Water Resources Protection Plan

Specifically Designed for: Leif Stafslien
Site Address: 1000 Eubanks Rd, Garberville, CA
WDID: 1B171395CHUM
APN: 220-082-020-000
Sub-Watershed: Painter Creek

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P.O. Box 5306, Arcata CA 95518 - 707-633-5403 - dan@compliantfarms.com

ArcGIS Web Map

Humboldt County Planning and Building Department

Printed: April 10, 2018 Web AppBuilder 2.0 for ArcGIS

Highways and Roads
- Principal Arterials
- Minor Arterials
- Major Collectors
- Minor Collectors
- Local Roads

- Private or Unclassified
- Major River or Stream

Blue Line Streams
- Perennial 1-3
- Perennial >4

- Intermittent
- Subsurface
- City Boundary
- Counties
- Parcels (no APN labels)
- Streamside Management Areas

0 180 360 720 Feet
0 0.0325 0.065 0.13 Miles
RF= 1:4,514 1 in = 376 ft

N W E S

Sources: NRCS
Humboldt County GIS
California Coastal Commission GIS/Mapping Unit, 2014
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ArcGIS Web Map

Humboldt County Planning and Building Department

0 350 700 1,400 Feet

0 0.05 0.1 0.2 Miles

RF= 1:9,028 1 in = 752 ft

N W E S

Highways and Roads

- Principal Arterials
- Minor Arterials
- Major Collectors
- Minor Collectors
- Local Roads
- Private or Unclassified
- Major River or Stream

Blue Line Streams

- Perennial 1-3
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Source: NRCS, Humboldt County GIS, California Coastal Commission GIS/Mapping Unit, 2014, Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


Base Map
WDID: 1B171395CHUM
APN: 220-082-020-000
Legend
B: Bladder
C: Culvert
CS: Cultivation Site
DC: Ditch Culvert
EDP: Engineered Discharge Point
MS: Materials Storage
RD: Residence
W: Well
WS: Water Storage
WS
Eubanks Rd
C5
C4
RD2
MS1
W
B
C1
C2
C3
RD1
CS1
CS3
CS2
DC
EDP
N
800 ft
Google Earth
© 2018 Google
Note: Locations are relative, use as reference only.

Standard Conditions Compliance Requirements - 2018						
WDID: 1B171395CHUM / APN: 220-082-020-000						
Site Code	**Map Point Description**	**Standard Condition**	**Recommendations**	**Action Priority**	**Permanent Strategy**	**Completion Date**
1. Site Maintenance, Erosion Control and Drainage Feature						
All	Roads Ditch Relief Culvert Satellite Road	Road Maintenance Other Corridors	**Triage Items** • Full road assessment by a licensed professional. **Monitoring, Maintenance and Protocols** • Hand-dig water bars at frequent intervals to discharge road runoff into protected discharge points. • Lay straw-flake checkdams or straw wattles at frequent intervals to discharge road runoff into protected discharge points. • Seed margins and discharge points with erosion mix per manufacturers instructions and mulch with straw. • Clear in-board ditches and the head of relief culverts of accumulated sediment dams and only enough vegetative debris to facilitate functionality. • Install small, rock checkdams in in-board ditches as a sediment control device. • Install trash-rack at the head of the relief culvert. **Design** • See *Water Resources Protection Elements* document. • See attached documents for more information related to *short term strategies for protecting water quality.* • See attached documents for information related to *monitoring requirements*.	5		
			Permanent Strategies • Implement road drainage, discharge and maintenance per licensed professional's assessment. • Road elements to include but not limited to: • Shape and grade road to outslope to continually shed stormwater so as not to overwhelm in-board drainage features. • Increase number of rolling dips and/or other discharge stategies. • Upgrade size of ditch relief culvert per assessment. • Surface road with appropriate, high quality rock. • Revegetate margins with native species.		September 2018	

All RD MS CS1-3	Roads Ditch Relief Culvert Satellite Road Developed Sites Cultivation Site	Discharge Points	**Triage Items** • Assessment by a licensed professional. **Monitoring, Maintenance and Protocols** • Utilize riprap or large woody debris at points of discharge to prevent erosion and disperse flow to promote infiltration. • Install straw bales or straw wattles per erosion prevention protocol. • Establish revegetation protocol. **Design** • See *Water Resources Protection Elements* document. • See attached documents for more information related to *short term strategies for protecting water quality*. • See attached documents for information related to *monitoring requirements*.	5		
			Permanent Strategies • Implement discharge strategies per licensed professional's assessment. • Discharge elements to include but not limited to: • Armor the outflow end of discharge point and install a velocity dissipater. • Replace waterbars with rolling dips. • Increase frequency of discharge points. • Install infiltration basins at points of discharge. • Install on-contour swales to promote infiltration and surface flow disconnection. • Implement revegetation protocol. • Temporary erosion control strategies must be implemented before and immediately after earthworks.		September 2018	

All RD MS CS1-3	Roads Ditch Relief Culvert Satellite Road Developed Sites Cultivation Site	Hydrologic Disconnection	**Triage Items** • Assessment by a licensed professional. **Monitoring, Maintenance and Protocols** • Reestablish connectivity with designed discharge strategy (i.e. install waterbar to reconnect road runoff with in-board ditch). • Protect discharge point with checkdam, straw flakes, large woody debris, etc. to slow the flow of discharge and allow sediment to fall out of suspension. • Hand-dig water bars at frequent intervals to discharge road runoff into protected discharge points. • Lay straw-flake checkdams or straw wattles at frequent intervals to discharge road runoff into protected discharge points. • Establish straw-flakes or straw wattles along the entire perimeter of developed or cultivated sites (flats) at all potential points of hydrologic connectivity. **Design** • See *Water Resources Protection Elements* document. • Establish revegetation protocol. • See attached documents for more information related to *short term strategies for protecting water quality.* • See attached documents for information related to *monitoring requirements.*	5		
			Permanent Strategies • Implement hydrologic disconnection strategies per licensed professional's assessment. • Disconnection elements to include but not limited to: • Replace waterbars with rolling dips. • Install infiltration basins at points of discharge. • Increase frequency of discharge points. • Regrade flats to shed stormwater into protected infiltration areas. • Implement revegetation protocol.		September 2018	

MS	Materials Storage	Stockpiled Materials	**Triage Items** • **Monitoring, Maintenance and Protocols** • Utilize secure structure for potentially hazardous materials (materials that pose a threat to water quality). • Organize benign materials (materials that do not pose a threat to water quality). **Design** • See attached documents for more information related to *short term strategies for protecting water quality.* • See attached documents for information related to *monitoring requirements.*			
			Permanent Strategies •		On Going	
Site Code	**Map Point Description**	**Standard Condition**	**Recommendations**	**Action Priority**	**Permanent Strategy**	**Completion Date**
2. Stream Crossing Maintenance						
Ca Cb Cc C1-5	Culverts Ford	Functionality	**Triage Items** • Assessment by a licensed professional. **Monitoring, Maintenance and Protocols** • Ensure that road surfaces approaching the crossing drain into protected discharge points prior to watercourse. • Remove vegetative debris from the head of the culvert. **Design** • See *Water Resources Protection Elements* document. • File permits with appropriate agencies (i.e. LSA1602 with CDFW). • Establish revegetation protocol for bank of riparian zone. • See attached documents for more information related to *short term strategies for protecting water quality.* • See attached documents for information related to *monitoring requirements.*	4		

			Permanent Strategies • Implement stream crossing maintenance strategies or upgrade per licensed professional's assessment. • Assure that pipe diameter will facilitate a 100-year storm event and is sufficient for the passage of aquatic life during all life stages. • Crossing elements to include but not limited to: • Increase basin size at culvert head and protect with riprap. • Install riprap at the toe of the culvert to reduce erosive force. • Surface road with appropriate, high quality rock. • Install appropriate size and scope of high quality rock in low-water crossing (ford). • Ensure that road surfaces approaching the crossing drain into protected discharge points prior to watercourse. • Install critical dip or other redundant system to protect the fill prism in the event of a plugged crossing. • Implement revegetation protocol for riparian zone.		September 2018	
Site Code	**Map Point Description**	**Standard Condition**	**Recommendations**	**Action Priority**	**Permanent Strategy**	**Completion Date**
3. Riparian and Wetland Protection and Management						
CS1-3	Cultivation Site Ancillary Site Associated Facilities	Discharge Setbacks Remediation and Restoration	**Triage Items** • Establish straw-flakes or straw wattles along the entire perimeter of developed or cultivated sites (flats) at all potential points of hydrologic connectivity. • Soil nutrition testing to guide feeding regiment to prevent the overuse of fertilizers and amendments thus preventing excessive leaching. **Monitoring, Maintenance and Protocols** • Deploy temporary strategies to disconnect cultivation site from surface water via surface runoff. • Mulch all exposed and disturbed soil including pathways, slope faces and pads or deploy other forms of erosion prevention. **Design** • Establish riparian restoration plan with a licensed professional to restore the functionality of riparian buffer. • See *Water Resources Protection Elements* document. • See attached documents for more information related to *short term strategies for protecting water quality*. • See attached documents for information related to *monitoring requirements*.	1		

			Permanent Strategies • Install remediation basin at fertigation tank to process discharge from clean out. • Implement riparian restoration plan.		May 2018	
Site Code	**Map Point Description**	**Standard Condition**	**Recommendations**	**Action Priority**	**Permanent Strategy**	**Completion Date**
4. Spoils Management						
SSP CS1-3	Soil and Spoils Processing Site Cultivation Site	Discharge Setbacks Side-Cast Material	**Triage Items** • Relocation of spoils (used soil and vegetative material) management site that is beyond 200-feet of a watercourse as well as hydrologically disconnected. • Cultivation related spoils can not be burned. **Monitoring, Maintenance and Protocols** • Contain used soil pile with a straw bale or wattle perimeter. • Seed and mulch or tarp used soil pile. • Contain non-compostable byproducts, such as rock-wool rooting medium, to be disposed of properly offsite. **Design** • See *Water Resources Protection Elements* document. • Create an on-site resource plan for processing forest side-cast material based on seasonal prescriptions. • See attached documents for more information related to *short term strategies for protecting water quality.* • See attached documents for information related to *monitoring requirements.*	2		
			Permanent Strategies • Establish a 3-tiered composting system for vegetative byproducts. • Rip compacted soils prior to placing spoils to promote the infiltration of tailwater. • Install remediation buffer at all downslope points of discharge to riparian zones. Terminate swale at an infiltration basin. • Plant remediation buffer berm and infiltration basin with appropriate management species. • Process forest side-cast material based on seasonal prescriptions and on-site resource planning. •		June 2018	

Site Code	Map Point Description	Standard Condition	Recommendations	Action Priority	Permanent Strategy	Completion Date
5. Water Storage and Use						
POD Well TT WS B CS1-3	Point of Diversion Transfer Tank Water Storage Cultivation Site	Water Quality Water Quantity Water Conservation Size and Scope Wetland Protection	**Triage Items** • Assessment of storage pond (levee and slope stability, spillway) by a licensed professional. • Install a water meter and collect monthly data. Separate domestic use from agricultural use. • Install pressure gauge to monitor conveyance system for leaks. • Install back flow prevention device. • Remove all old plumbing from nonuse water systems. **Monitoring, Maintenance and Protocols** • Use water storage in bladders first for irrigation water (they are not designed for longterm storage). • Check pressure gauge to monitor conveyance system for leaks. • Mulch all exposed soil to reduce evaporative rates. **Design** • See *Water Resources Protection Elements* document. • Assess an alternative source of water such as rainwater catchment. • Assessment for *Living Soils* style of cultivation to reduce irrigation. • See attached documents for more information related to *short term strategies for protecting water quality*. • See attached documents for information related to *monitoring requirements*.			
			Permanent Strategies • Increase water storage to meet a greater period of forbearance. • Armor valves and conveyance. • Install irrigation system so that water is applied at the root zone to promote deep, wide root growth. • Install float valve and redundant overflow at transfer tank. Overflow plumbing should return water to point of diversion. • Replace water bladders with rigid storage tanks. • Replace plastic valves at tank with metal gate valves. • Manifold tanks greater than 3,000-gallons internally. • Install rainwater catchment system at all structures and plumb to main storage. • Install rainwater harvesting systems on the upslope perimeter and within the the cultivation site to recharge groundwater supplies. • Implement *Living Soils* design plan.		On Going	

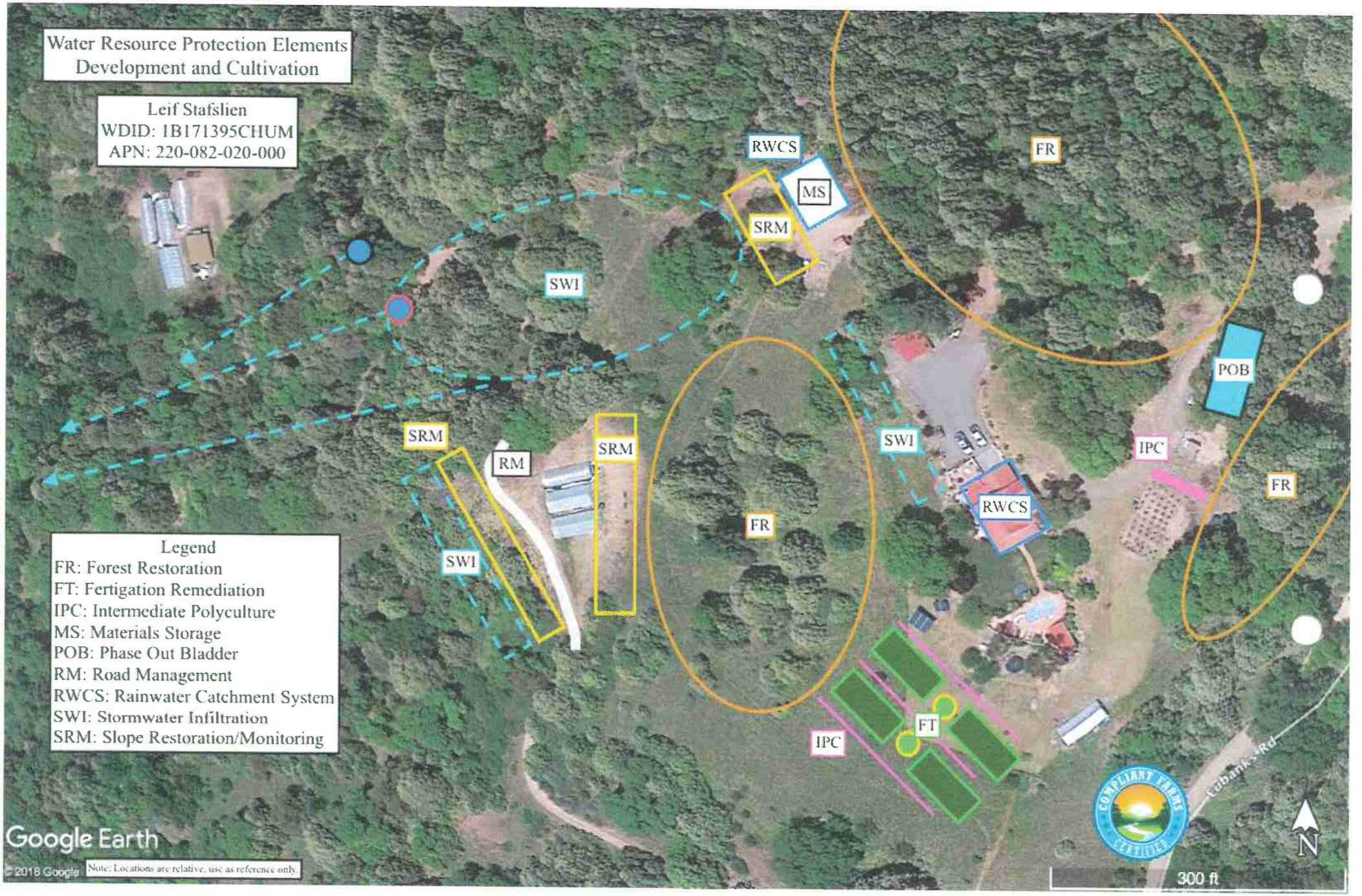
Site Code	Map Point Description	Standard Condition	Recommendations	Action Priority	Permanent Strategy	Completion Date
6. Irrigation Runoff						
CS1-3	Cultivation Site	Discharge	**Triage Items** • Monitor irrigation volumes to avoid runoff. **Monitoring, Maintenance and Protocols** • Soil nutrition testing to guide feeding regiment to prevent the overuse of fertilizers and amendments thus preventing excessive leaching. • Maintain and update irrigation system to prevent leaks. • Employ rain-triggered shutoff devices for automated irrigation systems. • Mulch all exposed soil including planting areas, pathways and pads. **Design** • See *Water Resources Protection Elements* document. • See attached documents for more information related to *short term strategies for protecting water quality.* • See attached documents for information related to *monitoring requirements.*			
			Permanent Strategies • Install remediation buffer at at all downslope points of discharge.		On Going	
Site Code	**Map Point Description**	**Standard Condition**	**Recommendations**	**Action Priority**	**Permanent Strategy**	**Completion Date**
7. Fertilizers and Soil Amendments						
CS1-3 FT MS	Cultivation Site Fertigation Materials Storage	Discharge	**Triage Items** • **Monitoring, Maintenance and Protocols** • Place all liquid-based materials in secondary containment (totes). • Products shall be labeled properly and applied according to the label. • Periodically calibrate application equipment. • Post inventory of cultivation related materials with application rates. • Store spill-kit at each storage facility. **Design** • Develop a *Living Soils* program to replace packaged products. • See attached documents for more information related to *short term strategies for protecting water quality.* • See attached documents for information related to *monitoring requirements.*			

			Permanent Strategies • Install remediation basin for fertigation system discharge/clean-out. • Install anti-backflow devices on fertigation systems. • Implement *Living Soils* program.		On Going	
Site Code	**Map Point Description**	**Standard Condition**	**Recommendations**	**Action Priority**	**Permanent Strategy**	**Completion Date**
8. Pesticides and Herbicides						
CS1-3 MS	Cultivation Site Materials Storage	Discharge	**Triage Items** • **Monitoring, Maintenance and Protocols** • Place all liquid-based materials in secondary containment (totes). • Products shall be labeled properly and applied according to the label. • Periodically calibrate application equipment. • Post inventory of cultivation related materials with application rates. • Store spill-kit at each storage facility. **Design** • Develop an *Integrated Pest Management* program to replace packaged products. • See attached documents for more information related to *short term strategies for protecting water quality*. • See attached documents for information related to *monitoring requirements*.			
			Permanent Strategies • Implement *Integrated Pest Management* program.		On Going	

Site Code	Map Point Description	Standard Condition	Recommendations	Action Priority	Permanent Strategy	Completion Date
9. Petroleum Products and Other Chemicals						
MS	Materials Storage	Discharge	**Triage Items** • **Monitoring, Maintenance and Protocols** • Place all liquid-based materials in secondary containment (totes). • Assess solar battery system for leaks. **Design** • See attached documents for more information related to *short term strategies for protecting water quality.* • See attached documents for information related to *monitoring requirements.*			
			Permanent Strategies •		On Going	
Site Code	**Map Point Description**	**Standard Condition**	**Recommendations**	**Action Priority**	**Permanent Strategy**	**Completion Date**
10. Cultivation Related Wastes						
SSP CS1-3	Soil and Spoils Processing Site Cultivation Site	Discharge	**Triage Items** • Relocation of spoils (used soil and vegetative material) management site that is beyond 200-feet of a watercourse as well as hydrologically disconnected. • Cultivation related spoils can not be burned. • Establish a 3-tiered composting system for vegetative byproducts. **Monitoring, Maintenance and Protocols** • Contain used soil pile with a straw bale or wattle perimeter. • Seed and mulch or tarp used soil pile. • Contain non-compostable byproducts such as rock-wool rooting medium to be disposed of properly offsite. **Design** • Establish a soil management plan for the purpose of reducing off-site soil. • See *Water Resources Protection Elements* document. • See attached documents for more information related to *short term strategies for protecting water quality.* • See attached documents for information related to *monitoring requirements.*	2		

			Permanent Strategies • Rip compacted soils prior to placing spoils to promote the infiltration of tailwater. • Install remediation buffer at all downslope points of discharge to riparian zones. Terminate swale at an infiltration basin. • Plant remediation buffer berm and infiltration basin with appropriate management species. • Implement *living-soils* management for the purpose of eliminating the need for off-site soil.		June 2018	
Site Code	**Map Point Description**	**Standard Condition**	**Recommendations**	**Action Priority**	**Permanent Strategy**	**Completion Date**
11. Refuse and Human Waste						
RD MS	Residence Materials Storage	Discharge	**Triage Items** • Cease the use of human-waste facility (outhouse/pit toilet). **Design** • See attached documents for more information related to *short term strategies for protecting water quality.* • See attached documents for information related to *monitoring requirements.*	3		
			Permanent Strategies • Remediate the area of the human-waste facility (outhouse/pit toilet).		June 2018	

These are recommendations only and not prescriptions for method or manner. All work should be designed and implemented by licensed professionals. We accept no liability for owner-build work based on this management plan.


Water Resource Protection Elements
Development and Cultivation
Leif Stafslien
WDID: 1B171395CHUM
APN: 220-082-020-000
RWCS
MS
SRM
FR
SWI
POB
SRM
SRM
RM
SWI
IPC
FR
RWCS
FR
SWI
FT
IPC
Legend
FR: Forest Restoration
FT: Fertigation Remediation
IPC: Intermediate Polyculture
MS: Materials Storage
POB: Phase Out Bladder
RM: Road Management
RWCS: Rainwater Catchment System
SWI: Stormwater Infiltration
SRM: Slope Restoration/Monitoring
Google Earth
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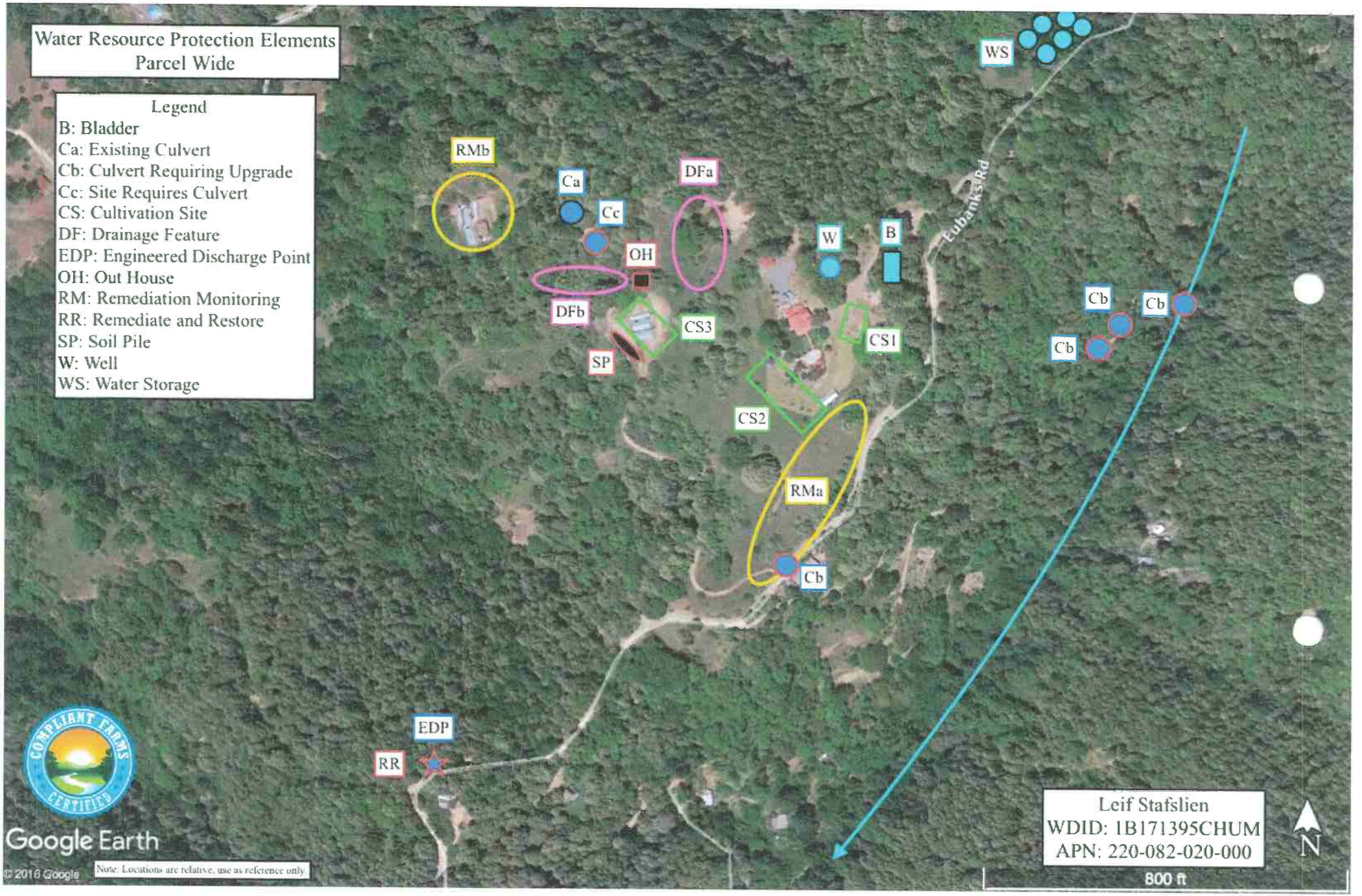
Note: Locations are relative, use as reference only.
Fairbanks Rd
N
300 ft


Water Resource Protection Elements
Parcel Wide
Legend
B: Bladder
Ca: Existing Culvert
Cb: Culvert Requiring Upgrade
Cc: Site Requires Culvert
CS: Cultivation Site
DF: Drainage Feature
EDP: Engineered Discharge Point
OH: Out House
RM: Remediation Monitoring
RR: Remediate and Restore
SP: Soil Pile
W: Well
WS: Water Storage
RMb
Ca
Cc
DFa
OH
DFb
CS3
SP
W
B
Eubanks Rd
WS
Cb
Cb
Cb
CS1
CS2
RMa
Cb
EDP
RR
Leif Stafslien
WDID: 1B171395CHUM
APN: 220-082-020-000
800 ft
N
Google Earth
© 2016 Google
Note: Locations are relative, use as reference only.

Remediation Monitoring Site (RMb)

(top to bottom)

- Looking upslope, road from CS3.
- Looking downslope, road from CS3.
- Cross section of natural slope.

Remediation Monitoring Site (RMa)

(top to bottom)

- Gate on Eubanks Rd looking upslope to CS2.
- Decommissioned access road.
- Looking down slope from CS2 showing new access road approach.

Inboard Ditch at Eubanks Road

Erosion below discharge point.

Unprotected discharge point.

Down slope erosion.

C4 Head

C4 Toe

C5 Head

C5 Toe

Culvert (C3) at Painter Creek

Counter Clockwise from Left

- C3 Head
- C3 Toe
- Painter Creek downstream from C3
- Road Approach
- Painter Creek upstream from C3

Culverts (C1 and C2) on road to Painter Creek

Counter Clockwise from Left

- Failed culverts and road approaches.
- C1 Head
- C1 Toe
- C2 Head
- C2 Toe

Rural Property Seasonal Timeline

	Topography	Roads	Water/Power[7]	Forests	Cultivated Land
January	• Assess/Maintain[8]	• Assess/Maintain[8]	• Rainwater Catchment[2] •	• Fuel Load Reduction[4]	• Assess/Maintain[8]
February	• Assess/Maintain[8]	• Assess/Maintain[8]	• Fill Water Storage •	• Fuel Load Reduction	• Assess/Maintain[8]
March	• Assess/Maintain[8]	• Assess/Maintain[8]	• Fill Fire Storage	• Fuel Load Reduction • Harvest Poles	• Chop and Drop • Assess/Maintain[8]
April	• Assess/Maintain[8]	• Assess/Maintain[8]	• Disconnect Diversion • Assess Secondary Containment for Oil/Fuels	• Final Fuel Load Reduction • Mow Pastures	• Install Remediation Buffer • Plant IPM Plants
May	• Professional Assess and Design	• Professional Assess and Design	• Assess Microhydro • Switch to Solar	• Maintain Fire Breaks	• Build Static Compost • Assess Storage
June			• Assess Garden Irrigation • Deploy Fire Fighting System	• Mow Pastures and Road Margins	• Mulch Plants and Paths
July	• Implement[9]	• Implement[9]	• Assess Water System[3]	• Assess Microclimate	• Update Amendment Inventory
August	• Implement[9]	• Implement[9]	• Assess Irrigation	• Assess FLR • Assess Hazard Trees	• Install Rainwater Harvesting System
September	• Implement[9]	• Implement[9]	• Assess Water System[3]		• Assess Rainwater Harvesting System[5]
October	• Stage Temporary Erosion Control Materials	• Stage Temporary Erosion Control Materials	• Rainwater Catchment[1] • Update Water System[10]		• Maintain Remediation Buffer[6]
November	• Revegetation • Assess/Maintain[8]	• Revegetation • Assess/Maintain[8]	• Switch to Microhydro • Assess Solar System	• Manage Microclimate • Native Revegetation	• Plant Cover Crop • Mulch
December	• Assess/Maintain[8]	• Assess/Maintain[8]		• Remove Hazard Trees	• Assess/Maintain[8]

Rainwater Catchment[1]: Install, expand and/or prep system. Overflow to harvesting system.
Rainwater Catchment[2]: Purge catchment filter and set for final fill of the season.
Assess Water System[3]: Filters, storage volume, conveyance, source and check for leaks.
Fuel Load Reduction[4]: Chip material that is accessible (road and developed site margins) and burn in interior sites. Plant burn sites with native seed mix and mulch.
Rainwater Harvesting System[5]: Pertains to earthwork systems for groundwater recharge above cultivated sites.
Maintain Remediation Buffer[6]: Remove woodchips and add to static compost. Refill with woodchips.
Power[7] (once/month): Check battery terminals, fluid levels, wires and filters for microhydro. Check generators and fuel storage for leaks.
Assess/Maintain[8]: Deploy erosion control (brush-weirs, erosion seed mix, wattles, straw mulch), clear culverts and maintain hydrologic disconnection.
Implement[9]: Mechanical restoration and mitigation based on professional design.
Update Water System[10]: Purge sediment, clean/replace filters, expand storage volume, and maintain conveyance/fittings/valves.

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Water Take and Use Data (gallons)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Irrigation[1]													
Domestic[1]													
	If Surface Water Diversion												
From Diversion[1]													
Bypass Flow Rate[2] (gpm)													
Take[3] (gpm)													
Percent Take[4]													

Systems Maintenance Checklist

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Topography												
Roads												
Water												
Power												
Forests												
Cultivation												

Irrigation[1]/Domestic[1]/From Diversion[1]: Data collected from a sealed water flow meter.
Bypass Flow Rate[2]: See EPA Stream Monitoring Manual Sec. 5.1 Stream Flow.
GPM Take[3]: As measured with water flow meter and stop watch. Not to exceed 10-gallons per minute.
Percent Take[4]: Based on Bypass Flow Rate and GPM Take. Divide Take by Bypass Flow Rate x100.

BMPs for Site Maintenance and Operations (per standard conditions)

The following BMPs are intended to address compliance with the standard conditions. Individual or multiple BMPS may be selected to address compliance with a given standard condition depending on site-specific conditions. BMPs are considered enforceable conditions as applicable to a given site.

A. Site Maintenance, Erosion Control, Drainage Features

70. Drainage of roads, clearings, fill prisms, and terraced areas is critical to ensuring their integrity and to prevent or minimize sediment discharges to watercourses. Proper design and location of roads and other features is critical to ensuring that a road or other feature be adequately drained and is best accomplished through consultation with a qualified professional. If inspection identifies surface rills or ruts, surfacing and drainage likely needs maintenance.

71. Surfacing of exposed/disturbed/bare surfaces can greatly reduce erosion associated with runoff. BMP features such as vegetative ground cover, straw mulch, slash, wood chips, straw wattles, fiber rolls, hay bales, geotextiles, and filter fabric fences may be combined and implemented on exposed/disturbed/bare surfaces as appropriate to prevent or minimize sediment transport and delivery to surface waters. Non-invasive, non-persistent grass species (e.g. barley grass) may be used for their temporary erosion control benefits to stabilize bare slopes and prevent exposure of bare soils to rainfall. If utilized, straw mulch shall be applied at a rate of 2 tons per acre of exposed soils and, if warranted by site conditions, shall be secured to the ground. Consultation with a qualified professional is recommended for successful site-specific selection and implementation of such surface treatments. Guidance literature pertaining to such BMPs is referenced in section IV. of this document.

72. Road surfacing, especially within a segment leading to a watercourse, is critical to prevent and minimize sediment delivery to a watercourse and maintain road integrity for expected uses. Road surfacing can include pavement, chip-seal, lignin, rock, or other material appropriate for timing and nature of use. Steeper sections of road require higher quality rock (e.g. crushed angular versus river- run) to remain in place.

73. Road shaping to optimize drainage includes out-sloping and crowning; shaping can minimize reliance on inside ditches. Drainage structures can include rolling dips and water bars within the road surface and ditch-relief culverts to drain inside ditches. Adequate spacing of drainage structures is critical to reduce erosion associated with runoff. Generally speaking, steep slopes require greater frequency of drainage structures. The drainage structures shall be maintained to ensure capture of and capacity for expected flow. The outlets of the structures shall be placed in such a manner as to avoid discharge onto fill, unstable areas, or areas that can enter a watercourse. If site conditions prohibit drainage structures at an adequate interval to avoid erosion, bioengineering techniques2 are the preferred solution (e.g. live fascines), but other techniques may also be appropriate including armoring (i.e. rock of adequate size and depth to remain in place under traffic and flow conditions) and velocity dissipaters (e.g. gravel-filled "pillows" in an inside ditch to trap sediment). In the case that inside ditches need maintenance, grade ditches only when and where necessary, since frequent routine mechanical grading can cause erosion of the ditch, undermine banks, and expose the toe of the cutslope to erosion. Do not remove more leaves and vegetation than necessary to keep water moving, as vegetation prevents scour and filters out sediment.

74. Road drainage shall be discharged to a stable location away from a watercourse. Use sediment control devices, such as check dams, sand/gravel bag barriers, and other acceptable techniques, when it is neither practical nor environmentally sound to disperse ditch water immediately before the ditch reaches a stream. Within areas with potential to discharge to a watercourse (i.e. within riparian areas of at least 200 feet of a stream) road surface drainage shall be filtered through vegetation, slash, or other appropriate material or settled into a depression with an outlet with adequate drainage. Caution should always be exercised with catchment basins in the event of failure.

75. Any spoils associated with site maintenance shall be placed in a stable location where it cannot enter a watercourse. Sidecasting shall be minimized and shall be avoided on unstable areas or where it has the potential to enter a watercourse.

76. Do not sidecast when the material can enter the stream directly or indirectly as sediment. Sidecast material can indirectly enter the stream when placed in a position where rain or road runoff can later deliver it to a channel

that connects with the stream.

77. Disconnect road drainage from watercourses (drain to hill slopes), install drainage structures at intervals to prevent erosion of the inboard ditch or gull formation at the hill slope outfall, outslope roads.

78. Ditch-relief culverts shall also be inspected regularly, and cleared of debris and sediment. To reduce plugging, 15 to 24-inch diameter pipes shall be the minimum size considered for ditch relief culverts and shall be informed by site-specific conditions.

79. Grade ditches only when and where necessary, since frequent routine mechanical grading can cause erosion of the ditch, undermine banks, and expose the toe of the cutslope to erosion. Do not remove more grass and weeds than necessary to keep water moving, as vegetation prevents scour and filters out sediment.

80. Use sediment control devices, such as check dams, sand/gravel bag barriers, and other acceptable techniques, when it is neither practical nor environmentally sound to disperse ditch water immediately before the ditch reaches a stream.

B. Stream Crossing Maintenance

81. Proper maintenance of stream crossings is critical to ensure support of beneficial uses of water. Regular inspection and maintenance is necessary to identify, in a timely manner, if problems are occurring. Crossings include rock fords3, armored fills with culverts3, and bridges3.

82. Rock fords are appropriate when temporary and minor moisture or over-land flow is expected, not typically when a bed and bank is present; exceptions may be justified if warranted by site specific conditions. Additionally, rock fords are appropriate if aquatic life is not present. An adequate layer of crushed angular rock shall be maintained at rock fords such that soil compaction is minimized under expected traffic levels.

83. Stream crossings consisting of armored fills with culverts and bridges are appropriate for streams with defined bed and bank2. They shall be sized to ensure the 100-year streamflow event can pass unimpeded. Additionally, crossings shall allow migration of aquatic life during all life stages potentially supported by that stream reach; water depth and velocity can inhibit migration of adult and juvenile fish species.

84. Stream crossing design and installation is best accomplished with the assistance of a qualified professional. Site conditions can change over time (e.g. channel filling or incision); consultation with a qualified professional is appropriate to evaluate maintenance or replacement needs and opportunities.

85. Regular inspection of the stream crossing is appropriate to identify changed conditions within the stream channel (e.g., bank erosion, headward incision, and channel filling).

86. The roadway adjacent to and over the crossing is an area of potential discharge. All road surfaces approaching a crossing shall be drained before the crossing, adequately filtered through vegetation or other material, and not discharged to a watercourse. If turbid water is discharged at a stream crossing, additional measures to control erosion at the source(s) or to remove sediment prior to discharge shall be implemented. Road surfaces shall be of rock, pavement, or other material appropriate for type and level of use.

87. If a culvert is used, the approaches and fill slopes shall be properly compacted during installation and shall be stabilized with rock or other appropriate surface protection to minimize surface erosion and slumping to the receiving waters. If possible, the road surface over the culvert shall have a critical-dip to ensure that if the culvert becomes plugged, water can flow over the road surface without washing away the fill prism. If site-specific conditions do not allow for a critical dip, alternatives such as emergency overflow culverts, oversized culvers, flared inlets, and debris racks may be warranted.

C. Riparian and Wetland Protection and Management:

88. Buffer width will be in compliance with Tier category.

89. Trees within riparian areas shall be retained for natural recruitment to streams. Large woody debris (LWD) shall be retained in stream or within riparian areas. The size of wood that can be beneficial to the stream will vary

depending on the size of the stream (i.e., larger pieces of wood are necessary to withstand flows in large streams). In the event that LWD or trees are disturbed during excavation, care shall be taken to separate the LWD from soil. The pieces shall be stockpiled separately until they can be replaced in appropriate locations to enhance instream or riparian conditions. Placement of instream wood for habitat enhancement should be done under the consultation of a qualified professional and in conformance with applicable regulatory permits.

90. Avoidance of disturbance in riparian areas (within 200 feet of a watercourse) should result in protection and restoration of the quality/health of the riparian stand so as to promote: 1) shade and microclimate controls; 2) delivery of wood to channels, 3) slope stability and erosion control, 4) ground cover, and 5) removal of excess nutrients. This recognizes the importance of the riparian zone with respect to temperature protection, sediment delivery, its importance with respect to the potential for recruitment of large wood, and removal of nutrients transported in runoff. In the event that past disturbance has degraded riparian conditions, replanting with native species capable of establishing a multi-storied canopy will ensure these riparian areas can perform these important ecologic functions.

D. Spoils Management

To ensure spoil pile stability and to reduce the potential for spoil pile slope failure or transport to waters of the state, the following measures shall be implemented when placing or disposing of spoils onsite:

91. Rip compacted soils prior to placing spoils to prevent the potential for ponding under the spoils that could result in spoil site failure and subsequent sedimentation;

92. Compact and contour stored spoils to mimic the natural slope contours and drainage patterns to reduce the potential for fill saturation and failure;

93. Ensure that spoil materials are free of woody debris, and not placed on top of brush, logs or trees.

94. Spoils shall not be placed or stored in locations where soils are wet or unstable, or where slope stability could be adversely affected.

95. Do not locate spoil piles in or immediately adjacent to wetlands and watercourses.

96. Store spoil piles in a manner (e.g. cover pile with plastic tarps and surround base of pile with straw wattle) or location that would not result in any runoff from the spoil pile ending up in wetlands and watercourses.

97. Separate organic material (e.g., roots, stumps) from the dirt fill and store separately. Place this material in long-term, upland storage sites, as it cannot be used for fill.

98. Keep temporary disposal sites out of wetlands, adjacent riparian corridors, and ordinary high water areas as well as high risk zones, such as 100-year floodplain and unstable slopes.

99. After placement of the soil layer, track walk the slopes perpendicular to the contour to stabilize the soil until vegetation is established. Track walking creates indentations that trap seed and decrease erosion of the reclaimed surfaces.

100. Revegetate the disposal site with a mix of native plant species. Cover the seeded and planted areas with mulched straw at a rate of 2 tons per acre. Apply jute netting or similar erosion control fabric on slopes greater than 2:1 if site is erosive.

E. Water Storage and Use

WATER USE

101. Conduct operations on a size and scale that considers available water sources and other water use and users in the planning watershed.

102. Implement water conservation measures such as rainwater catchment systems, drip irrigation, mulching, or irrigation water recycling. (Also see BMPs for Irrigation, below)

103. Take measures to minimize water diversion during low flow periods.

104. Options for documentation of water diversions and/or water usage may include the use of water meter devices and date-stamped photographs of water meter readings.

105. Hauled water utilized for irrigation shall be documented via receipt or similar, and show the date, name, and license plate of the water hauler, and the quantity of water purchased.

106. Apply water at agronomic rates (do not overwater plants).

WATER STORAGE

107. If using a water storage tank, do not locate the tank in a flood plain or next to equipment that generates heat. Locate the tank so it is easy to install, access, and maintain.

108. Vertical tanks should be installed according to manufacturer's specifications and placed on firm, compacted soil that is free of rocks/sharp objects and capable of bearing the weight of the tank and its maximum contents. In addition, a sand or pea gravel base with provisions for preventing erosion is highly recommended. Installation sites for tanks 8,000 gallons or more must be on a reinforced concrete pad providing adequate support and enough space to attach a tank restraint system (anchor using the molded-in tie down lugs with moderate tension, being careful not to over-tighten), especially where seismic or large wind forces are present.

109. Horizontal tanks shall be secured with bands and/or hoops to prevent tank movement.

110. Design and construct storage ponds in properly sited locations, off-stream. Plant vegetation along the perimeter of the pond. Construct berms or excess freeboard space around the perimeter of the pond to allow for sheet flow inputs.

111. Provide adequate outlet drainage for overflow of ponds, including low impact designs, to promote dispersal and infiltration of flows.

112. Place proper lining or sealing in ponds to prevent water loss.

113. Storage bladders are not encouraged for long term water storage reliability. If they are utilized, ensure that they are designed to store water, and that they are sited to minimize potential for water to flow into a watercourse in the event of a catastrophic failure. Used bladders (e.g. military surplus bladders) shall be checked for interior residual chemicals and integrity prior to use. Inspect bladder and containment features periodically to ensure integrity.

F. Irrigation Runoff

114. Irrigate at rates to avoid or minimize runoff.

115. Regularly inspect for leaks in mains and laterals, in irrigation connections, or at the ends of drip tape and feeder lines. Repair any found leaks.

116. Design irrigation system to include redundancy (i.e., safety valves) in the event that leaks occur, so that waste of water is prevented and minimized.

117. Recapture and reuse irrigation runoff (tailwater) where possible, through passive (gravity-fed) or active (pumped) means.

118. Construct retention basins for tailwater infiltration; percolation medium may be used to reduce pollutant concentration in infiltrated water. Constructed treatment wetlands may also be effective at reducing nutrient loads in water. Ensure that drainage and/or infiltration areas are located away from unstable or potentially unstable features.

119. Regularly replace worn, outdated or inefficient irrigation system components and equipment.

120. Use mulches (e.g. wood chips or bark) in cultivation areas that do not have ground cover to prevent erosion and minimize evaporative loss.

121. Leave a vegetative barrier along the property boundary and interior watercourses to act as a pollutant filter.

122. Employ rain-triggered shutoff devices to prevent irrigation after precipitation.

G. Fertilizers, Soil Amendments, Pesticides, Petroleum Products, and Other Chemicals

123. Evaluate irrigation water, soils, growth media, and plant tissue to optimize plant growth and avoid over-fertilization.

124. Reference Department of Pesticide Regulations Guidance (see Attachments E-1 and E-2 of Order No. R1-2015-0023)

125. All chemicals shall be stored in a manner, method, and location that ensures that there is no threat of discharge to waters of the state.

126. Products shall be labeled properly and applied according to the label.

127. Use integrated pest management strategies that apply pesticides only to the area of need, only when there is an economic benefit to the grower, and at times when runoff losses are least likely, including losses of organic matter from dead plant material.

128. Periodically calibrate pesticide application equipment.

129. Use anti-backflow devices on water supply hoses, and other mixing/loading practices designed to reduce the risk of runoff and spills.

130. Petroleum products shall be stored with a secondary containment system.

131. Throughout the rainy season, any temporary containment facility shall have a permanent cover and side-wind protection, or be covered during non-working days and prior to and during rain events.

132. Materials shall be stored in their original containers and the original product labels shall be maintained in place in a legible condition. Damaged or otherwise illegible labels shall be replaced immediately.

133. Bagged and boxed materials shall be stored on pallets and shall not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the rainy season, bagged and boxed materials shall be covered during non- working days and prior to rain events.

134. Have proper storage instructions posted at all times in an open and conspicuous location.

135. Prepare and keep onsite a Spill Prevention, Countermeasures, and Cleanup Plan (SPCC Plan) if applicable4.

136. Keep ample supply of appropriate spill clean-up material near storage areas.

H. Cultivation-Related Wastes

137. Cultivation-related waste shall be stored in a place where it will not enter a stream. Soil bags and other garbage shall be collected, contained, and disposed of at an appropriate facility, including for recycling where available. Pots shall be collected and stored where they will not enter a waterway or create a nuisance. Plant waste and other compostable materials be stored (or composted, as applicable) at locations where they will not enter or be blown into surface waters, and in a manner that ensures that residues and pollutants within those materials do not migrate or leach into surface water or groundwaters.

138. Imported soil for cultivation purposes shall be minimized. The impacts associated with importation of soil include, but are not limited to increased road maintenance and the increased need for spoils management. Use of compost increases the humic acid content and water retention capacity of soils while reducing the need for fertilizer application. In

the event that containers (e.g. grow bags or grow pots) are used for cultivation, reuse of soil shall be maximized to the extent feasible.

139. Spent growth medium (i.e. soil and other organic medium) shall be handled to minimize discharge of soil and residual nutrients and chemicals to watercourses. Proper handling of spent soil could include incorporating into garden beds, spreading on a stable surface and revegetation, storage in watertight dumpsters, covering with tarps or plastic sheeting prior to proper disposal, and use of techniques to reduce polluted runoff described under Item F. Irrigation Runoff.

140. Other means of handling cultivation-related waste may be considered on a site- specific basis.

I. Refuse and Human Waste

141. Trash containers of sufficient size and number shall be provided and properly serviced to contain the solid waste generated by the project. Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers. Use lined bins or dumpsters to reduce leaking of liquid waste. Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater. Make sure trash container areas are screened or walled to prevent off-site transport of trash. Consider using refuse containers that are bear-proof and/or secure from wildlife. Refuse shall be removed from the site on a frequency that does not result in nuisance conditions, transported in a manner that they remain contained during transport, and the contents shall be disposed of properly at a proper disposal facility.

142. Ensure that human waste disposal systems do not pose a threat to surface or ground water quality or create a nuisance. Onsite treatment systems should follow applicable County ordinances for human waste disposal requirements, consistent with the applicable tier under the State Water Resources Control Board Onsite Waste Treatment System Policy5.

TITLE 3
LAND USE AND DEVELOPMENT
DIVISION 1, PLANNING ZONING REGULATIONS
CHAPTER 6 - GENERAL PROVISIONS AND EXCEPTIONS
SECTION 314-61.1

STREAMSIDE MANAGEMENT AREA ORDINANCE

(a) Short Title

This section shall be known and cited as the "Streamside Management Area Ordinance of the County of Humboldt" (SMAO). In any administrative action taken by any public official under the authority of this code, the use of the term "Streamside Management Area Ordinance" or "SMAO", unless further modified, shall also refer to and mean this section.

(b) Purpose

The purpose of this section is to provide minimum standards pertaining to the use and development of land located within Streamside Management Areas (SMAs) and other wet areas such as: natural ponds, springs, vernal pools, marshes, and wet meadows (exhibiting standing water year-long or riparian vegetation).

The purpose of establishing the standards are to:

- Create an Streamside Management Area ordinance within the zoning regulations of the County of Humboldt pursuant to the mandates of state law.

- Implement portions of the County's General Plan policies and standards pertaining to open space, conservation, housing, water resources, biological resources, and public facilities.

(c) Relationship to Other Regulations

These regulations shall be in addition to regulations imposed by the principal zone, combining zone, development regulations, and other open space or resource protection regulations. Wherever the provisions of these regulations conflict with or are inconsistent in application with any other regulation, the most protective of natural resources shall apply.

(d) Scope of Application

This section shall be applicable to all development within or affecting SMAs or other wet areas within the unincorporated areas of the County and outside the Coastal Zone.

The provisions of this section shall be applicable to all development permits issued by the County pursuant to:

(1) Title III, Land Use and Development, Division 1, Planning.

(2) Title III, Land Use and Development, Division 2, Subdivision Regulations.

(3) Title III, Land Use and Development, Division 3, Building Regulations.

(4) Title IV, Streets and Highways, Division 1, Protection and Control of County Roads and Permits.

These regulations shall not apply to:

(1) Routine maintenance activities associated with existing public or private facilities, defined as "activities to support, keep and continue in an existing state or condition without decline." Routine activities include the replacement of culverts and related structures when conducted pursuant to a Department of Fish and Game Streambed Alteration Agreement.

For the purpose of these regulations, routine maintenance activities do not include:

- removal of trees with a diameter of 12 inches or greater (38-inch circumference), or
- removal of trees from within a contiguous or non-contiguous area of more than 6,000 square feet as measured under the tree canopy, or
- activities that could result in significant environmental impacts where the removal will:
  - be located within a streamside management or other wet area as defined in County regulations, or
  - occur on slopes greater than 15%, or
  - will expose more than 2,000 square feet of soil to erosion.

A site evaluation shall be made where necessary to determine if a project meets the exemption standards of these regulations or if the proposed development requires a special permit.

(2) Grading and construction activities associated with onsite wells and sewage disposal systems for single-family dwellings which have received all required County and State permits; or

(3) Any project where a complete application for grading or construction was accepted by the Community Development Services Department prior to April 25, 1995; or

(4) To any construction or grading on property which was subdivided and subject to discretionary and environmental review by the County after the

effective date of the 1984 General Plan, January 2, 1985, and any subsequent and applicable Community Plans, if the Responsible Department has determined that all conditions of approval and specific mitigation requirements have been fully met; or

(5) Development activities proposed and carried out under the provisions of the County Code Title III, Land Use and Development, Division 9, Mining Operations.

(6) Timber harvest and management activities when approved and carried out consistent with the California Forest Practices Act. Activities which are not exempt from the local regulation pursuant to Public Resources Code Section 4516.4 are subject to these regulations. Permits are required for private roads within timber harvest areas where the proposed improvements are in excess of the minimum road standards required by the California Department of Forestry for timber harvesting activities.

(7) The exemptions contained in Section 331-12.D.2., Grading, Excavation, Erosion and Sedimentation Control do not apply in SMAs or other wet areas.

(e) Permit Required and Processing

All development as defined in the Framework Plan within or affecting SMAs or other wet areas not exempted under subsection (d) above shall require a permit pursuant to an application for development within SMAs or other wet areas and processed as a Special Permit pursuant to the Humboldt County Zoning Regulations (Section 312-3.1.1 et seq).

For those activities subject to these regulations and conducted by the County Department of Public Works, the Director of the Department (of Public Works) shall be responsible for the environmental review and public notice requirement, be empowered to approve and issue a special permit following the making of findings, be empowered to meet with and work out solutions with impacted parties, and be required to provide notice and staff support to the Planning Commission when a hearing is requested. The impacted parties shall have a mandatory meeting with the Department of Public Works in an attempt to work out any issues before a hearing is requested or an appeal to the Planning Commission is filed.

(f) Findings of Exception - Written Report

Where there is disputed evidence, or controversy, regarding a finding of exception, the Administrative Official shall issue a written report containing the evidence, or referencing the evidence, upon which a finding of exemption is made. Copies of the report shall be sent to CDFG or any person or group requesting such report in writing. Any person dissatisfied with the finding of exemption may request a formal review pursuant to Section 314-61.1(h).

(g) Definitions

Whenever the words listed below are used in the Zoning Regulations or other regulations related to the Streamside Management Area Ordinance, they shall have the following meaning:

(1) "Grading" means all grading, filling, land contouring, clearing and grubbing, drainage activities, site preparation, and road building.

(2) "CDFG" means the California Department of Fish and Game.

(3) "Construction" means the erection or construction of, or addition to, any building or structure but shall not include the structural alteration, repair, remodeling, or demolition and reconstruction of and additions to any building or structure where the work would not increase the "footprint" of the building or structure. "Construction" does not include "minor additions" as defined in this section.

(4) "Minor Additions" means an exception to these standards for additions to buildings or structures existing on April 25, 1995, of up to 500 square feet of floor area. From this date forward, any number of individual additions to an existing building or structure may be permitted provided the aggregated total increase in square footage for all changes does not exceed 500 square feet of floor area. A "minor addition" is not "construction" as defined in these standards. Note: Physical additions to a building or structure where a condition or a prior discretionary permit or subdivision approval indicated that any future additions would be prohibited are not minor additions as defined in these Implementation Standards.

(5) "Project" means any "grading" or "construction" activities subject to the provisions of these standards.

(6) "Streamside Management Areas" (SMAs) [section 3432(5) of the Humboldt County 1984 General Plan] shall be as defined in the Humboldt County General Plan (Page G-8) and includes, a natural resource area along both sides of streams containing the channel and adjacent land.

(a) In areas outside of Urban Development and Expansion Areas (as defined in the Humboldt County General Plan Page G-9), the outer boundaries for streams (which do not consist entirely of drainage ditch or other manmade drainage device, construction or system) shall be defined as:

(1) 100 feet, measured as the horizontal distance from the stream transition line (as defined in the Humboldt County General Plan Page G-8), on either side of perennial streams.

(2) 50 feet, measured as the horizontal distance from the stream transition line on either side of intermittent streams.

(b) In areas inside of Urban Development and Expansion Areas, the outer boundaries for streams (which do not consist entirely of a drainage ditch or other manmade drainage device, construction or system) shall be defined as:

(1) 50 feet, measured as the horizontal distance from the stream transition line on either side of perennial streams.

(2) 25 feet, measured as the horizontal distance from the stream transition line on either side of intermittent streams.

(c) Where necessary, as determined by the responsible department, the width of SMAs shall be expanded to include significant areas of riparian vegetation adjacent to the buffer area, slides and areas with visible evidence of slope instability, not to exceed 200 feet measured as a horizontal distance, as measured pursuant to subsection (a) or (b) above, as applicable.

(d) The Streamside Management Area may be reduced or eliminated where the County determines, based on specific factual findings, that:

(1) The USGS mapping of the stream as perennial or intermittent is not accurate, and typical stream flow can be shown to be less than that required to be classified as either perennial or intermittent, or,

(2) It will not result in a significant adverse impact to fish, wildlife, riparian habitat, or soil stability.

Such a determination will require a permit to be processed as a Special Permit pursuant to Section 312-3.1.1 et seq of the Zoning Regulations.

(7) Other Wet Areas [section 3432(10) of the 1984 General Plan], i.e., natural ponds, springs, vernal pools, marshes and wet meadows which exhibit standing water year-long or riparian vegetation. The existence of possible Other Wet Areas shall be identified by the responsible department using normal soils investigation criteria. These criteria indicate the presence of any of the following: standing water, evidencing a natural pond or poor drainage conditions, marshy soils, or hydrophilic vegetation (e.g., swamp grass).

(8) Wetlands - as defined in the California Department of Fish and Game Code Section 2785, Subdivision (g).

(h) Administration and Enforcement

The regulations of this section are to be administered and enforced by the respective Administrative or Enforcement Official designated by the Code for each section cited in subsection (d) above and hereinafter referred to as "Responsible Department." In case of disagreement in the application of the regulations, the Director of the Community Development Services Department shall decide, subject to appeal to the Board of Supervisors pursuant to Section 312-13.

(i) Development Allowed

(1) Development within stream channels is limited to the following projects:

(a) Fishery, wildlife, and aquaculture enhancement and restoration projects.

(b) Road crossings consistent with subsection (j) below.

(c) Flood control and drainage channels, levees, dikes and floodgates.

(d) Mineral extraction consistent with other County regulations.

(e) Small-scale hydroelectric power plants in compliance with applicable County regulations and those of other agencies.

(f) Agricultural diversions and wells.

(g) New fencing, so long as it would not impede the natural drainage or would not adversely effect the stream environment or wildlife.

(h) Bank protection, provided it is the least environmentally damaging alternative.

(i) Other essential public projects, including municipal groundwater pumping stations, provided they are the least environmentally damaging alternative, or necessary for the protection of the public's health and safety.

(j) Improvements to non-conforming uses and structures when consistent with Section 314-131 - 314-132 of the County Code and these regulations.

(2) Development within Streamside Management Areas shall be limited to the following:

(a) Development permitted within stream channels.

(b) Timber management and harvests not otherwise excluded by the Applicability Section as well as noncommercial cutting of firewood and clearing for pasturage, provided:

(1) Cottonwoods are retained.

(2) Remaining willows and alders, as well as other unmerchantable hardwoods or shrubs, are to be protected from unreasonable damage.

(c) Road and bridge replacement or construction, where the length of the road within the SMA shall be minimized, and when it can be demonstrated that it would not degrade fish and wildlife resources or water quality, and that vegetative clearing is kept to a minimum.

(d) Removal of vegetation for disease control or public safety purposes.

(3) Bank Protection

(a) Protection measures for County river and stream banks may be permitted for the following purposes:

(1) Maintenance, replacement, or construction of necessary public or private roads;

(2) Maintenance, replacement, or construction of levees and dikes;

(3) Protection of principal structures in danger due to erosion;

(4) Protection of lands zoned AE, Agricultural Exclusive, from erosion.

(b) The bank protection measures which may be permitted are listed below in order of preference. The measures chosen for any bank protection project shall employ the highest ranking protection measure wherever feasible. The preference ranking for permitted protection measures shall be as follows:

(1) Piling fence;

(2) Rock hard points;

(3) Continuous revetment.

(j) Mitigation Measures

Mitigation measures for development within Streamside Management Areas shall, at a minimum, include:

(1) Retaining snags unless felling is required by CAL-OSHA, or by California Department of Forestry forest and fire protection regulations, or for public health and safety reasons, approved by the appropriate County department. Felled snags shall be left on the ground if consistent with fire protection regulations as they have no economic value.

(2) Retain live trees with visible evidence of use as nesting sites by hawks, owls, eagles, osprey, herons, or egrets.

(3) Replanting of disturbed areas with riparian vegetation (including such species as alders, cottonwoods, willows, sitka spruce, etc.) shall be required unless natural regeneration does not occur within two years of the completion of the development project. The mitigation and monitoring report adopted as a part of project approval shall include an alternative regeneration plan in case natural regeneration is not successful.

(4) Revegetation along channelized streams and other wet areas shall be required where the habitat has been converted to other uses. For development allowed within a Streamside Management or Other Wet Areas where the riparian habitat has been converted to other uses, the project shall be conditioned to require the development of new riparian or wetland habitat of an area equal to the area in which the development is to occur or, the area of an existing or proposed easement or right-of-way, whichever is larger.

(5) Erosion control measures: As found within the Building Regulations, Section 331-12, Grading, Excavating, Erosion, and Sedimentation Control.

(k) Prohibited Activities

The following prohibitions pertain to all development and related activities within Streamside Management or Other Wet Areas within the County:

(1) The discharge of soil, vegetation, or other organic or inorganic material from any development activity, except those authorized pursuant to the County's Streamside Management Area Ordinance, onsite or offsite, into any Streamside Management or Other Wet Area in quantities deleterious to fish, wildlife, or other beneficial uses is prohibited.

(2) The placement of soil, vegetation, or other organic or inorganic material from any development activity, except those authorized pursuant to the County's Streamside Management Area Ordinance, onsite or offsite, where such material

could pass into any Streamside Management or Other Wet Area in quantities which could be deleterious to fish, wildlife, or other beneficial uses.

(l) Confirmation of Development Within SMAs and Other Wet Areas

As a part of a development application review, the Responsible Department shall check USGS maps, or other information available to the department, to determine if grading, construction, or other activity is proposed to be located within a SMA or other wet area.

A preliminary onsite inspection shall be performed prior to any grading, construction, or other development permit issuance to determine if the project area contains SMAs or other wet areas.

Where there is disputed evidence or controversy regarding the confirmation of development within SMAs or other wet areas, the Administrative Official shall issue a written report containing the evidence, or referencing the evidence, upon which the confirmation is made.

Copies of the report shall be sent to CDFG and to any person or group requesting such report in writing.

(m) Biological Report Required

An application proposing development activities within a SMA or Other Wet Area shall include a site-specific biological report prepared consistent with these regulations.

The written report prepared by a qualified biologist shall be referred to CDFG for review and comment. If no reply is received from CDFG within ten (10) working days of the date of the referral, it shall be assumed that the report satisfies CDFG requirements.

(n) Incorporation of Recommendations as Conditions

The recommendations contained within the written report shall be incorporated into any development permit as conditions of approval by the Responsible Department.

(o) Project Monitoring, Security, and Certificate of Completion

The monitoring of mitigation measures and reporting of monitoring activities made as conditions to any permit issued pursuant to this section shall be performed as specified in the project's adopted mitigation and monitoring plan.

No development permit final acceptance, certificate of compliance or certificate of occupancy, nor any further development permits shall be issued unless and until all initial mitigation measures are completed and accepted by the County.

Where a project is phased or where mitigation measures are to be monitored beyond an initial building, grading, or construction period, or where mitigation measures are required beyond this initial period, as described within the development permit, the permittee shall post a bond or equal security with the Responsible Department prior to commencing any grading or

construction activities. The amount of the bond or security is to be based upon the cost of performing the required mitigation measures, the related monitoring and report activities, and the County's administrative and processing costs.

Following a written notice to the permittee of a failure to complete or fully implement mitigation or monitoring measures within the time period specified within the permit conditions, the bond or other security may be forfeited and applied to the incomplete mitigation or monitoring measures at the discretion of the Responsible Department.

(p) Waiver of Procedures for Emergencies

The provisions of Section 312-15, Subsections 1-5, of the County Zoning regulations shall be followed in cases of emergencies. Following the issuance of an emergency development permit or variance, application shall be made and processed for the required development permit or variance in accordance with the applicable provisions of the County Code.

(q) Biological Report

Where a Biological Report is required by these regulations, the report shall be prepared by a qualified professional educated, trained, and experienced in the subject matter, and the report shall contain the following:

Section I Summary of Findings and Conclusions

Section II Introduction, Background, and Project Understanding

Section III Methods

- A. Field Observation and Studies
- B. Trustee and Other Agency Consultation
- C. Document and Report Review
- D. Cumulative Biological and Watershed Effects

Section IV Results and Discussion

- A. Existing Site Conditions
  1. Terrestrial
  2. Hydrologic and Aquatic
  3. Sensitive Species or Habitats
- B. Offsite Conditions
  1. Terrestrial
  2. Hydrologic and Aquatic
  3. Sensitive Species or Habitats
- C. Development Effects
  1. Direct
  2. Indirect
  3. Cumulative

D. Recommended Mitigation and Monitoring Measures

Section V References

A. Plant Species Observed
B. Other Species Observed directly or indirectly (e.g. nests, scats, tracks, etc.)
C. Sensitive Species or Habitats in the Project Vicinity (listing)

(r) Mitigation and Monitoring Plan

When a mitigation or monitoring plan is required, information sufficient to answer all of the following is required:

(1) Statement of project/mitigation goals – what do you want to create?

(a) Map and/or description of existing site conditions.

(2) Schedule for implementation, inspection, and maintenance.

(3) Description of site preparation; i.e., excavation, grading, stockpile of topsoil, etc.

(4) Identify the planting material; i.e., cuttings, seedlings, seed, plugs, container size (source if not obtained from commercial nursery).

(a) Use of mulch and/or fertilizers.

(b) Description of plant preparation, if necessary; i.e., how cuttings were obtained, size, treatment with rooting hormone.

(c) Necessity for irrigation and/or fencing.

(5) Performance Standards – how to measure success through defined criteria; i.e., number of viable species, cover values, height, growth, etc. For example:

(a) Year one – 80% tree species viable and achieving at least 4 inches of growth from initiation of planting.

(b) Year three – plugs of silverweed shall cover at least 30% of project site.

(6) Monitoring Requirements – (standard is five years of monitoring).

(a) Conduct during June each year; however, may be modified if specific species are involved (i.e., annual that blooms in April).
(b) Photos.

(7) Reporting – listing of appropriate agencies to receive copies of monitoring report.

(8) Remedial Measures – plan shall include measures for mitigation not achieving specified performance criteria; i.e., replanting, irrigation, fencing, etc.