

Countywide Review of the Comprehensive Plan Designation Process for Mineral Resource Lands of Long-Term Commercial Significance

The purpose of this paper is to discuss options for designating Mineral Resource Lands (MRLs) at the countywide level. Designating MRLs at the countywide level is consistent with the requirements of the Growth Management Act (GMA) for protection of natural resource lands. Additionally, by designating MRLs at the countywide level, the unpredictable nature of the landowner initiated designation process that presently exists may be eliminated for areas where potential resources have already been identified. Upon designation, mineral extraction companies will be required to obtain operating permits, but will not be required to apply for comprehensive plan amendments with unpredictable outcomes. The paper will discuss both potential mapping of countywide resources, as well as the development regulations necessary to assure the conservation of MRLs of long-term commercial significance.

Background

GMA and Whatcom County Approach

One of the goals of the 1990 Growth Management Act (GMA) is to maintain and enhance natural resource industries of long-term commercial significance, including agricultural, forestry and mineral resources.

The GMA requires that counties classify and designate MRLs of long-term commercial significance for the extraction of minerals and implement development regulations to ensure the protection of the resource from incompatible uses¹.

To address the mandates of the GMA, Whatcom County formed a Surface Mining Advisory Committee (SMAC) in the 1990s to produce, through a consensus process, the issues, goals, and policies for designating MRLs of long-term significance. The County Council adopted the final version in chapter 8 of the 1997 Comprehensive Plan, which includes policies establishing MRL designation criteria (Exhibit A) and 24 Mineral Resource Land site-specific designations covering nearly 4,200 acres on the Comprehensive Plan Land Use Map. The 1997 Comprehensive Plan Land Use Map MRL designations essentially covered only existing mining operations. Since then, the MRL designation criteria and land use map have undergone minor amendments, but are generally the same as adopted in 1997. Protection of the MRL designations is achieved through the MRL Zoning Overlay (WCC 20.73) by

¹ Revised Code of Washington (RCW) 36.70A.170; RCW 36.70A.060; Washington Administrative Code (WAC) 365-190

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allowing mineral resource extraction and other the types of activities that encourage and support the opportunity for extraction of minerals, while discouraging incompatible uses from locating within MRLs where extraction may be anticipated.

Since the adoption of the Whatcom County Comprehensive Plan in 1997, there have been three minor changes to the Designated MRLs. Each of these Comprehensive Plan Land Use Map and Zoning Map amendments were applicant-initiated:

- Ordinances 2003-008 and 2003-009 expanded the Killam MRL by ~85 acres, near Telegraph Rd south of Sumas.
- Ordinance 2005-003 created a new ~37-acre MRL near the corner of North Star and Brown Roads.
- Ordinance 2012-006 eliminated the ~90-acre MRL on Aldrich Rd, just south of King Tut Rd.

Existing MRL designations on the Comprehensive Plan Land Use Map are shown in Figure 1.

Need for New Approach

Since 2005, two proposed applicant-initiated Comprehensive Plan amendments to expand existing MRL designations have been denied. Each of these amendments met the designation criteria outlined in the Comprehensive Plan and been recommended for approval by Whatcom County Planning and Development Services (PDS) staff and the Whatcom County Planning Commission. Nonetheless, each of these applications was ultimately denied by the County Council through the legislative process largely as a result of significant neighborhood opposition to expanded mining operations.

In response, the surface mining industry voiced frustration at an unpredictable process where time and money are invested, the approval criteria are met, recommendations of approval are made, but applications are still denied.

Subsequently, as part of the review of MRL Comprehensive Plan and Zoning Text amendments in October 2014, the Whatcom County Planning Commission strongly recommended that Whatcom County take a lead role in designating MRLs of long-term commercial significance in order to protect the resource from incompatible uses, as opposed to the presently unpredictable process of landowner initiated amendments. During the 2016 Comprehensive Plan update, the County Council adopted policies supporting a more proactive approach to MRL designation, including Policy 8R-1 which states:

Through a county-led countywide assessment, seek to identify and designate potential commercially significant mineral resource lands, to meet future demand, compatible with water resources, agricultural lands, forest lands and other GMA goals.

In 2017, the County Council formally docketed a request for PDS to engage in a countywide MRL designation process (PLN2017-00004).

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Because MRL designation on the Comprehensive Plan Land Use Map is necessary in order to apply for a Conditional Use Permit for mineral extraction, this countywide approach could greatly reduce the instances of the unpredictable landowner initiated designation process. Additionally, the surface mining industry would have more areas that have been identified as appropriate for submitting mining applications.

The purpose of this paper is to outline considerations for designating MRLs at the countywide level, including potential comprehensive plan amendments (both text and map) and development regulations necessary to assure the conservation of MRLs of long-term commercial significance.

County-Wide MRL Designation Processes

In 2003, a report authored by GeoEngineers² identified potential aggregate reserve areas (PRAs) that could be used to meet a then stated policy to "Designate a 50 year supply of commercially significant construction aggregate supply". As part of a 2014 update to the study, Element Solutions³ identified additional Potential Resource Areas (PRAs) where commercially significant aggregate (e.g., sand and gravel) reserves and bedrock may occur. These combined PRAs were the starting point in discussion on where to review potential Designated MRLs at a countywide level.

Planning and Development Services provided staff support to the SMAC in developing their recommendation for the county-wide designation process. Throughout their discussions, a couple key considerations were identified:

- The purpose of the countywide review is to protect the identified resource. Therefore, when deliberating how to proceed, attempt to protect maximum amount of the resource.
- While this is a countywide approach, there should remain a process for future landowner-initiated applications. Not all existing designation criteria apply to both situations equally. Some criteria cannot feasibly or realistically apply to the countywide approach.

The result of the SMAC's work is a map of potential Designated MRLs (Figure 2), comprehensive plan amendments (Exhibit B) and zoning code amendments (Exhibit C). These recommendations are provided below.

Additionally, multiple Comprehensive Plan Land Use Map, Zoning Map, and Zoning Code amendments have been applied for and/or docketed by the County Council over the past 8

² GeoEngineers, Inc., *Engineering Geology Evaluation Aggregate Resource Inventory Study, Whatcom County Washington*, for Whatcom County Planning and Development Services, File No. 0484-040-00/093003, September 2003.

³ Element Solutions, *Aggregate Resource Inventory 2014 Study Update, Whatcom County, Washington*, prepared for Whatcom County Department of Planning and Development Services, December 22, 2014.

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years. Two separate Comprehensive Plan Map/Zoning Map amendments have been docketed by the County Council. These docketed items include:

- PLN2012-00009 - North Star Rd - Comprehensive Plan Map/Zoning Map
Expansion of existing MRL to include a ~20 acre parcel immediately adjacent to the south. Expansion would include a new parcel currently designated Rural on the Comprehensive Plan Land Use Map.
- PLN2019-00002 - Rd - Comprehensive Plan Map/Zoning Map
Expansion of existing MRL to include ~22.8 acres immediately adjacent to the south. Expansion would include a new parcel currently designated Rural on the Comprehensive Plan Land Use Map, as well as a portion of a parcel that is already partially designated MRL.

A third Comprehensive Plan Map/Zoning Map amendment was applied for but was not docketed by the County Council in 2019:

- PLN2019-00001 - E Pole Road - Comprehensive Plan Map/Zoning Map
Expansion of existing MRL to include ~21.7 acres immediately adjacent to the east. Expansion would include a portion of a parcel that is currently designated Rural and already partially designated MRL.

These three proposed Comprehensive Plan Map/Zoning Map amendments are briefly discussed below in both the section on the SMAC Comprehensive Plan Map amendments and the section on Potential Alternatives and Amendments.

Finally, two separate Zoning Code amendments were docketed by the County Council in 2019. The following docketed items are discussed at the end of this paper:

- PLN2019-00010 - Surface Mining Pipeline Buffer
- PLN2019-00011 - Surface Mining of Dry Meander Zones

SMAC Recommended Designated MRL Map Amendments.

The SMAC recommended Designated MRL Map (see Figure 2) was developed by reviewing the PRAs identified by GeoEngineers and Element Solutions and applying the existing MRL designation criteria⁴ to either include or exclude areas, consistent with the criteria. While discussing the criteria it became clear that certain criteria were not applicable to a county-wide review. Ultimately, areas that were excluded from potential designation include lands outside of Whatcom County regulatory jurisdiction (federal, tribally owned, cities, etc.), lands identified in another GMA required element (park and recreation), areas negotiated in conjunction with other jurisdictions as required by GMA (Urban Growth Areas, Urban Growth Area Reserves), and other designations identified through Growth Management Hearings Board appeals and decisions (e.g., Limited Areas of More Intense Rural Development).

⁴ Whatcom County Comprehensive Plan, Chapter 8

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One result of this PRA mapping exercise is that some areas would require a new MRL Comprehensive Plan Map designation. In this scenario, where the PRAs overlap Rural designations, for example, the MRL designation would replace the Rural designation⁵. Other areas, such as Designated Agriculture, Designated Commercial Forestry or Designated Rural Forestry resource lands, may have dual designations with MRL. According to state guidance on designating natural resource lands under the GMA, “[i]f two or more natural resource land designations apply (i.e. meets designation criteria for multiple resource land categories), counties must determine if the designations are incompatible. If they are incompatible, counties should examine the criteria to determine which has the greatest long-term commercial significance and that resource use should be assigned to the lands being designated”.⁶ Under these scenarios, the underlying zoning district (e.g., rural, agriculture) is not proposed to change, meaning that the existing uses allowed within the zone as it exists now will continue to be allowed.

However, the MRLs Special District zoning overlay (WCC 20.73) would allow for site-specific applications to be submitted for surface mining subject to the Washington State Surface Mining Act (SMA). The SMA is a statewide law requiring the coordination between local jurisdictions and the State for the extraction of mineral resources (e.g. sand, gravel, bedrock) and subsequent reclamation to an ultimate end use.

In total, this scenario, if implemented, would result in a total of ~122,993 acres (~10,000 parcels) of Designated MRL. Presently ~4,133 acres (~231 parcels) are Designated MRL. The change in the amount of acreage for each Comprehensive Plan Land Use Map designation under this scenario is shown in Table 1.

Table 1 - Approximate CP Designation Acreage presently vs SMAC recommendation

CP Designation	Current	SMAC Recommendation	After
AG	85,821	-36,799	49,022
CF	186,474	-32,548	153,926
CITY	35,282	0	35,282
FEDERAL	857,352	0	857,352
MAJ/PORT-IND-UGA	7,029	-3,494	3,535
MRL	4,133	+118,860	122,993
PUBLIC-REC	4,812	0	4,812
RF	35,383	-14,460	20,923
RURAL	121,175	-30,180	90,995
RURAL BUSINESS	194	0	194
RURAL COMMUNITY	8,861	0	8861
RURAL NEIGHBORHOOD	3,072	-1,283	1,789
SMALL TOWN	211	0	211
UGA	12,713	0	12,713
UGAR	1,947	0	1947
MISC (WATER)	96	-96	0

⁵ RCW 36.70A.070(5)

⁶ WAC 365-190-040(7)(b)

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Landowner initiated amendments under this scenario

PLN2012-00009 - North Star Rd (Docketed)

If the SMAC recommendation is approved, the expansion proposed with this application would be included and become Designated MRL

PLN2019-00002 - Breckenridge Rd (Docketed)

If the SMAC recommendation is approved, the expansion proposed with this application would be included and become Designated MRL.

PLN2019-00001 - E Pole Road (Not Docketed)

If the SMAC recommendation is approved, the expansion proposed with this application would be included and become Designated MRL.

SMAC Recommended Comprehensive Plan Policy Amendments

The discussion on comprehensive plan policy or text amendments focuses on the MRL designation criteria (Exhibit A). In order to fully address the proposed SMAC recommended changes to the designation criteria, comprehensive plan policies would need to be modified as shown in Exhibit B.

As mentioned above, not all the existing designation criteria are applicable or feasible as part of a countywide review. What quickly became apparent is if all designation criteria were to be applied, a given designation criterion may result in another criterion not being met.

For example, if all parcels containing PRAs were mapped for potential designation, many parcels throughout the county would enclose upon non-designated parcels by greater than 50%. This would appear to be inconsistent with Criterion #9 which states "MRL Designation should not enclose by more than 50% non-designated parcels." If an "enclosing" parcel was removed from potential designation in order to address this criterion, inevitably the "enclosing" parcel (now no longer proposed for designation) would become enclosed upon by other potentially designated parcels. Continuing this cycle would result in a time consuming, site-specific process that would not appear to meet the intention of the countywide review.

Consequently, the SMAC recommended that amendments to the designation criteria would only be applied to any future landowner-initiated site-specific MRL map amendment applications—not those considered as part of this countywide MRL review process.

While reviewing the existing MRL designation criteria, the SMAC identified criteria that could be addressed through Comprehensive Plan policies and at the site-specific project permitting stage, rather than through the Comprehensive Plan MRL Land Use Map

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designation process. For example, the intent of existing designation Criterion #9 (discussed above) appears to be to prevent mining operations from surrounding properties that are not involved in mining. Similarly, Criterion #7 appears to intend that mining not occur within or abutting developed residential zones or subdivisions platted at urban densities. The SMAC proposed deleting Criterion #7 and amending Comprehensive Plan policies and conditional use permit criteria within the zoning code to capture the intent of the designation criterion. The SMAC also proposed deleting Criterion #9 and amending the Comprehensive Plan policies to capture the intent of the designation criterion, but were unable to develop clear zoning code language for implementing the intent of the existing designation criterion at the project permitting stage.

Another designation criterion proposed for deletion by the SMAC is Criterion #8. This criterion states "MRL Designations must not occur within the 10-year zone of contribution for designated wellhead protection areas..." Wellhead protection areas are "The surface and subsurface areas surrounding a water well, or well field, supplying a public water system, through which contaminants are reasonably likely to move toward and reach the well or well field."⁷ The intent appears to be to prohibit the extraction of mineral resources within the 10-year wellhead protection areas. However, the Whatcom County Critical Areas Ordinance already appears to meet the intention of this designation criterion by prohibiting metal and hard rock mining and new sand and gravel mining within the 10-year travel time zone of wellhead protection areas within new MRLs.

The only other proposal to the existing designation criteria is to amend Criterion #6 to allow for a greater ratio of overburden-to-resource. The rationale is that even if it is a 50/50 resource-to-overburden ratio, rather than the existing 80/20 ratio, there are commercial uses for the overburden that would allow mining to be economically feasible.

SMAC Recommended Whatcom County Zoning Code Amendments

SMAC proposed amendments to the Whatcom County zoning code (see Exhibit C) have primarily resulted from proposed changes to the comprehensive plan (discussed above). However, a few amendments to the zoning code are not a direct result of the proposed changes to the comprehensive plan, while one zoning code amendment is recommended because of a proposed change to the comprehensive plan map.

While the CAO prohibits mining subject to the Surface Mining Act within wellhead protection areas within new Designated MRLs, as discussed above, that prohibition is not clearly spelled out in the zoning code. In fact, the zoning code presently states "Excavations may occur within the 10-year zone of contribution outside of the five-year zone of contribution if they are not within 10 vertical feet of the seasonal high water table"⁸. The SMAC recommendation includes language clarifying that mineral extraction subject to the Surface

⁷ Washington State Department of Health. "Washington State Wellhead Protection Program Guidance Document." June 2010.

⁸ Whatcom County Code (WCC)20.73.153(2)

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Mining Act is prohibited within the 10-year zone of contribution within MRLs designated after January 1, 2020.

Another set of proposed amendments are the creation of lot clustering requirements for subdivisions within MRLs. Presently, no division of land within the MRL Special District which creates any parcel of less than 20 acres is permitted. Without changes to the zoning code, any property zoned R2, R5, or R10, for example, would not be able to subdivide below 20 acres if the property were to become Designated MRL through this countywide review. In order to allow for subdivisions at the current overall densities while also protecting MRLs from incompatible uses, lot clustering requirements similar to the Agricultural Protection Overlay (APO) are proposed. One notable exception to the lot clustering requirement would be for parcels that are wholly within the 10-year zone of contribution for designated wellhead protection areas. Since the purpose of lot clustering would be to provide a reserve tract for mineral resource protection and potential future extraction, it is not rational to require clustering within areas where mineral extraction is prohibited.

One final zoning code amendment recommended by the SMAC is a conditional use criterion for when the underlying zoning district is Agriculture, or when the subject parcel is within an area identified by the Rural Land Study Update where agricultural land protection efforts should be strengthened. In situations such as these, mining and reclamation to agricultural uses shall occur consistent with the Washington State Department of Natural Resource (DNR) "Best Management Practices for Reclaiming Surface Mines in Washington and Oregon", Revised Edition December 1997, or as further revised. Key factors to consider from the DNR best management practices document are further discussed below under Potential Alternatives.

Potential Alternatives and Amendments

Planning and Development Services is aware of potential impacts that may result from utilizing PRAs solely for designation of MRLs. These include but are not necessarily limited to:

- MRL designation in areas where surface mining has not historically been encountered;
- Designation changes from other natural resource lands with well-documented long-term conservation goals (100k acres of agricultural land)⁹;
- MRL designation where surface mining is ultimately unlikely due to existing development patterns, land-ownership, or other constraints;
- Potential conflicts with neighbors (domestic wells not protected as Group A and Group B, dust, noise (see about protections within CAO.); and
- Impacts on growth of cities surrounded by PRAs and agricultural lands.

⁹ Whatcom County Comprehensive Plan, Policy 8A-2

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PDS staff have identified potential alternatives to the exclusive PRA approach to MRL amendments that could address some of those issues. These alternatives are discussed below. Please note that each alternative is discussed independently. If a combination of alternatives is used, things like acreage and parcels impacted will change.

These alternatives would not protect as much of the PRAs as the SMAC recommendation. They could, however, substantially increase the acreage of Designated MRLs available for submittal of surface mining applications while reducing the need for landowner initiated comprehensive plan map amendment applications and their inherent costs and unpredictable outcomes.

Alternatives for MRL Designation

Alternative 1: Do not include zones with 20-acre or greater minimum lot sizes

While RCW 36.70A.170 directs counties to designate MRLs of long-term commercial significance in order to protect the resource from incompatible uses, the designation itself does not protect the resource. Rather, it is the development regulations adopted consistent with RCW 36.70A.060 (WCC 20.73 Zoning Overlay in Whatcom County) that protect the resource. This protection comes in the form of a 20-acre minimum lot size on subdivisions, which limits new development (people) from locating on lands that may be necessary for mineral extraction in the future.

If a 20-acre minimum lot size on subdivisions successfully protects mineral resources from incompatible uses locating upon the land, it follows that Rural Forestry (20-acre minimum lot size), Commercial Forestry (40-acres) and Agriculture (40-acres) zones also successfully protect mineral resources. Thus, if the purpose of the countywide review is to protect the resource from incompatible uses, rather than allow mining applications to be submitted, the Rural Forestry, Commercial Forestry and Agriculture zones protect the resource and do not need to be mapped as Designated MRLs.

Rural Forestry, Commercial Forestry, and Agriculture designated parcels encompass ~83,807 acres of the SMAC recommendation. Removing these natural resource zoned lands from the SMAC recommendation would result in ~35,053 acres (~7,100 parcels) of new Designated MRL (from formerly Rural, Major/Port Industrial, and Rural Neighborhood designations), rather than the ~122,993 acres recommended by the SMAC (see Figure 3). A change in the amount of acreage for each Comprehensive Plan designation under this scenario is shown on Table 2.

Table 2 - CP Designation Acreage presently vs SMAC recommendation Minus AG, CF, RF

CP Designation	Current	SMAC Recommendation	After
AG	85,821	0	85,821
CF	186,474	0	186,474
CITY	35,282	0	35,282
FEDERAL	857,352	0	857,352

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MAJ/PORT-IND-UGA	7,029	-3,494	3,535
MRL	4,133	+35,053	39,186
PUBLIC-REC	4,812	0	4,812
RF	35,383	0	35,383
RURAL	121,175	-30,180	90,995
RURAL BUSINESS	194	0	194
RURAL COMMUNITY	8,861	0	8861
RURAL NEIGHBORHOOD	3,072	-1,283	1,789
SMALL TOWN	211	0	211
UGA	12,713	0	12,713
UGAR	1,947	0	1947
MISC (WATER)	96	-96	0

If this is the preferred policy approach, PDS recommends an additional policy statement or other mechanism that would prioritize consideration for MRL designation on any Rural Forestry, Commercial Forestry or Agriculture lands identified as PRAs, if these lands are proposed for a redesignation or rezone that would allow subdivisions below 20 acres.

Landowner initiated amendments under this scenario

PLN2012-00009 - North Star Rd (Docketed)

If this alternative approach is taken, the expansion proposed with this application would be included and become Designated MRL.

PLN2019-00002 - Breckenridge Rd (Docketed)

If this alternative approach is taken, the expansion proposed with this application would be included and become Designated MRL.

PLN2019-00001 - E Pole Road (Not Docketed)

If this alternative approach is taken, the expansion proposed with this application would be included and become Designated MRL.

Alternative #2: Localized Expansion

The SMAC recommendation would result in ~122,993 acres of Designated MRL, an increase of ~118,860 acres (~9,769 parcels). This means that over 9,500 parcels would be owned by citizens who did not anticipate surface mining activities being allowed on, or maybe near, their properties at the time they purchased them. One approach to limit the number of property owners impacted would be to limit the proposed MRL designations to areas in close proximity to existing MRL designations.

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Limiting new MRL designations to SMAC recommended areas within 1 mile of existing MRL designations would result in a total of ~45,862 acres (~3,765 parcels) of Designated MRL, as shown in Figure 4. A change in the amount of acreage for each Comprehensive Plan designation under this scenario is shown on Table 3.

Table 3 - CP Designation Acreage presently vs SMAC recommendation within 1 mile existing MRL

CP Designation	Current	SMAC Recommendation within 1 Mile of existing MRL	After
AG	85,821	-9,895	75,926
CF	186,474	-10,752	175,722
CITY	35,282	0	35,282
FEDERAL	857,352	0	857,352
MAJ/PORT-IND-UGA	7,029	-816	6,213
MRL	4,133	+41,729	45,862
PUBLIC-REC	4,812	0	4,812
RF	35,383	-7,342	28,041
RURAL	121,175	-12,397	108,778
RURAL BUSINESS	194	0	194
RURAL COMMUNITY	8,861	0	8861
RURAL NEIGHBORHOOD	3,072	-475	2,597
SMALL TOWN	211	0	211
UGA	12,713	0	12,713
UGAR	1,947	0	1947
MISC (WATER)	52	-52	0

If the distance was increased to limit new MRL designations to SMAC recommended areas within 2-miles of existing MRL designations, a total of ~77,089 acres (~6,166 parcels) would be Designated MRL as shown in Figure 5. A change in the amount of acreage for each Comprehensive Plan designation under this scenario is shown on Table 4.

Table 4 - CP Designation Acreage presently vs SMAC recommendation within 2 mile existing MRL

CP Designation	Current	SMAC Recommendation	After
AG	85,821	-15,431	70,390
CF	186,474	-19,588	166,886
CITY	35,282	0	35,282
FEDERAL	857,352	0	857,352
MAJ/PORT-IND-UGA	7,029	-3,454	3,575
MRL	4,133	+72,956	77,089

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PUBLIC-REC	4,812	0	4,812
RF	35,383	-13,909	21,474
RURAL	121,175	-19,799	101,376
RURAL BUSINESS	194	0	194
RURAL COMMUNITY	8,861	0	8861
RURAL NEIGHBORHOOD	3,072	-699	2,373
SMALL TOWN	211	0	211
UGA	12,713	0	12,713
UGAR	1,947	0	1947
MISC (WATER)	76	-76	0

If the distance was decreased to limit new MRL designations to SMAC recommended areas within 1/2 mile of existing MRL designations, a total of ~25,220 acres (~1,773 parcels) would be Designated MRL as shown in Figure 6. A change in the amount of acreage for each Comprehensive Plan designation under this scenario is shown on Table 5.

Table 5 - CP Designation Acreage presently vs SMAC recommendation within 1/2 mile existing MRL

CP Designation	Current	SMAC Recommendation within 1/2 mile of existing MRL	After
AG	85,821	-4,785	81,036
CF	186,474	-5,301	181,173
CITY	35,282	0	35,282
FEDERAL	857,352	0	857,352
MAJ/PORT-IND-UGA	7,029	-155	6,874
MRL	4,133	+21,087	25,220
PUBLIC-REC	4,812	0	4,812
RF	35,383	-3,919	31,464
RURAL	121,175	-6,893	114,282
RURAL BUSINESS	194	0	194
RURAL COMMUNITY	8,861	0	8861
RURAL NEIGHBORHOOD	3,072	-31	3,041
SMALL TOWN	211	0	211
UGA	12,713	0	12,713
UGAR	1,947	0	1947
MISC (WATER)	3	-3	0

While this approach would not designate all the identified PRAs, designating parcels within 1 mile of existing MRL designations would result in roughly 10x more land designated as MRL than exists now. It should be noted that while this would be a substantial increase in the size of Designated MRL, these areas include natural features, lot configurations and lot ownerships, among other considerations, that may reduce the amount of land where mining is feasible. For example, 1-acre and 2-acre lots just east of Wisner Lake, DNR and land trust

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lands on the southern portion of Lummi Island, and land within the Nooksack River Floodplain/Floodway are located within 1 mile of existing MRLs.

Landowner initiated amendments under this scenario

PLN2012-00009 - North Star Rd (Docketed)

If this alternative approach is taken, the expansion proposed with this application would be included and become Designated MRL in either the 1-mile or 2-mile localized expansion.

PLN2019-00002 - Breckenridge Rd (Docketed)

If this alternative approach is taken, the expansion proposed with this application would be included and become Designated MRL in either the 1-mile or 2-mile localized expansion.

PLN2019-00001 - E Pole Road (Not Docketed)

If this alternative approach is taken, the expansion proposed with this application would be included and become Designated MRL in either the 1-mile or 2-mile localized expansion.

Alternative 3: Mineral Resource Protection Overlay (MRPO)

A conceptual Mineral Resource Protection Overlay (MRPO) would be a mapped area where subdivisions would be required to cluster the residential lots and reserve tract building areas. Similar to the Agricultural Protection Overlay (APO), cluster subdivision would leave a large portion of the original parcel in a reserve tract for natural resource protection, while overall densities would be maintained for the owner/developer of a property. Where the purpose of the APO is to protect agricultural land, the MRPO would be for protection of future access to mineral resources within the reserve tract.

The MRPO would add a new section to the zoning code (see WCC 20.73.250 in Exhibit C) that would protect mineral resources in a similar fashion to the SMAC recommendation of amending the MRL Special Zoning District section of the zoning code to require lot clustering for subdivisions within Designated MRLs. The key difference between the SMAC recommendation and the conceptual MRPO is that the MRPO would protect future access to the mineral resources without specifically allowing for the extraction of mineral resources, as allowed within the current MRL Special Zoning District.

The SMAC recommended PRA to MRL designation scenario would result in new areas designated as MRL that would allow for the extraction of mineral resources in areas where landowners did not anticipate such activities. The MRPO could be used as a tool to protect PRAs without allowing unanticipated activities, while limiting development patterns to protect mineral resources for future access for extraction.

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When a parcel would be subject to both the MRPO and APO, the applicants may choose to subdivide with the protection overlay of their choosing.

Landowner initiated amendments under this scenario

PLN2012-00009 - North Star Rd (Docketed)

If this alternative approach is taken, the expansion proposed with this application would be subject to cluster subdivision requirements of WCC 20.73.250 in Exhibit C.

PLN2019-00002 - Breckenridge Rd (Docketed)

If this alternative approach is taken, the expansion proposed with this application would be subject to cluster subdivision requirements of WCC 20.73.250 in Exhibit C.

PLN2019-00001 - E Pole Road (Not Docketed)

If this alternative approach is taken, the expansion proposed with this application would be subject to cluster subdivision requirements of WCC 20.73.250 in Exhibit C.

Alternative 4: Dual Designation with Agriculture

Existing MRL designation Criterion #15 prohibits MRL designations in areas Designated Agriculture by the Whatcom County Comprehensive Plan that contain "Prime Farmland Soils" determined by the Natural Resource Conservation Service (NRCS). In the SMAC recommendation, many areas presently designated as Agriculture were also identified as areas for designation as MRL.

Washington Administrative Code (WAC) 365-190-040(7)(b) addresses the process for overlapping natural resource land designations, stating: *"If two or more natural resource land designations apply, counties and cities must determine if these designations are incompatible. If they are incompatible, counties and cities should examine the criteria to determine which use has the greatest long-term commercial significance, and that resource use should be assigned to the lands being designated."*

In Whatcom County, prime agricultural lands often overlap with areas identified as PRAs. The sand and gravel deposits that are valuable to the mineral resource industry for extraction are also extremely valuable to the agricultural industry for the service they provide, namely well-draining soils.

When determining whether agriculture or mineral resource extraction has the greatest long-term commercial significance, many factors come into play. For the purpose of this exercise, staff will discuss impacts to mineral resources if the Agricultural designation and zoning remains, as well as impacts to agriculture if these lands are re-designated to MRL with an MRL zoning overlay. These discussions are not applicable to the entire Agricultural designation/zone. Rather they are applicable solely where the current Agriculture

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designation/zone coincides with PRAs. It is estimated that there are currently 85,821 acres of Designated Agriculture lands in the county and ~32.6% (27,991 acres) of those agricultural lands are also identified as PRAs.

Maintain Agriculture designation:

If the agricultural designation and associated zoning are not changed, mineral resource extraction would continue to be prohibited. Exceptions to this prohibition currently allowed on agricultural lands include small-scale (< 3 acres) surface mining of knolls and ridges for farm enhancement purpose (with conditions and review criteria).

While extraction for larger-scale commercial purposes would continue to be prohibited, protection of the resource would continue to be met through the large (40 acre) minimum lot sizes of the agricultural zone as discussed above.

If maintaining the existing Agriculture designation is the preferred policy approach to also protecting the underlying mineral resources, PDS recommends an additional policy statement or other mechanism that would prioritize consideration for MRL designation when designated resources outside of the Agriculture zone are nearing depletion. "Nearing Depletion" would need to be defined.

Re-designate to MRL:

If the agricultural designation and associated zoning that coincide with PRAs are changed to MRL with a MRL zoning overlay, surface mining subject to the surface mining act would be an allowed use through the conditional use process. It is important to note that existing activities taking place on these lands can continue to be the primary activities in the future.

While applications for mineral extraction may be submitted under this scenario, land ownership patterns, costs associated with studies/permitting, and existing permitted reserves will likely limit the extent and number of applications, thereby limiting impacts to agricultural lands of long-term commercial significance.

It is only when surface mining within formerly designated/zoned agricultural lands would occur that direct impacts to agricultural lands of long-term commercial significance may occur. While many factors are important to productive agriculture, two primary contributors are, or may be, directly impacted by the act of surface mining: 1) soil; and 2) water (drainage).

Soils are negatively impacted by the act of mining. Soils are created over long periods of time through physical, chemical and biological interactions with a parent material (rocks). According to the Natural Resources Conservation Service (NRCS), *"Managing for soil health (improved soil function) is mostly a matter of maintaining suitable habitat for the myriad of creatures that comprise the soil food web. This can*

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*be accomplished by disturbing the soil as little as possible...*¹⁰ During mining, soils are stripped and stockpiled, disrupting the physical, chemical and biological properties that are the makeup of the soil. The extent of disruption can be minimized by taking care to remove topsoil, subsoil and overburden separately, and constructing soil storage piles to minimize size and compaction.¹¹ Even if care is taken while removing and stockpiling soils, amending or manufacturing soils may be necessary so that reconstructed soils have the same characteristics as the original topsoil. A soil health assessment score coupled with agronomic productivity would provide good information on soil quality and whether there have been impacts to the soil that could limit or reduce the ability for long-term commercial agriculture upon completion of reclamation.

There are many soil health/soil quality scoring systems that could help to ensure soil quality has not been diminished upon completion of reclamation. The "Cornell Comprehensive Assessment of Soil Health - The Cornell Framework", for example, identifies soil health as *"a concept that deals with the integration and optimization of the chemical, physical, and biological processes of soil that are important for sustained productivity and environmental quality."*¹² These characteristics include, but are not limited to available water capacity, surface hardness, organic matter, soil respiration, active carbon, pH and plant nutrients, bulk density, porosity, among others. With agronomic productivity, the same crops would be planted before mining and after reclamation to make sure the 5-year yield averages before and after are comparable.¹³

Another concern for reclamation to agriculture is the potential impact to drainage. If wet mining (mining of sand and gravel resources below the water table) is conducted, importing materials must be done selectively so that new confining layers are not created. If sand and gravel deposits are replaced with silt and clay-rich soils, the likelihood of a confining layer and associated perched water table (and reduced drainage) occurring is increased, making reclamation to agriculture more difficult.

The Washington State Department of Natural Resources, which oversees reclamation of surface mining subject to the Surface Mining Act, has published a document titled "Best Management Practices for Reclaiming Surface Mines in Washington and Oregon." In the section titled "Agricultural and Forestry Subsequent Uses", under "Factors to Consider", the document states *"From an agricultural standpoint, at least 8 inches of topsoil with suitable subsoils or a minimum of 3 feet of combined topsoil*

¹⁰ Natural Resources Conservation Service, Soil Health Management, "<https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/mgmt/>" Accessed May 8, 2020.

¹¹ Norman, David K, and Peter J. Wampler, Allen H. Throop, E. Frank Schnitzer, and Jaretta M. Roloff. "Best Management Practices for Reclaiming Surface Mines in Washington and Oregon." Washington Division of Geology and Earth Resources, Open File Report 96-2. Revised Edition December 1997.

¹² Moebius-Clune, B.N., D.J. Moebius-Clune, B.K. Gugino, O.J. Idowu, R.R. Schindelbeck, A.J. Ristow, H.M. van Es, J.E. Thies, H.A. Shayler, M.B. McBride, K.S.M Kurtz, D.W. Wolfe, and G.S. Abawi. "Comprehensive Assessment of Soil Health – The Cornell Framework, Edition 3.2." Cornell University, Geneva, NY. 2016.

¹³ LaHue, Gabriel. "Re: Soils Question." Received by Joshua Fleischmann, 13 March. 2020.

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*and subsoil overlying a zone of saturation with water is needed for most plants during the growing season. Therefore mineral extraction should not occur below the water table.”*¹⁴ Throughout most of the Sumas-Blaine Aquifer (which includes most of the Agriculture zone in northern Whatcom County), the depth to groundwater is typically less than 10 feet, with the exception of certain areas near Sumas and the eastern margin of the aquifer. Given that the best management practices for reclamation to agriculture discourage mining below the water table and given that the water table is typically less than 10 feet in depth, commercially significant surface mining is unlikely to be feasible following guidance within this document for reclamation to agriculture.

Taking into account the guidance for reclamation within the DNR BMP document (mining should not occur below water table) coupled with high groundwater depths throughout much of the agriculture zone, and considering the potential impacts of mining to the soil and water resources necessary for agricultural production, the Agriculture and MRL designations may be incompatible.

Given the limitations on mineral resource extraction and the potential impacts to agricultural resources, and given that agricultural designation and associated activities do not preclude or diminish future access or value of mineral resources, agriculture may have a greater long-term commercial significance.

If the determination is made that designated agriculture and mineral resource lands are incompatible and that agriculture has greater long-term commercial significance, PDS recommends an additional policy statement or other mechanism that would prioritize consideration for MRL designation when designated resources outside of the Agriculture zone are nearing depletion. “Nearing Depletion” would need to be defined.

Landowner initiated amendments under this scenario

PLN2012-00009 - North Star Rd (Docketed)

The discussion on overlapping natural resource land designations is not applicable to this application since the proposed MRL expansion would be in the Rural designation.

PLN2019-00002 - Breckenridge Rd (Docketed)

The discussion on overlapping natural resource land designations is not applicable to this application since the proposed MRL expansion would be in the Rural designation.

PLN2019-00001 - E Pole Road (Not Docketed)

The discussion on overlapping natural resource land designations is not applicable to this application since the proposed MRL expansion would be in the Rural designation.

¹⁴ Ibid. 11

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Alternative 5: Rural Study Areas

Rural Study Areas (RSA) were identified through the 2007 “Whatcom County Rural Land Study: A Collaborative Report Identifying Rural Areas of Agricultural Significance” which identified ~21,000 acres within the Rural 5 and Rural 10 zoning districts that are of agricultural significance and that may require additional protection for long-term agricultural viability. The RSA have been subsequently re-evaluated, adding an additional ~8,000 acres of land identified for enhanced agricultural protection. With less than 90,000 acres of zoned agricultural lands, the Rural Study Areas and any enhanced protections they afford are important for meeting the stated goal of a minimum 100,000 acres of land available for agricultural use.

Unlike the Agriculture zone, which protects access to mineral resources through minimum lot sizes greater than required by the MRL zoning overlay, the RSA provides no such protection of mineral resources. Additionally, while WAC 365-190-040(7)(b) provides guidance for dual designation of overlapping resource lands, the GMA does not appear to allow for the dual designation of MRLs and a Rural designation.¹⁵ Therefore, in order to protect rural designated areas that have been identified as important to the agricultural land base of Whatcom County, as well as protecting the underlying mineral resource, RSAs may be an appropriate geographical area for implementing the Mineral Resource Protection Overlay (MRPO).

There are 19 RSAs that include some lands identified as PRAs. Combined, these areas of overlap account for over ~12,157 acres and ~1,627 parcels. If these parcels were to become Designated MRL, or subject to a theoretical MRPO, ~1,373 parcels would be unaffected, as they cannot presently subdivide further. The remaining ~254 parcels that would presently be able to subdivide would be impacted as shown below:

	Parcels Able to Subdivide	Parcels Unable to Subdivide	Potential Lots	Potential Lots Eliminated
Mineral Resource Protection Overlay (required clustering)	~254	~0	~1,068	~0
Designated MRL (20-acre minimum lot size)	~35	~219	~85	~983

A breakdown by affected RSA is included as Table 6.

Landowner initiated amendments under this scenario

¹⁵ Butler, Steven. "Response regarding Rural Elements and MRLs." Received by Joshua Fleischmann, 29 April. 2020.

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PLN2012-00009 - North Star Rd (Docketed)

The subject parcel is not located within a Rural Study Area. This alternative does not impact the application.

PLN2019-00002 - Breckenridge Rd (Docketed)

The subject parcel is not located within a Rural Study Area. This alternative does not impact the application.

PLN2019-00001 - E Pole Road (Not Docketed)

The subject parcel is not located within a Rural Study Area. This alternative does not impact the application.

Alternatives for Regulating MRL Mining Activities

Strengthening the Conditional Use Permit Approval Criteria

It is important to remember that the MRL designation itself does not protect the resource. Rather, it is the MRL Zoning Overlay (WCC 20.73), through its 20-acre minimum lot sizes on subdivisions, that protects mineral resources from incompatible uses. It is also through the MRL Zoning Overlay that Conditional Use Permit (CUP) applications for mineral extraction can be submitted.

It has been stated that MRL designation (and associated MRL overlay) is not a right to mine, and that CUP applications must still be submitted and reviewed for approval. This is true. However, outside of the SEPA Environmental Impact Statement (EIS) process, it would be difficult to deny a CUP, as the present approval criteria (WCC 20.84.220) are somewhat vague and qualitative.

Without a clear mechanism to deny permits, MRL designation and associated zoning may be a de-facto right to mine for any future proposal that does not receive a SEPA Threshold Determination of Significance (DS) (albeit potentially heavily conditioned and possibly modified from the original proposal).

It should be noted that even if an EIS is required, it is a costly, time consuming process that may not provide the mineral resource industry with the predictability they desire, as the scope of the review is not determined until initiation of the EIS.

Consequently, creation of strict CUP criteria specific to mineral resource extraction may be necessary to clearly identify thresholds to approve or deny mining permits more predictably.

Example criteria could include strict interpretation of the critical areas ordinance mitigation sequencing (i.e. avoidance can always be accomplished by not mining the critical area and/or buffer), or limiting the acreage or depth that mining can occur. While creating permit approval criteria with the purpose of having the ability to deny a permit may not be

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preferred by the surface mining industry, it may provide some predictability in whether to apply for a permit, as well as support the claims that MRL designation and zoning is not a right to mine.

Strengthening the Conditional Use Permit Approval Criteria to Protect Agricultural Land

The SMAC recommendation for mining and reclamation within the Agricultural zone and Rural Study Areas (RSA) requires that the mining activities be consistent with the DNR document "Best Management Practices for Reclaiming Surface Mines in Washington and Oregon", Revised Edition December 1997, or as revised. However, the document states "The techniques and guidance provided in this manual should not be construed as rules or laws, but merely the most effective and economical reclamation and mining practices known...at the present time." Because mining is under the regulatory jurisdiction of Whatcom County and reclamation is under the regulatory jurisdiction of DNR, in order to require that mining is conducted in a manner consistent with the guidance for reclamation to agriculture, staff recommends additional conditional use approval criteria within the Agriculture zone and RSAs if the preferred policy approach is to allow expanded mining activities in these areas.

Potential criteria to consider from within the DNR BMP document include:

- Mineral extraction will not occur below the water table (pg. 7.17)
- Live topsoiling, avoid compaction of pit floors (pg. 7.17)
- Require concurrent/progressive or segmental reclamation (pg. 3.2, 3.3)
- Limit a "segment" to no more than 7-acres (pg. 3.4)
- Topsoil, subsoil and overburden will be removed separately (pg. 3.13)
- Require topsoil and overburden to be stockpiled in separate, stable storage areas for later use in reclamation or immediately moved to reclaim adjacent depleted segments. (pg. 3.6)
- Topsoil cannot be sold, removed from the site, mixed with sterile soils or used to create screening berms. (pg. 3.6)
- Limit timing of soil removal, as porosity, or structure, can be permanently damaged if soils are stripped when they are excessively wet or dry (Pg. 3.13)
- Subsoils capable of supporting vegetation must be salvaged to a depth of 4 feet and stored in a stable area if not immediately used for reclamation (pg. 3.14)
- Limit soil storage piles to no more than 25 feet in height. Available plant material such as grasses, shrubs, and chipped tree limbs will be incorporated into the piles. Require aeration by deep ripping, discing and tilling every 2 or 3 years to retain soil microbes (pg. 3.15)
- Understanding the approximate fertility level of each soil type and different soil horizons will contribute to wise use of the resource (pg. 3.13). Reconstructed soils will have the same soil characteristics as topsoil. Soil characteristics that have the greatest effect on plant growth are the amount of organic matter, moisture-holding capacity, drainage, and available nutrients (pg. 4.6)

Other potential criteria to consider

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- A soil health assessment score, coupled with agronomic productivity, for gauging extent of impacts to soil. Prior to mining subsequent segments, require that reclaimed soils have comparable characteristics, composition, and agricultural productivity as the soils had prior to mining. May require amending or manufacturing soil (adding organic matter, improving moisture holding capacity, improving drainage)
- Involve WSU Extension or Whatcom Conservation District staff in reclamation planning or defining "successful reclamation to agriculture".

Landowner initiated amendments under this scenario

PLN2012-00009 - North Star Rd (Docketed)

The subject parcel is not located within a Rural Study Area or Designated Agriculture zone. This alternative does not impact the application.

PLN2019-00002 - Breckenridge Rd (Docketed)

The subject parcel is not located within a Rural Study Area or Designated Agriculture zone. This alternative does not impact the application.

PLN2019-00001 - E Pole Road (Not Docketed)

The subject parcel is not located within a Rural Study Area or Designated Agriculture zone. This alternative does not impact the application.

Docketed Zoning Code Amendments

PLN2019-00010 - Surface Mining Pipeline Buffer

The docketed item PLN2019-00010 proposes to:

Amend the Whatcom County Comprehensive Plan and Whatcom County Code to determine the minimum safe distance to allow surface mining to be conducted from a petroleum pipeline to ensure a pipeline will not become exposed or rupture during an earthquake event and contaminate an aquifer. Determination should be based on independent sources where possible and assuming a magnitude 9.0 or greater earthquake could occur.

Earthquakes impact land differently based on site specific variables, such as soil, underlying geology, topography, etc. This makes it difficult to develop a standard safe distance between mining and pipelines that is scientifically supportable.¹⁶

Additionally, the distance from the epicenter of an earthquake and the characteristics of the fault would also play a role in the shaking intensity and ground motion following an earthquake. For example, roughly 2/3 of Whatcom County may expect higher Modified

¹⁶ Horn, Marc, District Operations Manager, BP USPL, "Horn Letter to Fleischmann 05.30.2019"

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Mercalli Shaking Intensity from a 6.8 earthquake originating from the Boulder Creek fault than from a 9.0 earthquake originating from the Cascadia subduction zone.¹⁷

Rather than amending the comprehensive plan or zoning code to incorporate a "one-size-fits-all" setback between mining and pipelines, staff recommends amending the zoning code to require a site specific geotechnical analysis on the potential impacts to pipelines that would result through a combination of nearby mining and potential earthquake intensity. The geotechnical analysis would be required when a conditional use permit is submitted.

The following code language was drafted by staff, including consultation with the Planning and Development Services geologist, in an attempt to meet the intention of the proposed docket amendment:

WCC 20.73.153(9)

When mineral extraction is proposed within 500 feet of a gas or petroleum transmission pipeline, a site specific geotechnical analysis of potential impacts to the pipeline is required. The analysis shall show that mining will not result in an increased likelihood of the pipeline becoming exposed or rupturing during an earthquake, and shall consider various seismic scenarios with a 2 percent probability of exceedance in 50 years on both proximal crustal faults and at the Cascadia Subduction Zone.

In this proposed code language, "2 percent probability of exceedance in 50 years" is an industry standard for seismic designs that must consider large-magnitude, low-frequency seismic events. It is the common design standard for developments like essential or emergency facilities. By considering seismic events with this low recurrence potential, both on local crustal faults and at the Cascadia Subduction Zone, the required assessment essentially addresses a worst case scenario.¹⁸

At the June 26, 2019 SMAC meeting, the committee voted unanimously in support of forwarding this language onto the Planning Commission for their review and recommendation to the County Council.

The draft language is included in Exhibit C

PLN2019-00011 - Surface Mining of Dry Meander Zones

The docketed item PLN2019-00010 proposes to:

Amend the Whatcom County Comprehensive Plan and Whatcom County Code to allow the seasonal extraction of sand and gravel from dry upland areas located within the 1,000 year meander zone of the Nooksack River, provided that such extraction has no negative impact on salmon spawning habitat. The intent is to (a)

¹⁷ FEMA. "DRAFT - Risk Report FEMA Region X - Whatcom County Washington." 2016.

¹⁸ Wisner, Andy. "Earthquake Frequency." Received by Joshua Fleischmann, 6 June. 2019.

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reduce the conversion of land currently used for farming, forestry and wildlife habitat into gravel pits, and (b) safely remove some of the significant sediment load that enters the Nooksack River every year in an effort to reduce flooding and the need to build higher flood prevention berms along the river as the climate continues to change.

Preliminarily we would note that the "1,000 year meander zone" appears to be an undefined term. Similar regulatory terms used throughout the country include, but are not limited: floodplain, floodway, shoreline jurisdiction, channel migration zone, historic migration zone, erosion hazard area, avulsion hazard area, etc. Whatcom County regulates activities as they relate to floodplains/floodways and shoreline jurisdiction, rather than a 1,000 year meander zone.

Additionally, it should be noted that mining and dredging are presently allowed through Shoreline Substantial Development and Shoreline Conditional Use permits (WCC 23.100.010) on the North Fork from just upstream of Maple Falls, on the Middle Fork below the Mosquito Lake Rd Bridge, on the South Fork below the Saxon Rd Bridge, and on the mainstem, with minor geographical exceptions.

Within the floodplain/floodway, the applicant would need to demonstrate to Whatcom County (and applicable federal agencies), through a biological opinion consistent with Section 7 of the Endangered Species Act, that the proposed action will not adversely affect essential fish habitat for endangered salmonid species. Additionally, it would need to be demonstrated that mining will not have an adverse impact on flooding.

Notwithstanding that the intent of the proposed amendment appears to be met by existing code, the Shoreline Management Plan 2020 Periodic Update is currently in process for review and consistency with the Revised Code of Washington (RCW) and Washington Administrative Code (WAC). As proposed, consistency with the RCW will remove the requirement that the mining activity has a flood control/flood reduction nexus, but will still require no net loss of shoreline ecological functions.