Johns Lake

Minimum Flows and Levels
Independent Peer Review
Initial Comments
April 6, 2022

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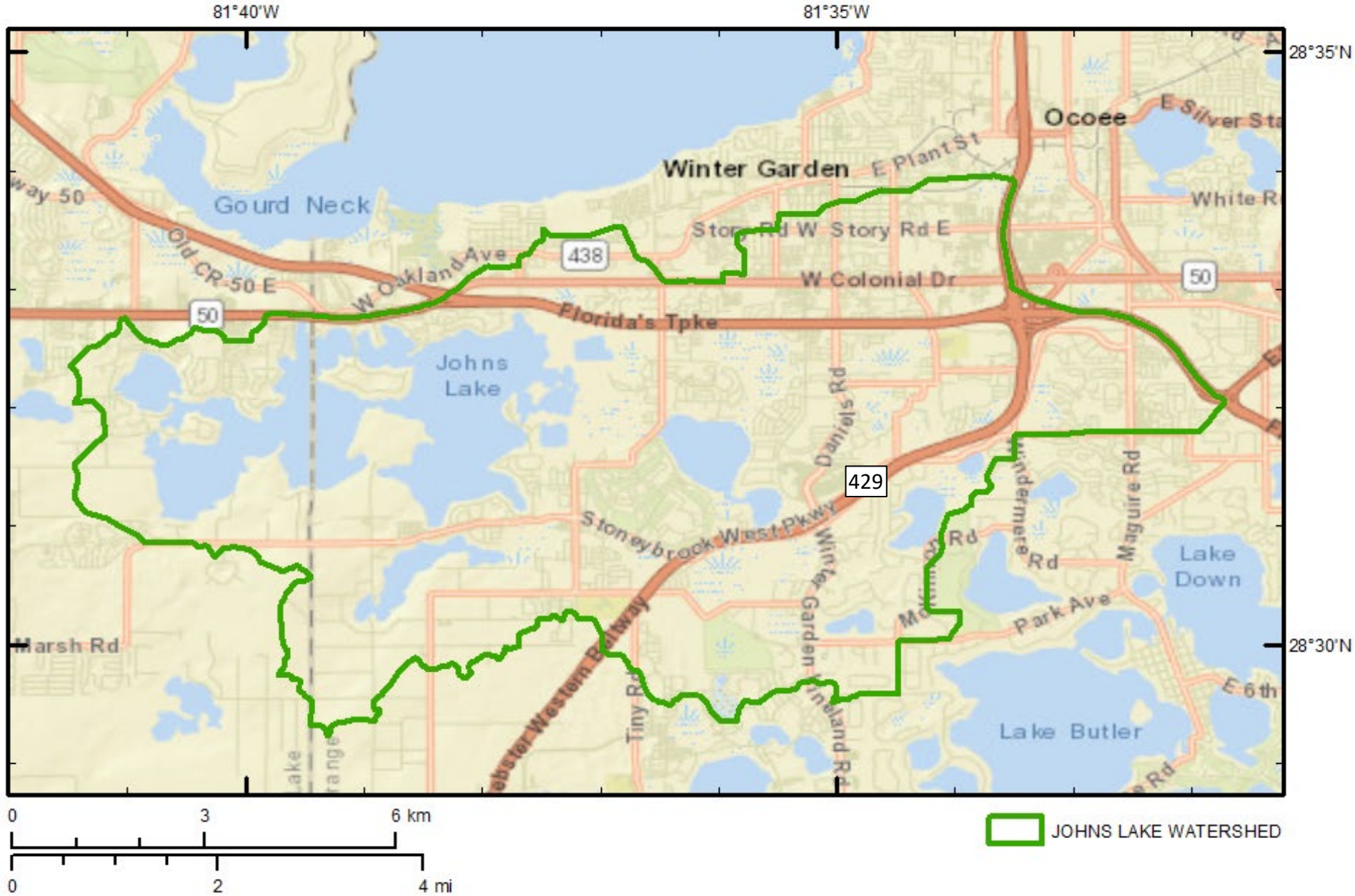

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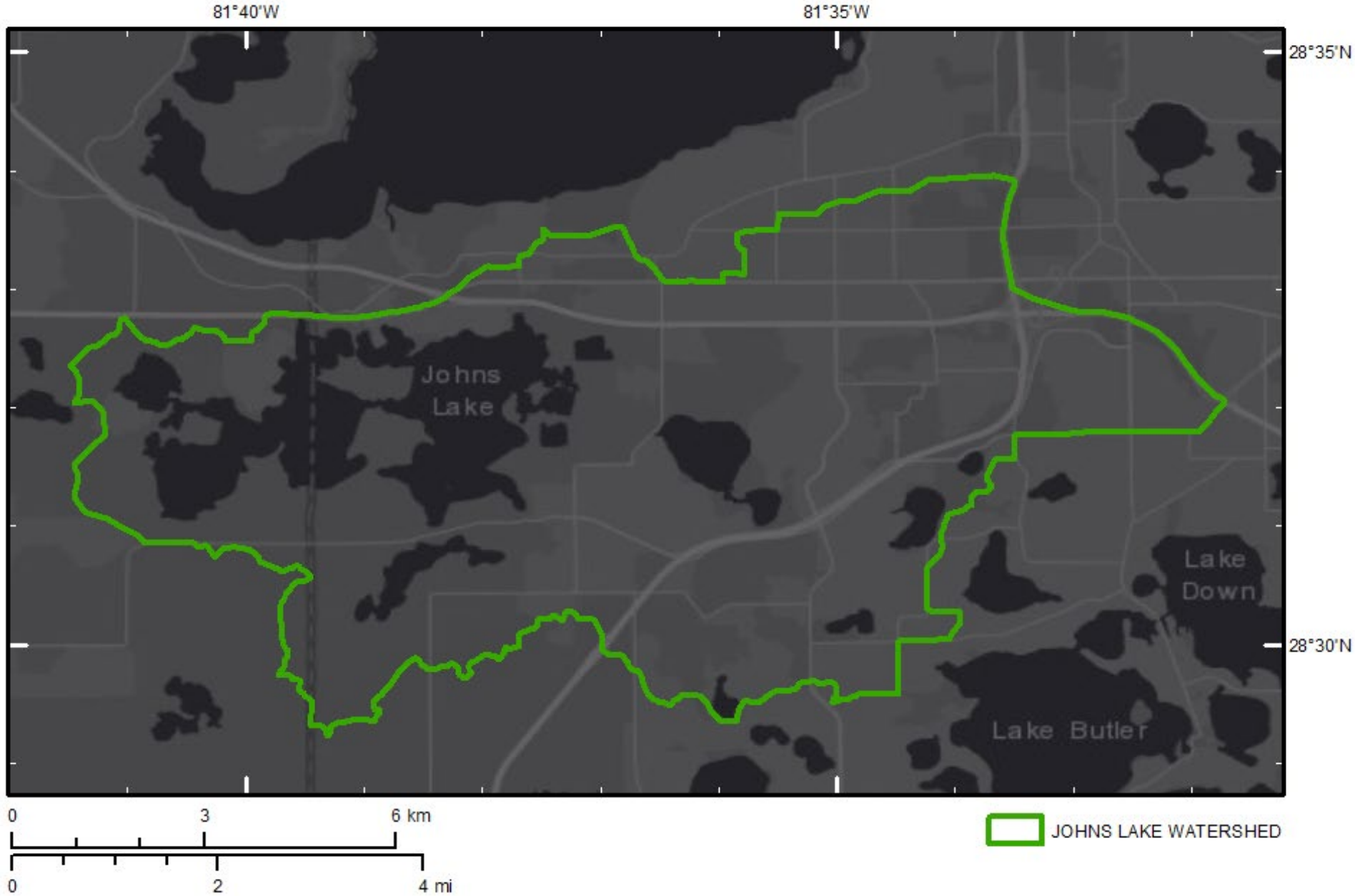
Independent Peer Review

• Task A:	Project Introduction Meeting	March 3
	Site Visit	March 3
• Task B1:	Public Presentation of Initial Peer Review Comments	April 6
	Public Comment	April 6
• Task B2:	Draft Peer Review Memorandum	April 27
• Task B3:	Draft Peer Review Public Presentation	May 5
	Public Comment	May 5
• Task B4:	Peer Review Memorandum	May 24



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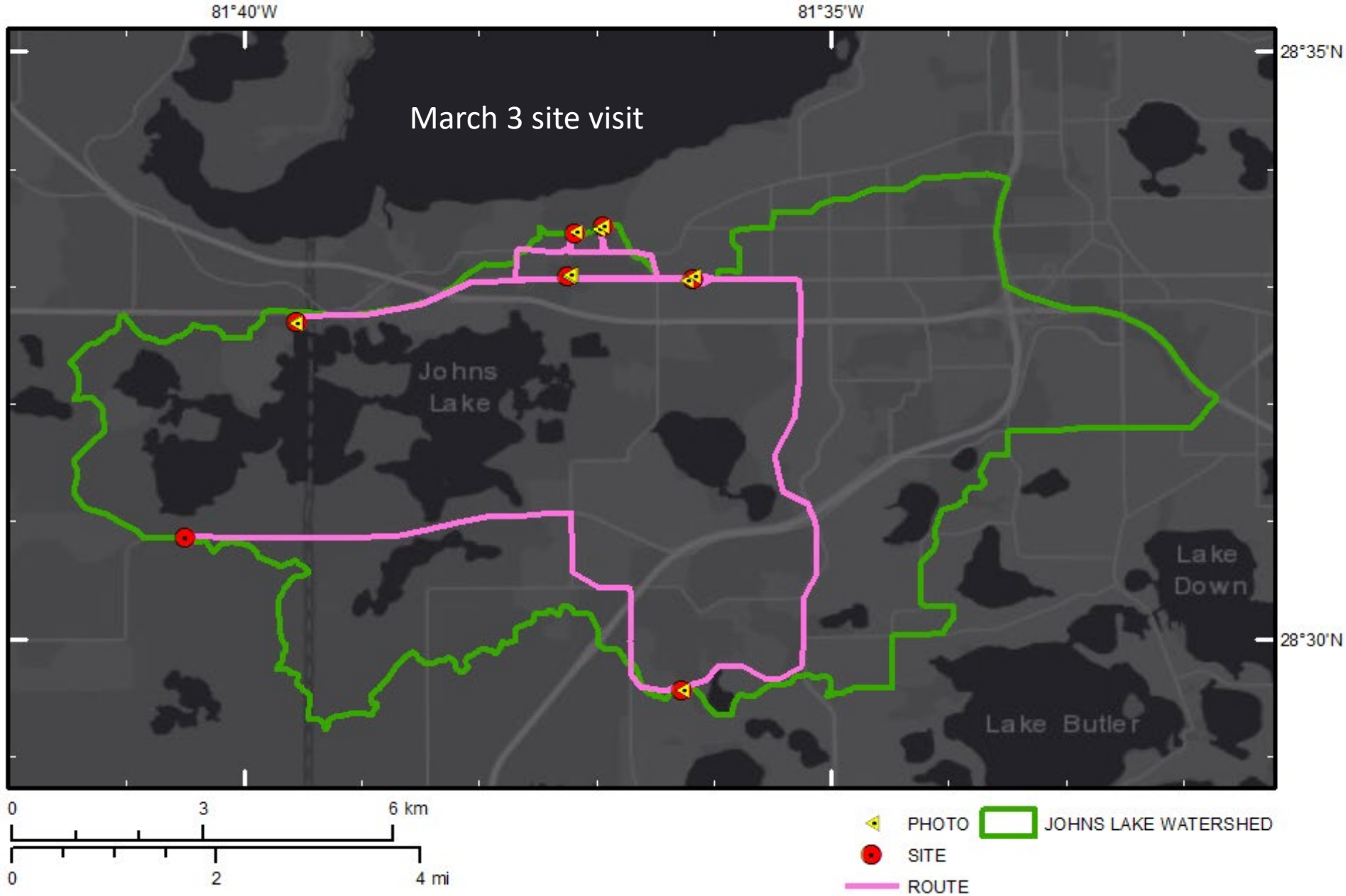

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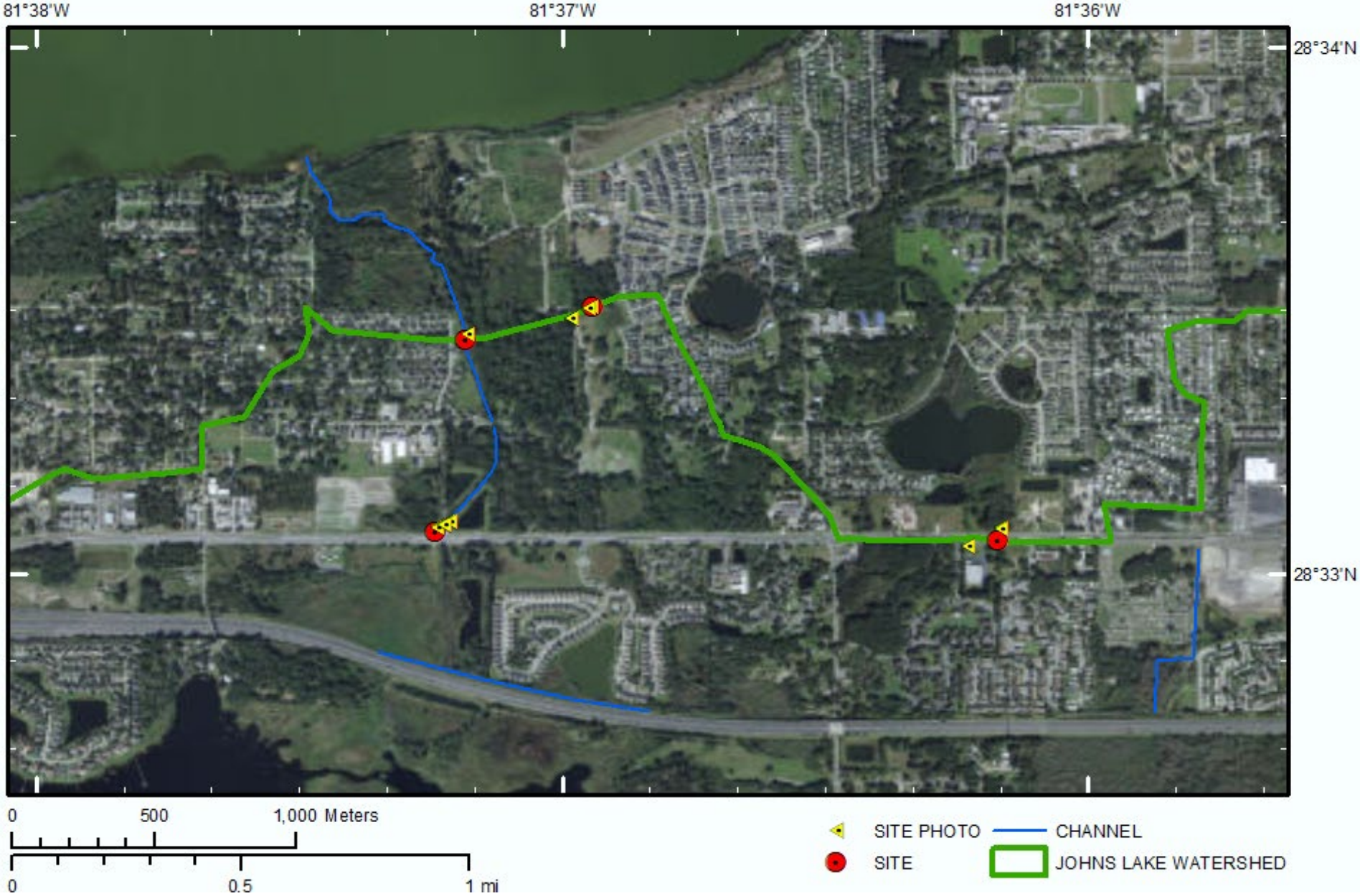

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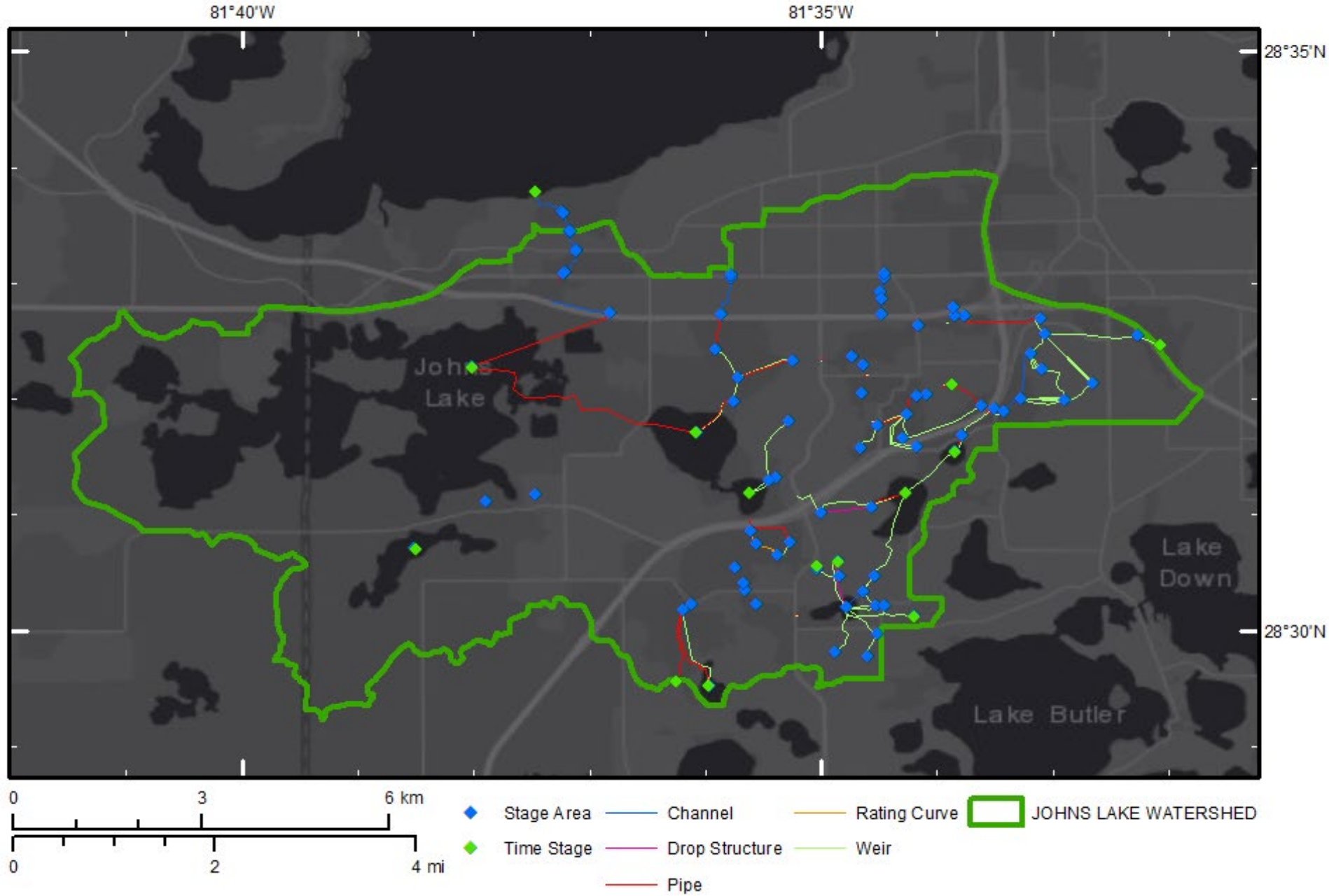

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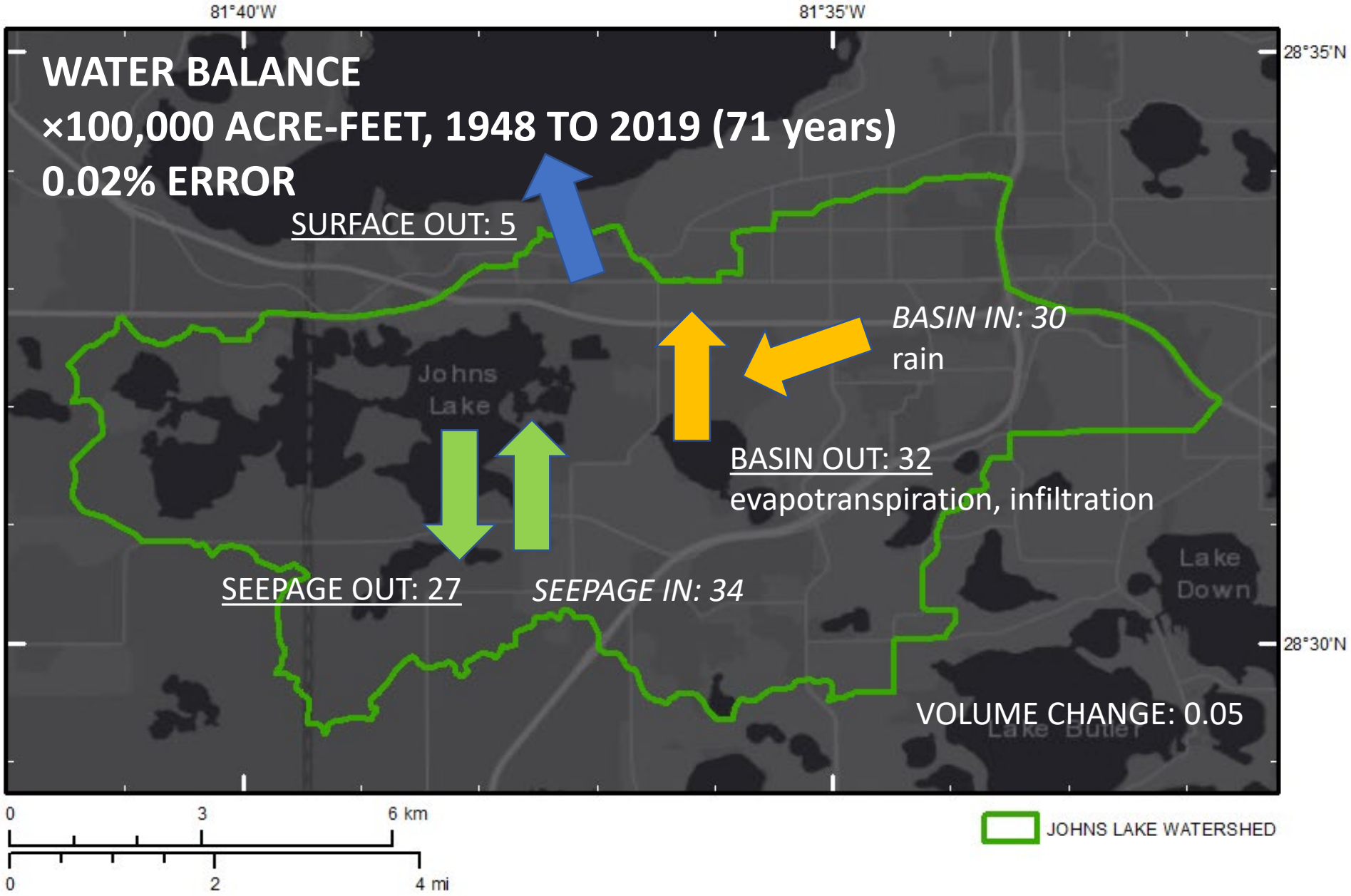

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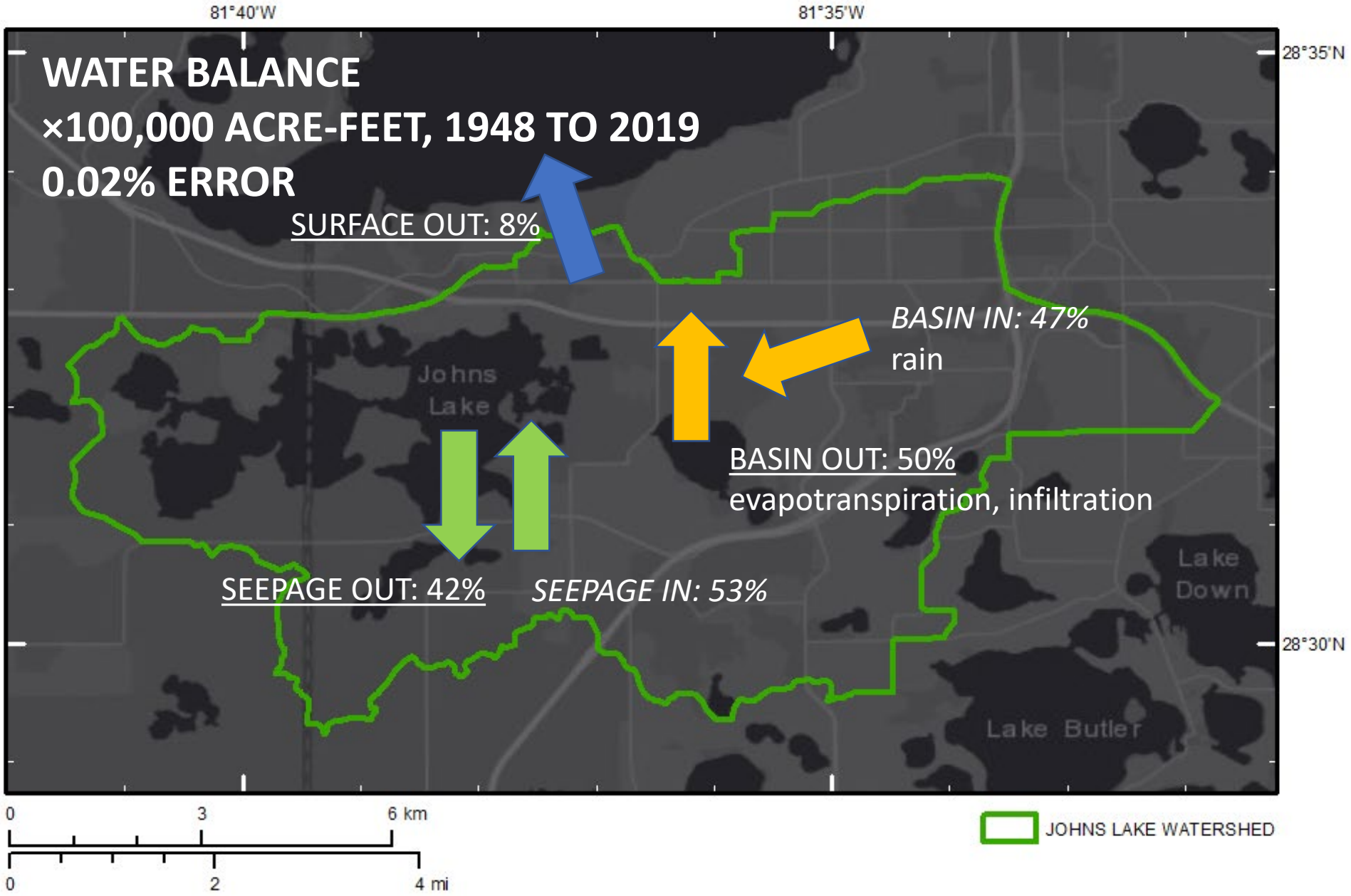

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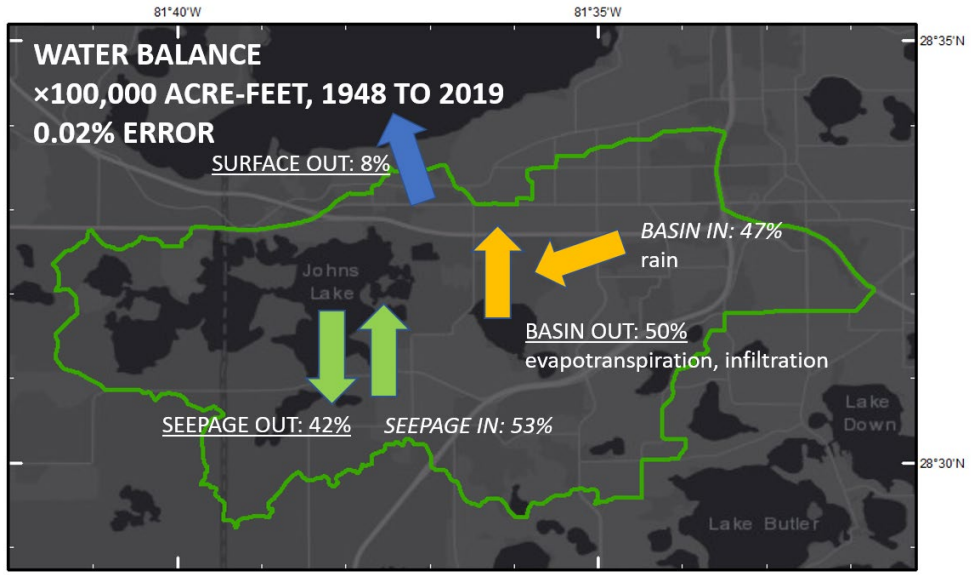
Independent Peer Review

<u>Review Focus Areas:</u>

A. Data

B. Simulation of Flows and Levels

1) Interconnected Channel and Pond Routing Model, Version 4 (ICPR4)
2) Simulation Development
3) Simulation Calibration
4) Simulation Verification



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A. Data

- Are all necessary data available? Did SJRWMD use the best available data? In general, yes.
  - Rainfall: Isle Win 1948-1994 & NEXRAD 1995-2019
  - ET: Clermont 1948-2019 & USGS 1985-2019
  - Groundwater levels: Several wells (OR0047 1948 to 2019; OR1123 in watershed)
  - Lake levels: SJRWMD 03840562 late 1950s-2019
- Did SJRWMD discard relevant data? In general, no.
  - Would use of discarded data significantly affect results? Generally, not applicable

B. Simulation Development

- Is ICPR4 an appropriate model? Yes
- Does ICPR4 satisfy MFL approach? Yes
- Is the simulation
  - Appropriate? Yes
  - Defensible? In general, yes. Some minor refinement may be more defensible.
  - Valid? In general, yes. Some minor refinement may be attractive.

B. Simulation Development

- Are assumptions
  - Reasonable? In general, yes
  - Consistent? In general, yes
  - Necessary?
    - Can use of available data eliminate or minimize any assumption? No
    - If yes, do simulated water-surface elevations or simulate flow rates change? Not applicable.
- Are simulation inputs referenced to the same datum?
  - Elevation datum not explicitly referenced in ICPR4 simulation input
  - NAVD88 is referenced 8 times in report.
  - NGVD29 referenced once in report.

Specific Comments …
Minutia, Do not Undermine Simulation

- Detail source-data reference :
  - Explicitly cite the source DEM, from which DEM modifications were made, including the year flown, resolution, data owner, and datums
  - Explicitly cite bathymetric surveys, from which bathymetric inputs were burned into the DEM, including year surveyed, resolution, method, data owner, and datums
  - Explicitly cite NRCS soil survey date
  - Explicitly cite structural survey source, date, method

Specific Comments …
Minutia, Do not Undermine Simulation

- Conform report to simulation:
  - 58 mapped basins cited in report. 63 mapped basins in ICPR4
  - Explain different use of hydraulic conductivity (1) for rainfall excess purposes and (2) for groundwater flow purposes
  - When tabulating CWR SWMM inputs, also tabulate SJRWMD ICPR inputs (for example: table B-3)
  - When tabulating SLT ICPR inputs, also tabulate SJRWMD ICPR inputs

Specific Comments …

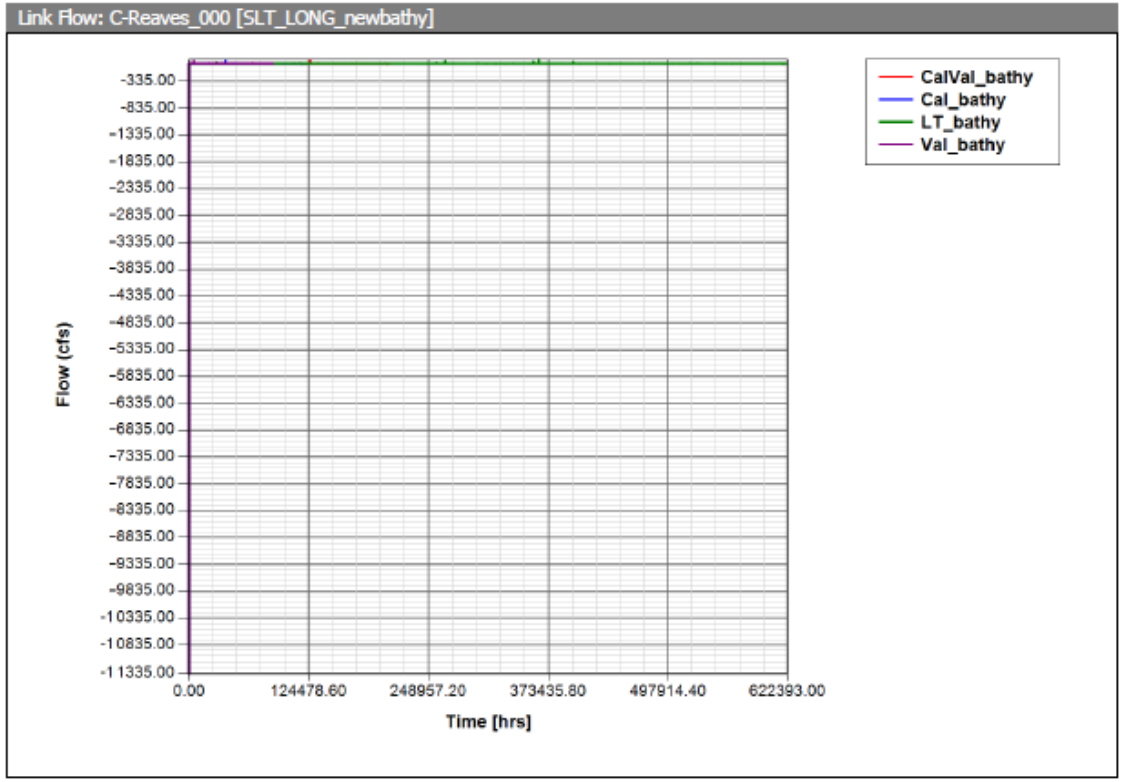
Minutia, Do not Undermine Simulation

- Explain:
  - Should water be 100% impervious, or 0% impervious? What is the consequence of this choice?

Specific Comments …

Minutia, Do not Undermine Simulation

- Check:
  - Should relatively-large-magnitude, instantaneous flows that occur at the beginning of simulations be minimized with a revision to the initial condition?



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Two General Recommendations for Future Consideration (Likely don't undermine a 2022 MFL)

- Model availability:
  - ICPR is a closed-source model.
  - Florida's WMDs may wish to use open-source models to develop MFLs.

- Climate change:
  - The global climate is changing.
  - Florida's WMDs may wish to incorporate future-conditions hydrology into MFL development.