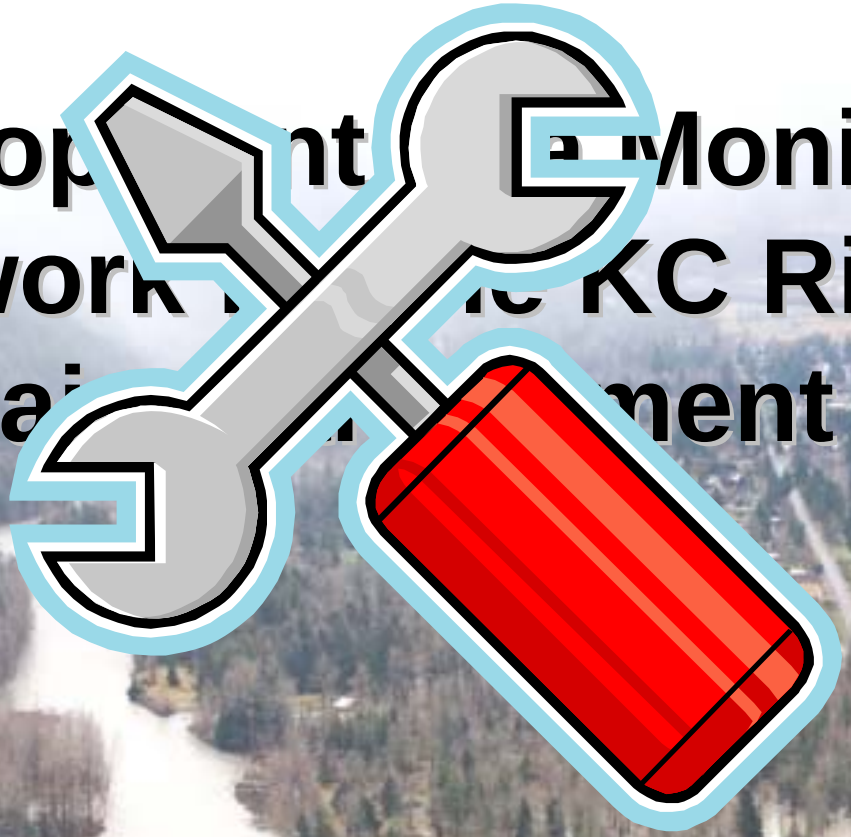
Development of a Monitoring Framework for the KC River and Floodplain Management Section

King County Water and Land Resources Division

Spring 2010 Science Seminar

Develop[illegible]nt [illegible] Monitoring Framework [illegible]e KC River and Floodpla[illegible]ment Section



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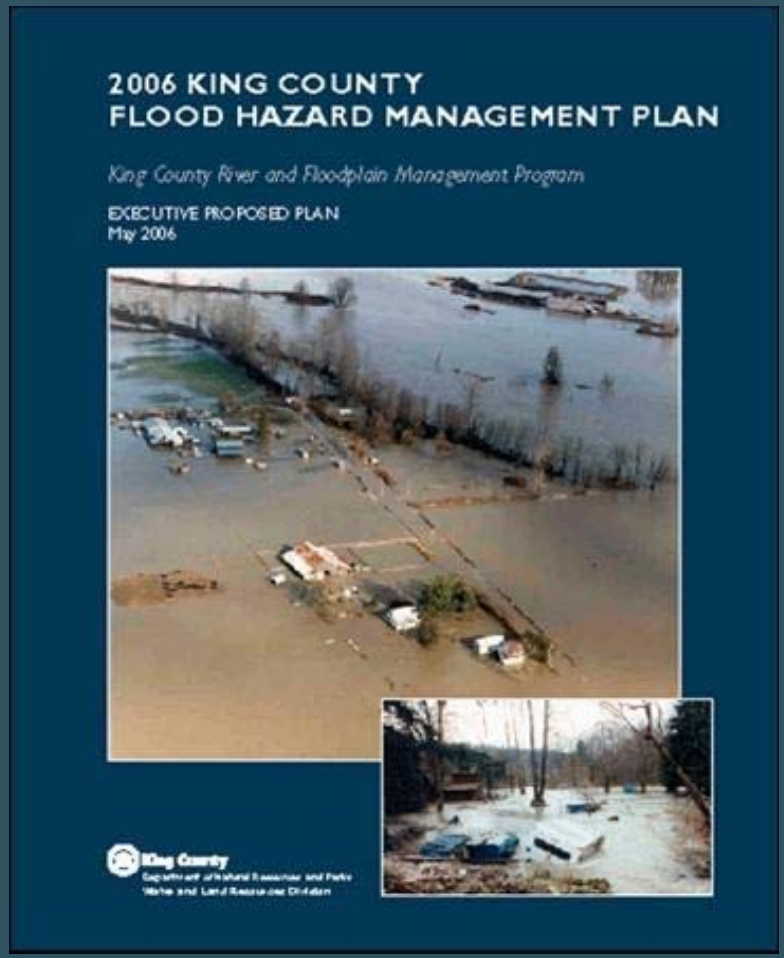
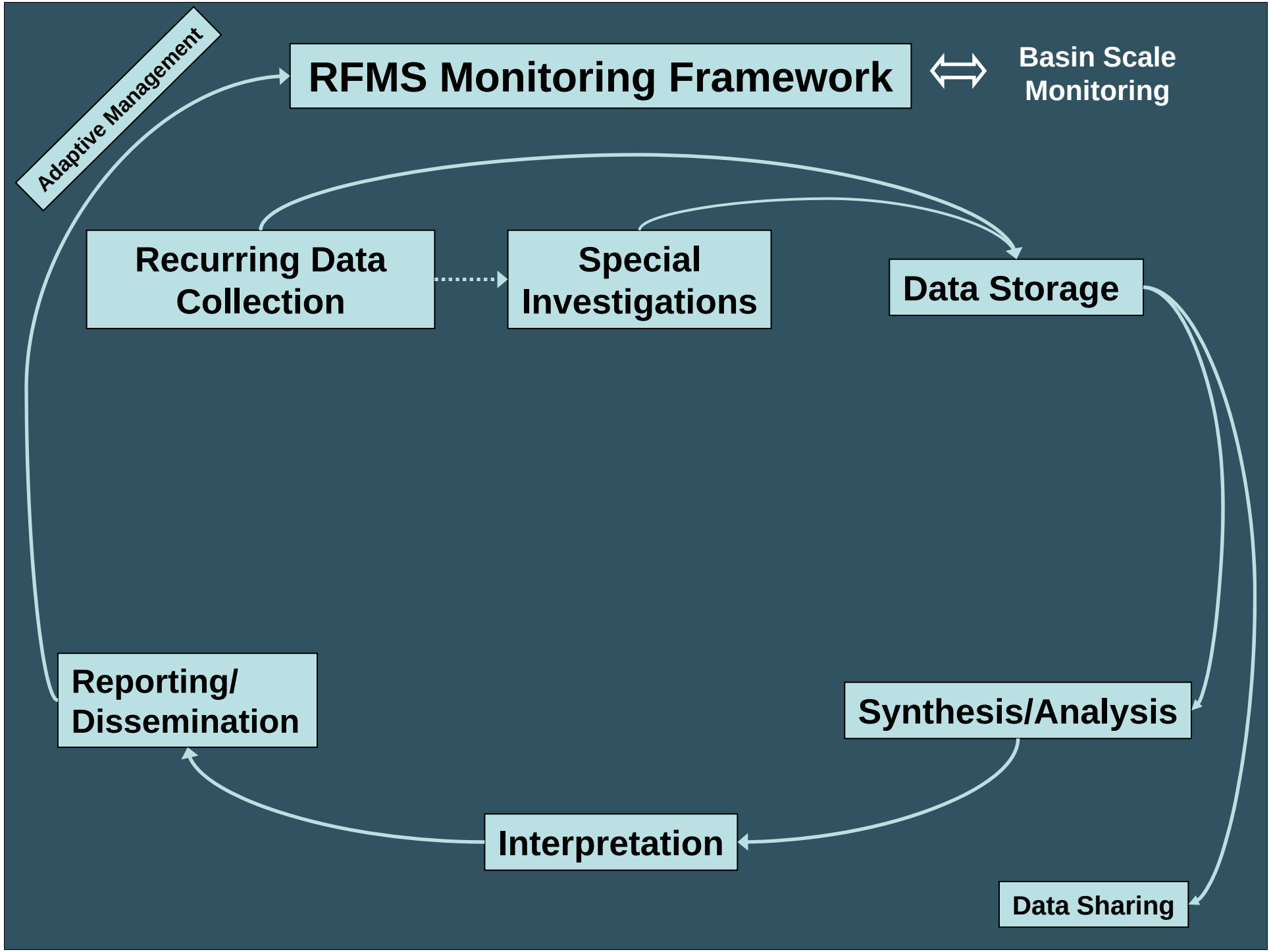
Has program and project implementation:

1. Reduced the risk of flood and channel migration hazards?
2. Avoided or minimized the environmental impacts of flood hazard management?
3. Reduced the long-term cost of flood hazard management?




Adaptive Management
RFMS Monitoring Framework
Basin Scale Monitoring
Recurring Data Collection
Special Investigations
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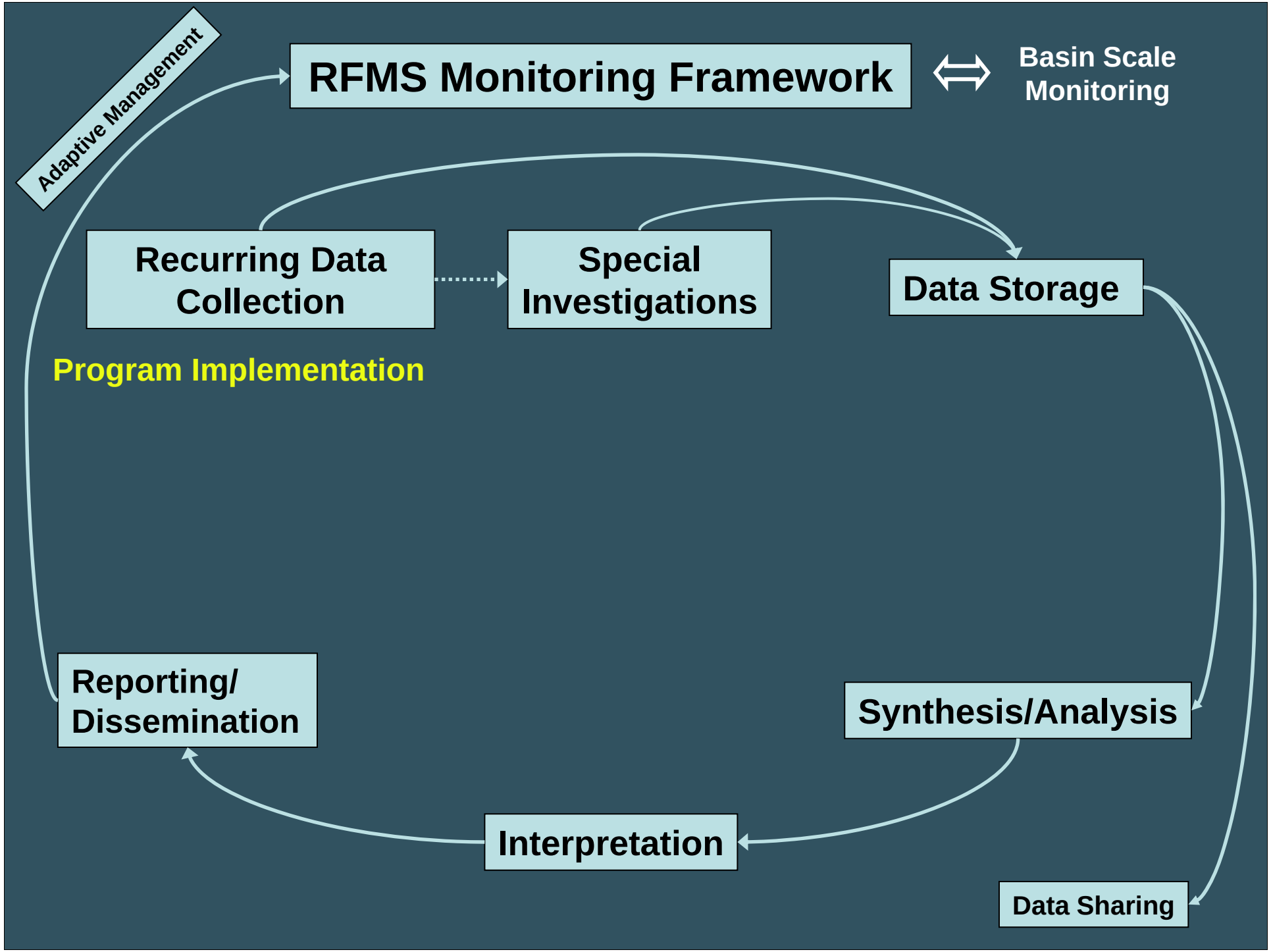
Reporting/ Dissemination
Synthesis/Analysis
Interpretation
Data Sharing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Implementation Monitoring

Community Rating System

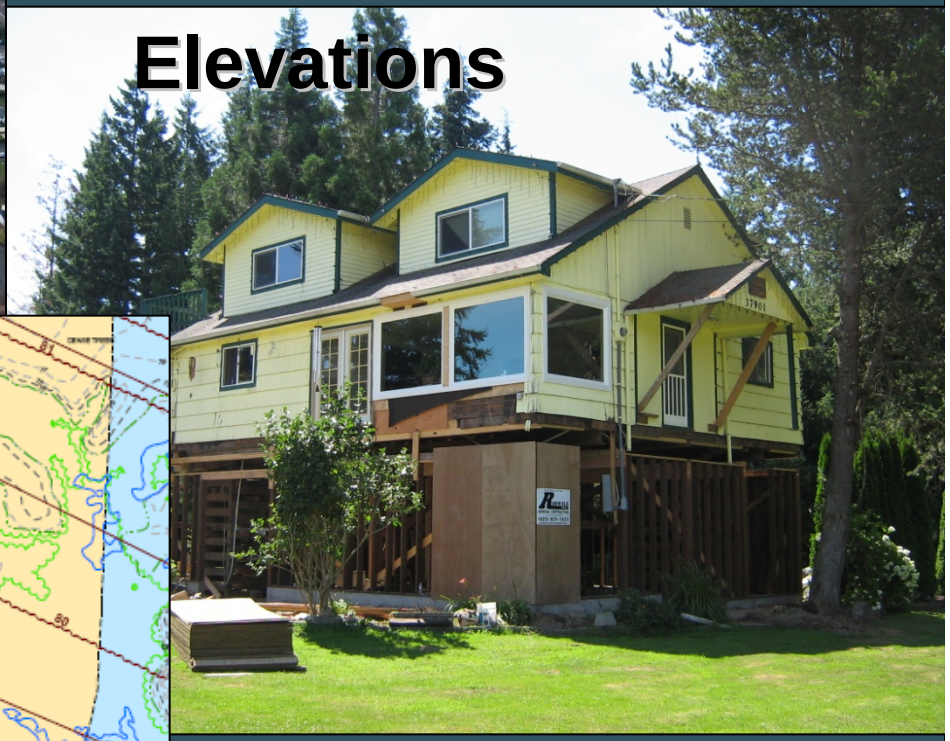
Grants

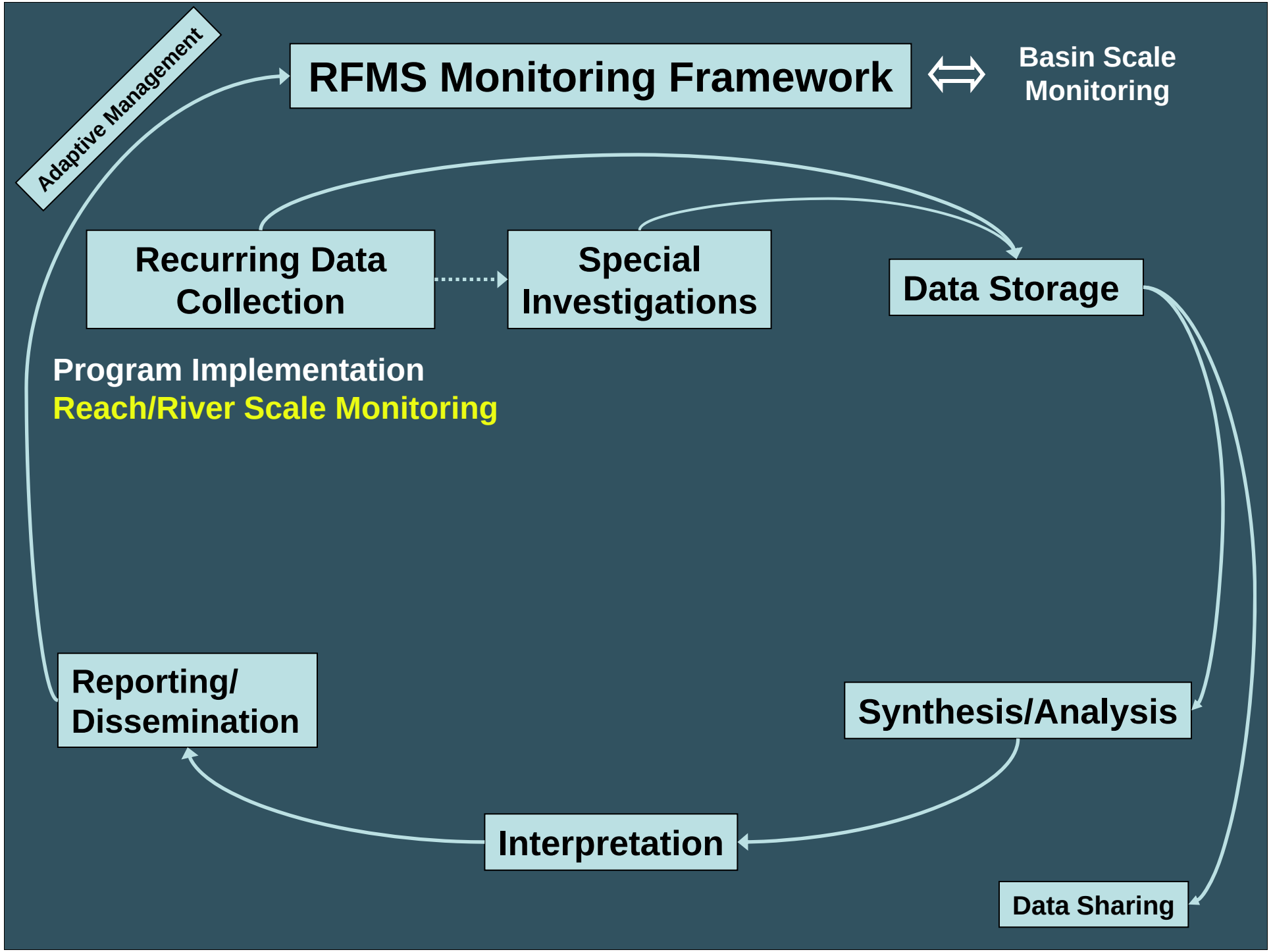
Regulations

Outreach

Projects

Flood Warning/Patrol

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Reach/River Scale Monitoring

- Corridor-scale implementation and effectiveness monitoring
- Channel and sediment monitoring
- Large wood studies

Corridor-Scale Monitoring

(example: White River, Segment 1)

River Segment	Corridor Condition	Strategy
King/Pierce County Line to River Mile 10	**FHMP:** Developed floodplain, constricted channel, depositional	**FHMP:** Acquire land or easements, modify levees and revetments to reconnect channel to floodplain

Corridor-Scale Monitoring

(example: White River, Segment 1)

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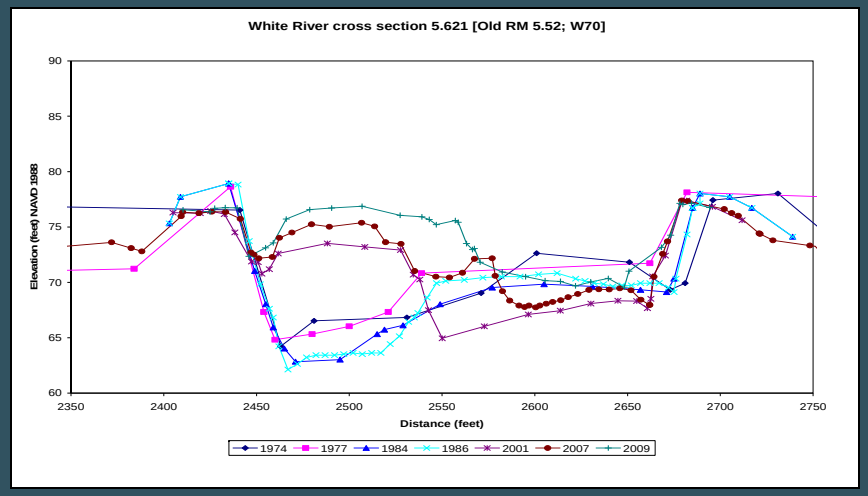
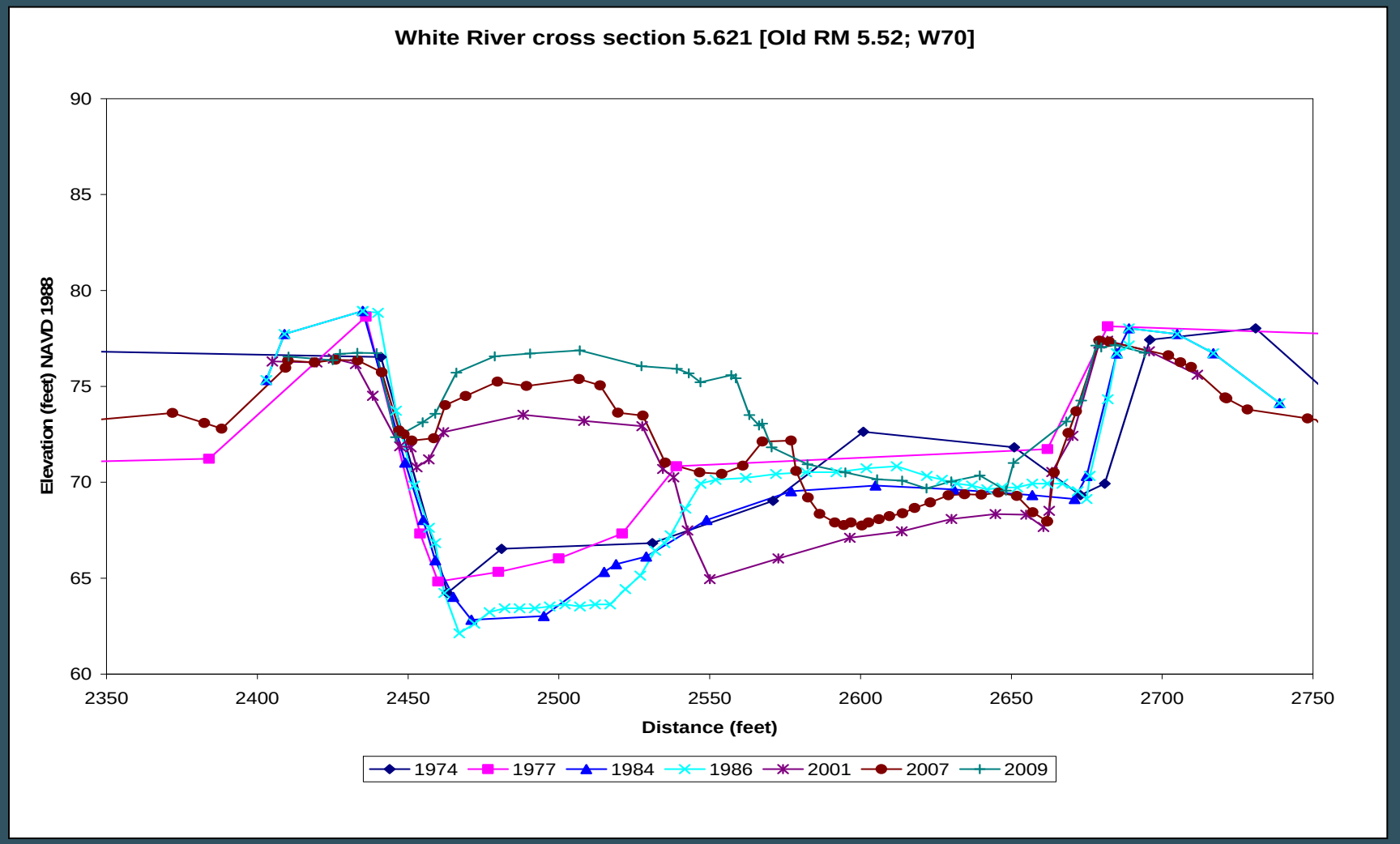
Are the identified strategies being implemented, and if so, are they having the intended effect?

Channel & Sediment Monitoring



Slide: Terry Butler

Channel & Sediment Monitoring



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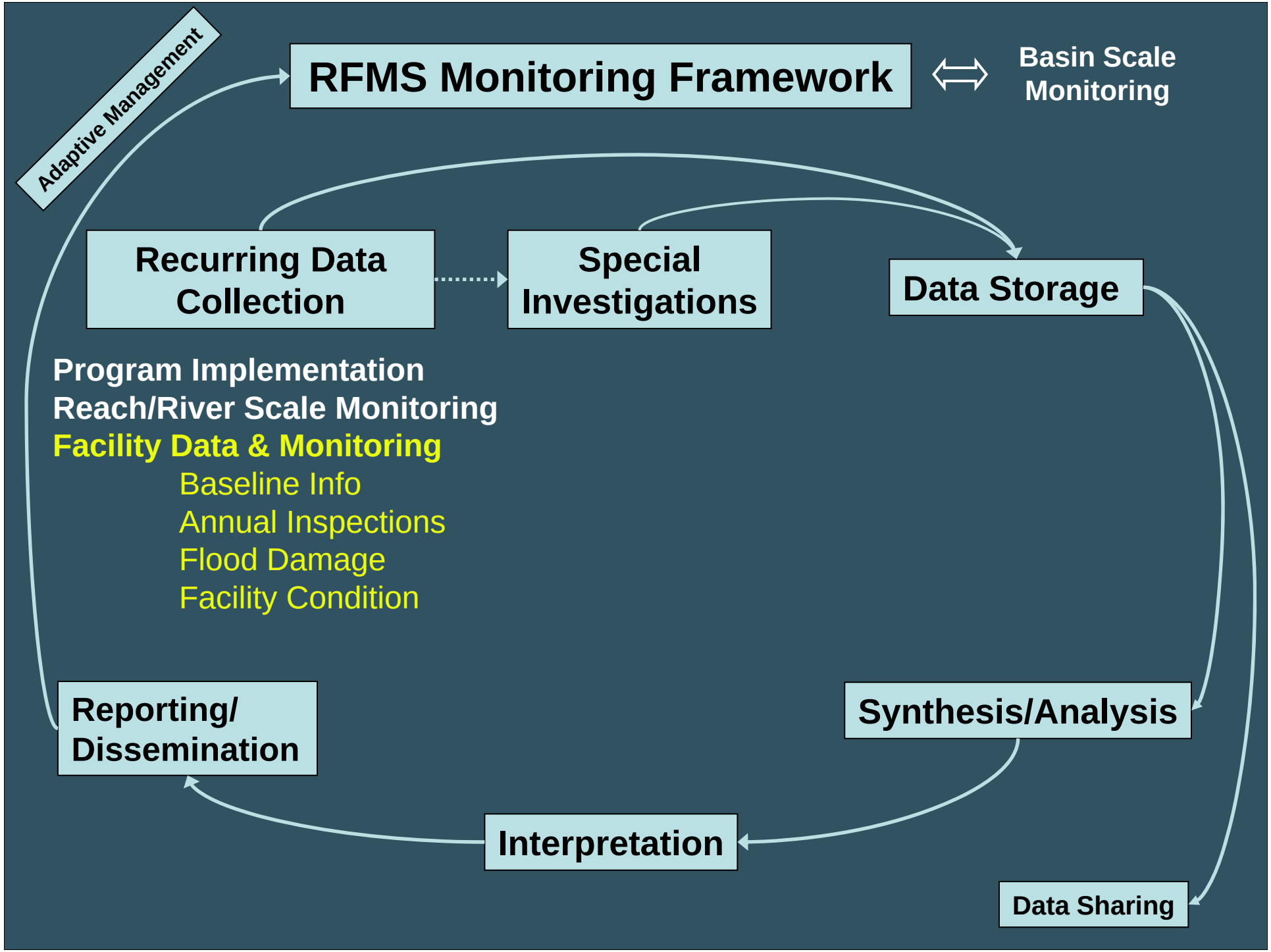
Large Wood Studies

Goals:

- Characterize historical changes in amount & distribution of large wood,
- Evaluate the effects of KC river management policies on current large wood conditions,
- Anticipate how the amount and distribution of wood can be expected to change under current policies.

Photo: G. Lucchetti; Content: K. Akyuz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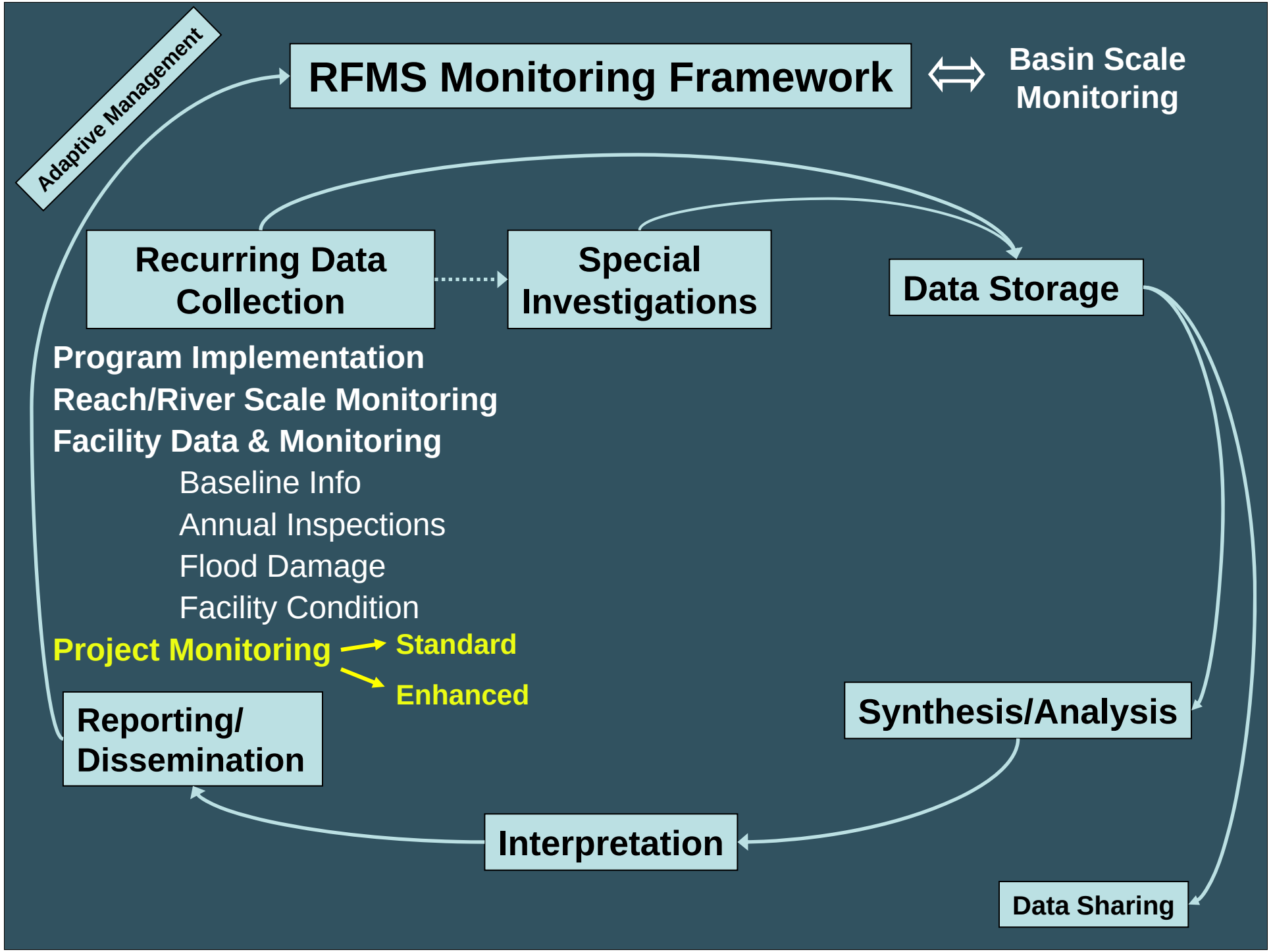
Baseline Info
Annual Inspections
Flood Damage
Facility Condition Assessments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Enhanced
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Standard Project Monitoring

Standard Project Monitoring

Source: Roger Peters, USFWS

Source: Ruth Schaefer

Enhanced Project Monitoring

Tolt River Floodplain Reconnection

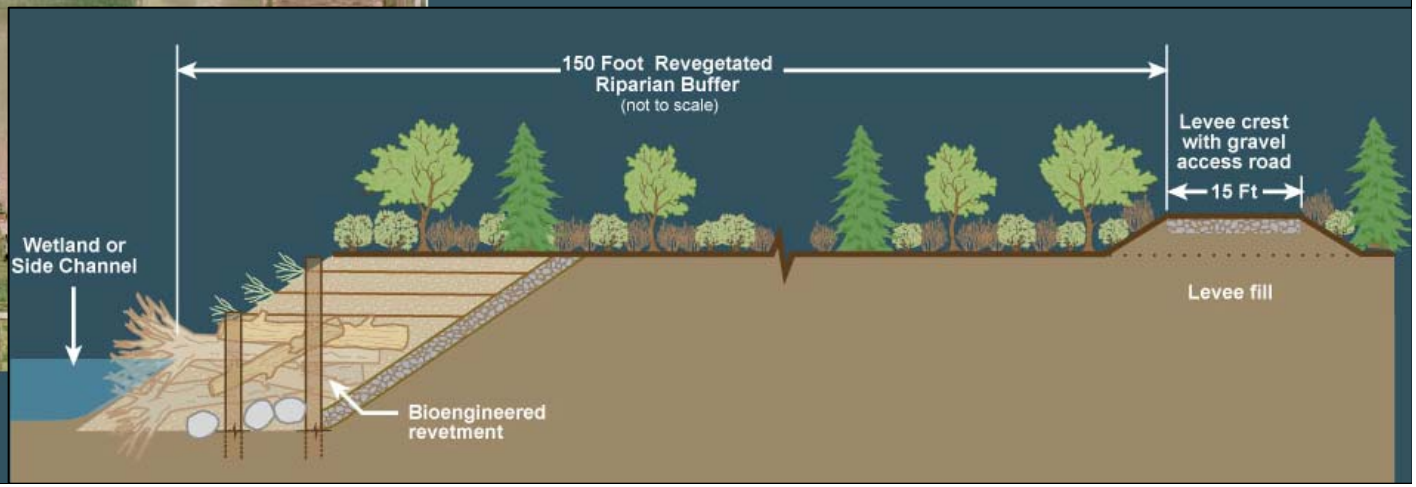
Countyline Project Construction

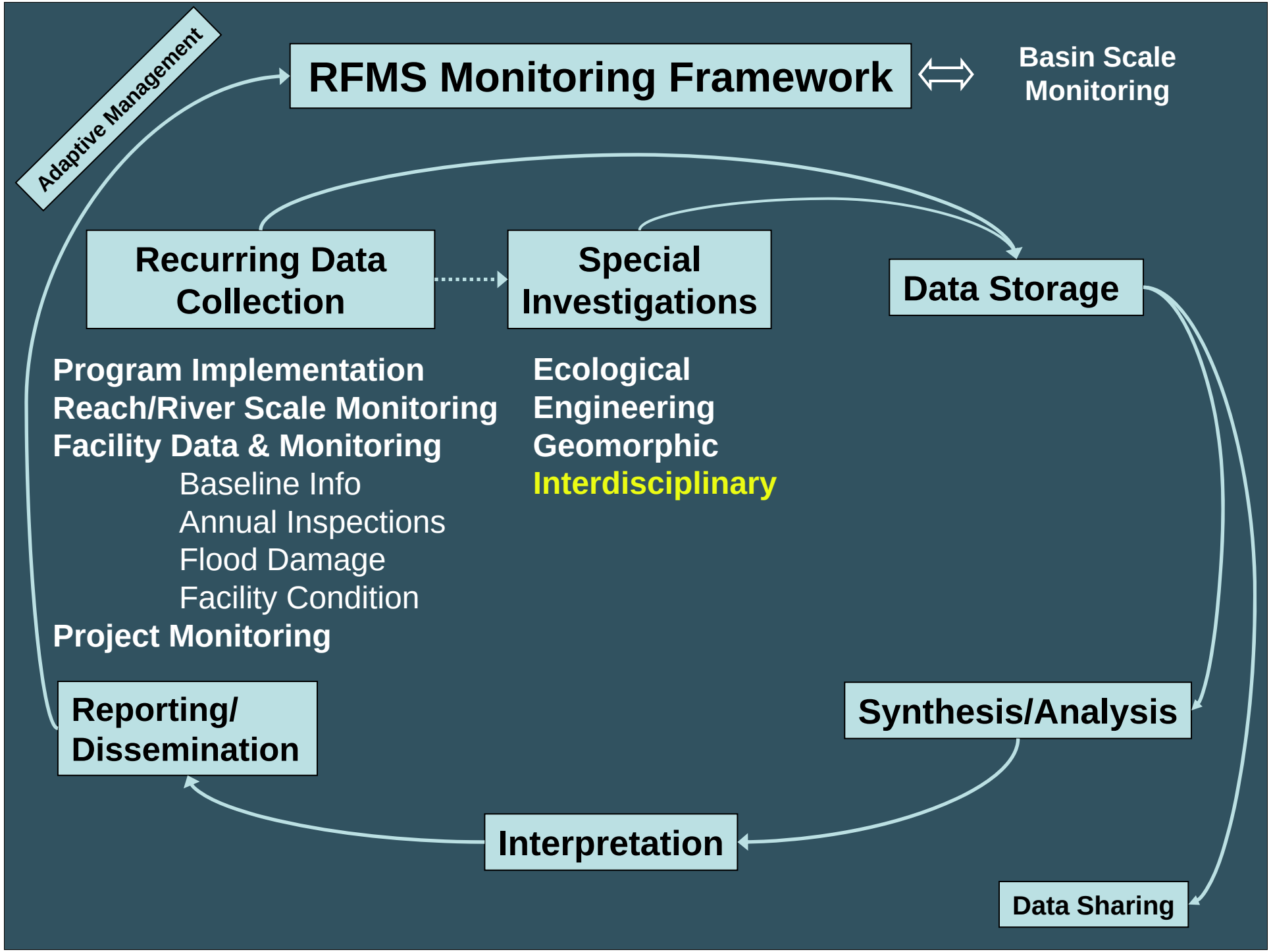
Phase I

- Project area
- Setback levee
- Biorevetment and riparian buffer
- Engineered log structures

Phase II

- Levee and revetment removal

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Special Investigations
An example of an interdisciplinary study…
Photo: John Koon

Special Investigations

An example of an interdisciplinary study…

Do Trees On Levees:

- Improve bank stability?
- Improve the quantity and quality of fish habitat?

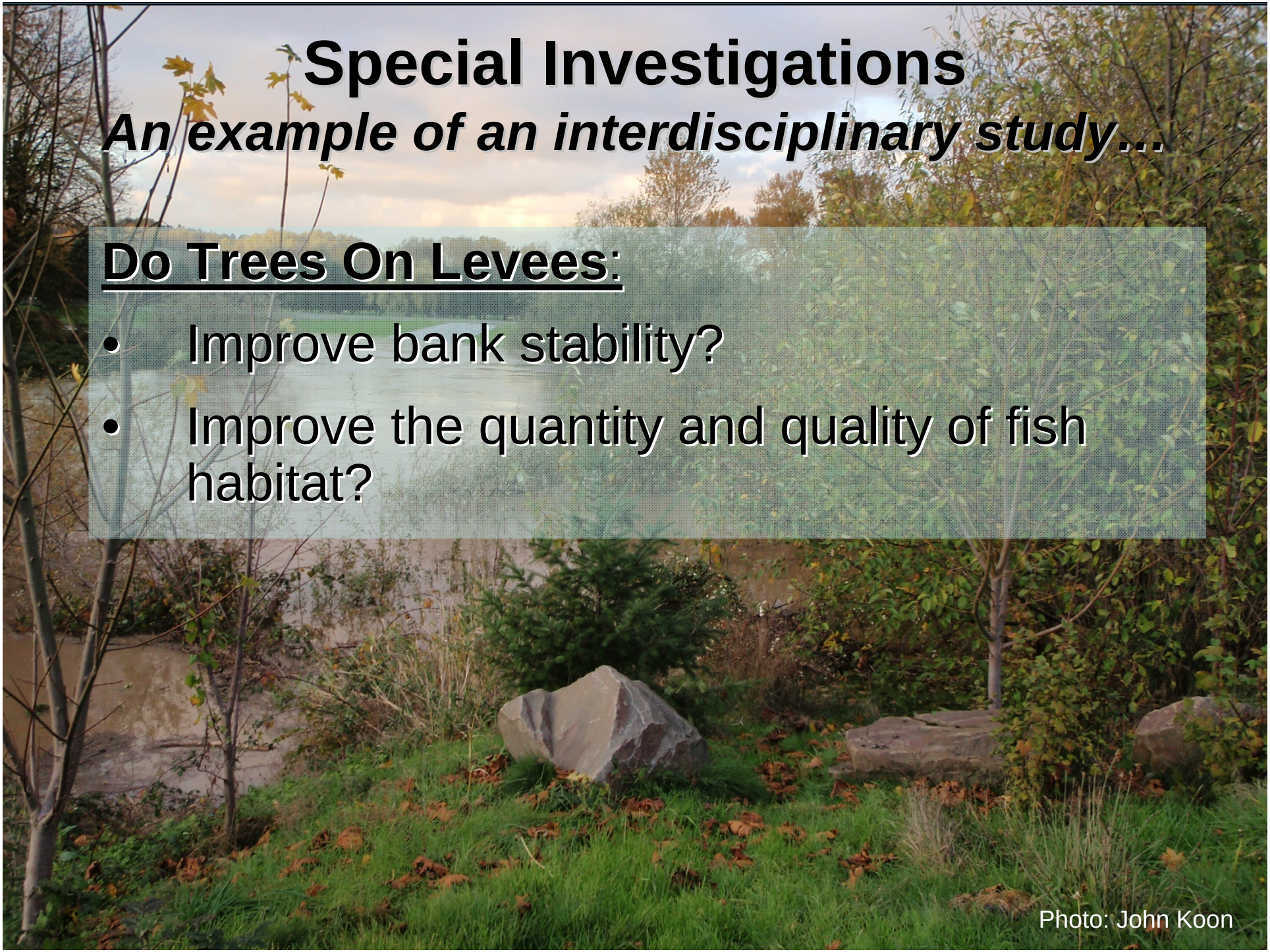
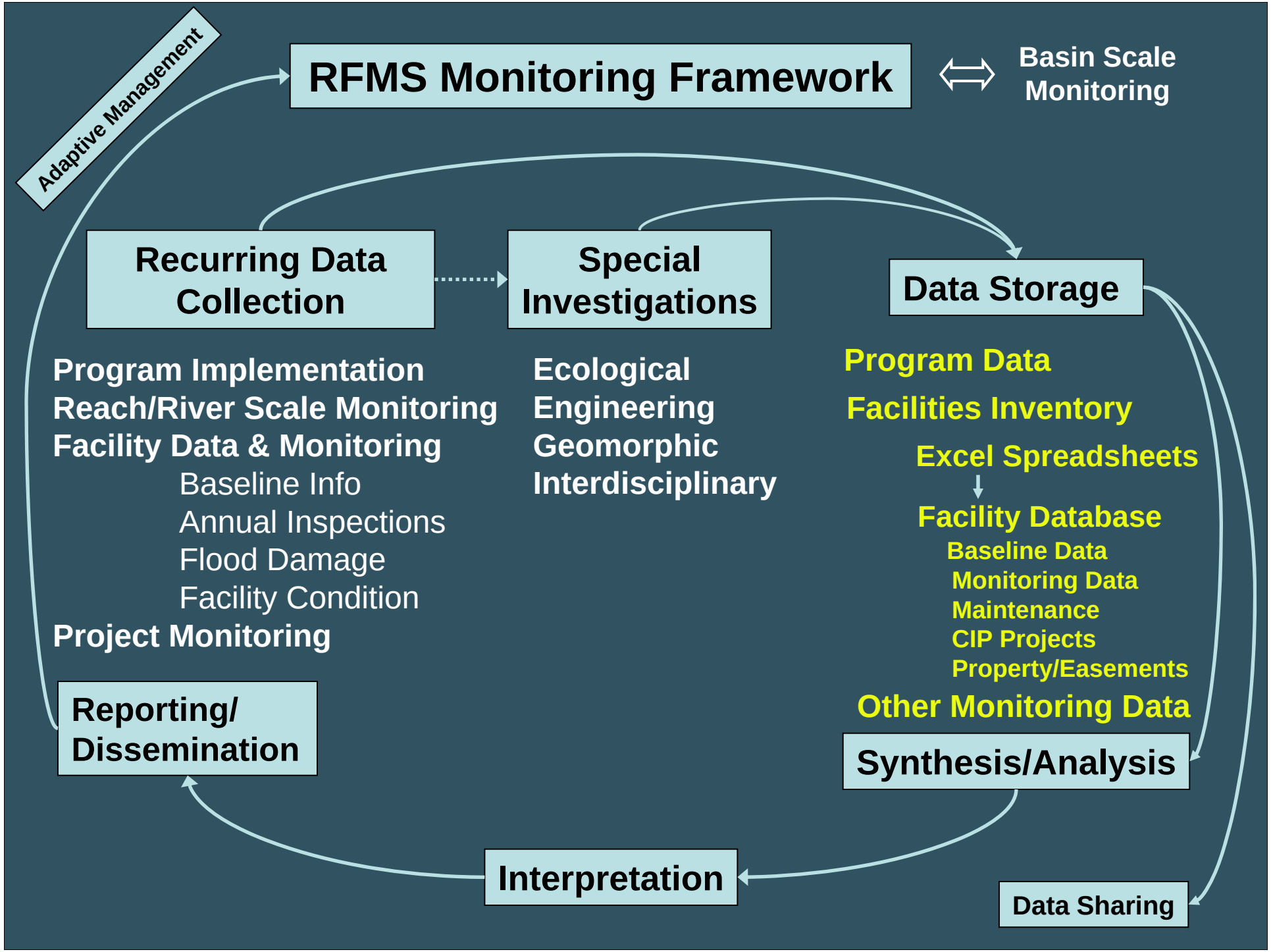


Photo: John Koon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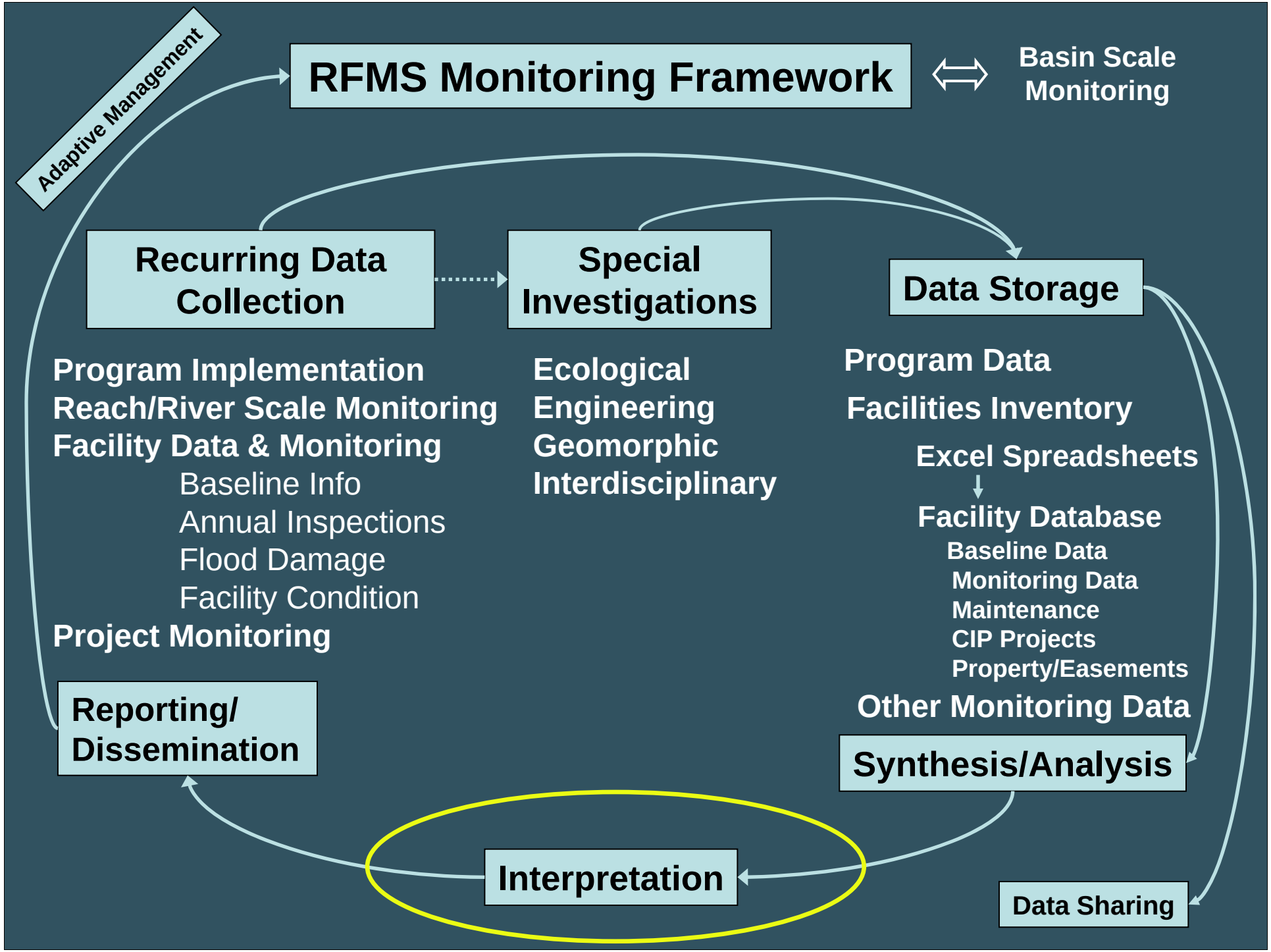
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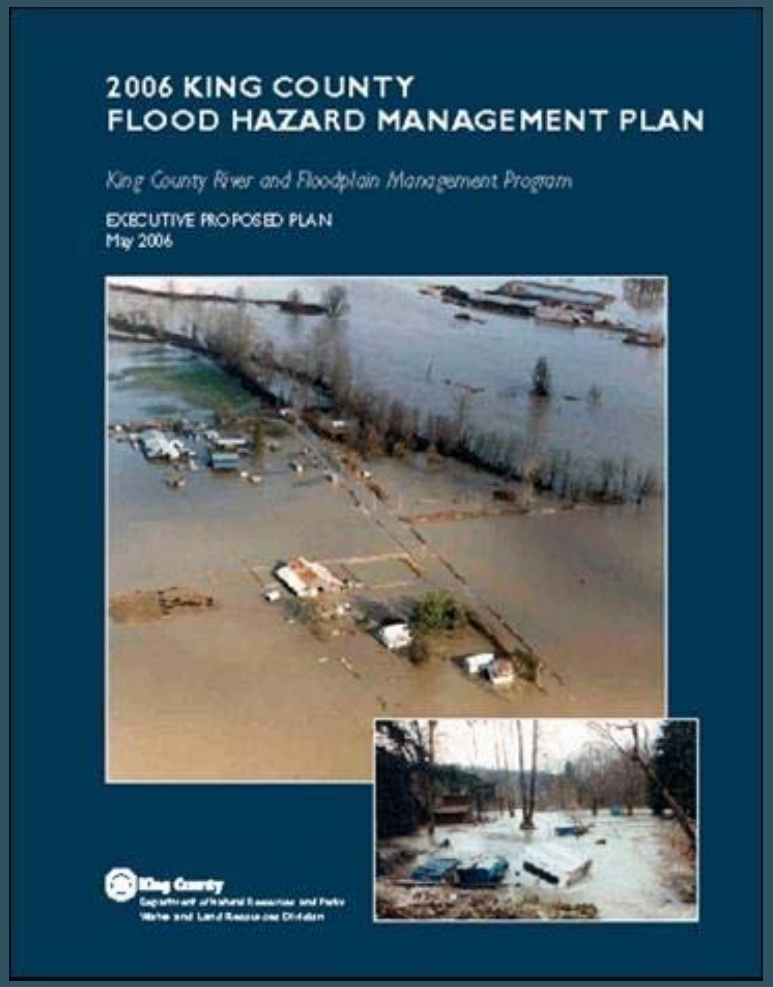
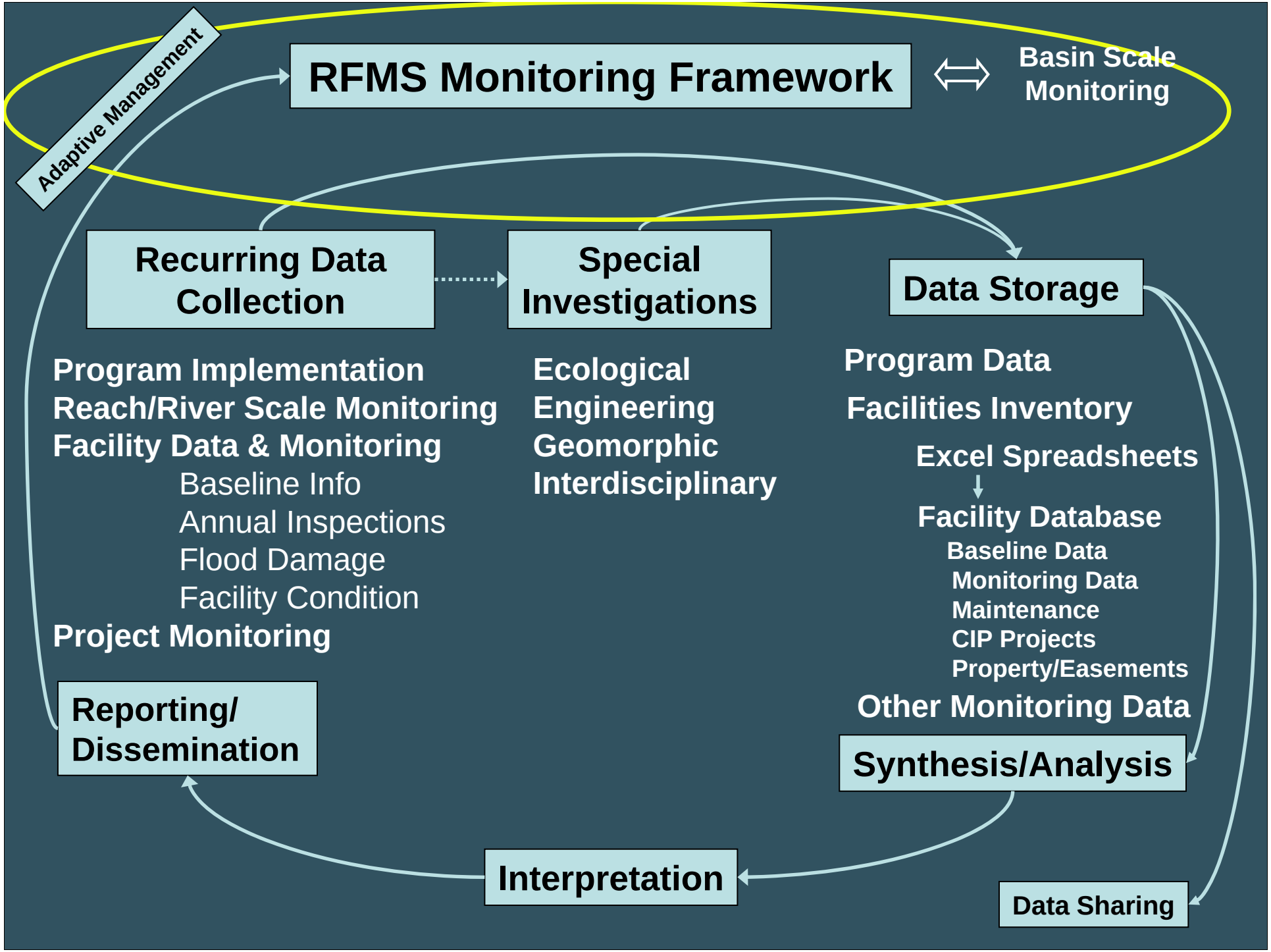
Validation Monitoring

Has implementation of Rivers Section management alternatives had the expected effects?

Requires coordination with other monitoring efforts

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Coordination/Collaboration

- LIDAR
- Fish In/Fish Out
- Basin Status and Trends
- Project Effectiveness Monitoring

(e.g. SAC, Rainbow Bend, Countyline)

- Other opportunities?

Photo: Kate Akyuz


Photo: John Koon

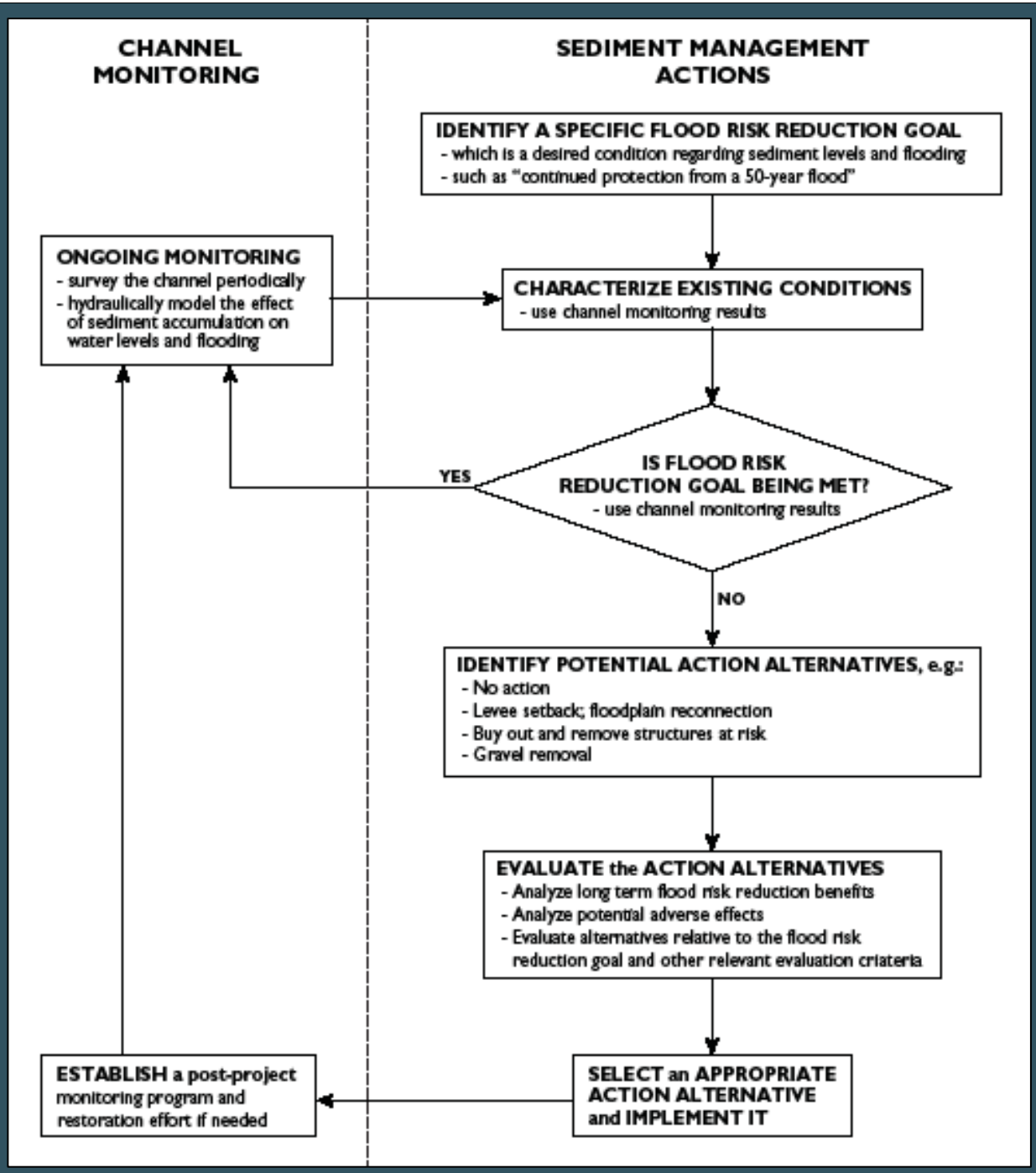
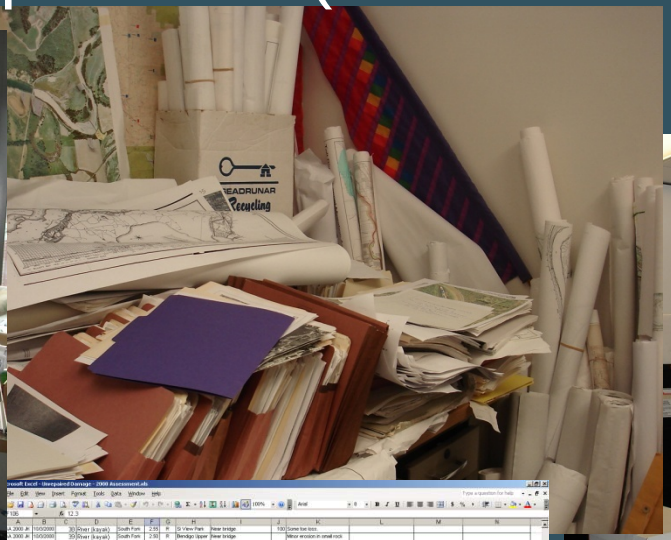
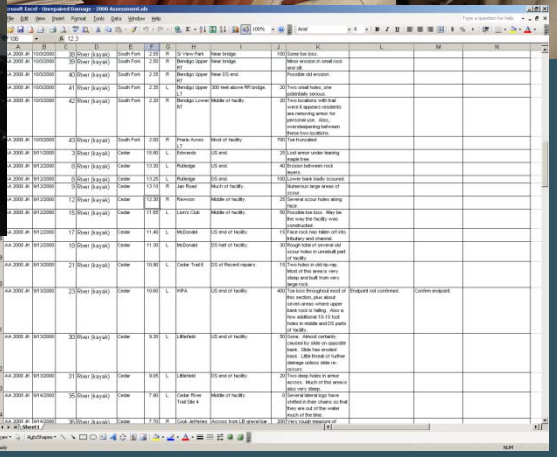


Figure 4-6: KC Flood Hazard Management Plan

Facilities Maintained by the Rivers Section

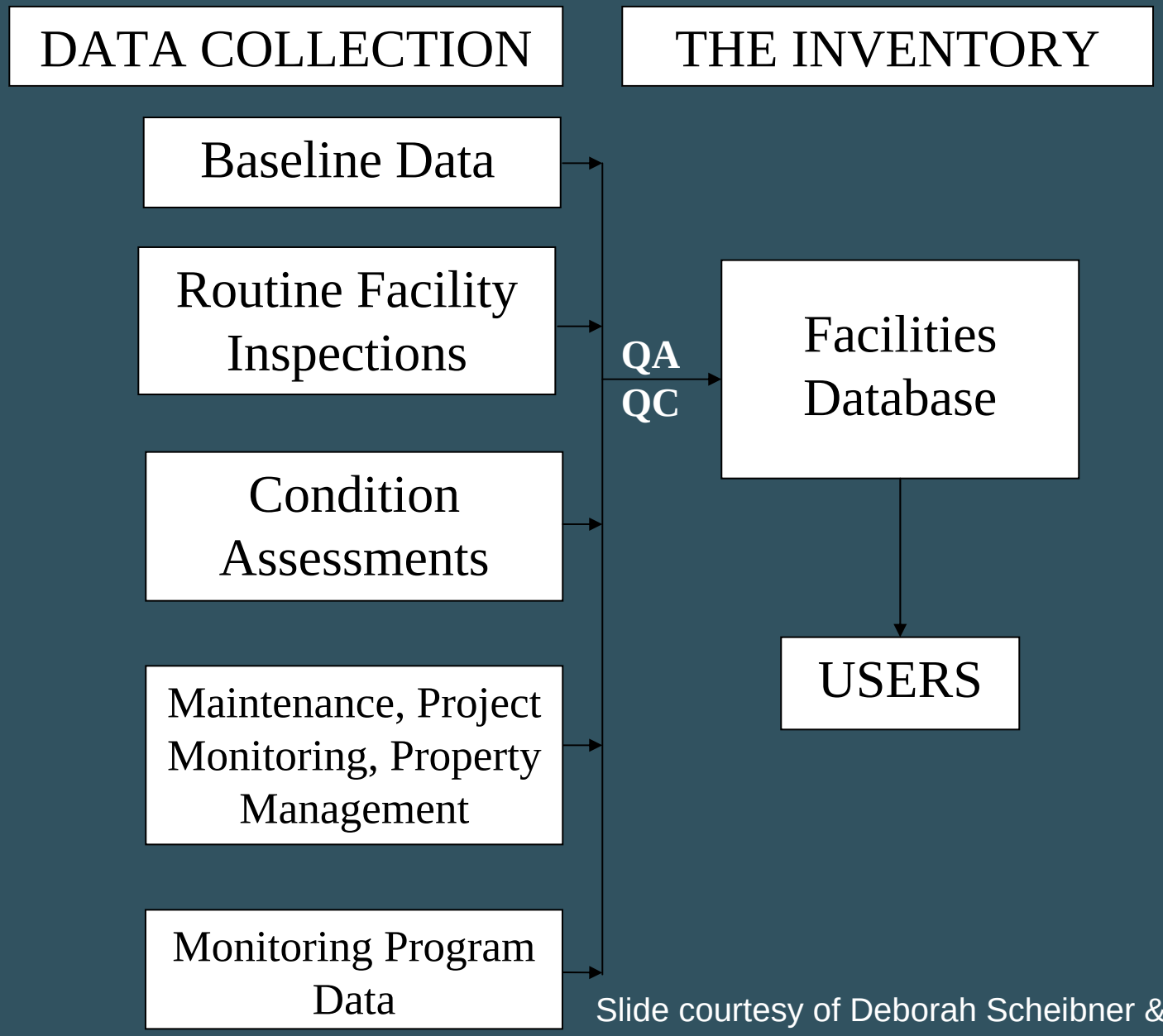
- 500 levees and revetments covering 119 miles
- Property acquisitions (>400 acres and “growing”)





Slide courtesy of Deborah Scheibner/Kyle Comanor

Data Storage



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