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Protection and restoration of salmon bearing streams in agricultural landscapes of the Puget Sound basin: a synthesis of approaches to reach-scale planning for eight focus areas

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Protecting riparian areas in agricultural landscapes: reach-scale planning & acquisition projects from the NEP Watershed Lead Organization

Session Chair: Carrie Byron

Project Lead – Puget Sound Watershed Protection and Restoration grant program

DEPARTMENT OF ECOLOGY
State of Washington

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Protection and restoration of salmon bearing streams in agricultural landscapes of the Puget Sound basin

A synthesis of approaches to reach-scale planning for eight focus areas

Colin Hume
Watershed Ecologist
Technical Lead for the Watershed LO Riparian Protection and Restoration grant program

Developing the Grant Program

- Tribal Treaty Rights at Risk initiative - Need to accelerate progress!
- NEP Watershed Lead Organization charged with developing new Riparian Protection and Restoration grant program for EPA
  - $5.8 Million investment
  - Focus on salmonid habitat in agricultural landscapes
  - Focus on permenant protection
- 25 person advisory group process informed program approach and design
  - Planning and strategy development important to fund in some areas
  - Concentrate investments to demonstrate progress
  - Use flexibility of NEP $ to leverage and coordinate with other programs (e.g. CREP) for greater effect

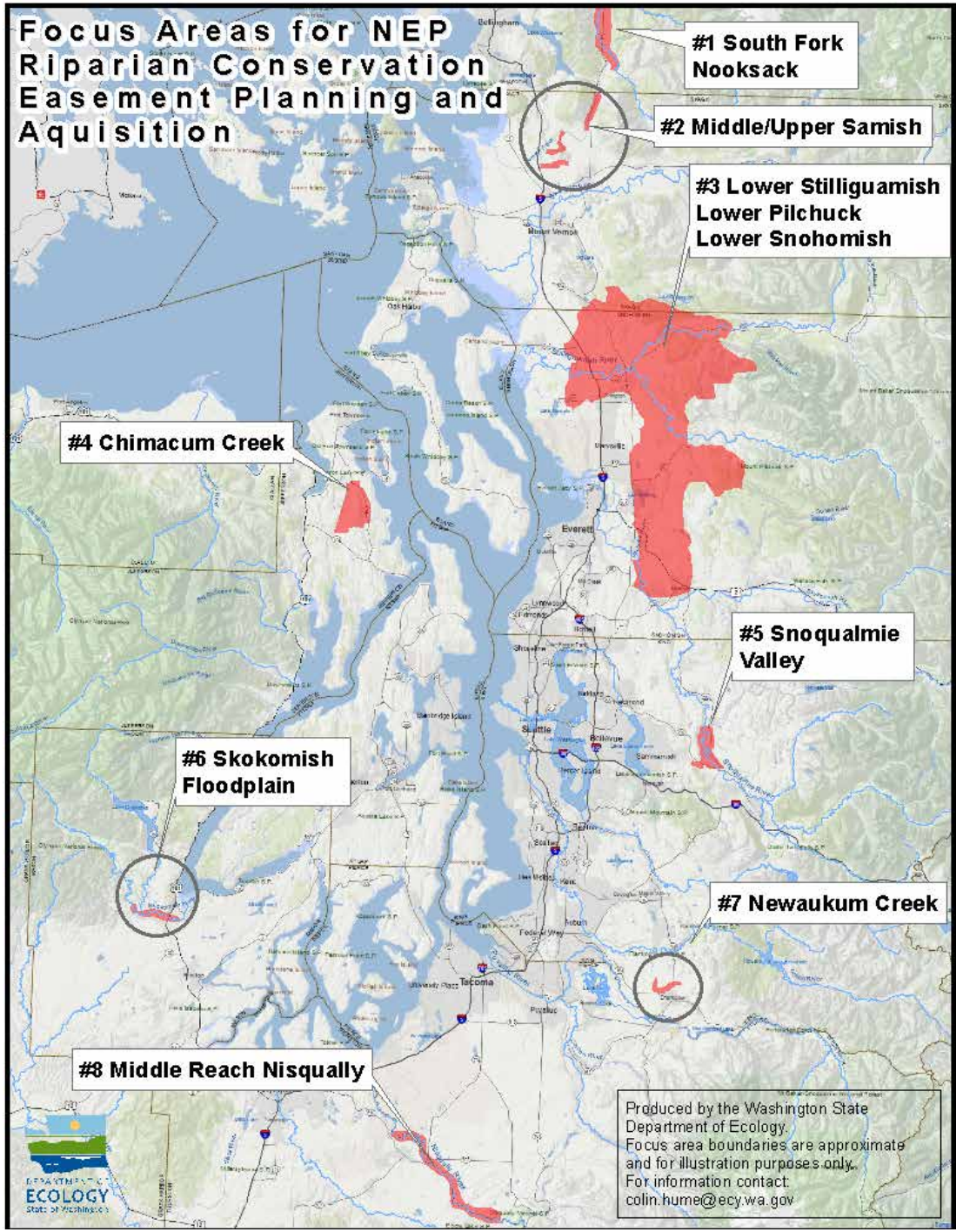
Grant Program Design

Phased approach

- Phase I Planning - Competitive solicitation to conduct reach-scale planning (up to $120K) for a focus area
  - Priority salmonid habitat in agricultural landscapes of PS basin
  - Partnerships which demonstrate habitat restoration, landowner recruitment and acquisition expertise
- Phase II Implementation – On-the ground protection and restoration actions
  - Eligible for additional implementation $ upon completion and approval of reach-scale plan
  - Total award including phase I not to exceed $550K unless additional $ becomes available
  - Propose projects identified in or justified as strategic by reach-scale plan
  - Provided flexibility to propose projects as landowner willingness comes and goes

8 Focus Areas

- **South Fork Nooksack River** – Nooksack Tribe
- **Middle/Upper Samish River** – Skagit Land Trust
- **Lower Stillaguamish, Pilchuck, Snohomish Rivers** – Snohomish Conservation District
- **Chimacum Creek** – North Olympic Salmon Coalition
- **Snoqualmie Valley Southern APD** – King County
- **Newaukum Creek** – King County
- **Skokomish Floodplain** – Mason Conservation District
- **Middle Reach Nisqually River** – Nisqually Land Trust



Reach-scale plan development

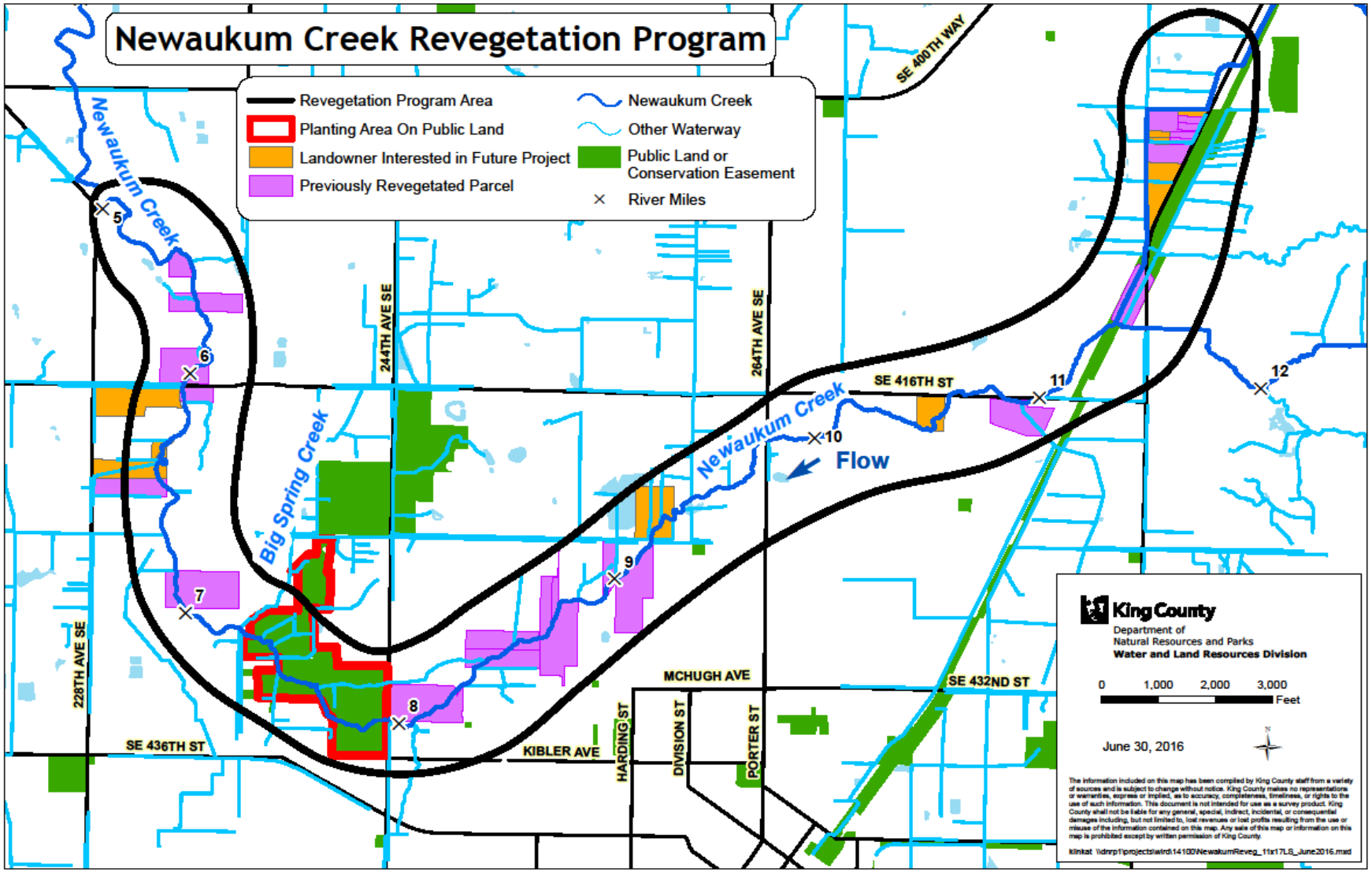
Phase I funded activities differed by focus area

- Planning related actions depended on the needs of sponsoring organization and context
- Wide variety of activities conducted
- Each plan different
- Plans required to cover and document some common elements

Approaches to Documenting Reach Context

- Assembling historic information on habitat and land use
- Assessing and describe development pressure
  - Zoning
  - Local knowledge about proposed development
- Assessing current conditions and riparian management issues
  - Assemble recent studies (e.g. TMDL, Salmon recovery plans etc.)
  - Geomorphic, water quality, and concentrated flow analyses
  - Beaver management issues and plan
  - Invasive species
  - Mapping current and proposed protection and restoration actions

Project Highlight- Newaukum Creek



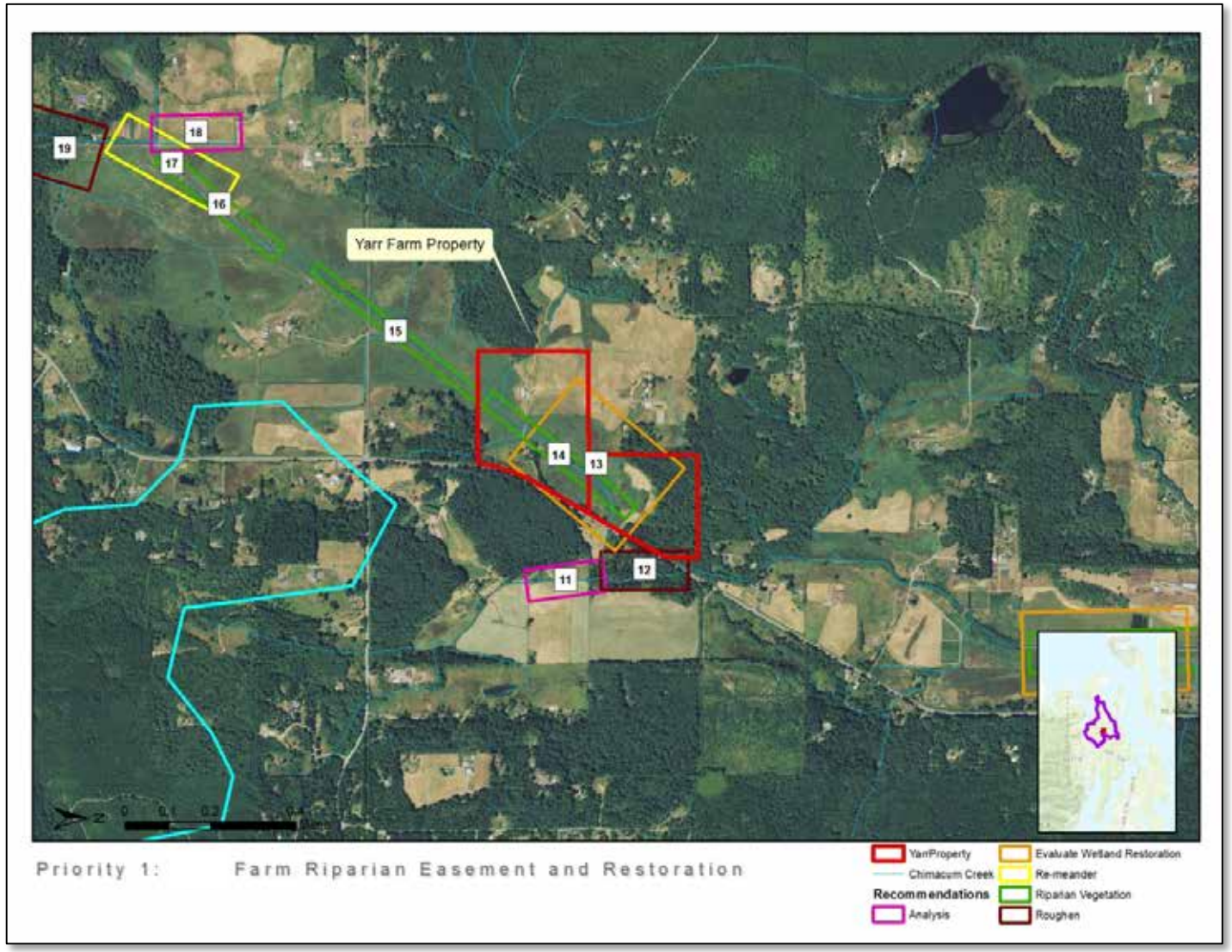
Action Identification

Identifying protection and restoration actions at reach -> parcel scale

Approaches included:

- Conducting partner workshops to review data/maps, categorize types of activities which are needed at reach/parcel scale
- EMDS logic modeling of riparian function and “farmability” -> landowner workshop
- Geomorphic and land cover analysis to determine where restoration is primary need or protection.
- Use of predefined suite of actions, e.g. –
  - Skokomish Floodplain – USACE projects
  - Watershed Plan and TMDL in the South Fork Nooksack

Project Highlight – Chimacum creek



Project Highlight – Chimacum Creek

REC #	TYPE	RM	LOCATION	RECOMMENDATION CATEGORY	RECOMMENDATION	PRIORITY	CONSIDERATIONS
14	Restoration	7.4-7.8	Main stem	Riparian Vegetation	Establish riparian vegetation along ditched reach.	High	
15	Protection	7.9-8.3	Main Stem	Riparian Vegetation	Protect and enhance riparian vegetation planted during previous restoration efforts; 2015 imagery suggests very small plants.	High	Note that there are existing beaver dams, and the low lying portion of the valley adjacent to the right bank could possibly become inundated.
16	Restoration	8.4-8.8	Main Stem	Riparian Vegetation	Establish riparian vegetation along ditched reach.	High	
17	Restoration	8.6-8.9	Main Stem	Re-meander	Re-meander and/or roughen channel in this reach through wood placement; some suggestion of relict channel features from the REM map.	Low	Additionally recommend 2-D hydraulic modeling to assess activation flows and changes in inundation from roughening.
18	Data Gap	8.8	West Valley tributary-ditch and unnamed tributary-ditch at left bank	Analysis	Investigate inflow from unvegetated west valley tributary ditch and from partially vegetated unnamed tributary ditch.	High	Water quality exceedances in both tributary ditches; establish or enhance riparian vegetation along ditches if inflow is substantial.
19	Restoration	9.0-9.4	Main stem, confined reach	Roughen	Improve habitat complexity by adding roughness; opportunity to re-engage flood plain.	Low-Medium	Additionally recommend 2-D hydraulic modeling to assess activation flows and changes in inundation from roughening.
20	Restoration	Trib.	Barnhouse Creek	Riparian Vegetation	Establish riparian vegetation along ditched reach.	High	Water quality exceedances at confluence of Barnhouse Creek and Chimacum Creek.

Prioritization schemes

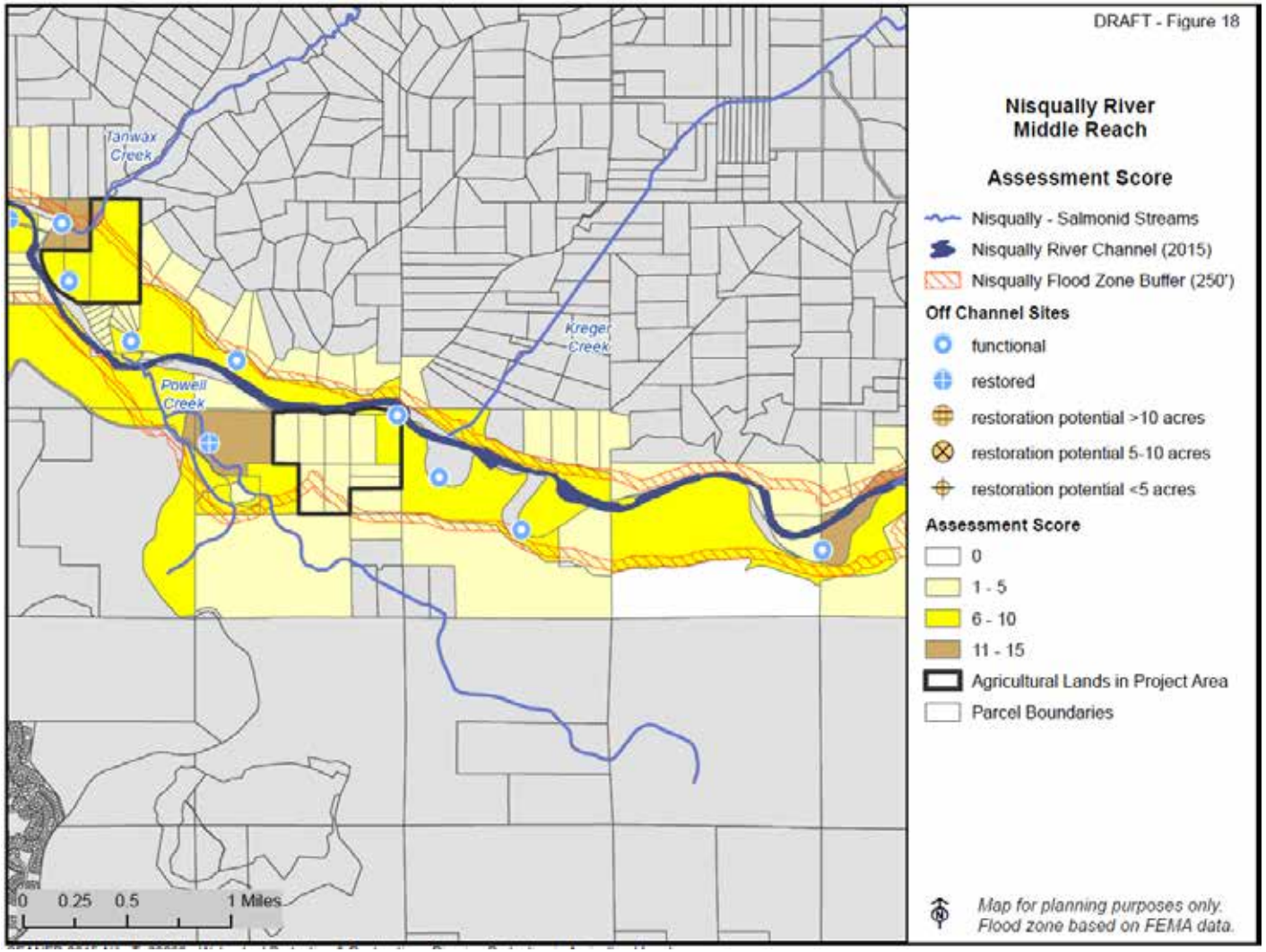
- Desktop GIS analyses to score and rank reaches, buffer segments, and/or parcels for their-
  - Potential ecological lift if restored
  - Existing habitat value to be protected
  - Threat to development
  - Feasibility/landowner willingness (often based local knowledge of partners)
- Partner workshops to score based on BPJ
- Cost estimates and real estate analyses

Prioritization schemes highlight

Nisqually Land Trust ranking – update of a 2005 Shoreline assessment

Table 1: Ranking Criteria – Three Key Habitat Characteristics

Description	Attribute Codes/Score	Source
Salmonid Accessible Tributary on Parcel		WA Department of Fish and Wildlife and Nisqually Indian Tribe Department of Natural Resources
Yes	5	
No	0	
2015 Flood Zone Forest Cover (for Parcel > 1 acre)		2015 National Agricultural Imagery Program aerial photography and Nisqually Land Trust staff knowledge of riparian forests in project area
100%	5	
75%-100%	4	
50%-75%	3	
25%-50%	2	
>0%-25%	1	
0%	0	
Off-Channel Habitat Site Score		South Puget Sound Salmon Enhancement Group Assessment
Functional	5	
Restored	4	
Impaired Site > 10 acres	3	
Impaired Site > 5 acres and < 10 acres	2	
Impaired Site < 5 acres	1	
No off-channel habitat	0	
Assessment Score	**11-15 = High** **6-10 = Moderate** **1-5 = Low**	
Maximum Score = 15 = Functional Off-Channel Habitat + 100% Forest Cover + Salmonid Tributary		

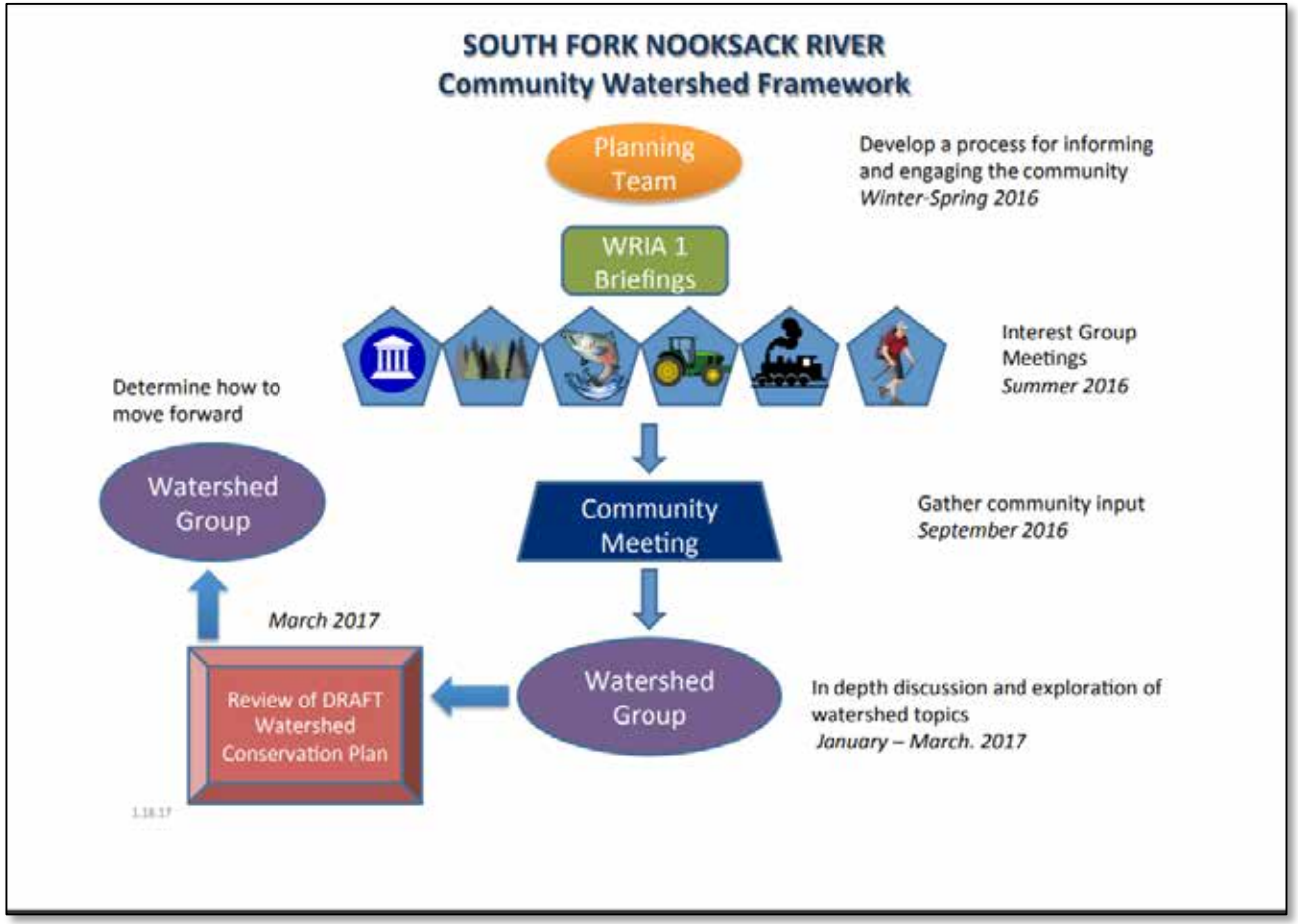


Landowner Recruitment Strategies

- Gain understanding of motivators and barriers to buffer work
  - Surveys
  - Focus groups
  - Landowner interviews
- Broad community outreach and public meetings to gain acceptance from stakeholders – Farm/Fish/Flood dynamics
  - SF Nooksack watershed planning process and flood zone meetings
  - Snoqualmie landowner workshop to identify properties where buffers could be restored without impacting agriculture
- Targeted landowner recruitment
  - Cultivate existing relationships (e.g. landowners who have done CREP or other restoration already) from project partners
  - Presentations at public meetings/landowner trainings on other topics
  - Mailers, brochures, knocking on doors, etc…

Project highlight

- South Fork Nooksack conducted reach-scale planning within a broader watershed planning effort
- NEP $ helped provide a focus on the agricultural areas
- Challenging community dynamics makes broad outreach efforts and community engagement important



Current phase of the program

- Moved into the implementation Phase (II)
- Early successes:
  - Have made 4 acquisitions on Newaukum Creek
  - Close to closing on 60 acres in Nisqually River focus reach
  - Appraisals on several more parcels being conducted
- Evaluating “Conceptual SOWs” which are proposed by grant sponsors to identify next round of funded activities:
  - Site visits
  - Appraisals and due diligence activities
  - Restoration designs
  - Negotiating easement terms
- About $1.5 Million to allocate still (doesn’t include awarded but unspent $)

Lessons Learned

- If priority for investments is to focus them geographically instead of spread around, then we need to understand and plan to address barriers to implementation locally:
  - Dynamics and barriers to implementation can be very different across locales so planning related investments and priorities need to adapt to this
  - Landowner perceptions vary, past experience matters, neighbors talk!
  - Competing interests – same patch of ground
- A flexible grant program can help solve local problems and overcome barriers but short timelines for spending $ makes this challenging.
- Local momentum is real and can drive success!

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