



Des Moines Creek Basin Committee

Options for moving forward

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Meeting Purpose and Agenda

Goal:

Decide what is important to include in next ILA.

How:

1. Review previous studies, committee accomplishments, and current basin conditions.
2. Discuss what has worked well, what needs improvement, and what the overall desires are of the committee members.
3. Decide on some workable options for moving forward.



Committee Origination

When



Why

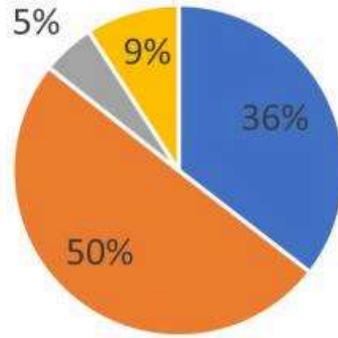
- Finish design and construction of capital facilities and share costs for projects that address surface water and fish habitat issues within the Basin, including:
 - Regional Detention Facility
 - By-pass Pipeline
 - Flow Augmentation Facility (eliminated from plan in 2007)
 - Habitat Enhancement and Restoration Projects
 - Operation, Maintenance, and Replacement of Basin Plan projects (listed above)

Who

- King County, Port of Seattle, WSDOT, SeaTac, Des Moines (1996)
- Port of Seattle, SeaTac, Des Moines, WSDOT (2007)

How

Percent



■ WSDOT ■ Port ■ Des Moines ■ SeaTac

Project cost sharing among Committee Members based on 2007 agreement.

- Committee members manage projects through jurisdictional administration.
- SeaTac takes manages budgetary resources.
- Decisions are met by consensus.

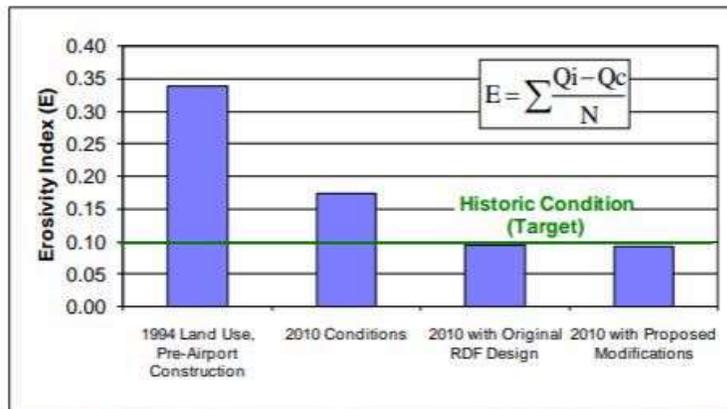


Figure 23a –Erosivity Index Comparison of Scenarios Simulated with HSPF at the Head of the Des Moines Ravine (Subbasin D14A)

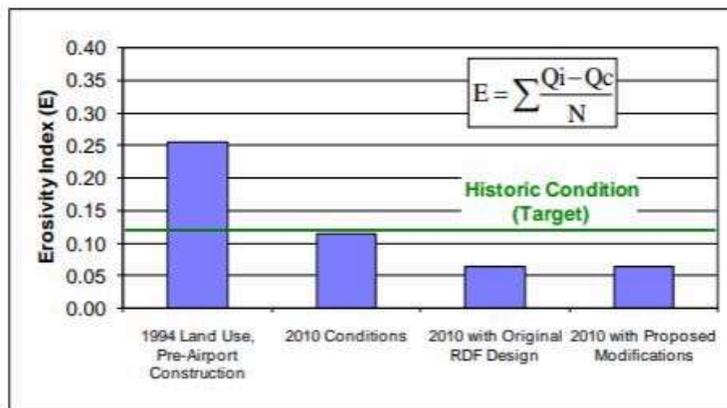


Figure 23b –Erosivity Index Comparison of Scenarios Simulated with HSPF at the Marine View Drive Crossing (Subbasin D20)

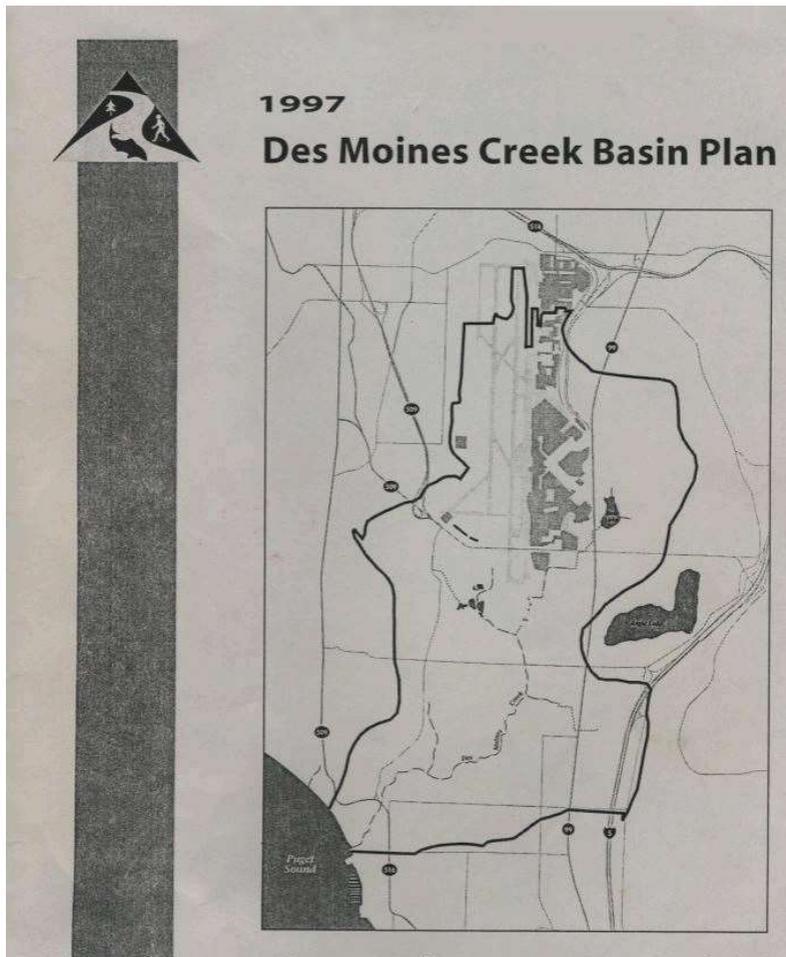
Accomplishments & Benefits

Construction and maintenance of Regional Detention Facility and Bypass Pipe

- Improved hydraulic conditions in Des Moines Creek
- Less flooding downstream
- Alternative minimum flow control standard for developers (cost savings)
- In-stream habitat improvements



In-stream restoration projects have created channel diversity and pool formation (as shown here in Phase III restoration area). Photo from Parametrix Year 3 monitoring report.



Past Studies & Evaluations

Water Quality Monitoring

- King County 2012- implemented by the Des Moines Creek Basin Committee. Designed to answer the following:
 - Temperatures and dissolved oxygen to support aquatic life
 - Have improvements in flow regime improved habitat and water quality
 - Have basin improvements improved benthic index of biotic integrity (B-IBI)
 - Are improvements improving spawning conditions for coho

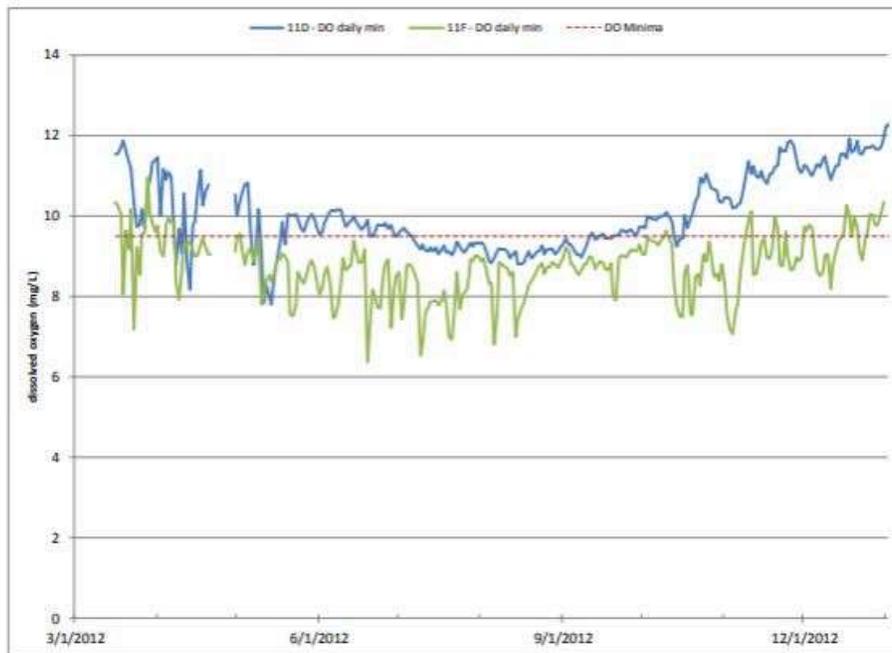


Figure 10. Stream water quality – Dissolved oxygen data from two sites on Des Moines Creek in 2012. The data presented are the daily minimum values and the water quality standard is a minima of 9.5 mg/L. Site 11F (above 200th St) had more days below the standard (low DO) than the lower basin site, 11D, see Table 4. Units are mg/L.

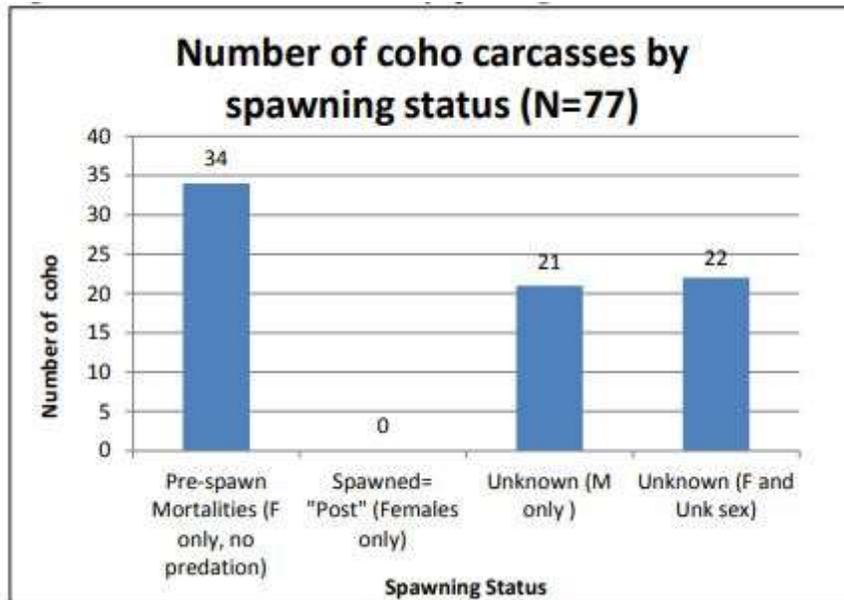
King County water quality monitoring data shows dissolved oxygen at stations above 200th (green) and in lower basin (blue). Both had many days below the water quality standard in 2012, however, the upper station had significantly more.

Habitat Monitoring (past and on-going)

- Habitat inspections (Phase I, II and III & Erosion Repair Sites)
 - King County 2015 (Habitat Inspection)
 - King County 2014 (Erosion Repair)
 - Parametrix 2022 (Year 3 Monitoring Report)
- Geomorphologic Studies
 - Fluvial geomorphic analysis of bed movement in Des Moines Creek (Marit Larson and Derek Booth, UW, 1999)
 - Confluence 2015
- Fish Barrier Assessment (S 200th Street)
 - Parametrix 2022

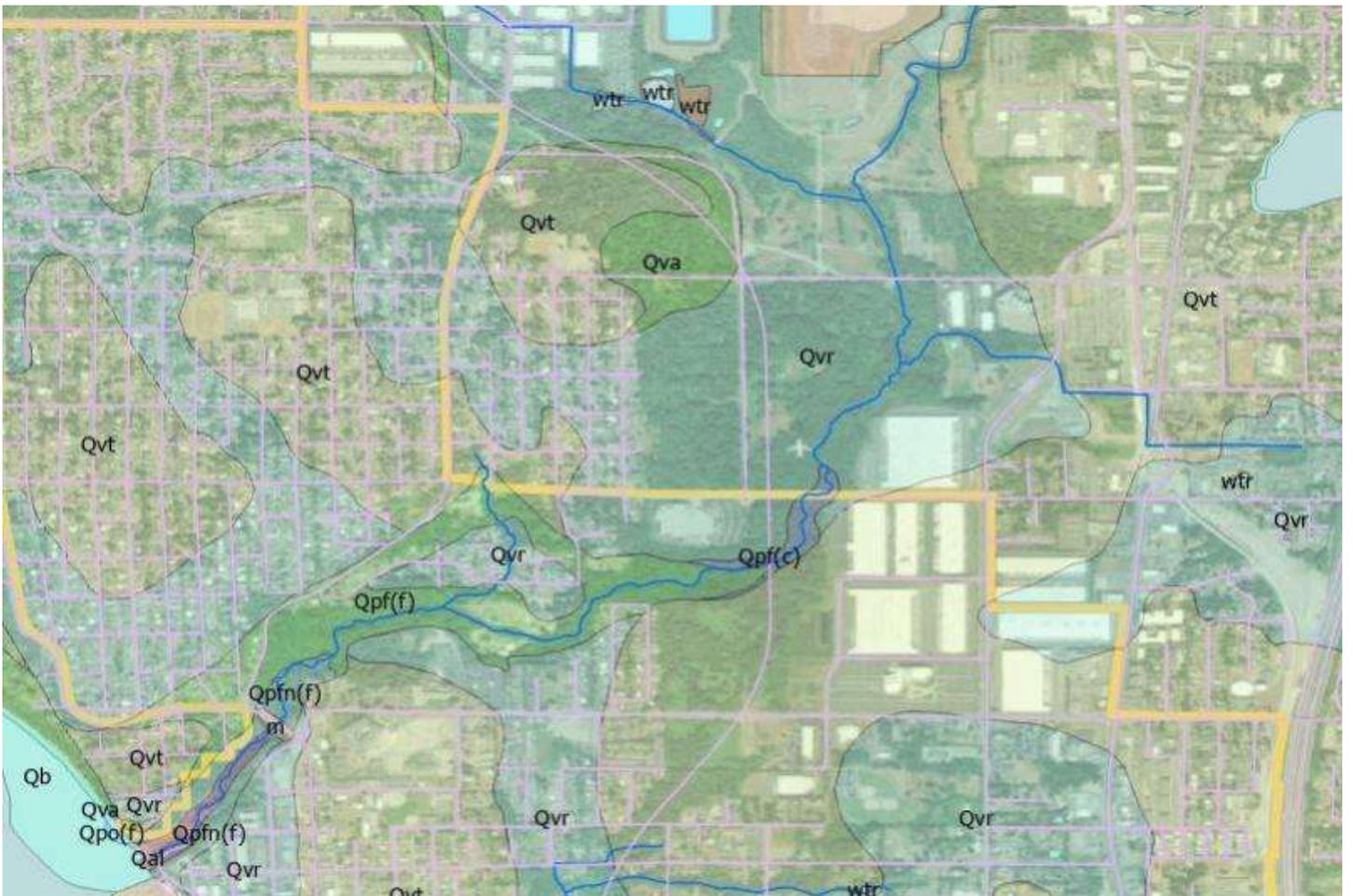
Fish and Pre-Spawn Mortality

- King County 2012 Pre-spawn Mortality Survey



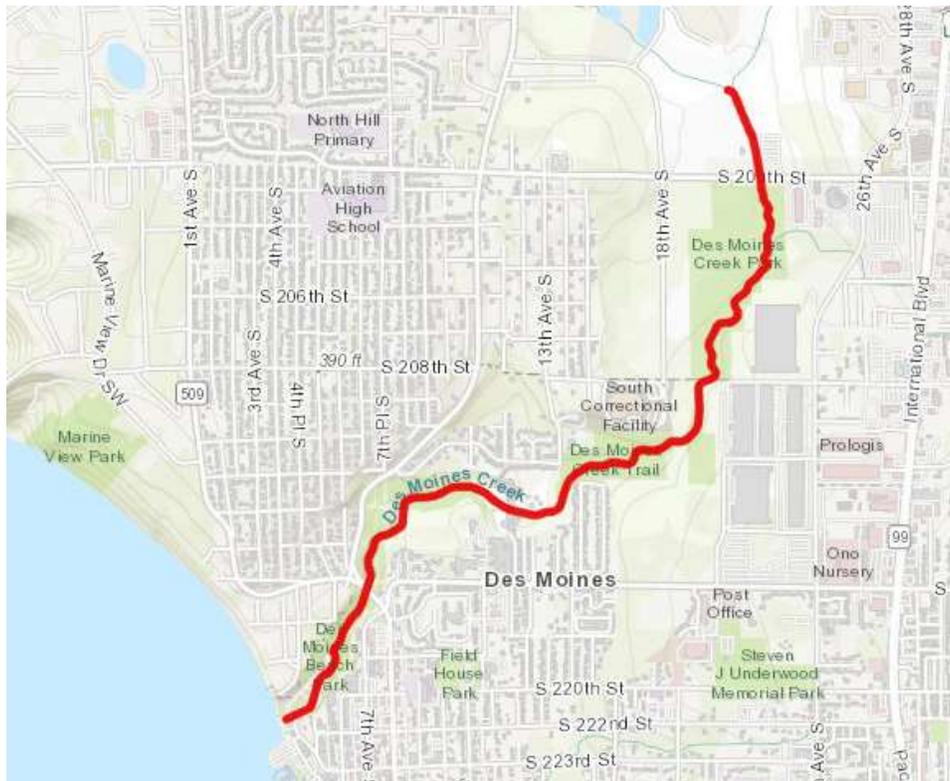
All female coho carcasses observed in 2012 King County Survey had perished without spawning.

- Fish Use (annual)
 - Port electrofishing data



Current Basin Conditions

Water Quality



Des Moines Creek is on Ecology's 303(d) most recent Category 5 (impaired water bodies) list for temperature, bacteria, and dissolved oxygen

Habitat



Invasive vegetation in some areas along creek corridor
(photo from Parametrix Year 3 Monitoring Report)



Stream bed and bank scour (photo from Parametrix Year 3 Monitoring Report)

Unstable hillslopes



Geology contributes to instability in some locations (in this photo water is seeping out at the clay/sand interface: sand and gravel on top of the clay is saturated and unstable)



Committee Member Interests for Des Moines Creek

High Priority (highest interest by all)

- Maintenance and repair of existing assets
 - Projects installed by committee, or if the project is a benefit to the entire basin
- New in-stream restoration projects
 - Bank stabilization
 - Debris removal and stream restoration
 - If benefit/need can be shown
- Public education and outreach
 - Trail signs
 - Educational mailers

- Stewardship opportunities

Secondary Priority (not all are on board)

- Monitoring to understand more about conditions (water quality, B-IBI, fish studies, etc.)
 - Need to know what the question is and how monitoring will inform the answer
- Capital projects to improve fish passability
 - Depends on if habitat availability warrants it
 - Need to prove benefit for all
- Upland or riparian vegetation projects (invasive species removal, tree planting, etc.)
 - Geographically fair (throughout basin)
 - Secondary to in-stream
 - Wouldn't likely be done without committee
- Regional water quality treatment
 - Need specific projects (scope and scale, issue solved)
 - Potential retrofit of existing facilities



Benefits of Interlocal Agreement

Shared Assets

- On-going maintenance
 - On-going asset maintenance funding (\$150k/year)
- Mechanism to replace assets
 - On-going asset replacement funding (\$180k/year)

Holistic Approach for Watershed Management

- Able to have big-picture view of watershed processes
- Cooperative decision-making can result in better projects

Improved Ability for Secure Funding



Improvements for Interlocal Agreement

Clarity

- Geographic boundaries (floodplain only, or upland work as well)
- Decision-making (consensus?)
- Who is responsible for what

Equitability

- How is this determined?
 - Number of projects in each jurisdiction
 - Amount of funding spent in each jurisdiction
 - Ecological benefit apportioned by jurisdictional boundary

New Projects

- Short list of committee funded projects, plus flexibility to add new ones
- Framework for introducing projects
- Baseline criteria
- Funding sources
- Project management (rotating or who has the most geographic area where project is located?)

| Basin Recommendations | Source | Issue Addressed | Date | Status |
|--|--|---|------|----------------------------------|
| Construct combined detention/bypass project | Des Moines Creek Basin Plan- 1997 | High flows, erosion, water quality | 1997 | Completed |
| Support replacement of Marine View Drive culvert | Des Moines Creek Basin Plan- 1997 | Blockage of fish passage | 1997 | Completed |
| Outlet improvements to Bow Lake | Des Moines Creek Basin Plan- 1997 | High flows, erosion, water quality | 1997 | |
| Construct low flow augmentation facility | Des Moines Creek Basin Plan- 1997 | Low flows, high temperatures and low dissolved oxygen levels | 1997 | |
| Riparian habitat improvements | Des Moines Creek Basin Plan- 1997 | Poor habitat conditions | 1997 | Completed |
| In-stream habitat improvements | Des Moines Creek Basin Plan- 1997 | Poor habitat conditions | 1997 | Completed |
| Reduce fecal coliform bacteria | Des Moines Creek Basin Plan- 1997 | Contamination of creek from human sewage or septage. | 1997 | |
| Improvement management of roadway runoff | Des Moines Creek Basin Plan- 1997 | Metals and petroleum in runoff. | 1997 | |
| Continue to identify point sources and implement source control BMPS | Des Moines Creek Basin Plan- 1997 | Non-point source pollution. | 1997 | |
| Public involvement and outreach | Des Moines Creek Basin Plan- 1997 | Inappropriate actions by citizens. | 1997 | |
| Reduce impervious area | Des Moines Creek Basin Plan- 1997 | Decrease rate of problem growth. | 1997 | |
| Continue basin committee process | Des Moines Creek Basin Plan- 1997 | Provide forum for interjurisdictional communication and problem solving | 1997 | |
| Joint funding and management of projects | Des Moines Creek Basin Plan- 1997 | Continue cooperative interjurisdictional effort. | 1997 | |
| Develop a monitoring program | Des Moines Creek Basin Plan- 1997 | Ascertain improvements are working, trigger subsequent phases. | 1997 | |
| Continue involving outside parties | Des Moines Creek Basin Plan- 1997 | Improve implementation. | 1997 | |
| Start programmatic effort | Des Moines Creek Basin Plan- 1997 | Long term water quality improvements. | 1997 | |
| Revise spill response plan | Des Moines Creek Basin Plan- 1997 | Prepare to respond to non-airport related spills. | 1997 | |
| Invasive Species Removal | Parametrix 3-year monitoring Report-2022 | Invasive species proliferation | 2022 | |
| In-stream habitat modifications to existing projects | Parametrix 3-year monitoring Report-2022 | Erosion and scour | 2022 | |
| Periodic visits after Large events | Parametrix | | | |
| B-IBI vs. restoration areas | Parametrix | B-IBI | | |
| Continued Monitoring (LWD, erosion, cow catcher) | Parametrix 3-year monitoring Report-2022 | Erosion and scour | 2022 | |
| EDNA/Fish Studies | Parametrix | Pick up DNA of fish from samples or actually do spawning surveys | | Port still doing assessments/POS |
| South 200th Street Culvert Replacement | | Fish passability | | Evaluated 2022 |
| Des Moines Creek Pocket Estuary Project | City of Des Moines CIP List | Estuary enhancement | 2022 | |

Strategies for Next ILA

General Decisions

- Include additional projects/strategies?
- Expand geographic reach? Within watershed but outside floodplain?

- Project management coordination/rotation

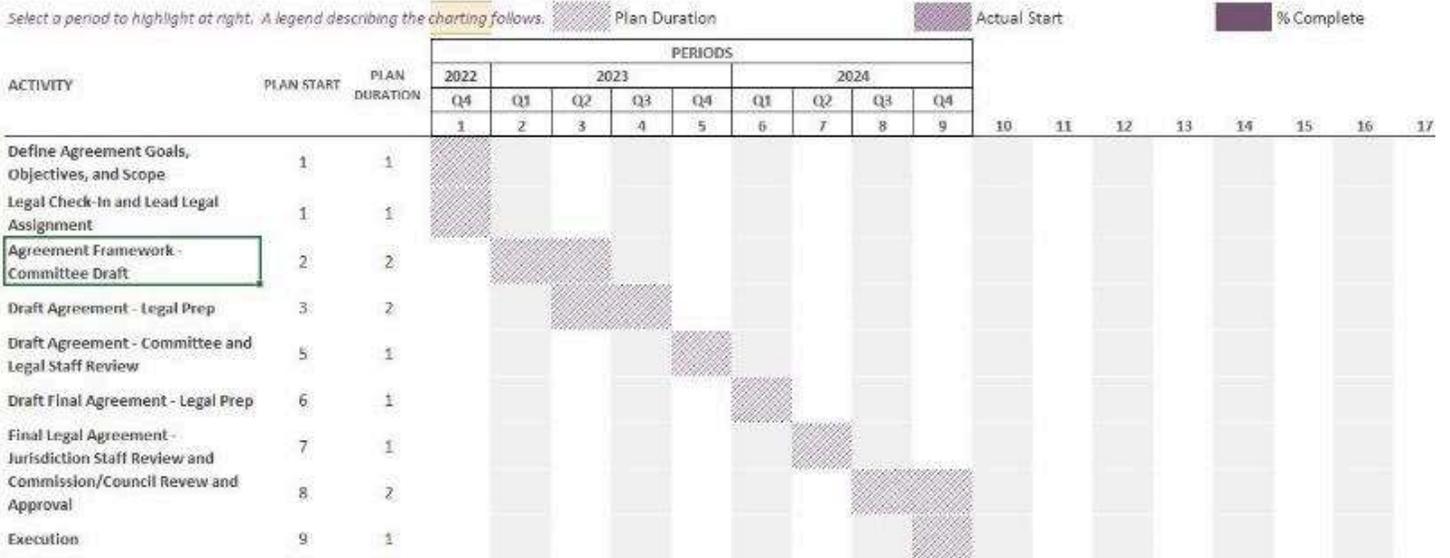
New Projects

- Conceptual projects agreed upon in advance of ILA (scope, scale, cost identified)
- Flexibility for types of projects that can be considered at a later date
 - What types of projects?
 - Criteria for consideration
 - Decision-making and prioritization for advancing committee-funded projects

Suggested New Projects to Discuss

- Public Engagement
 - Des Moines Creek Outreach Website/portal
 - Updated/modern signs/kiosks (QR codes) about committee projects
 - Inserts included in City mailings
 - Stewardship events (remove invasive species, other events)
- Continue Habitat Monitoring
- Remove old debris deposits and conduct stream restoration in same area (Des Moines)
- One or two additional in-stream restoration projects (LWD installation) to add additional pools and more diversity (and potentially bank stabilization)
- Contribute to Des Moines estuary enhancement project?
- Contribute to 200th S. Culvert replacement?
- Placeholder funding for monitoring (to be determined)

Des Moines Creek Basin Committee - Agreement Development Schedule



ILA Schedule



Q4 2022

Define Agreement Goals, Objectives,
and Scope/ Legal Check-in and Lead
Legal Assignment

Q1 2023

Agreement Framework- Committee
Draft

Q2 2023

Draft Agreement - Legal Prep (WE
SHOULD BE HERE)

Q4 2023

Draft Agreement - Committee and
Legal Staff Review

Q1 2024

Draft Final Agreement - Legal Prep

Q2 2024

Final Legal Agreement - Jurisdiction
Staff Review and
Commission/Council Review and
Approval

Q3 2024

Approval

Q4 2024

Execution



Next Steps

Decisions

- Projects to include in ILA?
 - Level of detail needed (scope, scale, estimate)
- Budgetary commitment

- Same level of funding right now?
- More funding to get more done?