4.3 WATER RESOURCES

4.3.1 ALTERNATIVE A – PREFERRED ALTERNATIVE: CASINO, HOTEL, CONFERENCE CENTER, AND PARKING FACILITY

SURFACE WATER HYDROLOGY

The project would increase impervious surfaces through the conversion of 9.3 acres of nearly undeveloped land into a casino, hotel, convention center building, access road, parking structure and associated facilities. Impervious surfaces would increase runoff, which could cause drainage impacts from the concentration of stormwater runoff. Since the annual precipitation and peak rainfall intensity in the area may be considerable, surface water runoff may be also. Special attention to engineering and design of culverts and storm drainage facilities would be important to prevent runoff from causing downstream impacts.

The total Martin Ranch drainage area was delineated into five separate sub-basins in the 2005 SHN Engineers, Inc. study (**Figure 3** of **Appendix B**). The sub-basins were selected based on the discharge points from the property. The hydrologic analysis was conducted using the Santa Barbara Urban Hydrograph Method to estimate the current peak discharges under existing and post-project conditions for the 10-year, 50-year, and 100-year storm. The analysis showed that Sub-Basins 1, 2 and 3 would be impacted by an increase in impervious surfaces and a corresponding increased peak flow. Sub-Basins 4 and 5 would not be impacted by the project.

The drainage basin most impacted by the site development would be Sub-Basin 1. Under project conditions the total increase in impervious area in Sub-Basin 1 would be approximately 5.6 acres, which equals approximately 5.9% of the total drainage area for the basin. The estimated increase in peak flows for the basin is shown in **Table 4-1**.

TABLE 4-1
HYDROLOGICAL ANALYSIS OF THE PROPOSED PROJECT

Basin	Condition	2-yr		10-yr		25-yr		100-yr	
		Q (cfs)	V (ac-ft)	Q (cfs)	V (ac-ft)	Q (cfs)	V (ac-ft)	Q (cfs)	V (ac-ft)
1	Project	18.9	17.0	32.1	26.1	42.0	32.5	52.5	39.1
	Difference	**2.3**	**1.3**	**3.0**	**1.6**	**3.6**	**1.8**	**3.9**	**1.9**
2	Project	37.1	34.2	63.7	52.8	83.8	66.0	105.2	79.8
	Difference	**2.3**	**1.3**	**3.1**	**1.7**	**3.7**	**1.9**	**4.1**	**2.0**
3	Project	6.8	3.9	11.7	6.0	15.2	7.5	18.9	9.0
	Difference	**0.9**	**0.3**	**1.1**	**0.4**	**1.2**	**0.4**	**1.4**	**0.4**

SOURCE: SHN Engineers, 2006.

This increase in drainage is considered significant as it may exceed the capacity of existing culverts. Impervious surfaces would increase by 2.8 acres in Sub-Basin 2, which represents 1.4%

of the total drainage area for the Sub-Basin. In Sub-Basin 3, impervious surfaces would increase by 0.9 acres, which represents 4.1% of the Sub-Basin. Capacity of culverts draining these sub-basins may also be exceeded. As culvert capacity may be exceed this impact is considered potentially significant and mitigation is required. Mitigation for this impact includes vegetated detention swales and an Adaptive Management Plan (**Appendix X**) as discussed in **Section 5.0**. With mitigation, the hydrologic model developed for predicting runoff volumes shows that the peak flows for the 2-year, 10-year, and 25-year flow conditions were less than the peak flows under existing conditions and matched peak flows for a 100-year return interval (SHN, 2006). These findings are based on smaller individual sub-areas.

The Adaptive Management Plan, recommended as mitigation in **Section 5.2.2** and included in the EIS as **Appendix X**, includes the development of baseline data from monitoring prior to construction. The goal of the Adaptive Management Plan is to mimic the natural runoff from the Martin Ranch property prior to development. Monitoring downstream of the Proposed Project would be ongoing after construction to ensure that the stormwater treatment system operated effectively. The plan contains criteria to analyze the effectiveness of the stormwater treatment system and an available list of modifications should the monitoring suggest that changes are needed. Thus, mitigation would reduce the impact to less than significant.

Collection of water for the Crescent City water supply comes from groundwater aquifers which are recharged by infiltration of surface water. While the increased demand of the project would reduce river flows slightly, the increased demand of the project would come from the City's available water rights. The increased demand of 80,000 gpd would represent 1.3% of the City's total water right of 6.3 MGD. This amount is small and considered less than significant.

FLOODING

The proposed site is located outside of the 100-year floodplain, as shown on the applicable Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM). The FIRM relevant to this project is Del Norte County Community and Panel Number 065025 0100 C revised on July 3, 1986. No mitigation measures for on-site flooding are required.

GROUNDWATER

The existing casino facility on Elk Valley Road has an average annual demand of 5,500 gpd. When Alternative A is built the existing facility would be closed. Therefore the predicted "net" increase in water demands would be on the average 80,000 gpd. The Proposed Action would not result in significant groundwater withdrawals from the Smith River Plain Groundwater Basin (Basin 1-1). Pursuant to the MOU between the Tribe and Del Norte County, community water service would be provided to the project by the City of Crescent City or the Bertsch-Ocean View Community Services District (BOVCSD), which contracts with the City of Crescent City for its

water service. Crescent City obtains all of its water from the aquifer below the Smith River (Caplinger, 2005). The affect on regional groundwater resources is considered less than significant due to the relatively small size of the project, large groundwater basin, and the fact that surface water adequately recharges the aquifer under the Smith River.

WATER QUALITY

Potable Water

The project would be served by the City of Crescent City or the BOVCSD, which contracts with the City of Crescent City for its water supply. The City has stated that they have sufficient capacity to serve the project (**Appendix I**). The water quality of the Crescent City system is generally high. The City of Crescent City obtains its water from the aquifer under the Smith River and currently provides only minor chlorination prior to distribution. Fluoride is added for dental protection. Domestic water for the project would be provided by the City of Crescent City or the BOVCSD, which serves a small outlying area just east of Crescent City. A connection along Roy Avenue and a pipeline onto Martin Ranch property is required to deliver this supply. The most convenient connection point is at Darby Street (MWH, America, Inc., 2004a).

Surface Water

Construction activities could change the structural integrity of soils on site and result in vegetation removal necessary for soil retention. Without mitigation, the loose soils generated from construction could be transported off site by stormwater runoff and degrade local surface water quality. Required mitigation is discussed in **Section 5.0**.

Surface water runoff during construction and operation of the proposed project could transport trash, debris, oil, sediments, and grease into adjoining surface waters affecting surface water quality. During periods of wet weather, stormwater flows over road surfaces, parking lots, and other impervious surfaces, and will likely carry pollutants and sediment into storm drains which eventually lead to local water bodies such as the nearby wetlands or the Pacific Ocean. Stormwater runoff typically carries the highest loads of pollutants during the first major storm of the season and the initial runoff period of each storm event. These periods of runoff are termed the "first flush" when runoff is exposed to accumulated pollutants on the ground that may be entrained in the stormwater and carried to local water bodies. As the stormwater runoff continues, the limited pollutant sources are generally reduced and the pollutant loading to the stormwater drops accordingly. Vegetated detention swales designed to treat the "first flush" are listed as mitigation in **Section 5.0**. Irrigation runoff would either be absorbed into the ground on site or flow off site through stormwater treatment facilities including vegetated swales. As irrigation would not occur during wet periods it is unlikely that it would exceed the capacity of the detention swales.

Impacts to water quality are potentially significant and will be mitigated as part of project implementation. To reduce the effects of increased surface runoff volume and entrained pollutants, the Tribe will comply with the terms of the General Construction National Pollutant Discharge Elimination System (NPDES) Permit and ensure that Best Management Practices (BMPs) are used to reduce the risk of soil erosion and polluted discharge. Construction activities such as site preparation could increase the potential for erosion to occur. These BMPs will include the provision that surface water should not be allowed to flow uncontrolled over exposed soil surfaces by employment of engineering designs which divert drainage to minimize erosion. The Tribe will prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) to reduce the amount of pollutants in stormwater runoff leaving the site. The SWPPP shall include measures to prevent sediment and pollutants from impermeable surfaces, such as the parking area, from entering the drainage system. Oil and grease traps/separators reduce the risk of off-site water quality impacts from automobile-associated pollution. Runoff impacts would be reduced through minimizing irrigation and the use of fertilizer and avoiding irrigation or the use of fertilizer during wet periods. To ensure that off-site impacts are minimized, the Coastal Commission will review water quality and landscaping plans prior to construction (**Appendix Q**). Additional mitigation measures are listed in **Section 5.0**.

COASTAL RESOURCES

Although none of the Alternative A facilities would be located within the Coastal Zone, an existing access road within the Coastal Zone would be widened from 16 feet to 24 feet. The Coastal Commission has found the project, including access road improvements, are consistent with the Coastal Act and local coastal policies (**Appendix Q**). The improvements to the access road would not impact water resources in the Coastal Zone portions of the property. Utility lines would avoid jurisdictional waters by following the access road on site. The project would span creek or drainage channels with inverted "U" culverts or clear span bridges.

The overall watershed contributing to the Crescent City Marsh is approximately 1,120 acres, of which 510 acres are developed and 610 are undeveloped. Assuming the development of 10 acres, Alternative A would alter the watershed to 520 acres developed and 600 acres undeveloped. This would increase developed areas in the watershed by 0.9%. As discussed above, the hydrologic model developed for predicting runoff volumes shows that the mitigated peak flows for the 2-year, 10-year, and 25-year flow conditions were less than the peak flows under existing conditions and matched peak flows for a 100-year return interval (SHN, 2006). These findings are based on smaller individual sub-areas. Thus, mitigation would reduce the impact to a less than significant level. Off-site drainage impacts to western lily are addressed in **Section 4.5**, Biological Resources.

4.3.2 ALTERNATIVE B – GOLF COURSE, HOTEL, CONFERENCE CENTER, AND PARKING FACILITY (NON-GAMING ALTERNATIVE)

The Non-Gaming Alternative would place structures on generally undeveloped land. The net result would be an increased percentage of impervious surfaces, increased runoff, and increased contaminant loading in runoff. Overall ground disturbance, site coverage, and surface water runoff would be greater than those of the Proposed Action due to the addition of the golf course.

SURFACE WATER HYDROLOGY

The Non-Gaming Alternative would convert approximately 103 acres of nearly undeveloped land into buildings, parking areas, greens, tees, and fairways. This alternative would increase impervious surfaces by approximately 10 acres. Impervious surfaces would increase runoff, which could cause drainage impacts from the concentration of stormwater runoff. This increased runoff would affect primarily Sub-Basin 2 (Figure 2 of **Appendix B**). Minor impacts could occur to Sub-Basins 1,3, and 4 with no impact to Sub-Basin 5. Runoff from the golf course would be offset by ponds and swales that would function as detention facilities.

Sub-Basin 2 discharges through a culvert under Humboldt Road (Culvert 4) with a maximum capacity of 67 cfs. This accommodates the existing peak flow of 58 cfs during a 10-year storm event but not the peak flow of 76 cfs during a 25-year storm event. According to a hydrology analysis prepared by White Shield, Inc. in 2002, a similar-sized project would increase flows to Basin 2 by 12.32 cfs during a 10-year storm event (**Appendix B**). Since current drainage facilities are inadequate, the impact is considered significant. Mitigation is discussed in **Section 5.0**.

Collection of water for the Crescent City water supply comes from groundwater aquifers which are recharged by infiltration of surface water. While the increased demand of the project would reduce river flows slightly the increased demand of the project would come from the City's available water rights. The increased demand of 120,000 gpd would represent 1.9% of the City's total water right of 6.3 MGD. This amount is small and considered less than significant.

FLOODING

The project site is located outside of the 100-year floodplain, as shown on the applicable FEMA FIRM. No mitigation measures for on-site flooding are required.

GROUNDWATER

Under the Non-Gaming Alternative the City of Crescent City or the BOVCSD would supply potable water to the site. As the City and BOVSCD receive their water from Ranney collectors that are recharged primarily by the Smith River, there would be less than significant effects to groundwater. This alternative would have a maximum day demand of 120,000 gpd for potable

water and a maximum day demand of 1.2 MGD for non-potable (irrigation) water (**Appendix L**). Irrigation water would be supplied by reclaimed water from the City of Crescent City wastewater treatment plant. Alternative B would not result in significant groundwater withdrawals from the Smith River Plain Groundwater Basin. No mitigation would be required.

Potential impacts to regional groundwater resources exist due to the application of fertilizers and pesticides by the golf course operation. Leaching of chemicals in through the soil is influenced by factors including physical properties, chemical properties, solubility, and longevity of the fertilizer or pesticide. This impact is considered significant and specific mitigation measures are discussed in **Section 5.3.1**. Mitigation includes measures that will decrease the likelihood of leaching during storage, mixing, equipment cleaning, disposal, and application. Selection of pesticides and fertilizers, monitoring of weather prior to application and monitoring of the amount of application can reduce the risk of leaching.

WATER QUALITY

Potable Water

Water would be supplied by the City of Crescent City or the BOVCSD which receives its water from the City. These providers are required to meet federal and state drinking water standards. The water quality of the Crescent City system is generally high. The City of Crescent City is supplied with water from the Smith River and currently provides only minor chlorination prior to distribution. Fluoride is added for dental protection (MWH America, Inc. 2004a). No impacts with regard to safe drinking water would occur.

Surface Water

As with impacts described under Alternative A, construction could generate loose soils which may be transported off site by surface water flow. These sediments, entrained in surface flow, can degrade local surface water quality. Mitigation measures listed in **Section 5.0** would reduce this impact to a less than significant level.

Additionally, surface water runoff during construction and operation could transport materials into adjoining surface waters, such as nearby wetlands or the Pacific Ocean. Vegetated detention swales designed to treat the “first flush” are listed as mitigation in **Section 5.0**.

To reduce the effects of increased surface runoff volume and entrained pollutants, the Tribe will comply with the terms of the General Construction NPDES Permit and ensure that BMPs are used to reduce the risk of soil erosion and polluted discharge. The Tribe will prepare and implement a SWPPP to reduce the amount of pollutants in stormwater runoff leaving the site. These measures are described more fully under Alternative A. Potential impacts would be

considered significant and mitigation, as described for the Proposed Action in **Section 5.0**, would be required.

Golf Course Considerations

The construction of a golf course has the potential to result in significant adverse impacts on the aquatic environment. A typical golf course can convert as much as 100 acres of rural land into a highly "terra-formed" environment of fairways, greens, tees, sand traps, cart paths and water hazards. Haphazardly designed golf courses can disrupt and degrade wetlands, floodplains, riparian areas, and forests that contribute to stream quality. This could potentially affect on-site wetlands, Sitka Spruce forest, and Red Alder/mixed deciduous woodland areas. Anticipated effects to habitat types are discussed under Biological Resources **Section 4.5.2** and affected acreages are shown in **Table 4.8**. Improper grounds management can result in excessive applications of fertilizers. Nutrients from golf course fertilizers can result in eutrophication of on-site or other nearby surface waters. Nearby waters that could be affected include the Crescent City Marsh, other coastal wetland areas, and the Pacific Ocean. Common components of turf fertilizers, namely nitrogen and phosphorous, are of paramount concern as the source of nutrients. Eutrophication is the enrichment of waters with plant nutrients, leading to enhanced plant growth (both algae and macrophytes) that results in algal blooms, floating algal and/or macrophytic mats and benthic algal and submerged macrophytic agglomerations. When decaying, this plant material leads to the depletion of oxygen reserves of water bodies, which in turn causes an array of secondary problems such as fish mortality and liberation of corrosive gases and other undesirable substances, such as CO_2, CH_4, and H_2S, organoleptic substances (causing taste and odor), and toxins, etc. The application of pesticides, fungicides, and other chemicals can be required to maintain vigorous and attractive greens. In some cases, chemical application rates can rival or exceed those used in intensive agriculture. Even though the application of golf course chemicals is considerably lower in areas with cool climates such as the project site, mitigation measures would be required to reduce these potential impacts to less than significant levels.

Because of the growing popularity of the sport and increased demand for more courses, and their regulatory designation as a source of non-point source water pollution, golf courses have come under increasing scrutiny in the United States. As such, the USEPA, the Golf Course Superintendents Association of America (GCSAA), and others have been working to keep downstream water sources clean. Environmental principles that seek to produce environmental excellence in golf course planning, siting, design, construction, maintenance and facility operations have been developed by a group of leading golf and environmental organizations. These principles were developed by the American Farmland Trust, American Society of Golf Course Architects, Audubon International, Center for Resource Management, Friends of the Earth, GCSAA, *Golf Digest*, National Coalition Against the Misuse of Pesticides, National Wildlife Federation, North Carolina Coastal Federation, Rain-Bird Golf Division, Royal Canadian Golf Association, SENES Oak Ridge Inc. – Center for Risk Analysis, Sierra Club,

USEPA, and United States Golf Association (USGA). These principles cover planning and siting, design, construction, maintenance (including plant protection and nutrition), water usage and conservation, wildlife management, and facility operations (including the handling, treatment, and storage of chemicals), etc.

The GCSAA and the USEPA have built a strong cooperative relationship and sound environmental practices that are being implemented on most golf courses today. According to the GCSAA, golf courses provide substantial environmental benefits. The GCSAA also points out the following: 1) independent university research supports the fact that well-managed golf courses do not pose significant risks to environmental quality, wildlife or human health; 2) the modern pesticides and fertilizers used to maintain healthy golf course turf have been thoroughly tested and are considered safe when used according to label directions; a pesticide product today has typically undergone more than 120 studies at a cost of $50 million before the EPA registers it; 3) today's golf course superintendents are educated professionals who care about environmental quality; most of today's superintendents have college degrees in agronomy, horticulture or related fields and substantial continuing education; 4) superintendents are the nation's leading practitioners of integrated pest management, a philosophy that reduces the potential risks of pesticide use; 5) virtually all golf courses employ at least one state licensed pesticide applicator who is trained in environmentally sound pesticide use; 6) the United States Golf Association is spending millions of dollars on research to study issues such as water quality and wildlife and the GCSAA has made environmental education a major focus of all its education and information programs; 7) the nation's golf course architects now design courses that reduce the need for pesticides, water and costly maintenance practices while preserving habitat and environmental quality (GCSAA, 2002).

Golf courses typically implement BMPs. These BMPs relate to the methods and systems implemented during the design and construction portion of a project and the management practices, which continue perpetually throughout the life of the project. The Tribe and its course architect (Palmer Course Design Company) are committed to the environmental principles developed by the GCSAA and to the implementation of the full range of BMPs used by today's golf courses (**Appendix V**). Some of these BMPs are included as mitigation measures in **Section 5.0**. The Tribe also intends to hire a qualified golf course superintendent to manage the operation and carry out the GCSAA environmental principles and operational BMPs. This should help reduce potential water quality impacts. Mitigation measures necessary to reduce potential water quality impacts to less than significant levels are described in **Section 5.0**.

COASTAL RESOURCES

Development in the Coastal Zone would include areas of the golf course. Structures including the clubhouse and hotel/conference facilities would be located outside of the Coastal Zone. Development within the Coastal Zone requires a Coastal Zone Management Act Federal

Consistency Determination by the Bureau of Indian Affairs. State approvals include concurrence with the consistency determination and approval of a Coastal Zone Permit by the California Coastal Commission. Other approvals by Federal and State agencies are listed in **Table 2-2**. As mitigation, these approvals would be obtained. Physical environmental impacts are discussed in the other topical sections of the EIS such as **Section 4.5,** Biological Resources.

4.3.3 ALTERNATIVE C – CASINO, HOTEL, CONFERENCE CENTER, GOLF COURSE, AND PARKING FACILITY

Alternative C would place structures on generally undeveloped land including a golf course. The net result would be increased impervious surfaces, increased runoff, and increased contaminant loading in runoff. Overall ground disturbance, site coverage, and surface water runoff would be similar to those of Alternative B.

SURFACE WATER HYDROLOGY

Alternative C would convert approximately 103 acres of nearly undeveloped land into buildings, parking areas, greens, tees, and fairways. This alternative would increase impervious surfaces by approximately 14.1 acres (**Appendix B**). Impervious surfaces would increase runoff, which could cause drainage impacts from the concentration of stormwater runoff. Similar to Alternative B, increased runoff would affect primarily Sub-Basin 2 with minor impacts to Sub-Basins 1, 3, and 4. Runoff from the golf course would be offset by ponds and swales that would function as detention facilities. As discussed under Alternative B, a similarly sized project, drainage facilities are inadequate to support this increased runoff. Mitigation is discussed in **Section 5.0**.

Collection of water for the Crescent City water supply comes from aquifers which are recharged by infiltration of surface water. While the increased demand of the project would reduce river flows slightly, the increased demand of the project would come from the City's available water rights. The increased demand of 154,000 gpd would represent 2.4% of the City's total water right of 6.3 MGD. This amount is small and considered less than significant.

FLOODING

The project site is located outside of the 100-year floodplain, as shown on the applicable FEMA FIRM. No mitigation measures for on-site flooding are required.

GROUNDWATER

Under Alternative C water would also be supplied to the site by the City of Crescent City or the BOVCSD, via the City of Crescent City, which receives its water from Ranney collectors. These collectors are recharged primarily by the Smith River, which would lead to less than significant impact to groundwater. This alternative would have a maximum day demand of 154,000 gpd for potable water and a maximum day demand of 1.2 MGD for non-potable (irrigation) water

(**Appendix L**). Irrigation water would be supplied by reclaimed water from the City of Crescent City wastewater treatment plant. Alternative C would not result in significant groundwater withdrawals from the Smith River Plain Groundwater Basin. No mitigation would be required.

Potential impacts to regional groundwater resources exist due to the application of fertilizers and pesticides by the golf course operation. As discussed under Alternative B leaching of chemicals is considered a significant impact and mitigation measures are discussed in **Section 5.0**.

WATER QUALITY

Potable Water

Water would be supplied by the City of Crescent City or the BOVCSD, which receives its water from the City. These providers are required to meet federal and state drinking water standards. The water quality of the Crescent City system is generally high. The City of Crescent City is served by the Smith River and currently provides only minor chlorination prior to distribution. Fluoride is added for dental protection (MWH America, Inc. 2004a). No impacts with regard to safe drinking water are anticipated.

Surface Water

Under Alternative C, surface water quality issues would be similar to those discussed for Alternative B. Potential impacts would be considered significant and mitigation, as described for the Proposed Action in **Section 5.0**, would be required.

Golf Course Considerations

Impacts to the aquatic environment from the development of a golf course are discussed under Alternative B. Mitigation measures are included in **Section 5.0**, including BMPs specific to golf course operation.

COASTAL RESOURCES

Development in the Coastal Zone would include areas of the golf course. Structures including the casino, hotel/conference facilities, and clubhouse would be located outside of the Coastal Zone. Development within the Coastal Zone requires a Coastal Zone Management Act Federal Consistency Determination by the Bureau of Indian Affairs. State approvals include concurrence with the consistency determination and approval of a Coastal Zone Permit by the California Coastal Commission. Other approvals by federal and state agencies are listed in **Table 2-2**. As mitigation, these approvals would be obtained. Physical environmental impacts are discussed in the other topical sections of the EIS such as **Section 4.5,** Biological Resources.

4.3.4 ALTERNATIVE D – ENDERTS BEACH DEVELOPMENT

The Enderts Beach Property Alternative would place additional structures on relatively undeveloped land. The result would be an increased percentage of impervious surfaces, increased runoff during wet weather events, and increased contaminant loading in urban runoff. Additional consumptive demands would also be placed on area water resources.

SURFACE WATER HYDROLOGY

The project would increase impervious surfaces through the conversion of approximately 15 acres of nearly undeveloped land into a casino/hotel/convention center building, access road, and parking area. Impervious surfaces would increase runoff which could cause drainage impacts from the concentration of stormwater runoff. Since the annual precipitation and peak rainfall intensity in the area may be considerable, surface water runoff may be also. Runoff from the Enderts Beach site drains into the Pacific Ocean through a breach in the fore-dune.

The site contains wetland areas that currently retain water from upslope areas to the east and shape local drainage patterns. As compared to the Proposed Action, these wetlands are unfarmed and provide unique resource values, drainage and flood control. Since coastal wetlands would be filled and drainage courses would be altered directly and indirectly, this alternative would also alter local surface water hydrology both on and off site. Increased peak flows during storm events are likely and space limitations could make wetland avoidance difficult and hinder efforts to design appropriate drainage facilities. Filling of wetlands would alter existing drainage courses and potentially create new wetland areas on site or off site.

Potential impacts are considered significant. The small size of the Enderts Beach parcel, and its proximity to the Pacific Ocean indicates that potential impacts may not be mitigated to less than significant levels.

FLOODING

The vast majority of the site is located outside of the 100-year floodplain, as shown on the applicable FEMA FIRM. The FIRM relevant to this project is Del Norte County Community and Panel Number 065025 0100 C revised on July 3, 1986. No development would occur within the high tide area. No mitigation measures for flooding would be required.

GROUNDWATER

Under Alternative D water would also be supplied to the site by the City of Crescent City, which receives its water from Ranney collectors. These collectors are recharged primarily by the Smith River, which would lead to a less than significant impact to groundwater. This alternative would have a maximum day demand of 154,000 gpd for potable water and a maximum day demand of 4,000 gpd for non-potable (irrigation) water (**Appendix L**). Alternative D would not result in

significant groundwater withdrawals from the Smith River Plain Groundwater Basin. No mitigation would be required.

WATER QUALITY

Potable Water

Water would be supplied by the City of Crescent City, which is required to meet federal and state drinking water standards. The water quality of the Crescent City system is generally high. The City of Crescent City is served by the Smith River and currently provides only minor chlorination prior to distribution. Fluoride is added for dental protection (MWH America, Inc. 2004a). No impacts with regard to safe drinking water are anticipated.

Surface Water

Construction activities would disturb soils on the site and result in vegetation removal. Without mitigation, the exposed soils from construction could be transported off site by stormwater runoff, de-watering, and the movement of equipment. These sediments may degrade local surface water quality. The mitigation described for Alternative A and discussed in **Section 5.0** would be necessary.

Surface water runoff during construction and operation of Alternative D could transport trash, debris, oil, sediments, and grease into adjoining surface waters, affecting surface water quality. During periods of wet weather, stormwater flows over road surfaces, parking lots, and other impervious surfaces, carrying with it pollutants and sediment into storm drains and eventually to local water bodies such as the nearby wetlands or the Pacific Ocean. To reduce the effects of increased surface runoff volume and entrained pollutants, the Tribe would comply with the terms of the General Construction NPDES Permit and ensure that BMPs are used to reduce the risk of soil erosion and polluted discharge. Construction activities such as site preparation could increase the potential for erosion to occur. These BMPs would include the provision that surface water should not be allowed to flow over and fill slopes, in order to significantly reduce erosion. The Tribe would prepare and implement a SWPPP to reduce the amount of pollutants in stormwater runoff leaving the site. The SWPPP would include measures to prevent sediment and pollutants from impermeable surfaces, such as the parking area, from entering the drainage system. Oil and grease traps/separators reduce the risk of off-site water quality impacts from automobile-associated pollution. These are potentially significant impacts, which would be mitigated as part of project implementation. Mitigation measures are listed in **Section 5.0**.

As currently shown on the conceptual site plan, the project would directly alter existing drainage ways. These alterations could adversely affect the physical, chemical, or biological properties of on- and off-site surface waters. Mitigation measures would be necessary to reduce these potential

impacts to less than significant levels. Mitigation for potential water quality impacts is discussed in **Section 5.0**.

The Enderts Beach site contains approximately 15.67 acres of jurisdictional wetlands and two intermittent drainages (other "waters of the U.S.") totaling approximately 1,130 linear feet (Oscar Larson & Associates, 1990). Over approximately 11 acres of palustrine emergent marsh, palustrine scrub-shrub and palustrine forested wetlands and the entire length of several intermittent drainages could be directly impacted by this project alternative.

Additional direct impacts would occur due to construction of detached bungalows. Indirect impacts are also likely to occur, as the conceptual site plan currently shows development within a 100-foot wetland buffer established by Del Norte County ordinance. Potential indirect impacts to waters of the U.S. include increased sedimentation and pollutants resulting from site runoff, inadvertent spills of fuel, lubricants, or other toxic materials, and location of construction staging areas. Reduced water quality due to project-related activities could impact sensitive species associated with aquatic habitats. Potential impacts include increases in water temperature, decreased available oxygen content, decreased visibility, and an increase in pollutants. Potential impacts to waters of the U.S are considered significant. Although the mitigation measures identified in **Section 5.0** would be incorporated into the project, residual impacts are still expected to be significant due to the unique nature of the habitat and its location on the Pacific coast.

COASTAL RESOURCES

Development of the casino in the Coastal Zone would require approvals by the Coastal Commission, USACE, and USEPA. As mitigation, these approvals would be obtained.

4.3.5 ALTERNATIVE E – NO ACTION

The No-Action Alternative would not result in adverse impacts to surface or groundwater resources.