Advance Mitigation Projects (AMP)

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Advance Mitigation Projects – Contents

AMP– What is Wetland Mitigation

What is Wetland Mitigation:

It is the process of creating or restoring wetlands that have been unavoidably impacted by development.

Purpose of Wetland Mitigation:

To replace damaged or destroyed wetlands with newly created or restored wetlands to offset the impacts of development and restore any lost functions. The goal is no net loss to the environment.

AMP 4 – What is Advance Mitigation

What is Advance Mitigation:

- System of credits and debits designed to ensure unavoidable ecological damage to wetlands, other critical areas (streams), and buffers is offset by restoration, enhancement, creation and/or preservation of natural habitats, streams and wetlands.
- Sites are permitted, constructed and established before future development projects may need them.

Why Build Advance Mitigation:

- Provides mitigation offsets for impacts from future projects
- Faster project permit approval times
- Lower mitigation cost per credit compared to mitigation banks or concurrent mitigation
- Improved mitigation ratios compared to concurrent mitigation

Concurrent vs. Advance Mitigation

Concurrent Mitigation

- Mitigation that will be provided or constructed at the time of impact.
- Credit ratios for concurrent mitigation are typically higher (3:1) because the newly created wetlands don't have a proven track record.
- More costly due to increased credit ratios – need more mitigation area
- Longer project-specific permitting and approval timeframes

Advance Mitigation

- Allows AMP construction in advance of needing it for a future project
- Typically receives more favorable credit offset ratios
- Decreased cost due to reduced ratios and decreased temporal loss and risk of failure (1:1)
- Decreased project-specific permitting and approval timeframes because mitigation is already in place

Generating Mitigation Credits

Advance Mitigation Credits

- An advance mitigation site generates value or credits as it matures over time.
- The site reaches its maximum potential by meeting all its required performance standards.
- Typically, a mitigation site reaches its maximum potential at year 10.
- Wetland creation that has met all performance standards at year 10 will typically have a 1:1 credit ratio – for 1 acre of wetland impact (assuming category III wetland) 1 credit will be used from the advance mitigation site.

Age of Site (years)[1]	Category of Impacted Wetland and Recommended Ratio[2]			
	I	II	III	IV
0	Case-by-Case	3:1	2:1	1.5:1
1	Case-by-Case	3:1	2:1	1.5:1
2	Case-by-Case	2.5:1	1.7:1	1.3:1
3	Case-by-Case	2.2:1	1.5:1	1.15:1
4	Case-by-Case	2.2:1	1.5:1	1.15:1
5	Case-by-Case	1.8:1	1.3:1	1:1
6	Case-by-Case	1.8:1	1.3:1	1:1
7	Case-by-Case	1.5:1	1.15:1	0.9:1
8	Case-by-Case	1.5:1	1.15:1	0.9:1
9	Case-by-Case	1.5:1	1.15:1	0.9:1
10 and beyond	Case-by-Case	1.2:1	1:1	0.85:1

Mitigation Development & Use

- Advance mitigation can be proposed by any public or private entity.
- Permittee is responsible for site development, management, performance and protection.
- Credits generated can only be used by the permittee that developed the advance mitigation site.
- Credits cannot be sold or transferred to another entity. Advance mitigation is different than a mitigation bank.
- Creation of compensation in advance of impacts does not guarantee that the advance mitigation will be adequate for future impacts.

Community Benefits of Mitigation Areas

The community surrounding the advance mitigation area benefits greatly from a large green space.

The mitigation area is placed in a restrictive covenant that protects it from development.

Once the plants are established it becomes a great place for walking and exploring.

The area attracts a variety of wildlife, especially birds. Birdwatchers enjoy the diversity of species at our site.

Mitigation Site Selection

When looking for potential mitigation sites, look for:

- Sustainable water source
- Existing low habitat function (ex. hay field)
- Mix of existing wetland and upland
- Connection to habitat corridors or open space – small site perimeter buffers
- Not located abutting future development that may decrease site hydrology
- Square or rectangle sites are more usable than long linear areas
- Site is located within the same watershed as potential future development

Advance Mitigation Permitting Challenges

There are multiple documents needed for each of the required agency permit(s) listed below, along with lots of coordination between each of the agencies. Most of the permitting timelines run concurrently with each other.

Whatcom County

- Land Disturbance Permit (LDP) – 6 to 8 months
- State Environmental Policy Act (SEPA) determination – 4 to 6 months

U.S. Army Corps of Engineers (USACE)

- Clean Water Act, Section 404 Nationwide Permit (NWP) – 6 to 13 months

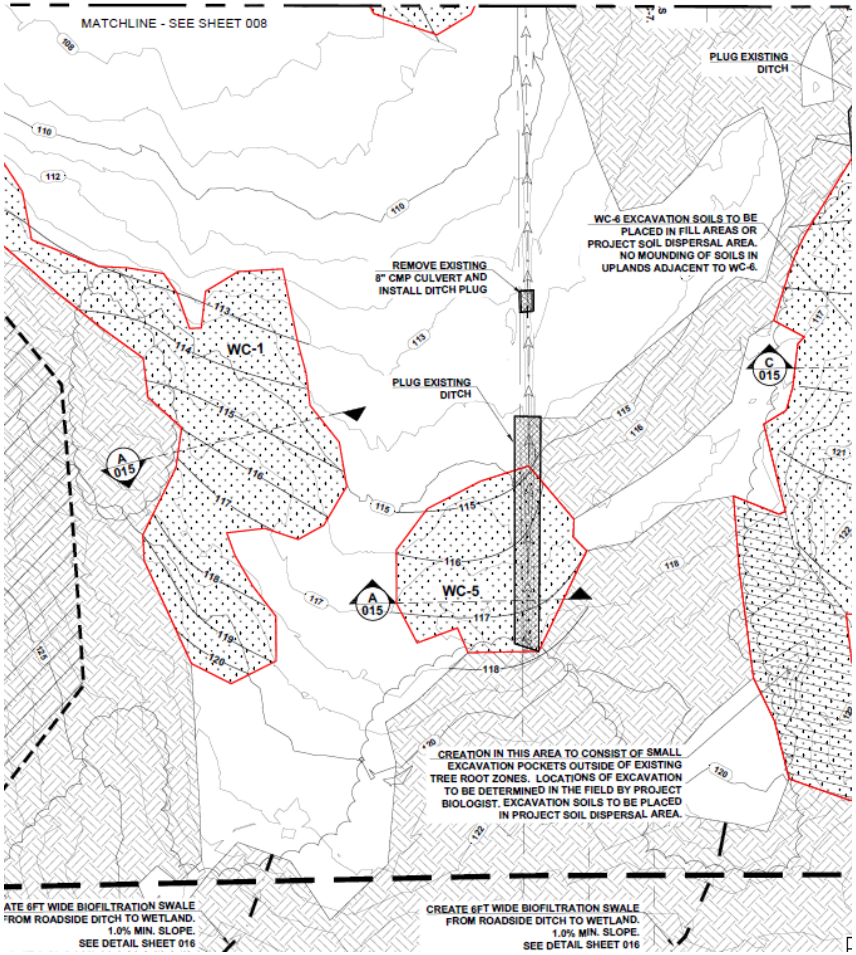
Washington Department of Ecology

- Clean Water Act, Section 401 Water Quality Certification – 7 to 13 months
- Coastal Zone Management Act Consistency Determination – 6 to 12 months
- NPDES Construction Stormwater General Permit coverage – 2 months

Washington State Department of Transportation

- General Permit – 6 months
- Utility Permit – 6 months
- Access Connection Permit – 2 months

Permitting Tips

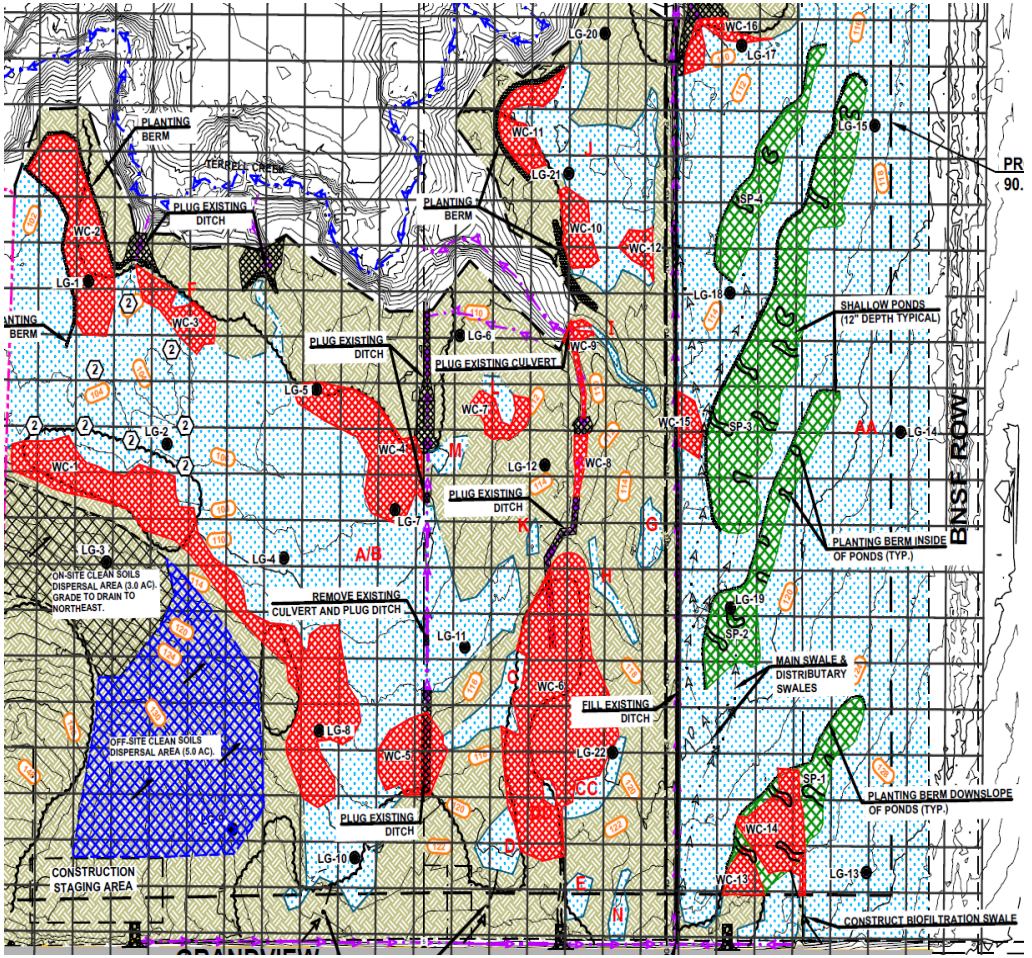


Coordinate an Agency site walk with your wetland biologist, design group, and any stakeholders (tribes).

- This was helpful to make sure we weren't missing any fatal flaws prior to submitting our permit applications.
- It also gave the reviewers a firsthand view of the site.
- A second site walk after permit submittal is helpful to put the site into perspective.
- Large sites are hard to visualize for some and grading on a large scale can easily be misunderstood.

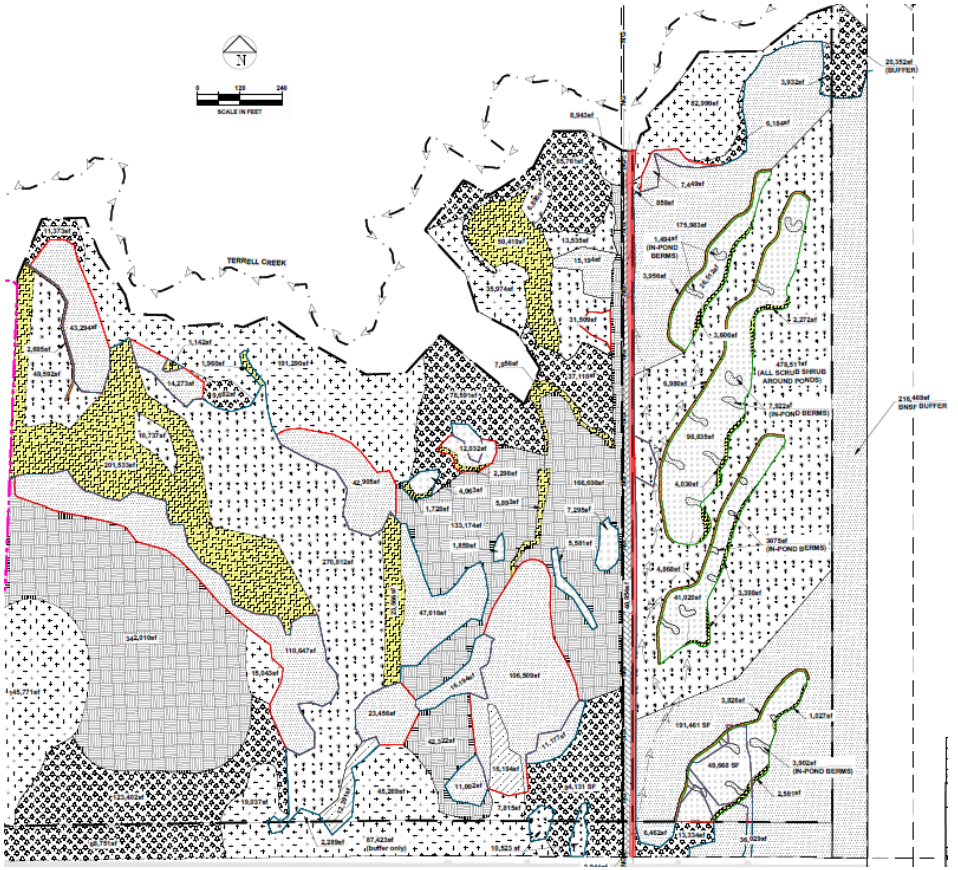
Design Challenges

- Installation of monitoring wells early enough to monitor through a wet season
- Finding a site that has a hydrology source
- Ensuring the proposed site has the right soils
- Designing based on drone LiDAR which doesn't pickup micro topography as well as conventional ground survey
- Finding a site with wetlands that can be rehabilitated or enhanced



Design Challenges Continued

- Site perimeter buffers decreased our usable design area by ~10%
- Existing gas pipeline required additional permitting and design work
- Decreased mitigation area due to offsets from the pipeline



Construction Tips

Look for opportunities to:

- Procure mulch for access roads and staging areas and place in an onsite upland area prior to construction
- Procure habitat features (woody debris) ahead of construction
- Contract at least a year in advance with a local nursery that specializes in native plants to make sure they'll have the needed plant quantities
- Use nearby water sources for irrigation (2 – 3 yrs.)
- Cut back and spray invasive species the summer prior to construction

Construction Tips Continued

- Plan for civil construction during the dryer spring/summer months so equipment doesn't get stuck
- Use of tracked equipment worked well on the soft soils
- Find a contractor that specializes in irrigation that can monitor the system remotely. The system will need to be in place for 2-3 years depending on plant establishment
- Load civil and planting plans into GPS software on an iPad
- Locate an upland area onsite that can be used for excess excavated soils

Construction Challenges

- Construction around an existing gas pipeline required an engineered crossing and load details on all vehicles that used the crossing
- Field verification of elevations due to LiDAR accuracy in heavily vegetated areas and micro grading
- Installation of irrigation system while still accessing the site for planting
- Planting is spread out over both a Fall and Spring season

Construction Challenges Continued

- Access and parking for contractors in a remote area required Conex boxes for a job shack and generators for lights
- Hard area to secure so Conex boxes were used to secure UTVs at night.
- Bird deterrents were needed during planting to prevent geese from pulling up the new plantings

Mitigation Maintenance & Monitoring

- Routine maintenance needs to be planned for 10+year post-construction to meet the required performance standards.
- Maintenance personal need to be very knowledgeable in plant species, invasives and the mitigation design
- Routine checks of the groundwater monitoring wells need to be performed
- Wetland biologist need to evaluate the site and submit reports back to the Agencies typically in years 1, 3, 5, 7 and 10.

Advance Mitigation

Questions?