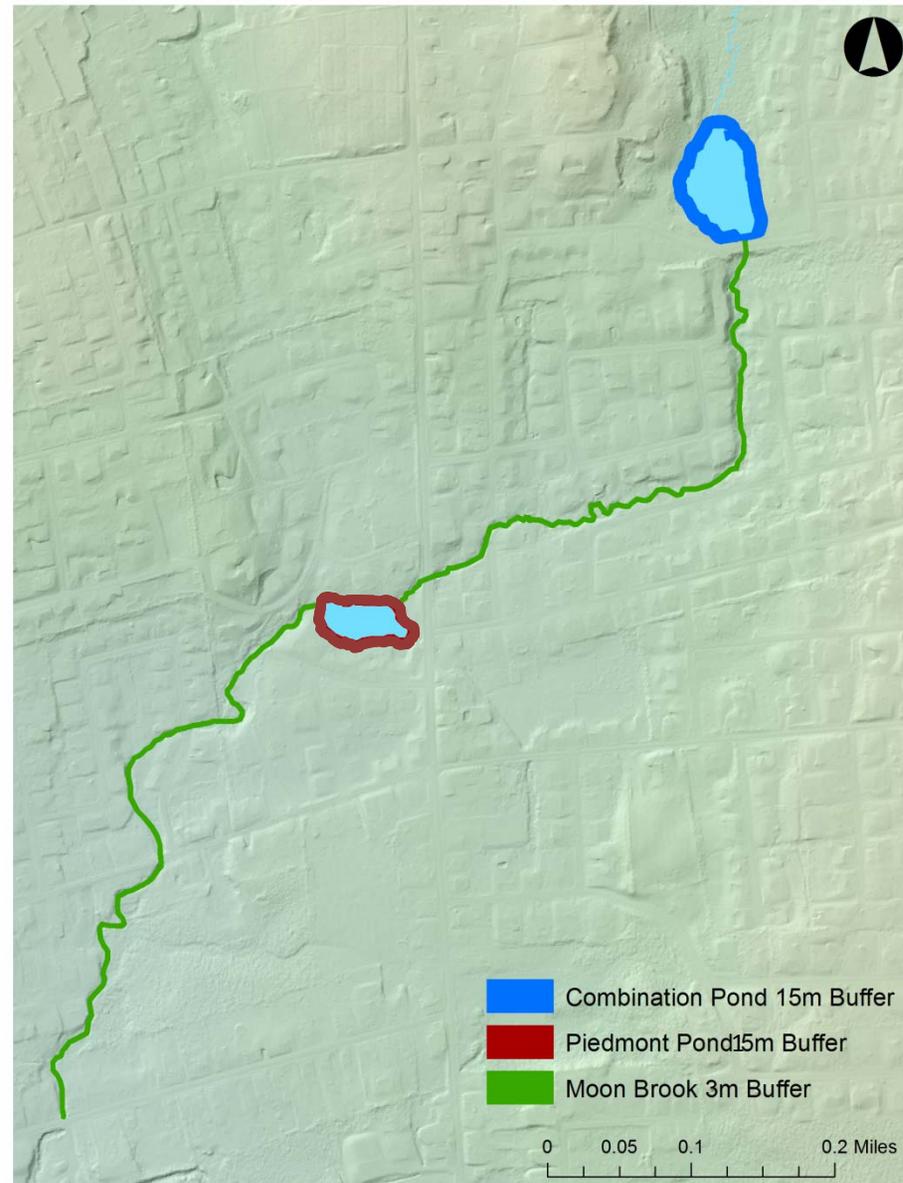
- Add riparian shading around Piedmont Pond.
- Add riparian shading around existing edge of Moon Brook channel.
- Dredge fine sediment from Piedmont Pond.
- Treatments at Combination Pond.

80% Canopy Cover in 5-meter Canopy



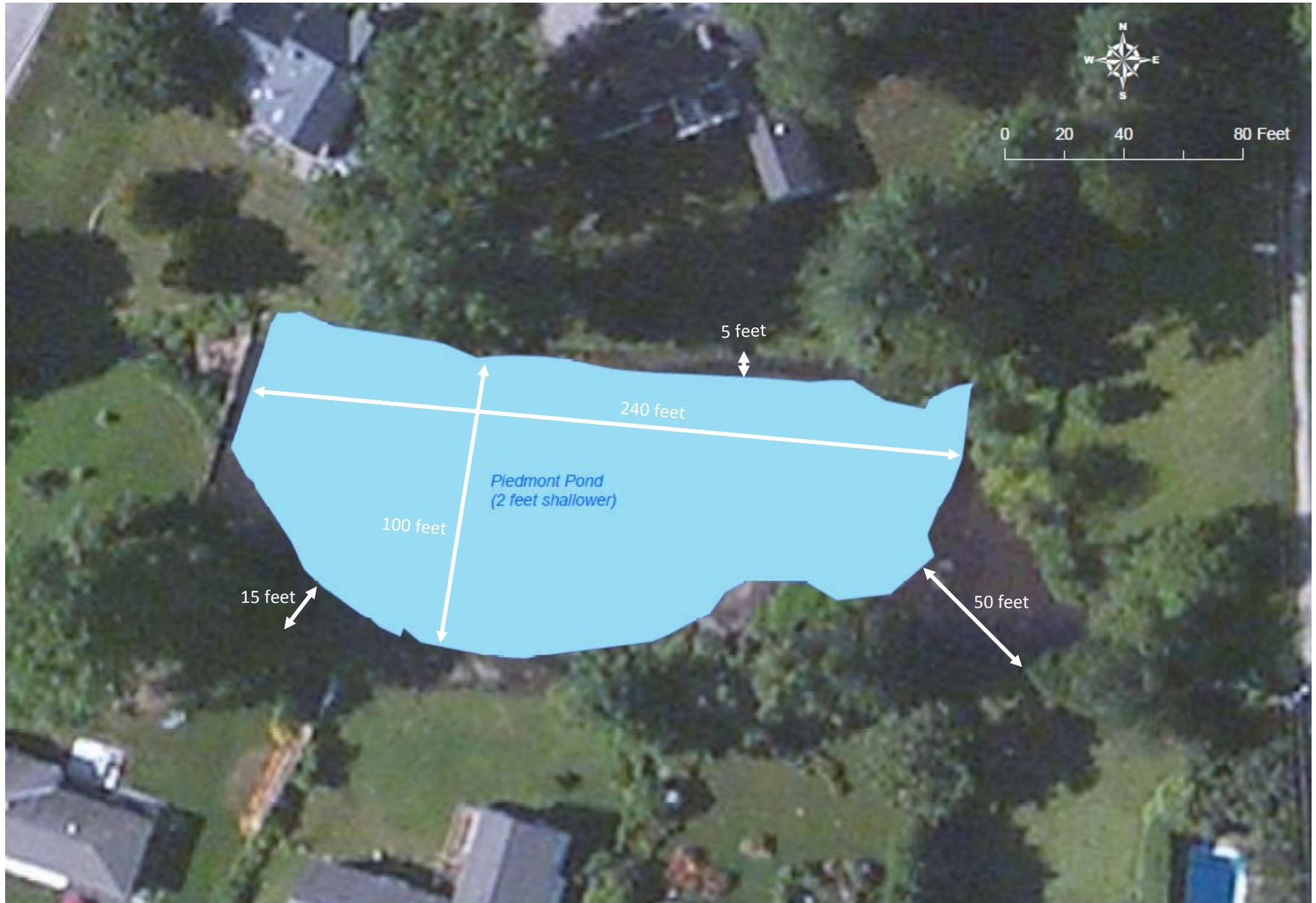
Model Run 3: Definition

- Lower Piedmont Pond 2 feet and add riparian shading around pond edge with reduced aerial extent.
- Add riparian shading around existing edge of Moon Brook channel.
- Dredge fine sediments in ponds.
- Lower Combination Pond 2 feet and add riparian shading around pond edge with reduced aerial extent.



(ANR, 2017)

Lower Water Level 2 Feet



Revegetate Edge of Pond

CONSTRUCTION SEQUENCE:

1. WORK WILL COMMENCE IN LATE SUMMER DURING LOW FLOW CONDITIONS IN WOOD BROOK.
2. WATER FROM THE POND WILL BE DRAINED SOON USING A SPINCH ATTACHED TO THE EXISTING DAM STRUCTURE. THE RELEASE RATE OF THE WATER FROM THE POND WILL BE RESTRICTED BY THE SPINCH TO ENSURE THAT DOWNSTREAM WATER QUALITY IS NOT IMPACTED.
3. ONCE THE POND IS DRAINED ANY EXCESS WATER WILL BE PUMPED OUT OF THE POND TO A SEDIMENT CONTAINMENT BAG.
4. BYPASS PIPING WILL BE INSTALLED ALONG THE NORTHERN SLOPE OF THE POND TO ROUTE FLOWS AROUND THE WORK AREA AND DIRECTED THROUGH BATTER BOARD(STEP LOG GAP) ON THE EXISTING POND.
5. ACCUMULATED SEDIMENT WILL BE EXCAVATED FROM THE POND BOTTOM USING AN EXCAVATOR OR SIMILAR SUCKET TYPE EQUIPMENT. THE BOTTOM ELEVATION OF THE POND WILL BE RESTORED TO ITS ORIGINAL DEPTH OF APPROXIMATELY EIGHT FEET. (REFER TO SITE PLAN)
6. TO IMPROVE THE SEDIMENT REMOVAL CHARACTERISTICS OF THE POND AND FACILITATE MAINTENANCE, A FOREBAY WILL BE SELECTIVELY EXCAVATED AT THE UPSTREAM END OF THE POND. THE FOREBAY WILL BE FOUR TO SIX FEET DEEP AND IS DESIGNED TO COLLECT SEDIMENT BEFORE IT ENTERS THE MAIN PORTION OF THE POND. IT WILL BE SEPARATED FROM THE MAIN POND BY A SHALLOW SUBMERGED BURN PLANTED WITH HELIOPSIS VEGETATION. THE FOREBAY WILL BE LOCATED ADJACENT TO STRATTON ROAD WHERE IT WILL BE ACCESSIBLE FOR FUTURE MAINTENANCE CLEARING WITH CONVENTIONAL EXCAVATING EQUIPMENT.
7. FOLLOWING THE DRAINING OF THE POND, MAINTENANCE IMPROVEMENTS WILL BE MADE TO THE CONCRETE DAM AND A LOW FLOW OUTLET STRUCTURE WILL BE INSTALLED.
8. FOLLOWING THE REMOVAL OF SEDIMENT, ANY DISTURBED AREAS ABOVE THE PERMANENT WATER SURFACE ELEVATION WILL BE STABILIZED WITH TOPSOIL, SEED AND MULCH.
9. THE TEMPORARY BYPASS PIPING AND ALL TEMPORARY MEASURES WILL BE REMOVED AND THE POND BATTER BOARDS WILL BE REINSTALLED, ALLOWING THE POND TO FILL.

| [feet] | POND LEVEL | L _{max} | W _{max} | D _{max} |
|-----------|------------|------------------|------------------|------------------|
| (current) | 99.1 | 275 | 120 | 4.1 |
| | 97 (-2) | 210 | 95 | 2 |



80% Canopy Cover, 15-meter Canopy



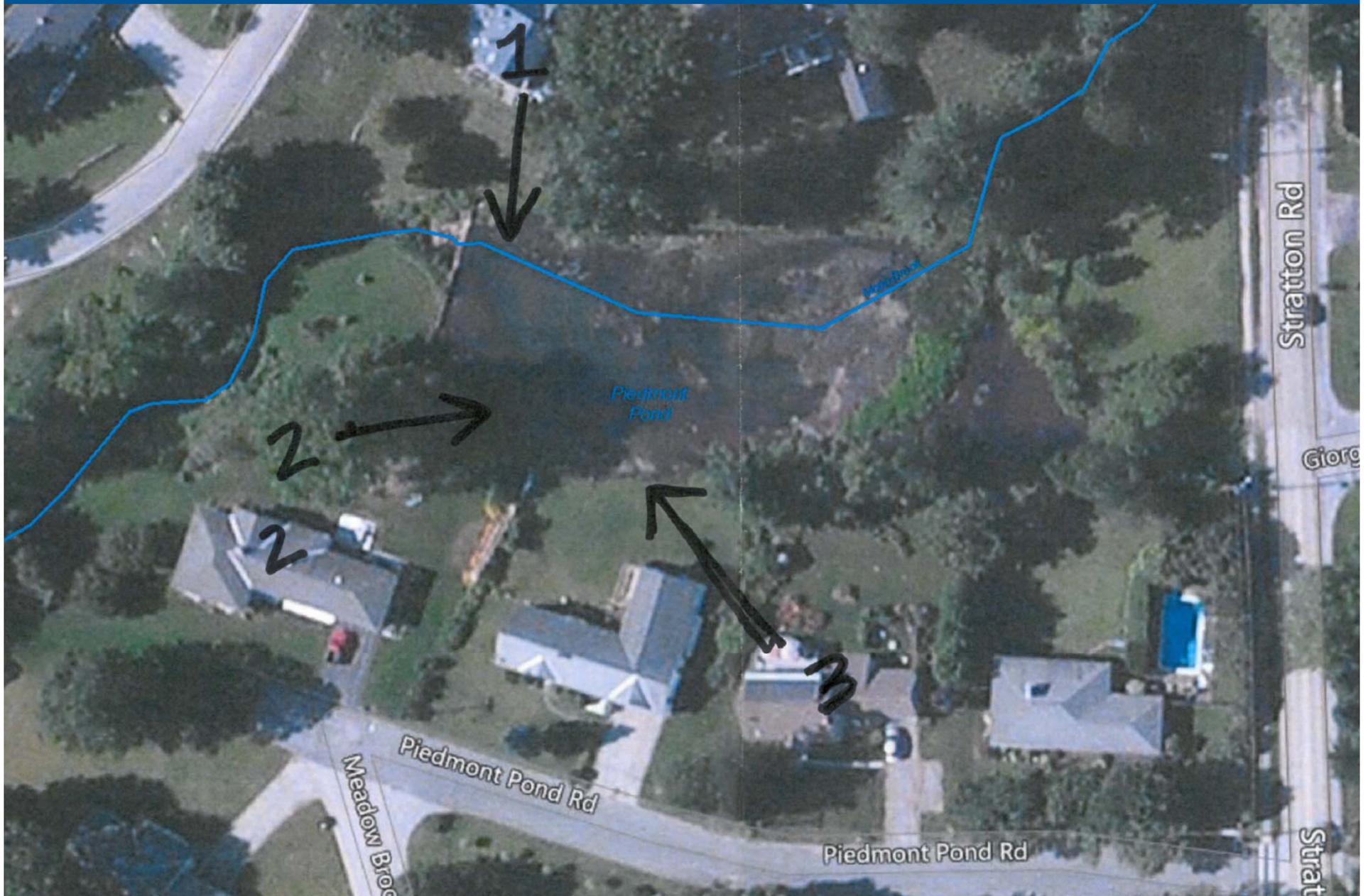
Recent Dam Safety Assessment



Recent Dam Safety Assessment

- Dam in poor condition. Vegetation near dam. Concrete deteriorated. Seepage is taking place.
- Need hydraulic study to see if spillway properly sized and if can handle flood.
- Loss of material on upstream face of dam.
- Undercut concrete spillway.
- Stop logs need replacement.
- Likely hydraulically inadequate.

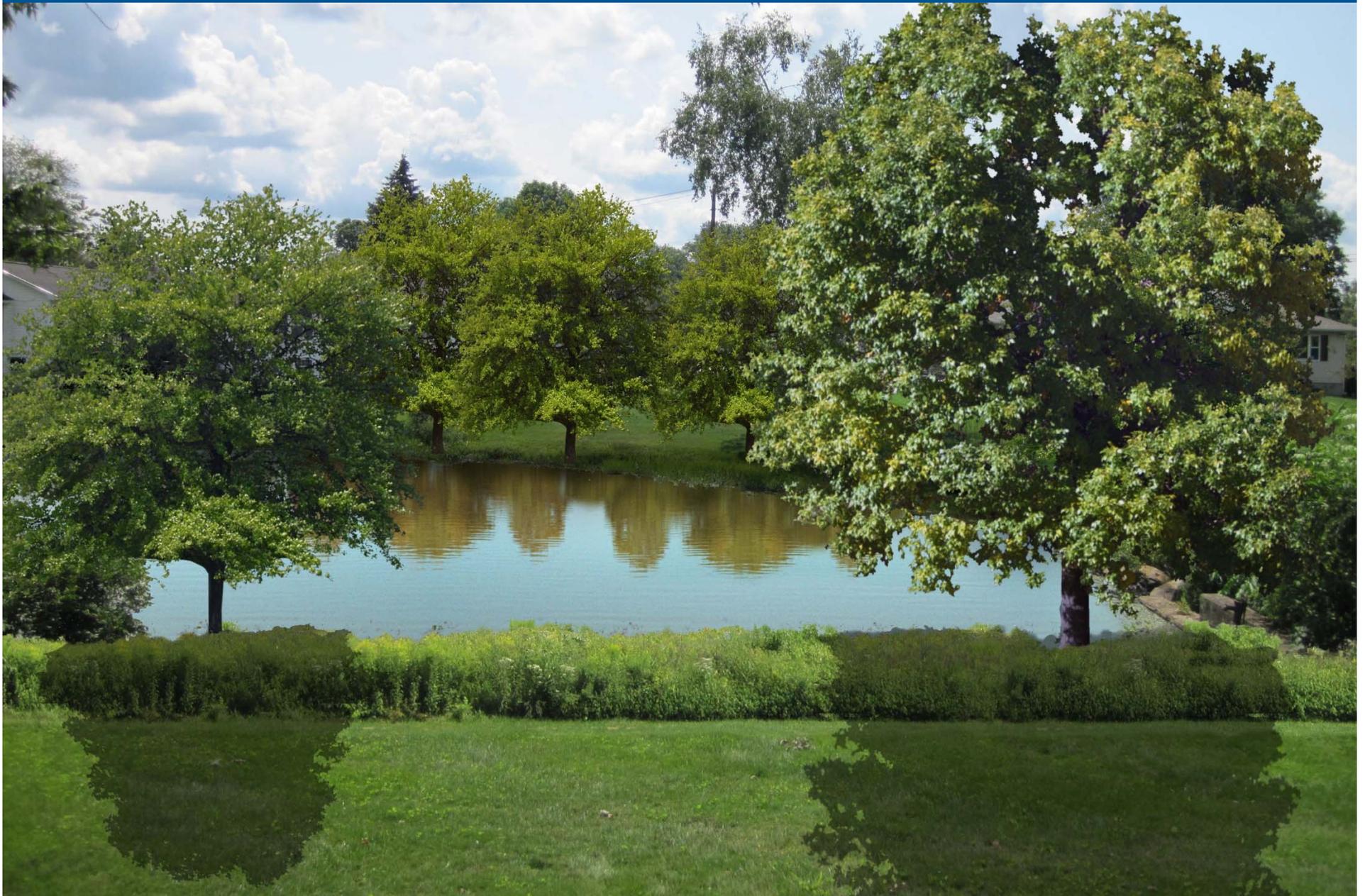
Photo-Simulations



View 1 - Existing



View 1 – Proposed (5-meter canopy)



View 1 – Proposed (15-meter canopy)



View 2 - Existing



View 2 – Proposed (5-meter canopy)



View 2 – Proposed (15-meter canopy)



View 3 - Existing



View 3 – Proposed (5-meter canopy)



View 3 – Proposed (15-meter canopy)



Design

Upland/ Urban Fill Areas

| <u>Overstory</u> | <u>Understory</u> | <u>Shrubs</u> | <u>Herbs</u> |
|------------------|----------------------|---------------------|----------------------------|
| Red Oak | Black and Gray Birch | Sweetfern | Warm Season Grass Seed Mix |
| Pin Oak | Flowering Dogwood | American Hazelnut | Wildflower Seed Mix |
| White Oak | Eastern Red Cedar | Bayberry | |
| Tulip Tree | Eastern Hemlock | Meadowsweet | |
| Pitch Pine | Witch Hazel | Low bush Blueberry | |
| White Spruce | Staghorn Sumac | Nannyberry Viburnum | |
| Balsam Fir | Black Cherry | Mountain Laurel | |
| White Pine | | | |
| American Beech | | | |

Pond/ Streamside

| <u>Overstory</u> | <u>Understory</u> | <u>Shrubs</u> | <u>Herbs</u> |
|------------------|------------------------|------------------------|--------------------------------|
| Balsam Fir | Yellow and River Birch | Speckled Alder | Wildlife/Conservation Seed Mix |
| Red Maple | American Hornbeam | Sweet Pepperbush | Wet Meadow Seed Mix |
| Silver Maple | Chokecherry | Silky Dogwood | Boneset |
| Eastern Larch | Serviceberry | Red-Osier Dogwood | Spotted Joe Pye Weed |
| Sycamore | Spicebush | Gray Dogwood | Blue Vervain |
| Black Willow | | Rhododendron | New York Ironweed |
| | | Elderberry | New England Aster |
| | | Steeplebush | |
| | | Highbush Blueberry | |
| | | Arrowwood Viburnum | |
| | | Highbush cranberrybush | |
| | | Winterberry | |

Voting

Which alternative do
you prefer? Which
can you live with?