

City of
PIQUA  



Piqua Hydraulic Canal and Dam Safety Design Project

Steering Committee Meeting 2 – July 18th 2022

Agenda

1. Review Outcomes of CAC 1
2. Review Alternatives for Echo/Franz & Canal
3. Group Work – SWOT of Alternatives
4. Focus Group Nominations

Review Outcomes of CAC 1

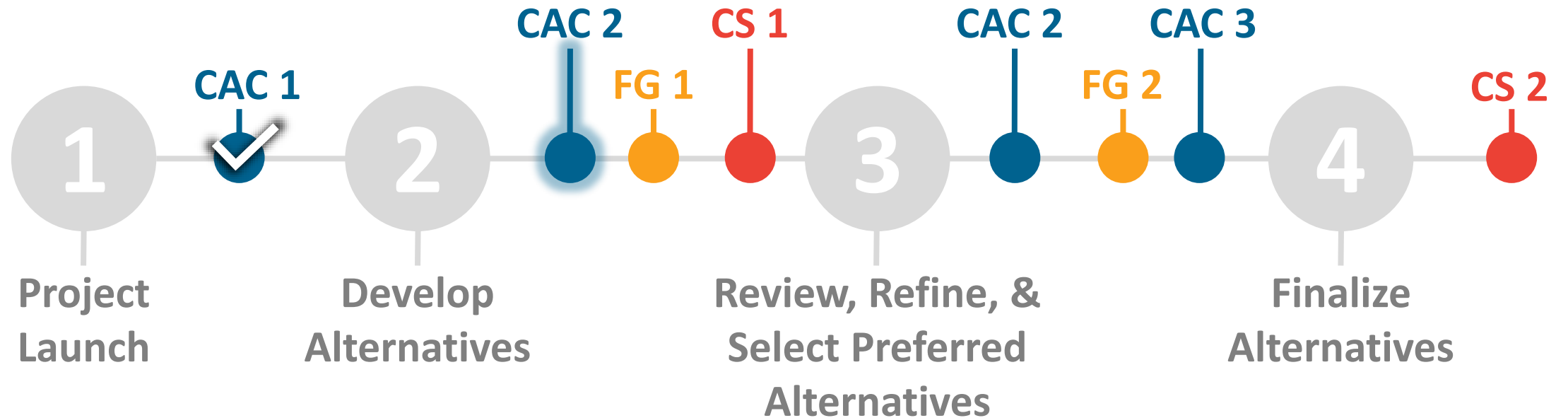
Schedule + Next Steps

Focus Group Round 1 - August, 2022

Community Summit 1 - August, 2022

CAC Meeting 3 - Monday, August 22nd, 2022 (Tentative)

Dates may be subject to change.



CAC – Citizen Advisory Committee

FG – Focus Group

CS – Community Summit

Outcomes of CAC Meeting 1

- A need to take a step back and review all of the alternatives in detail
- Discussions with ODNR on exceptions to the regulations
 - City has reached out to ODNR (scheduling to meet in the coming weeks)

Last Time We Reviewed Select Alternatives for Echo/Franz & Canal

The plan and options were:

1. First start with the preferred alternative for Swift Run
 - Decrease outflow to Spillway 1 to increase capacity for other lakes
2. Second, address Franz Pond outflow
 - Outflow flows to Echo Lake, so we need to address this next
3. Third, address Echo Lake and the canal system
 - Carefully address the dam and outflow for minimum disturbance

Swift Run Plan

Goal: Decrease Flow to Spillway 1/ODNR Compliance

- Lower the damn on north side
- Improve the spillway condition
- H2O levels stay similar to existing
- Decreases flows to Spillway 1

- By reducing flow to Spillway 1 this maintains/increases capacity
- Keeps capacity for water flowing from Franz and Echo
- Helps alleviate disturbance (widening) of the canal to meet PMF

Swift Run Lake

Spillways #2 and #3

Spillway #1

Echo Lake

Franz Pond

Initial Options Presented

Swift Run Lake

Spillways #2 and #3

Spillway #1

Echo Lake

Franz Pond

Goal: Reduce flows to Echo and the Canal

• Two Options:

Option 1

- Pushes flows into existing city storm system
- Pond turns to wetland feature/park

Option 2

- Raise the berm
- Widen the canal
- Push flows to Echo Lake

Initial Options Presented

Swift Run Lake

Spillways #2 and #3

Option 1

- Would result in minimal work to the canal between Echo and Spillway 1, but would result in significant changes to Franz Pond

Option 2

- Would preserve Franz Pond, but would require significant work to widen the canal through Fountain Park/Forrest Hill and additional tree removal

Spillway #1

Echo Lake

Franz Pond

Goal: Reduce flows to Echo and the Canal

- Two Options:

Option 1

- Pushes flows into existing city storm system
- Pond turns to wetland feature/park

Option 2

- Raise the berm
- Widen the canal
- Push flows to Echo Lake

Summary Approach

Improve Swift Run to minimize flow to spillway 1

Reduce impacts to bike path and park along canal

Plans for Echo TBD, criteria to be developed by committee and public

Transition to natural area, or divert to existing storm system

Echo Lake

Franz Pond



Let's take a step back.

Alternatives Presented in Dec. 2021

Swift Run

- Property Easements / Acquisition
- Additional Spillway Capacity
- New Auxiliary/Emergency Spillways
- Overtopping Protection (RCC)
- Re-Classification of Dam

Echo Lake/Franz Pond

- New Spillway(s) at Dam Location(s)
- New Spillways at Alternate Locations
- New Culvert System
- New Auxiliary/Emergency Spillways
- Raise Dam/Canal Embankments
- Overtopping Protection (Roller Compacted Concrete)
- Short Wall (selected locations or entire)
- Control Inflow (large diversion ditches)
- Property Acquisition
- Upstream Lake Control (interior berm, supplemental dam, etc.)
- Decommission Dam / Lower Pool Levels and/or Fill in portion of Lake

Hydraulic Canal

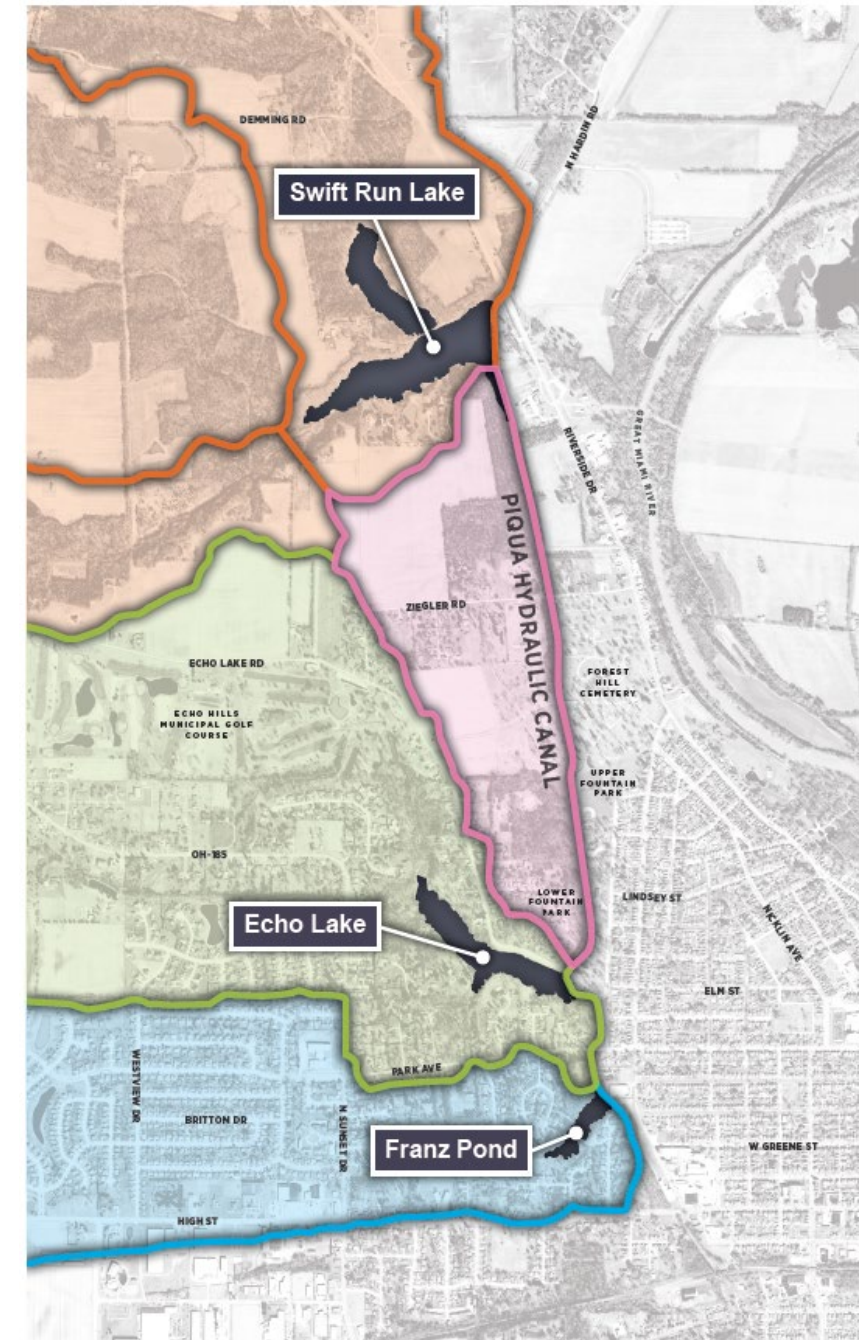
- Flatten Canal Downstream Slopes / Modify Upstream Slopes
- Conduit Canal System – Widening
- Conduit Canal System – Deepening
- Crest Wall Installation
- Additional Flow Control (new gates, etc.)
- Overtopping Protection (RCC)
- Property Acquisition

Group Work

- Stantec to **briefly** present each alternative
- Group discussion and recording of ideas
- Dot exercise
 - **Green** - For consideration
 - **Yellow** - Consider with caution
 - **Red** - Eliminate

ECHO LAKE / FRANZ POND			
SOLUTION	FEASIBILITY	CONSULTANT TEAM OBSERVATIONS	CAC OBSERVATIONS / COMMENTS
New Spillway(s) at Dam Location(s)	Not Feasible	<ul style="list-style-type: none"> • Due to downstream hazards. • No flow paths available through city. 	
New Spillways at Alternate Locations	High	<ul style="list-style-type: none"> • Evaluating at multiple park locations. 	
New Culvert System	Low	<ul style="list-style-type: none"> • Due to significant capacity required. 	
New Auxiliary/Emergency Spillways	Medium	<ul style="list-style-type: none"> • Still have issue with downstream hazards. • No optimal locations. 	
Raise Dam/ Canal Embankments	Medium	<ul style="list-style-type: none"> • Modification of the hydraulic canals is a budget concern due to their lengths and heights. 	
Overtopping Protection (Roller Compacted Concrete)	Medium	<ul style="list-style-type: none"> • At selected locations as part of a combination of multiple improvements. • Acceptable with ODNR Dam Safety. • Reduces improvements to downstream flood inundation. 	
Short Wall (selected locations or entire)	Medium	<ul style="list-style-type: none"> • Still have concerns with stability of hydraulic canal embankments. 	
Control Inflow (large diversion ditches)	Medium	<ul style="list-style-type: none"> • Only solves part of the storage capacity issue. 	
Property Acquisition	High	<ul style="list-style-type: none"> • May not be public friendly. • Includes home on Echo Lake Dam, Fountain Park, other downstream properties. 	

Reference Maps



Focus Group Nominations

Next Steps

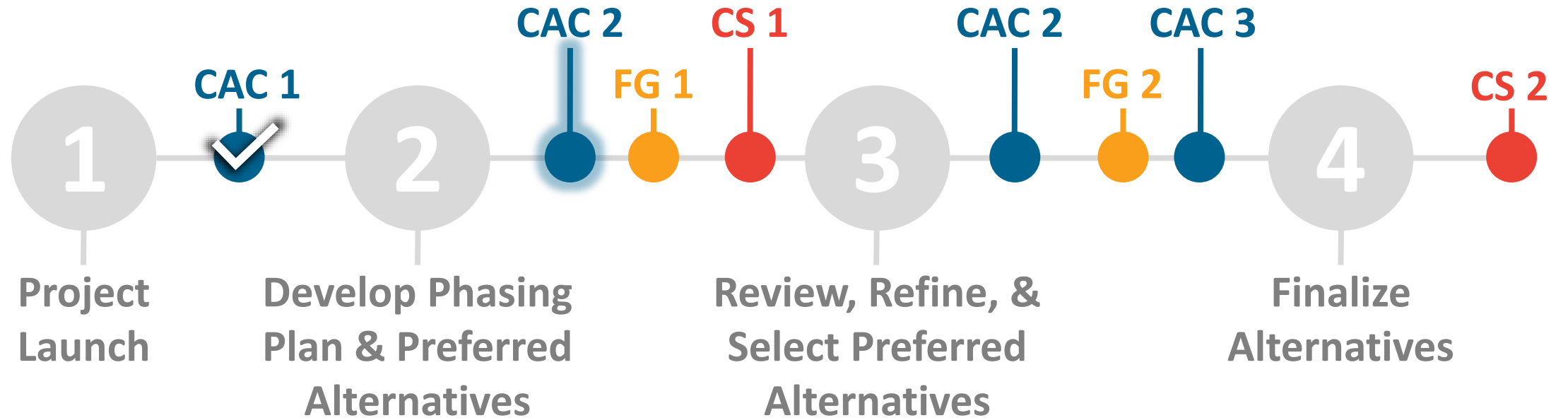
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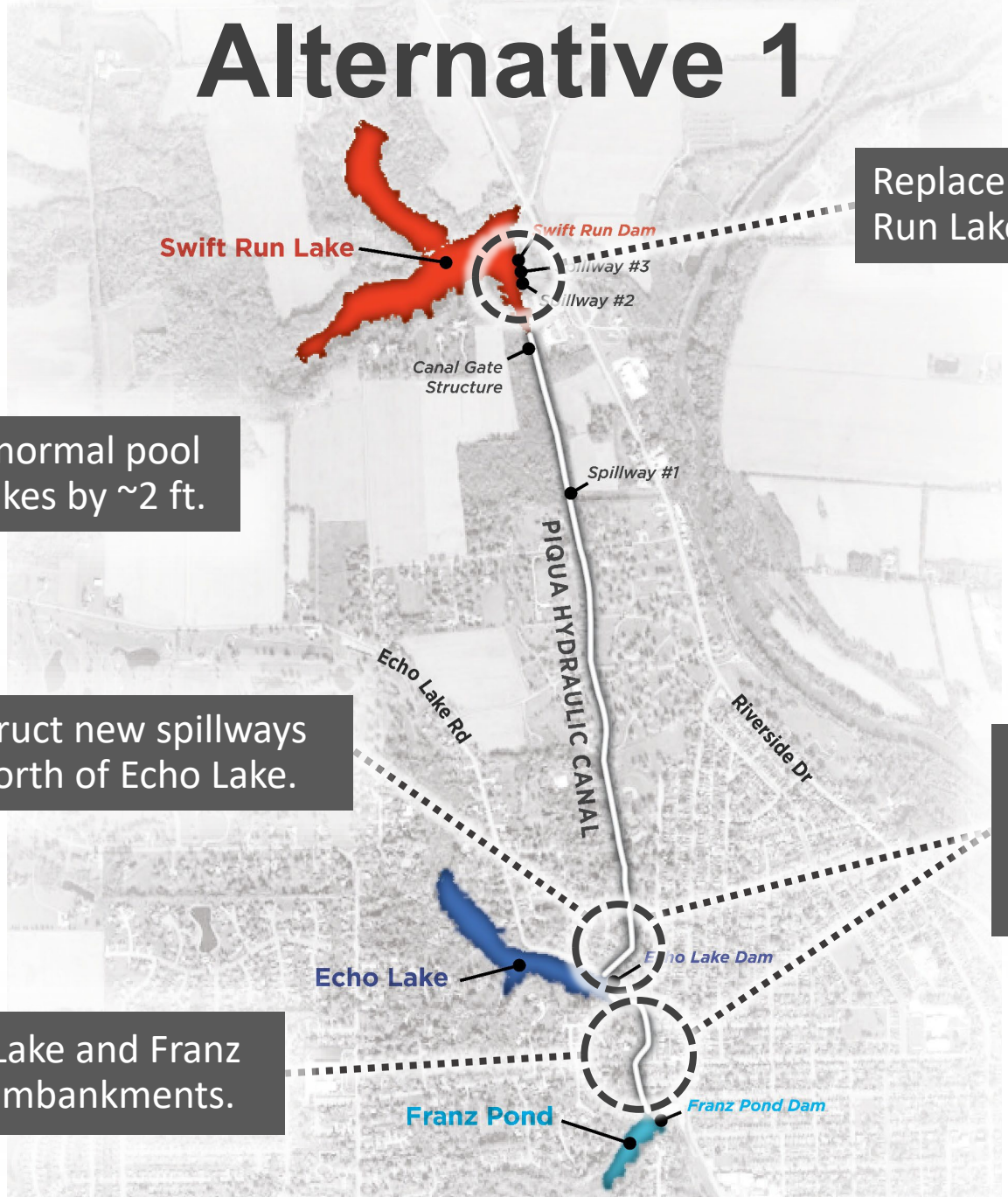


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Alternative 1



Replace and widen Swift Run Lake spillway.

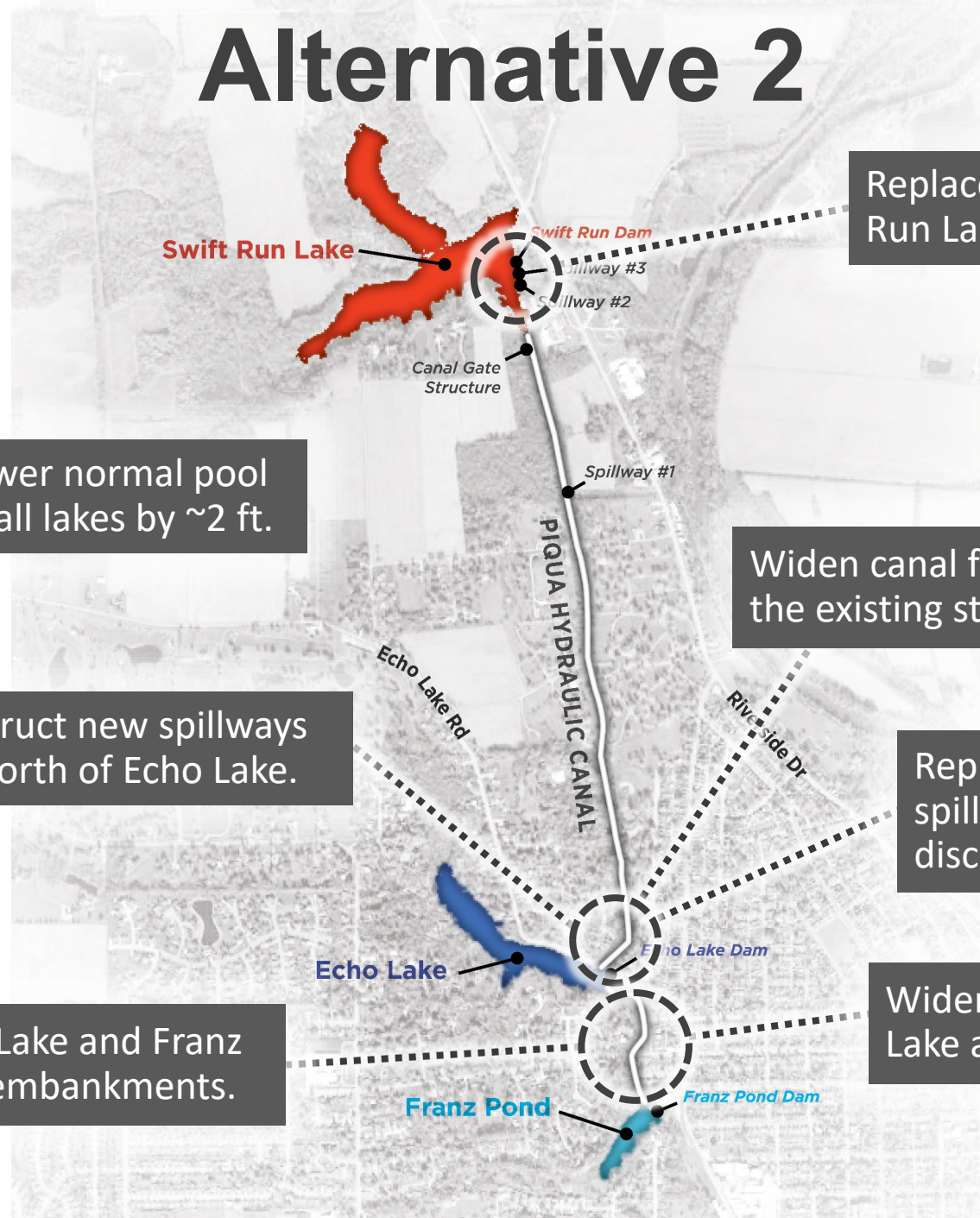
Lower normal pool of all lakes by ~2 ft.

Construct new spillways just north of Echo Lake.

Widen canal between Echo Lake and Franz Pond and north of Echo Lake to the new spillway.

Raise Echo Lake and Franz Pond dam embankments.

Alternative 2



Replace and widen Swift Run Lake spillway.

Lower normal pool of all lakes by ~2 ft.

Widen canal from Echo Lake to the existing standalone spillway.

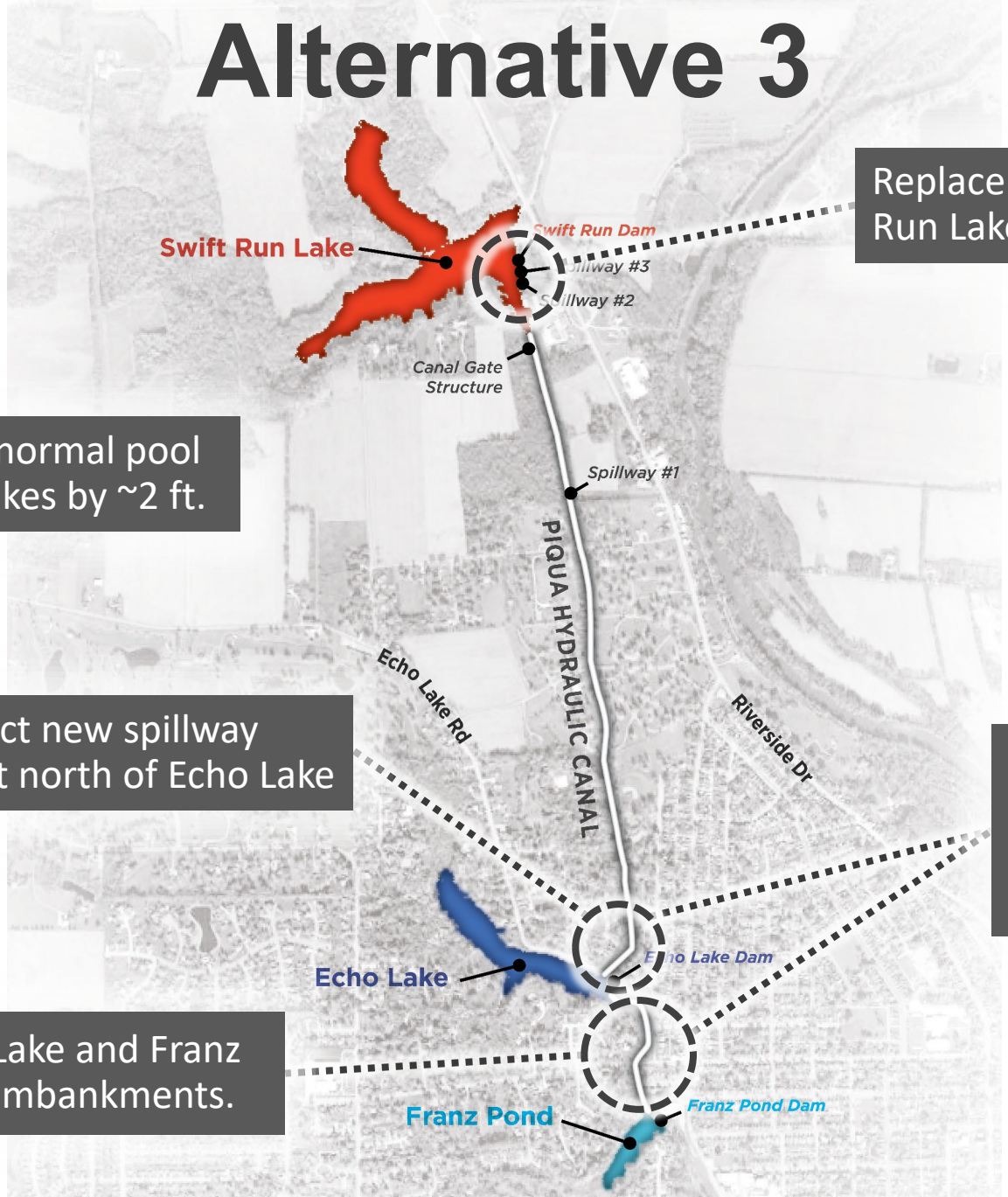
Construct new spillways just north of Echo Lake.

Replace and widen standalone spillway and widen spillway discharge channel

Raise Echo Lake and Franz Pond dam embankments.

Widen canal between Echo Lake and Franz Pond.

Alternative 3



Replace and widen Swift Run Lake spillway.

Lower normal pool of all lakes by ~2 ft.

Construct new spillway ~1800 ft north of Echo Lake

Widen canal between Echo Lake and Franz Pond and north of Echo Lake to the new spillway.

Raise Echo Lake and Franz Pond dam embankments.

Alternative Costs

Feature	Potential Improvements	Estimated Construction Costs
Franz Pond Dam	Raise dam and canal improvements (structural). New bridge crossing. Property acquisition.	\$ 6 – 12 M
Echo Lake Dam	Raise dam and canal improvements (structural). New bridge crossing. Property acquisition. New spillway constructed in Park.	\$ 15 – 25 M
Swift Run Lake Dam	Construct new spillway (may replace existing). Property acquisition.	\$ 4 – 8 M