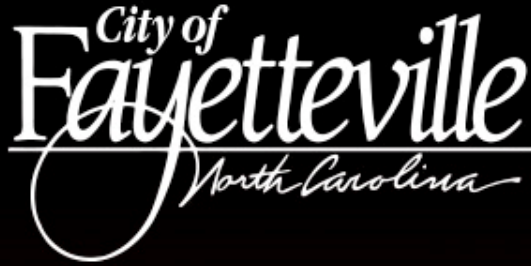




Private Dams Update

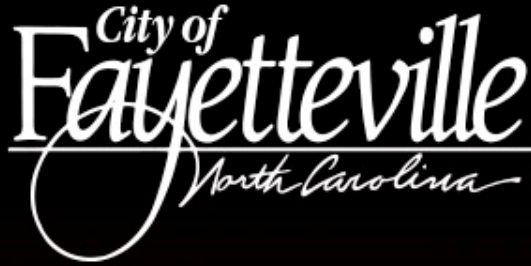
Arran Lakes & Strickland Bridge

May 7, 2018



Agenda

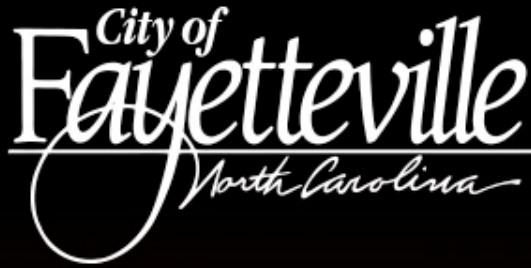
- Current Dam Policy
- History
- Findings of Engineering Evaluations
- Discussion of Benefited Properties
- Next Steps
- Summary



Dam Policy

Privately-Owned Dams Supporting City Streets

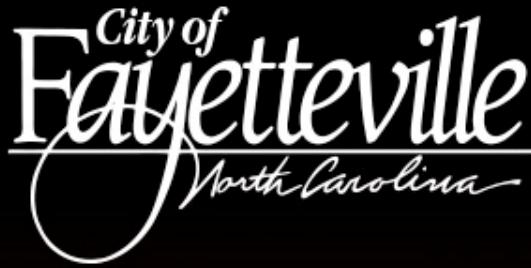
- City can participate in repair and improvements to the private dam if there is damage to the roadway resulting from a major disaster
- City participation is limited to improvements eligible for reimbursement by state or federal assistance
- If the lake is permanently drained, the City shall bear the cost to repair, replace or maintain the storm drain facilities necessary to safely maintain the embankment to support the public street



Dam Policy

Privately-Owned Dams Supporting City Streets

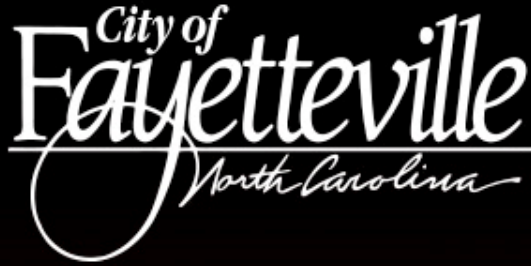
- If NCDEQ determines that major repairs are required for the dam to continue to impound water, and the affected property owners desire to repair the dam, the City shall contribute an amount equal to 110% of the expense necessary to preserve the structural integrity of the street, but not including emergency spillway facilities. The remaining cost may be funded through the formation of a Special Assessment Project



Dam Policy

Dams with Private Streets, NCDOT Roadways, or No Street Over Them

- All improvements to the dam including, but not limited to, the embankment, pipes and other drainage structures, and any State or private roadway over the dam, shall be performed and funded entirely by the owners of the lake and/or the owner of the roadway over the dam. The City of Fayetteville shall not be involved in the improvements of these facilities.



History

- Dam Policy Adopted – April 2017
- Public Outreach – July 2017
- Petition Process – August & November 2017
 - Total of 6 Private Dams Approved for Evaluation Funding
- Engineering Evaluations – January 2018

Tonight's Goal

COMPLETED

COMPLETED

COMPLETED

HOA

- Petition for Evaluation

City Council

- Vote to Fund Evaluation

FNI / City Staff

- Perform Evaluations
- Cost / Schedule Estimates

FNI / City Staff

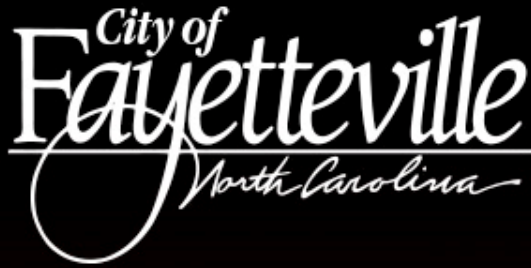
- Define Special Assessment

Benefitted Properties

- Petition for Special Assessment

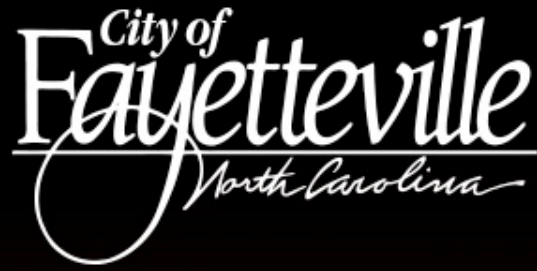
City Council

- Decision to Assess, Design, and Construct



Why Engineering Evaluations?

- Develop Alternatives and Costs
- Estimate Schedules for Each Alternative
- Begin Addressing Environmental Concerns
(2-year window)
- Investigate Potential Public Benefit
 - Impoundments could be designed to act as a stormwater facility



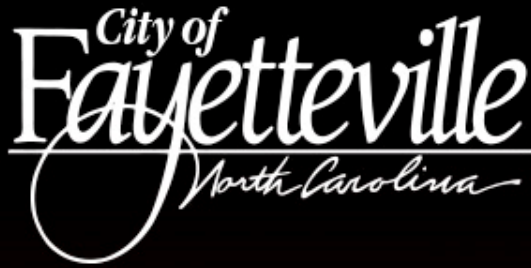
Amenity Lake vs. Dry Detention Pond





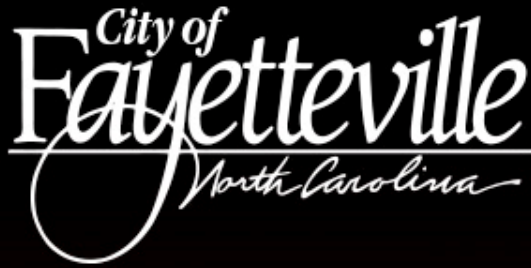
Take-Aways from Evaluations

- USACE Mitigation Cost / Timeline
 - Quantity of Wetland and Stream Impacts
 - High Cost of Those Impacts
 - 2-year Window from Declared Disaster



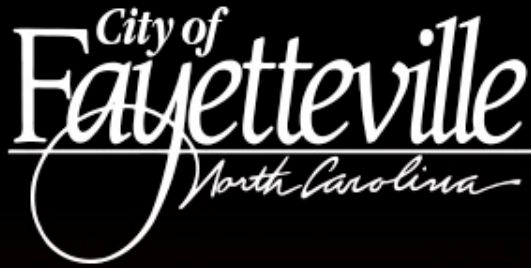
Take-Aways from Evaluations

- Limited Public Benefit of Arran Lake & Strickland Bridge
 - Dams were built for amenity purposes within neighborhoods
 - Dams not constructed to current standards – design challenges to avoid release of additional flows and little room for stormwater storage



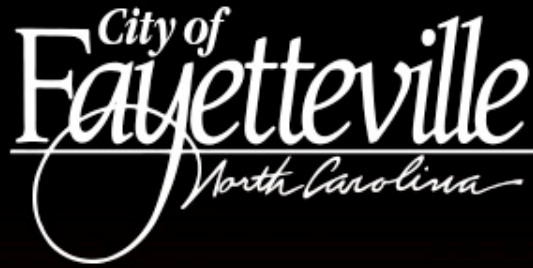
Take-Aways from Evaluations

- Dam Safety Culvert Interpretation
 - A pass-through culvert can still impound water in larger storm event and the embankment acts as a dry detention pond
 - High cost of culvert option due to dam safety requirements



Take-Aways from Evaluations

- Owner(s) are responsible for bringing dam into compliance with Dam Safety
 - Properly Designed Breach (Decommission)
 - Reconstruction of Dam to Current Standards
 - Properly Designed Pass-through Culvert

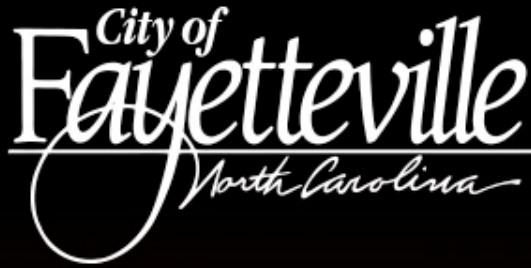


Arran Lake Alternatives & Costs

- Alt. 1 – Breach (Decommission) • \$1.07 Million*
- Alt. 2 – Reconstruction of Dam • \$3.55 Million**
- Alt. 3 – Pass-through Culvert • \$2.68 Million

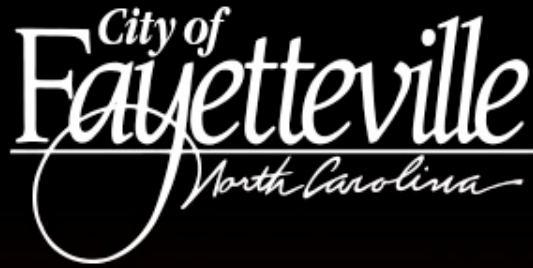
*Excludes Potential
Remediation Costs

**Excludes Potential
Mitigation Fees
(Estimated \$2.8M)



Arran Lake Benefited Properties

- Dam Owner(s) are responsible for bringing dam into compliance with NC Dam Safety
 - Breach Option – City cannot assess for this option due to no public benefit
 - Dam Reconstruction Option – Owner(s) equally assessed

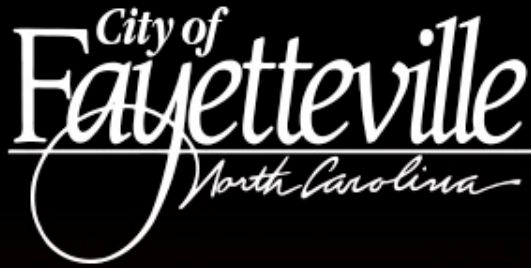


Strickland Bridge Alternatives & Costs

- Alt. 1 – Breach (Decommission) • \$530,000*
- Alt. 2 – Reconstruction • \$1.46 Million**

*Excludes Potential
Remediation Costs

**Excludes Potential
Mitigation Fees
(Estimated \$656,000)



Strickland Bridge Benefited Properties

- Dam Owner(s) are responsible for bringing dam into compliance with NC Dam Safety
 - Breach Option – City cannot assess for this option due to no public benefit
 - Dam Reconstruction Option – Owner(s) equally assessed

Next Steps

- Continue with Engineering Evaluations for remaining 4 dams
- Carry forward with direction established tonight

Summary

Key Points

- Dam Safety Culvert Policy
- USACE Mitigation Cost / Timeline
- Limited Stormwater Benefit
- Owner(s) Responsible for Bringing Dam into Compliance

Direction

- Agreement that Owner(s) are Benefitted and Assessed Equally
- Public Meeting and/or Petition for Owner Input

Tonight's Goal

COMPLETED

COMPLETED

COMPLETED

HOA

- Petition for Evaluation

City Council

- Vote to Fund Evaluation

FNI / City Staff

- Perform Evaluations
- Cost / Schedule Estimates

FNI / City Staff

- Define Special Assessment

Benefitted Properties

- Petition for Special Assessment

City Council

- Decision to Assess, Design, and Construct