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Mr. John Miller, Senior Planner
County of Humboldt
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Re: Comments on the Draft Environmental Impact Report (DEIR) Planning Commission Approved General Plan for the Humboldt County General Plan Update (GPU)

Mr. Miller,

On behalf of the board, staff and supporting members of Humboldt Baykeeper these comments are submitted regarding the Draft Environmental Impact Report (“DEIR”) for the proposed Humboldt County General Plan Update (“GPU”). Humboldt Baykeeper appreciates the effort that has been expended by the Humboldt County Planning Commission, staff, and the environmental review that has been conducted. We appreciate the opportunity to present you with our concerns regarding the GPU.

Many of the GPU’s goals, policies, standards, and implementation measures will make significant progress in reducing impacts to the environment that are currently ongoing under the 1984 Framework Plan. However, it is unclear how the County will implement and enforce them, since ordinances are deferred to an uncertain future date. Without defined timeframes for the development of ordinances or implementation of mitigation measures, it is unclear how the County intends to meet the GPU’s stated goals within the 20-year planning period, such as:

- BR-G1, Sufficient recovery of threatened and endangered species to support de-listing;
- BR-G3, Fish and wildlife habitats protected on a sustainable basis to generate long-term public, economic, and environmental benefits;
- WR-G2, River and stream habitat supporting the recovery and continued viability of wild, native salmonid and other abundant coldwater fish populations supporting a thriving commercial, sport, and tribal fishery; and
- Wr-G8x1, All water bodies de-listed and watersheds restored, providing high quality habitat and a full range of beneficial uses and ecosystem services.

The GPU should explicitly state when ordinances are to be developed and implemented, and that they will also be incorporated into existing community plans, such as the 2002 McKinleyville and 1995 Eureka Community Plans, if those plans lack the enforceable standards or ordinances to implement goals, policies, standards, and implementation measures adopted in this Update. These two Community Planning Areas are particularly important because they cover a large portion of the unincorporated areas of the County that will be most subject to development pressure. The health of the watersheds within these Community Planning Areas is critical to the recovery of coho salmon and other listed species.

Protected Fish Species

County streams, rivers and estuaries are habitat for more than 20 State- and Federally-listed threatened and endangered species, such as coho salmon (*Oncorhynchus kisutch*) a State-and Federally-threatened species; Chinook salmon (*Oncorhynchus tshawytscha*) a Federally-threatened species; coastal cutthroat trout (*Oncorhynchus clarki clarki*), a California species of special concern; steelhead trout (*Oncorhynchus mykiss*) a Federally-threatened species; tidewater goby (*Eucyclogobius newberryi*) a Federally-endangered species and California species of special concern; and green sturgeon (*Acipenser medirostris*) a Federally-threatened species and California species of special concern.

Most of the County's anadromous salmonid stocks have, for multiple reasons, precipitously declined over the past 100 years. Coho salmon, for example, have undergone at least a 70% decline in abundance since the 1960s, and is currently at 6 to 15% of its abundance during the 1940s (DFG 2004). The region's commercial and recreational fishing industry has been severely impacted by this decline.

Humboldt Bay and its principal tributaries and the lower Eel, Mad, and Van Duzen rivers maintain important coho salmon populations that have been designated by DFG as key populations to maintain or improve (DFG 2004). Humboldt Bay and many of these important fish-bearing rivers and streams are situated in or adjacent to areas serviced by existing water and sewer services and therefore are in the areas most likely to be impacted by the future development envisioned in the General Plan Update.

According to National Marine Fisheries Service's Draft Recovery Plan for the Southern Oregon-Northern California Coast Coho Salmon,

Many coho salmon once returned to spawn in the rivers and streams found in Northern California and Southern Oregon. Not long ago, these watersheds provided conditions that supported robust and resilient populations of coho salmon that could withstand changes in environmental conditions. Since, the combined effects of fish harvest, hatcheries, hydropower operations, and habitat alterations caused from land management led to extraordinary declines in these populations. Evaluations of declining coho abundance, productivity, range reductions and diminished life history

diversity due these threats, supported the decision to list coho salmon populations from the Mattole River in California to the Elk River in Oregon as a threatened species under the Endangered Species Act (ESA) in 1997.

According to the Plan, the Humboldt Bay Tributaries coho salmon population is considered not viable and is at high risk of extinction, since the rate of population decline exceeds 10%. However, the Humboldt Bay Tributaries population is considered a “Functionally Independent” population meaning that it is sufficiently large to be historically viable-in-isolation and its demographics and extinction risk are minimally influenced by immigrants from adjacent populations. It is a core population and therefore the recovery target is to recover the population to at least a low risk of extinction, meeting the low risk spawner threshold. The low risk spawner threshold addresses the need for adequate spatial structure and diversity within the population. Besides achieving objectives for recovery within the Humboldt Bay area, recovery of the Humboldt Bay Tributaries population is important because it may serve as a source population for the Lower Eel River population.

In the Humboldt Bay watershed, coho habitat is heavily impacted by urban runoff, altered hydrology, and lack of tidal influence in former estuarine and brackish wetlands. Impervious surfaces, diked wetlands and floodplains, and lack of vegetation along slough channels due to grazing and development are primary factors in the lower watersheds. In the Humboldt Bay watershed, additional recovery actions should address the conversion of timberlands to residential uses.

According to Wallace and Allen (2007), young-of-the-year coho over-winter for at least 3 months in the tidal freshwater portion of Humboldt Bay tributaries, possibly to take advantage of the low gradient habitat during high winter stream flows. This is a life history trait that has rarely been documented in California for coho salmon, suggestion that for the Humboldt Bay Tributaries population, restoring and protecting low-gradient streams from further degradation is critical.

Impaired Waterbodies

Many of the County’s larger water bodies, such as Humboldt Bay, Freshwater, Jacoby, and Redwood creeks, and the Eel, Elk, Klamath, Mad, Mattole, Trinity and Van Duzen rivers are designated by the US Environmental Protection Agency as sediment-impaired pursuant to the Clean Water Act §303(d) or are otherwise impaired by high water temperatures, water diversions, loss of riparian habitat, or barriers to fish passage (DFG 2007). Two of California’s three largest river systems flow through the County. Toxic algae impacts many of the major rivers that are important for water-based recreation as well as either currently or formerly supporting listed salmonids populations. Low instream flows during the dry season contribute to toxic algae blooms. Though dogs have died from exposure to these toxic algae in the Van Duzen and Eel Rivers, Big Lagoon, and elsewhere, little has been done to address this public health concern.

Humboldt Baykeeper is concerned that although the GPU includes many improvements in protections for biological and water resources compared with the 1984 Framework Plan, it doesn't go far enough to minimize substantial adverse effects to candidate, sensitive, or special status species; to minimize substantial adverse effects to riparian habitat; and to limit substantial interference with the movement of native or migratory fish or limit impediments to native wildlife nursery sites, specifically coho salmon, as described in the environmental checklist in Appendix G of the CEQA Guidelines.

Our specific comments and concerns with the DEIR are outlined below.

I. Water Resources

1) Degrade Water Quality (Impact 3.10.3.1) and Altered Drainage Patterns (Impact 3.10.3.3)

The non-point source pollution found in urban runoff is now a leading threat to the nation's water quality. A significant overall reduction in stream and wetland quality indicators occurs when impervious cover in a watershed exceeds 10%, with severe degradation expected beyond 25% impervious cover (Arnold and Gibbons 1996). Because non-point source pollution can accumulate from diverse sources throughout a watershed, numerous small management changes can improve water quality.

Humboldt Baykeeper supports the inclusion of WR-P38, Storm Drainage Impact Reduction, and WR-IM26, Low Impact Development Methods. We do not agree, however, with limiting these requirements to watersheds with known significant cumulative impacts from stormwater. Additionally, significant adverse effects to water quality are likely to occur without specific Post-Construction Requirements to minimize polluted runoff. Furthermore, waiting to implement LID methods until watersheds are known to have "significant cumulative impacts from stormwater" will not result in the benefits to water quality that are mandated by the corresponding policy requirements of the General Plan.

Limiting LID requirements to watersheds with known significant cumulative impacts from stormwater would degrade water quality, contradicting State and Federal Antidegradation Regulations which require that existing instream water uses and the water quality necessary to protect those existing uses be maintained and protected (*See, e.g.* 40 C.F.R. 131.12 (1)). Waters that exceed quality levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water must be protected, and higher-quality waters must also be protected (40 C.F.R. 131.12 (2)).

The built environment in Humboldt County is focused around Humboldt Bay, the second largest estuary in California, which is of high biological and economic value to the communities it supports and to the County as a whole. Humboldt Bay is listed as

Impaired by PCBs and dioxins under Section 303(d) of the Clean Water Act, and all of its major tributaries are listed as Impaired by sediment. Humboldt Bay and its tributaries are critical to protect from stormwater runoff, whether they are considered to have “known significant cumulative impacts from stormwater” or not (which remains unclear in the GPU DEIR).

According to the Planning Commission Approved Draft,

Protection of water quality in the watersheds that are sources for municipal water is important to maintaining these supplies. Threats include discharge from sewage treatment plants, failing septic systems, non-point source urban pollution, and turbidity from sediment discharge (page 11-5).

All watersheds, and especially those that are sources for municipal water, are critical to protect from stormwater runoff, whether they are considered to have “known significant cumulative impacts from stormwater” or not.

Implementing LID methods in all watersheds will lessen significant effects to water quality, water supply, and biological resources, such as Humboldt Bay shellfish and candidate, sensitive, and species of concern by: 1) filtering out pollution and increasing the quality of stormwater runoff, 2) decreasing peak flows and erosion in downstream waters and 3) increasing ground water recharge and therefore helping maintain biologically-important summer low flows.

Development that results in the covering of permeable soil on vegetated land with impervious surfaces such as structures, streets, sidewalks, and parking lots, tends to intensify storm water runoff volumes and velocities. These effects typically result in higher stream peak flows, increased bank instability, erosion, channel incision, flooding, discharge of fine sediment, and the introduction of pollutants such as hydrocarbons, heavy metals, garbage, pathogens, nutrients, pesticides, and domestic animal feces.

These impacts to water quality and quantity also adversely effect listed salmonids and other aquatic species. Yet the application of LID methods in all watersheds to protect all of these resources is not analyzed in the DEIR.

a) Impacts of Pathogenic Bacteria in Surface Waters

Fecal coliform poses significant threats to human health, the environment, and the economy of the Humboldt Bay area. Research has found residential streets and lawns to be a major source of *E. coli* in stormwater runoff (Arnold and Gibbons 1996). Beneficial uses are currently impacted by *E. coli* and other pathogenic bacteria, and will be further impacted by future development unless mitigation measures are implemented to minimize such impacts.

Fecal coliform and associated pathogens are concentrated by shellfish, which are commercially grown and also are harvested for subsistence use, particularly by Hmong and Native American communities. These pathogens can also cause illness in people swimming or playing in water, as children often do in the wadeable streams, including tributaries of Humboldt Bay.

Fecal coliform has long been identified as a pollutant of concern in Humboldt Bay, in large part due to the economic importance of the shellfish industry. Five commercial shellfish harvesters operate in the bay, producing 60% of oysters in California. High fecal coliform levels require post-storm closures of commercial oyster beds. Shellfish tissue studies have documented fecal coliform levels above FDA market standards following rain events, and commercial shellfish harvest is prohibited for an average of 30 days per year. Currently, the Humboldt Bay Harbor, Recreation, and Conservation District is actively pursuing plans to expand commercial shellfish production in the bay, with financial support from the County's Headwaters Fund.

A variety of studies on contamination movement in the bay have found that fecal coliform concentrations greatly exceeding water quality criteria for shellfish-growing areas emanate from the watershed during rainfall events. The primary pollution sources are thought to be a variety of non-point sources, but studies to quantify the total contributions of each drainage or source type have not yet been performed (Twelve Year Sanitary Survey Report, California Department of Health Services Preharvest Shellfish Unit, 2006). For discharges affecting Eureka Slough, one of the bay's main tributaries, during an ebb tide, a very small flood tide is sufficient to bring contaminants to nearby commercial shellfish beds.

Since its inception in 2005, Humboldt Baykeeper's Citizen Water Monitoring Program has documented numerous exceedances of fecal coliform bacteria (*Escherichia coli*) in tributaries of Humboldt Bay, including sites in the unincorporated areas where development is regulated by the County. In August 2010, Humboldt Baykeeper used its 5 years of monitoring data as the basis for recommending that the Regional Water Quality Control Board list six streams in the Humboldt Bay area as impaired under the Clean Water Act due to extremely high levels of *E. coli*. Regardless of the outcome of the Regional Board's decision, Humboldt Baykeeper believes it is imperative that LID methods be required in these and other watersheds to ensure that future development does not add to the polluted runoff that is impacting these streams, which ultimately flows into Humboldt Bay and the ocean, putting residents and the shellfish industry at risk.

b) Impacts of Pathogenic Bacteria in Coastal Waters

The following warning on the County Division of Environmental Health, Ocean Monitoring Program website also demonstrates the County's public health concerns over stormwater impairment to local waters:

“After a significant rainfall, stormwater runoff draining into creeks and the ocean can contain high levels of bacteria and pollutants. Please avoid contact with ocean and creek water until at least 3 days after a heavy rainfall.”

Indeed, on June 5, 2012, the County’s Ocean Monitoring Program posted three local beaches (Moonstone Beach, Luffenholz Beach, and Clam Beach as failing to meet State Water Quality Standards for bacteria that are not to be exceeded in recreational waters following a rainstorm (<http://co.humboldt.ca.us/hhs/phb/environmentalhealth/oceanmonitoringprogram/>).

c) Vague, Unenforceable, and Unmeasurable Mitigations

The mitigations provided in the EIR for impacts to water quality are vague, unenforceable, not measurable, and unlikely to produce water quality benefits or to lessen the significant adverse effects to water quality and quantity from polluted runoff, sedimentation and erosion, and interference with groundwater recharge.

First, the requirement in WR-IM26, Low Impact Development Methods for LID methods in watersheds with “known significant cumulative impacts from stormwater” is vague and unenforceable. Standards for determining where LID methods will be required needs to be identified.

The DEIR fails to identify specific LID methods to protect both water quality and quantity, such as pervious surface technologies for driveways and walkways, vegetated roofs, disconnected downspouts, water gardens and grassy swales to maximize pervious surfaces and capture and maintain on-site stormwater percolation and treatment that maintains post-project pervious surfaces to the greatest extent practicable. These elements filter and settle out pollutants and provide for more infiltration than is possible for traditional centralized structural BMPs placed at the lowest point in a site. They provide source control for runoff and lead to a reduction in pollutant loads. When implemented, they also help reduce the magnitude and volume of larger, less frequent storm events (e.g., 10-yr, 24-hour storm and larger), thereby reducing the need for expensive flood control infrastructure. The multiple benefits of using non-structural benefits will be critically important as the state’s population increases and imposes strains upon our existing water resources. Maintaining predevelopment drainage densities and times of concentration will help reduce post-development peak flows and volumes in areas not covered under a municipal permit. The most effective way to preserve drainage areas and maximize time of concentration is to implement landform grading, incorporate site design BMPs and implement distributed structural BMPs (e.g., bioretention cells, rain gardens, rain cisterns).

Failure to identify specific LID methods that will be implemented is inadequate and is likely to result in potential direct and indirect impacts of increased stormwater runoff,

altered hydrology, and increased sediment delivery to receiving waters. The DEIR defers specific LID requirements to an undisclosed future date.

Direct and indirect substantial adverse effects are likely to occur until this mitigation measure is implemented, and such effects have not been addressed in the DEIR. Without interim mitigation measures, ongoing direct, and indirect substantial adverse effects will continue to occur to water quality and quantity, groundwater supply and recharge areas, and candidate, sensitive, and special status species and their habitat. Therefore, interim measures to reduce these impacts to less than significant are critical.

2) Interference with Groundwater Recharge (Impact 3.10.3.3)

In addition to stormwater pollution, development projects are often designed to rapidly discharge storm and flood water offsite and into natural drainage features such as streams and ultimately Humboldt Bay. Unless intentionally designed to do so, development typically leads to decreases in groundwater and local aquifer recharge. Since groundwater is the principal summer water source for streams, rivers, and wetlands on the North Coast, increases in impervious surfaces and in stormwater facilities designed for rapid drainage of stormwater off-site tend to result in decreased summer low flows, higher stream temperatures, and loss or even elimination of aquatic habitat during the summer. Failure to implement specific LID methods will result in potential direct and indirect impacts of increased altered hydrology to receiving waters.

3) Additional Mitigations Not Considered

During the Planning Commission's review of the General Plan Update, some members of the development community advocated for policies that would allow the use of private infrastructure to facilitate development, such as "package sewage treatment plants." Review of the most recent Sonoma County General Plan Update sheds light on the impacts of the use of such plants, both on orderly development and on the environment, particularly water resources.

The failure to appropriately limit the use of package sewage treatment systems by remaining silent in the DEIR could lead to significant negative impacts over the planning period, both individual and cumulative, on the following resources:

- **Water Resources:** Depending on where the effluent is discharged, such systems could add pollutants to already-impaired waterbodies, and could impact water quality and quantity through increased water withdrawals to serve new development. Pollutants commonly detected in treated sewage include pathogenic bacteria and viruses, nutrients, heavy metals, pharmaceuticals, endocrine disruptors, and others known to be harmful to aquatic organisms.

- **Biological Resources:** Impacts to water resources are likely to impact riparian and aquatic resources, both in the waterbody immediately affected as well as in downstream waterbodies. Effluent discharge and increased use and construction of private roads built to serve new development would be likely to increase erosion and sedimentation to streams, further degraded habitat of listed salmonids. New construction of private roads and driveways is especially problematic due to the lack of standards and mitigation measures to reduce this major source of sediment delivery to salmon-bearing streams.
- **Air Resources:** “Leapfrog” and poorly planned development that would likely occur would negatively impact air resources through increased greenhouse gas emissions, and which would also threaten the County’s ability to meet greenhouse gas emissions reductions targets required under AB 32. In addition, impacts in particulate matter related to increased construction and use of unpaved roads would further degrade air quality.

The County should not allow new subdivisions or new development based on the capacity to treat wastewater with a new “package treatment plant” technology. The location of new development should be based solely on the General Plan, not on whether wastewater treatment is possible. Package treatment plants should only be permitted when they are consistent with the General Plan and necessary to resolve an existing public health hazard, as has been adopted in Sonoma County.

These plants are a significant departure from traditional septic tanks that operate on a small scale, generally serving a single household. Package treatment plants are privately owned facilities that, like a conventional sewage treatment facility, can serve users on a much larger scale, on many parcels of land. Allowing package treatment systems could open up thousands of parcels to development throughout unincorporated Humboldt County.

Humboldt Baykeeper is especially concerned about where wastewater would be discharged after treatment, how surface water and groundwater would be protected from contamination and degradation by such discharge, and how these large-scale privately owned facilities would be monitored. Sonoma County’s brief experiment with private sewage treatment plants illustrates a cautionary tale, and the General Plan Update must not remain silent on this matter.

The location of new development should not be decided by whether wastewater treatment is possible. Development approvals should be based on where local citizens and their elected officials have decided new growth should go, as laid out in the General Plan.

The lack of reasonable limits on the use of package sewage treatment plants would have growth-inducing impacts that are required to be assessed and mitigated under 14 CCR

§15126.2(d), along with the potential for negative impacts to water quality, air resources, and biological resources, particularly aquatic organisms, many of which are listed as Threatened and Endangered under state and federal law.

Humboldt Baykeeper recommends the following policy be included to ensure that such impacts do not occur in Humboldt County:

Ensure that publicly-managed package treatment plants are only permitted when they are consistent with the General Plan and necessary to resolve an existing public health hazard. Specify that new treatment plants shall not encourage new development and their use must not be in conflict with other General Plan goals and policies.

According to PRC §21002.1 (b) “Each public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so.”

II. Biological Resources

1) Sensitive Species and Sensitive Habitat Areas (Impact # 3.11.3.1)

The current Framework Plan was adopted prior to listing under the Endangered Species Act of numerous species that are being significantly impacted by development, including coho salmon, steelhead, and tidewater goby. These impacts were not analyzed under the Framework Plan’s DEIR, and development approved under current land use planning and zoning ordinances continues to allow harm to these and other protected species and their habitats.

The DEIR states that, “As proposed by the Planning Commission’s Tentative Draft recommendations, the General Plan Update policies, standards, and implementation measures of the Biological Resources section (10.3) are more protective of biological resources than current local policies and ordinances.” (DEIR at 3.11-17)

Many of the policies and standards in the Planning Commission’s Tentative Draft recommendations will lessen these impacts, though the DEIR finds that adverse effects will not be less than significant without further mitigation measures (DEIR at 3.11-12). We urge the County to 1) adopt interim measures to avoid such impacts until adequate mitigation measures are adopted; and 2) adopt additional mitigation measures as recommended in the DEIR to reduce these direct, indirect, and cumulative effects to less than significant.

Humboldt Baykeeper supports the Planning Commission’s Tentative Draft recommendation **BR-IM3 Biological Review and Referral**, which states that “the County must also have on staff, or retain, a qualified biologist to conduct site visits, work

with resource agencies, review applicant prepared biological reports and formulate and monitor project conditions and mitigation measures.”

Retaining a qualified biologist is essential for identifying potential impacts to sensitive biological resources such as wetlands, rare plants, critical habitat, etc.

It is critical to have a qualified biologist conducting site visits, reviewing applicant prepared biological reports, and formulating and monitoring project conditions and mitigation measures. These skills require extensive knowledge and a qualified biologist will be more efficient and effective than training someone to do the job on site and then missing important details which then needed to be re-assessed.

According to testimony on this implementation measure by a representative of the U.S Fish & Wildlife Service before the Planning Commission on March 17, 2011, “On-staff biological expertise and/or early coordination with resource agencies is the single most important factor to reduce planning conflicts.”

According to the California Department of Fish & Game’s July 17, 2007 comments on the Notice of Preparation of the General Plan Update,

The diversity and ubiquity of significant fish and wildlife resources in Humboldt County, often makes the evaluation and, where necessary, mitigation of potential impacts to them a large component of the County’s permitting process pursuant to CEQA. Given staff limitations, DFG often cannot provide the County Community Development Services staff and project consultants the degree of technical support or consultation that recurring resources issues merit.

DFG recommends the County Community Development Services department hire a broadly trained biologist or environmental scientist to assist permitting staff in the project review and permitting process. By interfacing and coordinating with County planners, project proponents and their environmental consultants, and the wildlife agencies, this scientist could facilitate the protection of trust resources while expediting the review and permitting of projects.

Staff limitation at state and federal resources agencies result in the inability to review and comment on every project application within the County’s jurisdiction, and without this Implementation Measure, ongoing direct and indirect substantial adverse effects will continue to occur to candidate, sensitive, and special status species and their habitats.

Direct and indirect substantial adverse effects are likely to occur until this mitigation measure is implemented, and such effects have not been addressed in the DEIR. Therefore, interim measures to reduce these impacts to less than significant are critical. The County must analyze the potential for significant impacts to candidate, sensitive, and special status species, either directly or through habitat modification, during ministerial

and discretionary permit review, until adequate mitigation measures are implemented to avoid such impacts or minimize them to the fullest extent feasible.

2) DEIR Mitigation Measures 3.11.3.1.b (Habitat Conservation Plans) and 3.11.3.1.c (Master Lake or Streambed Alteration Agreement) are inadequate because they fail to set a timeline for implementation. Direct, and indirect substantial adverse effects are likely to occur until these mitigation measures are implemented, and such effects have not been addressed in the DEIR. Therefore, interim measures to reduce these impacts to less than significant are critical, yet absent from the Planning Commission's Draft GPU or the DEIR. The DEIR fails to address the potential for significant impacts to candidate, sensitive, and special status species, either directly or through habitat modification, during ministerial and discretionary permit review.

Without addressing these impacts, the project has the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife species to drop below self-sustaining levels, and reduce the number or restrict the range of a rare or endangered plant or animal. These standards of significance apply particularly to salmonids such as Coho and steelhead, since these species are subject to ongoing adverse effects under the County's current land use planning and zoning ordinances.

3) Additional Mitigations Not Considered

Even with the vast improvements in policies, standards, and implementations measures recommended in the Planning Commission's Draft Biological Resources and Water Resources Element, without Mitigation Measures 3.11.3.1.b (Habitat Conservation Plans) and 3.11.3.1.c (Master Lake or Streambed Alteration Agreement), impacts to sensitive species and sensitive habitats will continue to be significant. If Mitigation Measures 3.11.3.1.b and 3.11.3.1.c are not adopted and timelines set for them to be implemented with interim measures to avoid such impacts in the short term, and if any other mitigations for such impacts in this section, the Water Resources Element, or other sections are weakened, additional mitigation measures must be considered, since effects to sensitive species and habitats are avoidable.

Impacts from sea level rise have not been analyzed, and must not be deferred to a future planning process for which no timeline has been established and may be delayed indefinitely (the Local Coastal Plan Update).

III. Sea Level Rise (Impact 3.10.3.4)

Sea level rise is an issue of paramount importance for areas within and adjacent to the Coastal Zone that are governed by the County's General Plan. As sea level rises, areas vulnerable to flooding during major storms will continue to expand, while increasing areas at risk of inundation during the rare but catastrophic event of a major tsunami.

Analyzing impacts of sea level rise must not be deferred to the Local Coastal Plan process because adverse effects from sea level rise and associated expansion of 100-year floodplain and tsunami run-up zones are projected to occur inland of the Coastal Zone, particularly along riparian corridors.

Maps prepared by the Pacific Institute in 2009 projecting sea level rise along with changes in coastal base flooding show potential inundation of the Humboldt Bay area extending uniformly through most of the current Coastal Zone boundary as well as inland, particularly along riparian corridors and within the historical footprint of Humboldt Bay. Communities that are particularly at risk of adverse effects include the Arcata Bottoms, the North Spit communities of Manila, Samoa, and Fairhaven, and parts of Freshwater, Cutten, and Elk River areas closest to major tributaries of Humboldt Bay. (See enclosed maps of Flood Risk and Sea Level Rise for the Arcata South and Eureka Quadrangles).

California counties and cities must develop strategies for adaptation and long-term planning to most effectively protect their residents from hazards related to sea level rise, including flooding, erosion, and inundation. The measures will protect life and property as well as coastal resources.

On November 14, 2008, Governor Schwarzenegger issued Executive Order S-13-08, directing various state agencies to undertake various studies and assessments toward developing strategies and promulgating development review guidelines for addressing the effects of sea level rise and other climate change impacts along the California coastline. Consistent with the executive order, the governing board of the Coastal Conservancy adopted interim sea level rise rates: (a) 16 inches (40 cm) by 2050; and (b) 55 inches (140 cm) by 2100 for use in reviewing the vulnerability of projects it funds.

According to the California Coastal Commission,

Sea level rise is an important consideration for the planning and design of projects in coastal settings. Such changes in sea level will exacerbate the frequency and intensity of wave energy received at shoreline sites, including both storm surge and tsunamis, resulting in accelerated coastal erosion and flooding in such locales. There are many useful records of historic sea level change, but little certainty about how these trends will change with possible large increases in atmospheric greenhouse gas emissions and air temperatures. Notwithstanding the controversy and uncertainties about future global or local sea levels, guidance on how to address sea level rise in planning and permitting process is evolving as new information on climate change and related oceanic responses become available...

Most climate models now project that the historic trends for sea level rise, or even a 50% increase over historic trends, will be at the very low end of possible future sea level rise by 2100. Satellite observations of global sea level have shown sea level

changes since 1993 to be almost twice as large as the changes observed by tide gauge records over the past century. Recent observations from the polar regions show rapid loss of some large ice sheets and increases in the discharge of glacial melt (City of Arcata LCP Amendment No. ARC-MAJ-1-09 at 77-78).

Several recent studies have projected future sea level to rise as much as 4.6 feet from 1990 to 2100. For example, in California, the Independent Science Board (ISB) for the Delta Vision Plan has used the Rahmstorf Report projections in recommending that for projects in the San Francisco Delta, a rise of 0.8 to 1.3 feet by 2050 and 1.7 to 4.6 feet by 2100 be used for planning purposes. This report also recommends that major projects use the higher values to be conservative, and that some projects might even consider sea level projections beyond the year 2100 time period. The ISB also recommends “developing a system that can not only withstand a design sea level rise, but also minimizes damages and loss of life for low-probability events or unforeseen circumstances that exceed design standards. Finally the board recommends the specific incorporation of the potential for higher-than-expected sea level rise rates into long term infrastructure planning and design.” (City of Arcata LCP Amendment No. ARC-MAJ-1-09 at 79).

According to the State of California Sea-Level Rise Interim Guidance Document (2010), “sea level rise potentially will cause many harmful economic, ecological, physical and social impacts and that incorporating sea level rise into agency decisions can help mitigate some of these potential impacts. For example, sea level rise will threaten water supplies, coastal development, and infrastructure, but early integration of projected sea level rise into project designs will lessen these potential impacts.”

This report also states that on Humboldt Bay’s North Spit, tide gages have recorded an average rate of 4.72 mm per year over the past 33 years. This is a higher rate of sea level rise than the global value, indicating land subsidence, and is more than twice the rate of sea level rise found on California’s coastline during the same period, suggesting that sea level rising projections recommended for planning purposes by state agencies may be insufficient in the Humboldt Bay area. This supports the inclusion of provisions to rely on the best available science at the time that projects proposed are to address sea level rise and to develop suitable mitigation and adaptation measures accordingly.

The General Plan Update and its subsequent associated Local Coastal Plan, which has been identified as an issue to be resolved (DEIR at 1-10), must analyze these impacts and adopt all feasible mitigation measures to lessen their impacts.

1) Sea Level Rise Impacts to Life and Property

People, infrastructure, and property are already located in areas vulnerable to flooding from a 100-year event. Sea level rise will cause more frequent—and more damaging—floods to those already at risk and will increase the size of the

coastal floodplain, placing new areas at risk to flooding, including areas lying outside the Coastal Zone.

Potential threats to public infrastructure in the Humboldt Bay area from sea level rise include potential inundation of valuable infrastructure such as roads, municipal sewer and drinking water pipelines, stormwater infrastructure, and wastewater treatment plants that serve existing and future residential, commercial, and industrial development in the unincorporated areas of the County.

A report prepared by the Pacific Institute (Heberger et al. 2009) estimates that critical infrastructure, essential coastal wetlands and other habitats, and many billions in property along the coast face steadily increasing flood risks if no adaptation actions are taken. For Humboldt County, the estimated replacement value of buildings and contents vulnerable to a 100-year coastal flood with a 1.4-meter sea-level rise was \$1.4 billion in 2009.

Threats to Humboldt County from a 1.4-meter rise in sea level include:

- Residences: 7,800 people will be living in the 100-year floodplain, with disproportionate impacts on low-income households.
- 240 miles of roads, including 58 miles of highway. The U.S. Highway 101 corridor between Arcata and Eureka is especially at risk.
- 3 contaminated sites (in addition to the 10 that are currently within the 100-year floodplain).
- Other infrastructure at risk includes wastewater treatment plants serving the cities of Eureka and Arcata, the Humboldt Bay power plant, and fuel storage tanks.

2) Sea Level Impacts to Biological Resources

Coastal wetlands must be preserved and restored to help protect infrastructure and other development from damage from sea level rise and storm surge. As sea level rises and the 100-year floodplain expands, coastal ecosystems will undergo changes of an unprecedented scale and magnitude. Approximately 90% of Humboldt Bay's salt marshes have been destroyed by diking, draining, and conversion. It is important to implement measures now so that sea level rise will not eliminate the small amount that remains. Such measures will minimize impacts to sensitive habitats such as salt marsh, sloughs, and brackish marsh, along with the sensitive species that rely on them.

With long-term planning, the Humboldt Bay area has a high potential for wetlands to migrate inland rather than being completely lost to coastal inundation. If implemented, such efforts will help developed areas of the Humboldt Bay area withstand sea level rise and storm damage. Without such mitigation measures to protect coastal wetlands from the adverse effects of sea level rise, significant adverse effects to sensitive species and sensitive habitat areas (Impact # 3.11.3.1) are likely to occur, yet have not been analyzed in the DEIR.

We support Mitigation Measure 3.10.3.4.a; however, it is unclear whether it takes into account projected sea level rise of 55” or the best available science as recommended by the above-mentioned agencies and experts.

IV. Brownfields and Hazardous Materials (Impact 3.7.3.1)

Brownfields are addressed in the Planning Commission’s Tentative Draft of the Economic Development Element (ED-G13, ED-P16, ED-IM10).

These policies, standards, and implementation measures are laudable goals, and yet are too vague to adequately analyze potential significant adverse effects to the public and/or the environment, including water quality.

Streamlining regulatory review for proposed development in commercial and industrial zoned Brownfields as recommended in ED-P16 could potentially subvert thorough review and comment by agencies and the public, especially if the timeline for review and comment is shortened as a streamlining measure.

Developing zoning standards to provide increased flexibility for interim land uses and continuation of legal non-conforming uses as recommended in ED-IM10 could encourage maintaining the status quo, rather than encouraging cleanup and reuse of underutilized commercial and industrial zoned Brownfields. Such zoning standards should include clear timelines for addressing site assessment and cleanup so that ongoing impacts to the public and/or water quality cannot continue to occur indefinitely. In particular, standards for residential reuse need to be clearly defined and need to be stringent enough to protect human health.

Potential adverse effects to public health and the environment that could occur as a result of these policies, standards, and implementation measures are not analyzed in the DEIR. If the standards are adequate, public health and the environment will benefit in the long-term, but clear standards and timelines need to be included.

V. Community Separators, Scenic Vistas (Impact 3.15.3.1) and Visual Character (Impact 3.15.3.2)

Humboldt Baykeeper strongly supports the incorporation of community separators between fast-growing unincorporated areas, such as would maintain separation between Eureka-Arcata, Arcata-Blue Lake, Arcata-Manila, Bayside-Myrtle town, McKinleyville-Fieldbrook, McKinleyville-Westhaven, etc.

In addition to impacts to scenic vistas and visual character, the DEIR should address the potential for policies, standards, and implementation measures for community separators to the following impacts identified in the DEIR: Degrade Water Quality (Impact 3.10.3.1), Altered Drainage Patterns (Impact 3.10.3.3), Interference with Groundwater

Recharge (Impact 3.10.3.3), Sensitive Species (Impact 3.11.3.1), Wetlands (Impact 3.11.3.2) and Wildlife Corridors and Nursery Sites (Impact 3.11.3.3).

Further developing watersheds already impacted by too many septic systems, habitat fragmentation, roads and other and impervious surfaces will further degrade water quality, will interfere substantially with movement of native resident or migratory fish or wildlife corridors, or impede the use of native wildlife nursery sites.

Although the DEIR does not identify community separators as mitigation measures to other resources, it is only through the inclusion of community separators in the GPU that the impacts to these resources are mitigated to a level of less than significant. Open Space Consistency Determination (CO-S3, S4, IM5) and a Greenbelt overlay zone (CO-P4) are also critical to reducing these impacts to less than significant, and their connection to these impacts should likewise be included in the DEIR.

VI. Conclusion

In all cases, PRC §21002.1 (b) requires agencies to “mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so.” All mitigation measures included in these comments are feasible and therefore must be incorporated.

Humboldt Baykeeper hereby incorporates all previous comments on the GPU made by our staff as well as the Healthy Humboldt Coalition (of which we are a member) into these comments.

Humboldt Baykeeper would again like to thank the Humboldt County Board of Supervisors, Planning Commission, and Community Development Department for the many years and good-faith efforts that went in to developing this Update of the County General Plan. With 17 deliberation and input from Planning Commissioners and hundreds of members of the public, including many public-interest organizations, we believe the County as a whole should proud of the resulting document. We appreciate the opportunity to provide the above comments and hope they will be incorporated into the final Update adopted by the Board. We look forward to reviewing future documents that reflect these comments as well as your responses, and thank you in advance for your consideration of these comments.

_____/s/_____
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Enclosures:

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