

Stormwater and the Endangered Species Act

Infrastructure Assistance Coordinating Council

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Stormwater and the Endangered Species Act (ESA)

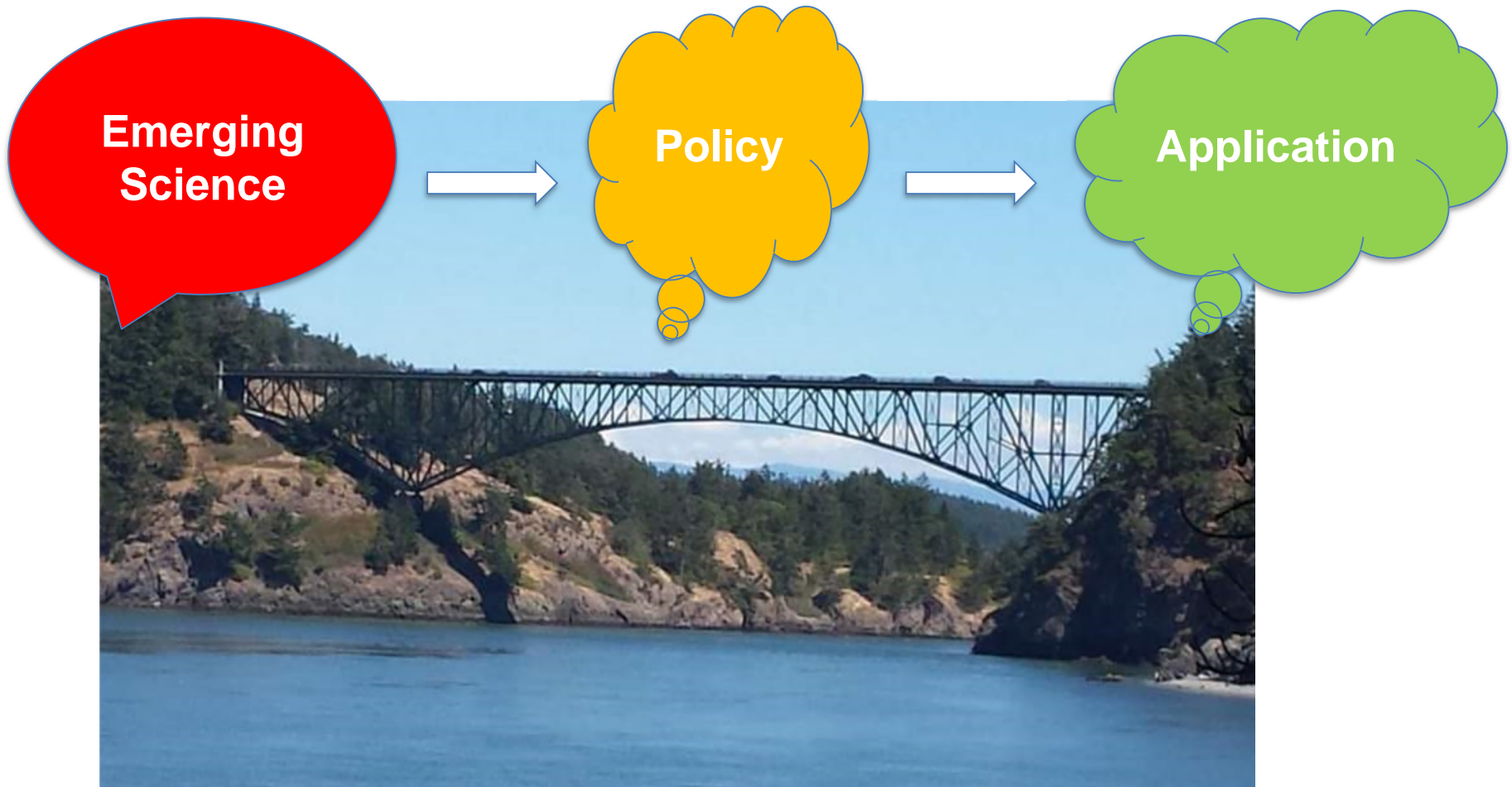
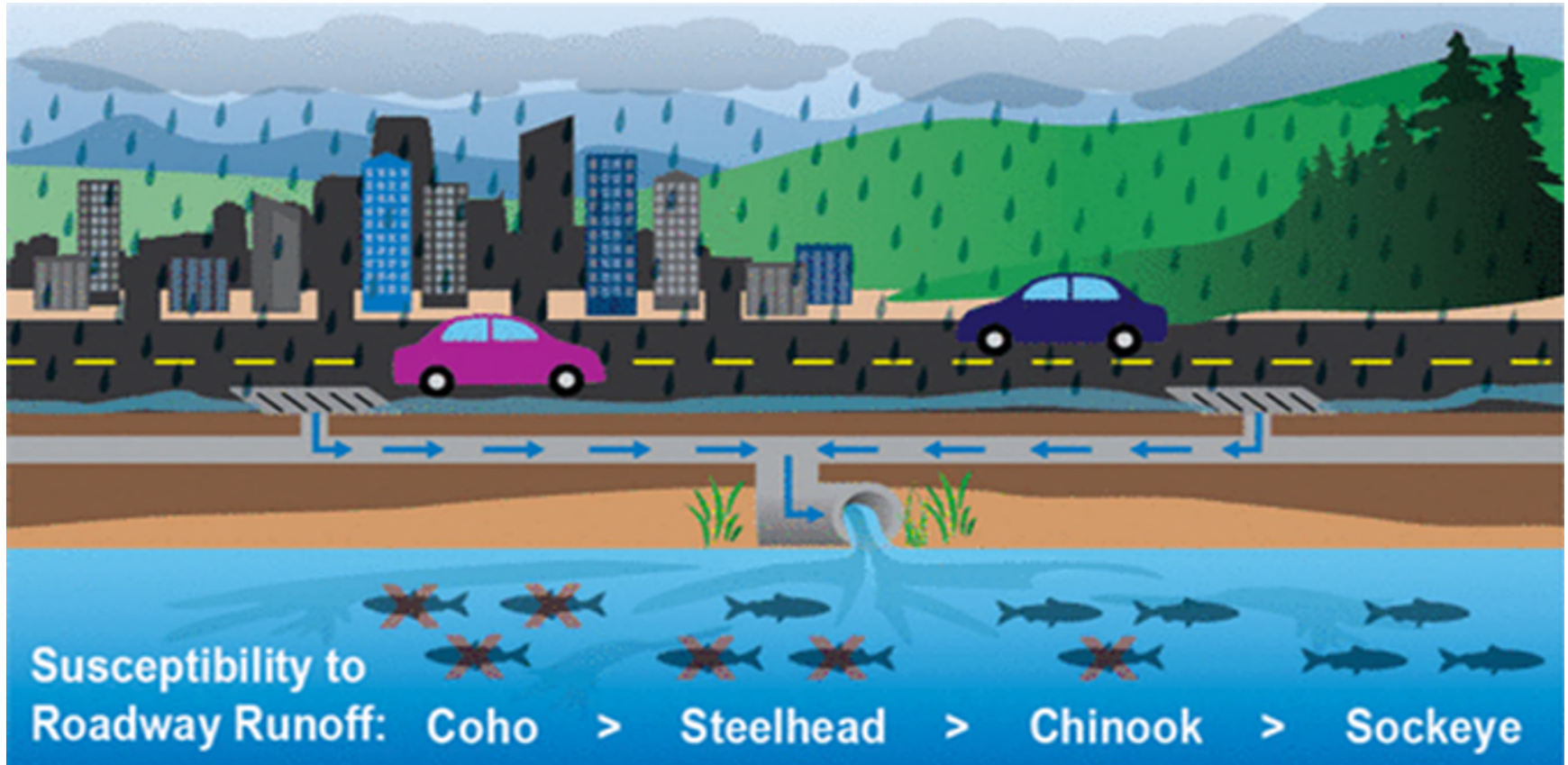


Photo Credit: Melanie Vance, SR 20 over Deception Pass

Urban Runoff Lethal to Coho, Steelhead, and Chinook Salmon



B. F. French, D. H. Baldwin, J. Cameron, J. Prat, K. King, J. W. Davis, J. K. McIntyre, and N. L. Scholz. 2022. Urban Roadway Runoff Is Lethal to Juvenile Coho, Steelhead, and Chinook Salmonids, But Not Congeneric Sockeye. *Environmental Science and Technology Letters* 2022, 9, 9, 733-738. <https://pubs.acs.org/doi/10.1021/acs.estlett.2c00467>

“Better Than Baseline \neq Benefit”

- Ecology-Approved Design Manuals
- HRM



- Toxicity is acute and irreversible
- Design storms are often exceeded
- All surface water discharges require consultation

Image Source: Pixabay

Deepwater Horizon Lesson - Petroleum Toxic to Many Fish

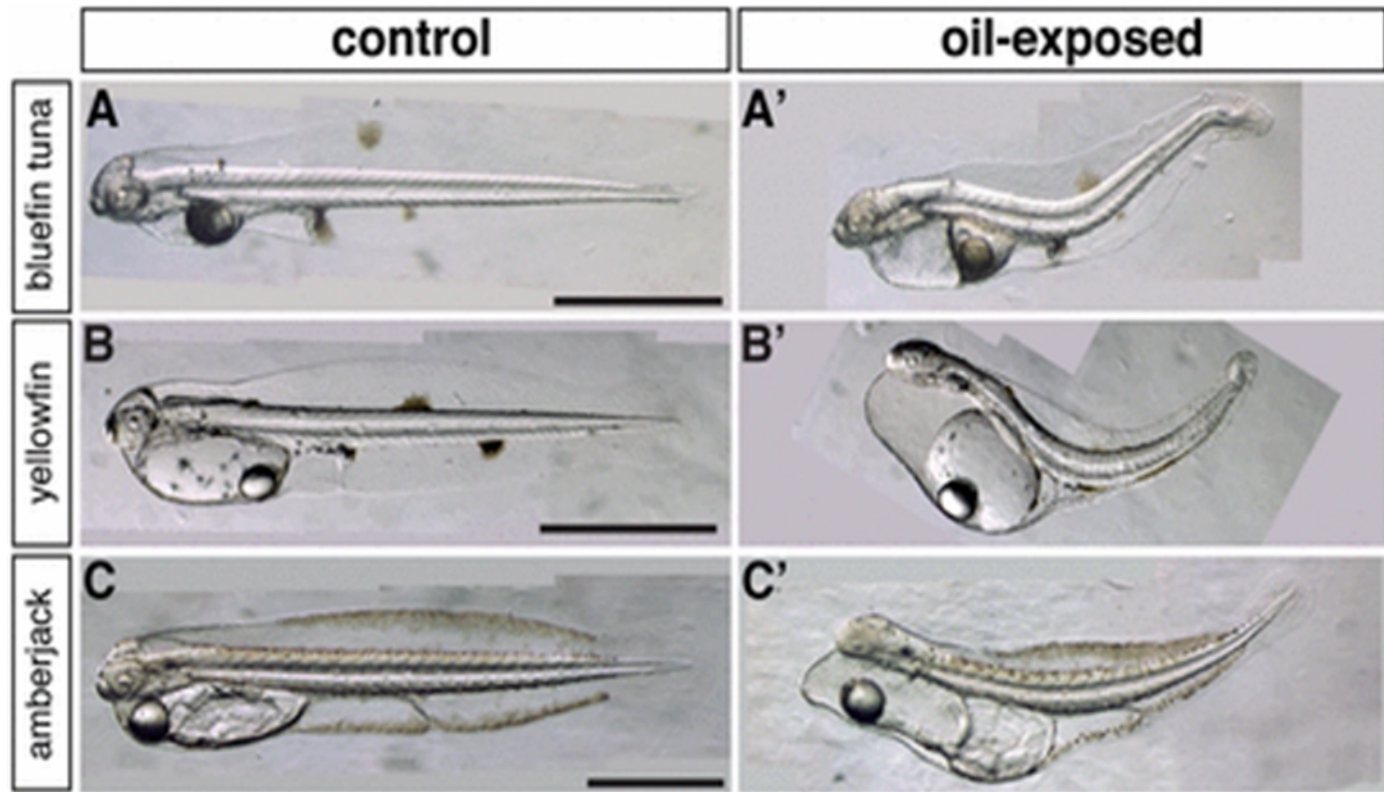


Photo Credit: Dr. John Icardona et al, 2014

Forever Chemicals?

Transport in the environment

- Bind to sediment?
- Remain in solution?



Image Source: Pixabay

Bioaccumulation

- Uptake from environment?
- Food chain impacts?

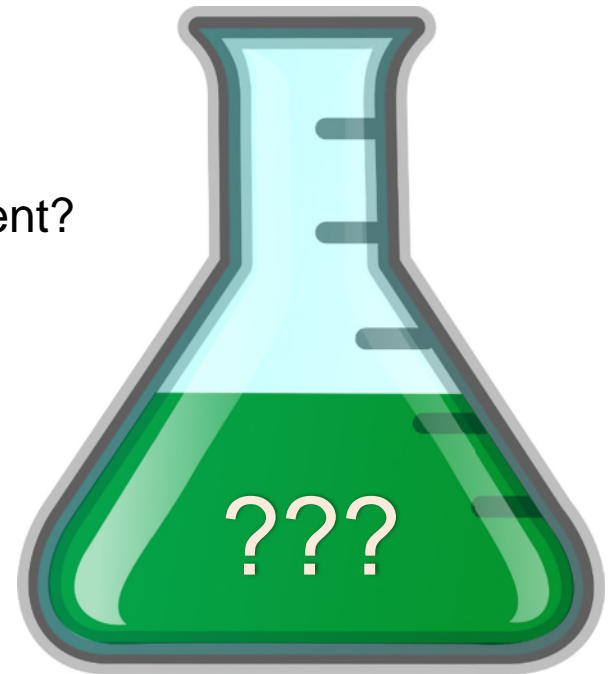
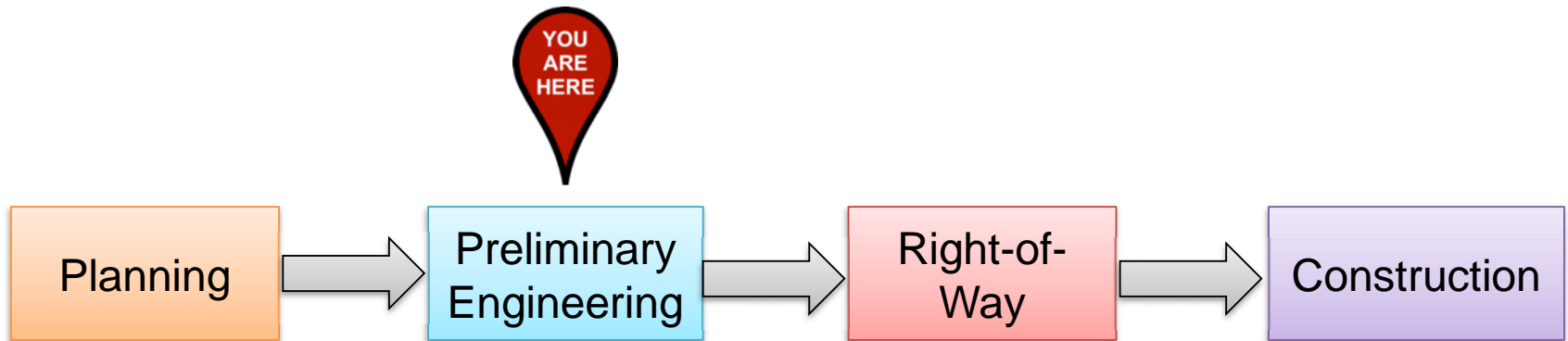


Image Source: Pixabay

Project Development Continuum



- Design the project

- NEPA starts ~ 30% design



- Formal ESA ~ 60% design



- NEPA complete after
ESA is complete.

ESA/NEPA Scenarios on Road Projects Lacking Infiltration

Before:



Photo Credit: Google Maps Street View, Clark County WA, July 2012

After:



Photo Credit: Google Maps Street View, Clark County WA, May 2019

- No federal funding or permits



ESA and NEPA Required

- No federal funding, but US Army Corps permit needed (Wetlands? Culverts?)
- Federal funding (FHWA, HUD, etc.)

WSDOT BA Manual Chapter 17

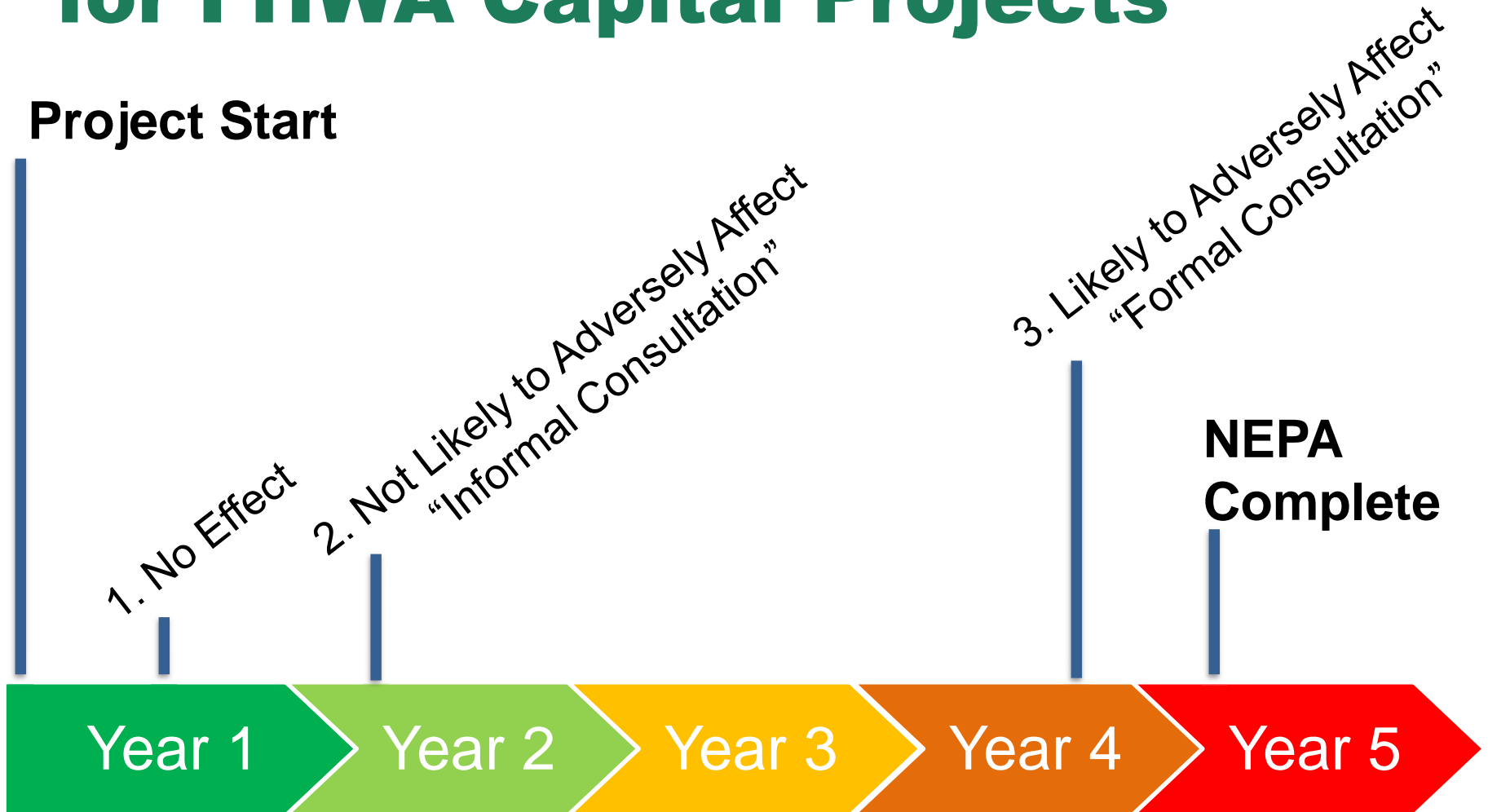
Updated Stormwater Guidance

- Action areas extend to Puget Sound or Columbia River, whichever is closer to the project.
- Addresses 6-PPD Q, PAH, and “forever chemicals.”
- 100% infiltration or natural dispersion are the only paths to No Effect if new PGIS is added.

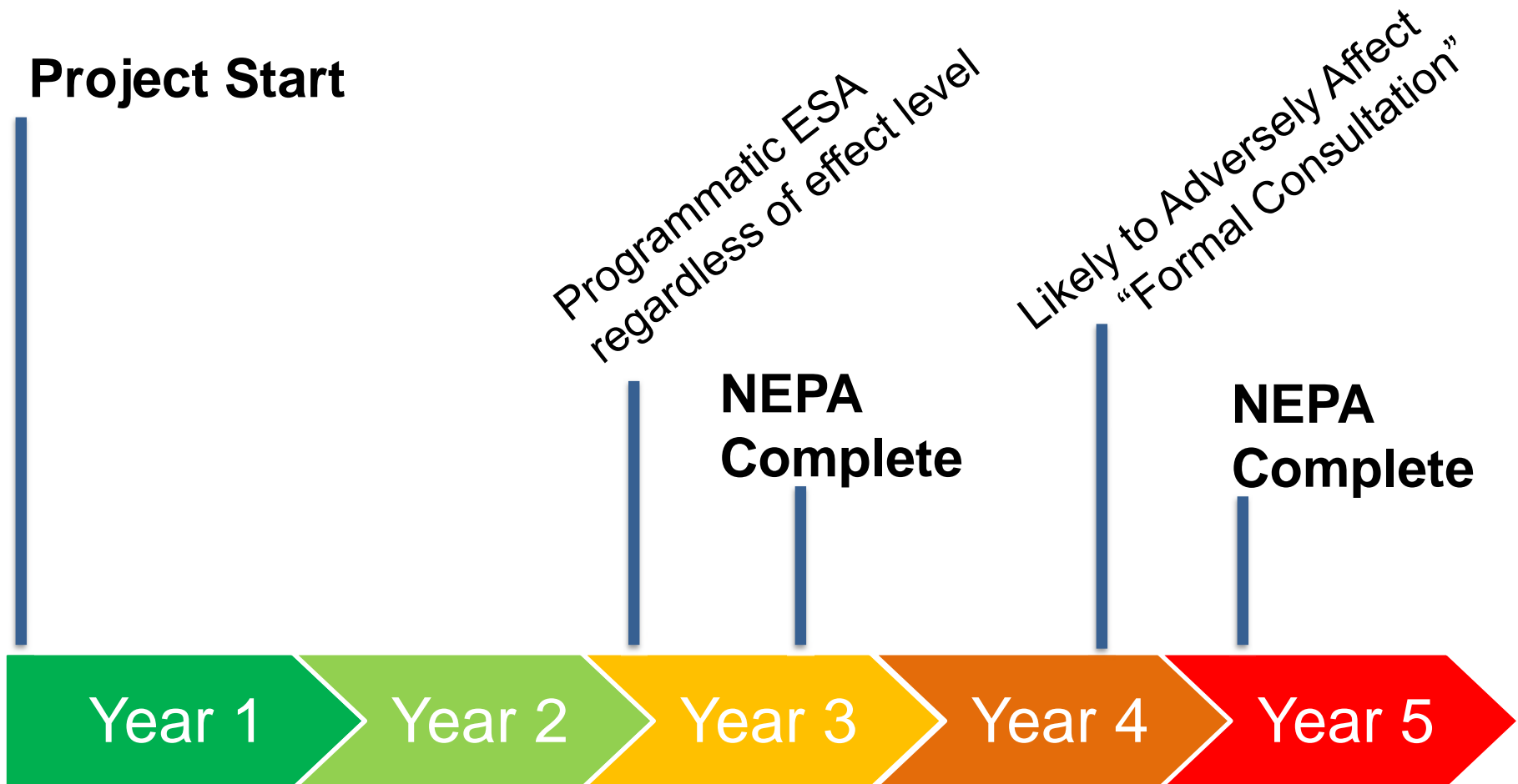
Image Source: Pixabay

Three Levels of ESA Compliance for FHWA Capital Projects

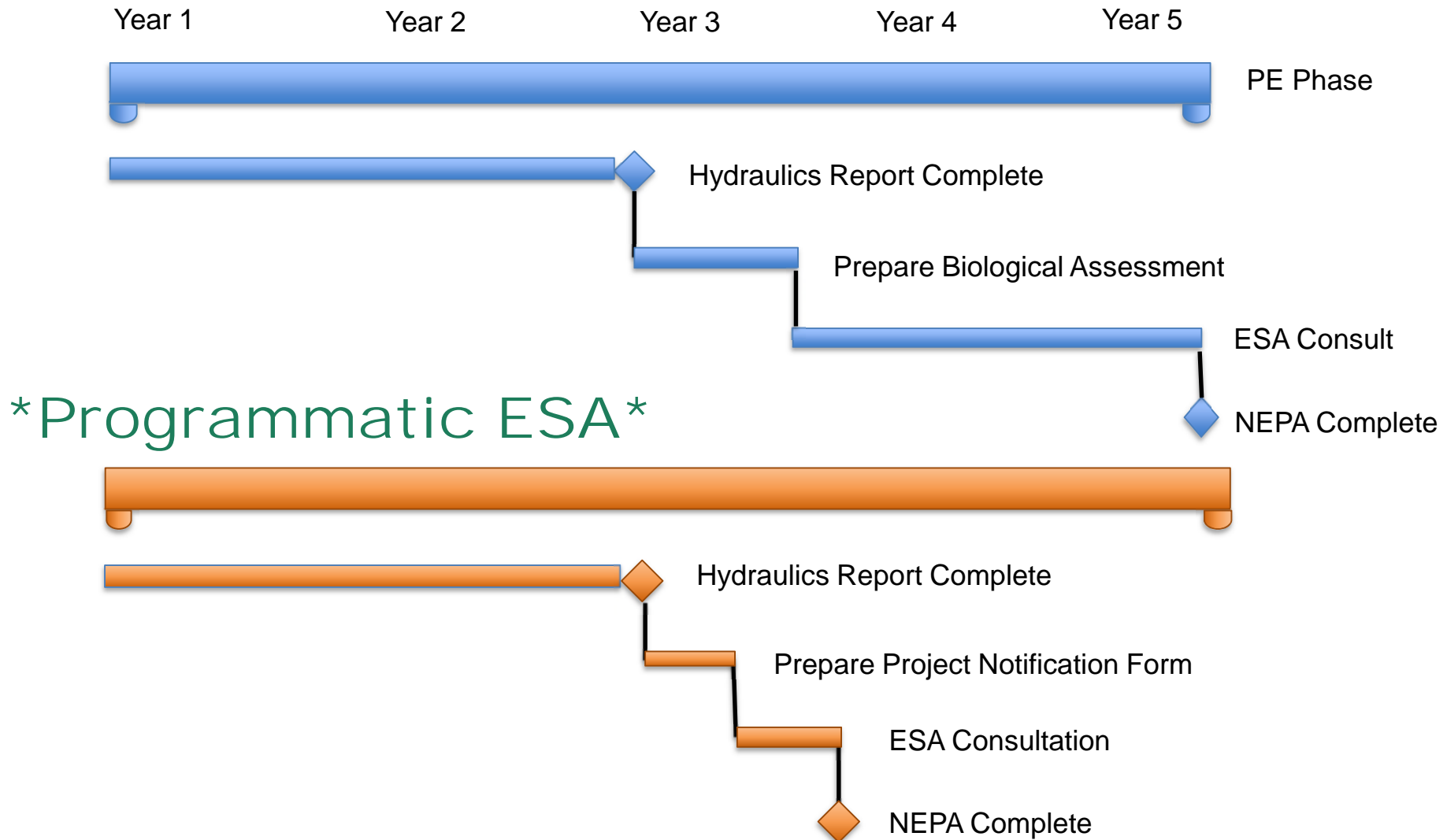
Project Start



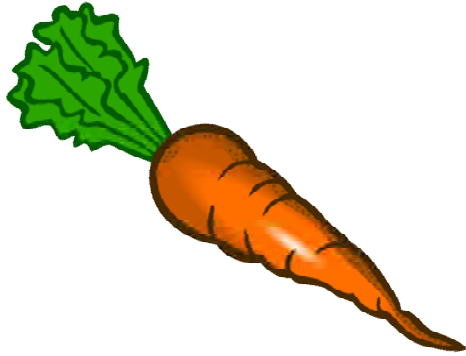
Three Levels of ESA Compliance for FHWA Capital Projects



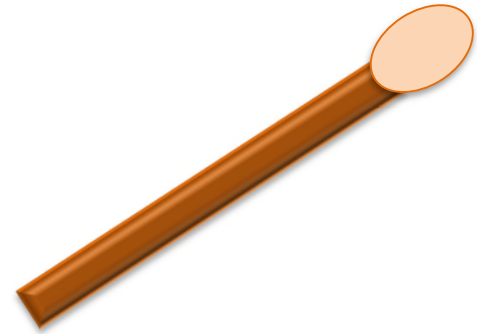
Schedule Concepts Compared



Programmatic Trade-offs



- Faster review process with predictable staff
- Outcome certainty
- Legal liability assumed by FHWA and NMFS



- Stricter design requirements
- Expensive construction and maintenance
- Construction reporting and as-builts

Image Source: Pixabay

NMFS Programmatic ESA

Project PGIS Trigger	Best-Case ESA Consultation Treatment Requirements**		Current Local Agency ESA Consultation Triggers	
	Programmatic	Individual	Programmatic N/A	Individual
<500 sq ft net new*	No treatment	Any net new PGIS is considered a formal consultation unless 100% infiltrated; USFWS/NMFS may require treatment. (WSDOT has not yet seen this scenario)	N/A	ANY new PGIS, or added stormwater treatment, requires consultation regardless of treatment quantities or methods.
500 sq ft to 2 acres net new PGIS	Treat all new and replaced PGIS	Formal consultation unless 100% infiltrated; follow HRM (5,000 sq ft trigger), but NMFS will likely require treatment for all new, replaced, and possibly existing PGIS in project area.	N/A	See above
2 to 5 acres net new	Treat all PGIS in project area			
>5 acres net new	Not covered			

PGIS = Pollution Generating Impervious Surface. Any pavement a car can drive on.

* "net new PGIS" is a term specific to ESA and NMFS – it includes all pavement and compacted gravel that vehicles can access minus any existing PGIS removed (this is not defined in the HRM)

** infiltration and other treatment required by ESA is not required to be designed to full HRM design standards

Design Your Way In!

- RETROFIT!
- Equivalent areas?
- Off-site mitigation?



Image Source: Melanie Vance, City of Chelan outfall to Lake Chelan

- Dept of Ecology/Evergreen StormH₂O ranked BMPs
- Filtration expected best remove 6PPD-Quinone

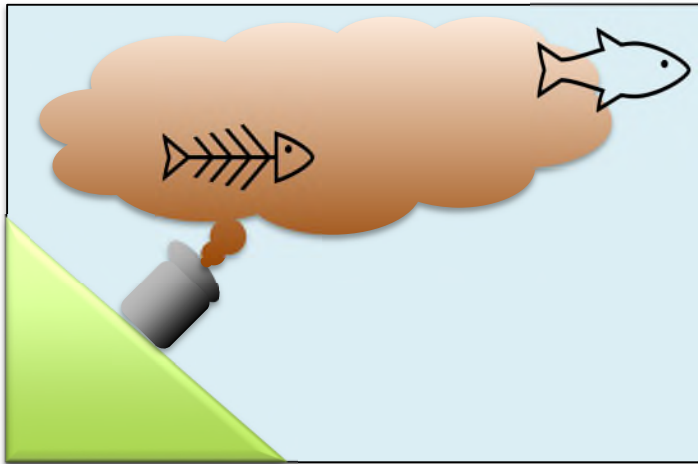


Image Source: Created by Melanie Vance

Questions?



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Photo Credit: Melanie Vance, Stuart Lake, Enchancements