

Appendix G Supplement

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1.0 Purpose Summary

1.1 Purpose of Appendix G Supplement

The Appendix G Supplement has been developed by the Division of Forestry, Fire and State Lands (FFSL) to provide sufficient information to support the Division's selection of the preferred permitting strategy and to establish specific requirements and stipulations FFSL will utilize to implement the selected permitting strategy outlined in Appendix G of the Bear Lake Comprehensive Management Plan (CMP).

2.0 Summary of Alternative Permitting Strategies

2.1 Sources of Information Used in Analysis

Many factors were considered in the analysis and ultimate selection of a permitting strategy regarding the use of boat ramps on sovereign lands at Bear Lake First and foremost is the Public Trust obligations of FFSL. As described in Section 1.1 of the Bear Lake CMP, sovereign lands are to be managed by FFSL under the Public Trust Doctrine. The purpose of the Public Trust Doctrine, as interpreted by the Utah State Legislature, is to assure public access to navigable waters and lands for commerce, navigation, fishing and other broad uses such as swimming, recreational boating and preservation of lands in their natural state. The Utah State Legislature has further codified the Public Trust Doctrine to include multiple uses on sovereign land. Utah Code Title 65A, Chapter 2, Section 1 (UC 65A-2-1) states that FFSL shall administer state lands using multiple-use, sustained-yield principals. According to the Bear Lake CMP, there is no hierarchy of uses protected under the doctrine. However, when there are competing public benefits, the public trust requires that those benefits that best preserve the purpose of the public trust be given a higher priority.

Stakeholders within the Bear Lake Planning, Implementation and Review Group (PIRG) as well as technical experts within various government agencies with regulatory authority at Bear Lake were consulted as FFSL considered a range of alternatives to address the impact of boat ramps at Bear Lake. Public comment on Bear Lake boat ramp issues was also sought during a 30-day public scoping period in the spring of 2016.

FFSL is required by statute and rule to consider several factors when evaluating proposed actions on sovereign lands, including impacts to wildlife, water quality, navigation, and other resources. FFSL often finds it necessary to consult with cooperating agencies that possess subject matter experts in these resource areas. As such, FFSL contacted representatives from the U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), Utah Division of Wildlife Resources (DWR), Utah Division of State Parks and Recreation (State Parks), and the Utah Division of Water Quality (DWQ). The consensus opinion obtained from the cooperating agencies and some members of the Bear Lake PIRG was one of concern regarding unfettered use of Bear Lake sovereign lands for the installation and operation of private boat ramps. Most indicated there should be some limit to the number and size of private boat ramps at Bear Lake in order to minimize adverse impacts to natural and cultural resources as well as navigation. In addition, several alternative permitting strategies were suggested, which was the basis for examining permitting strategies in the analysis.

FFSL often consults with managers and staff of sovereign land programs in adjoining states to share information and ideas about effective land management strategies. FFSL consulted representatives of the sovereign land programs in Nevada, Idaho and Arizona to determine their management strategies concerning private boat ramps on their sovereign land units (Wyoming, Colorado and New Mexico have not asserted jurisdiction over submerged lands and, as a result, do not have sovereign land programs). Feedback from these representatives revealed a diversity of management approaches to boat ramps. Idaho typically only authorizes public boat ramps, including at Bear Lake, for public entities such as city, county, state and federal agencies. In limited cases, private boat ramp authorizations may be issued to commercial marinas but they must be open to use by the public. Private boat ramps are not generally permitted for adjacent, upland landowners based on the availability of public boat ramps. Arizona authorizes the use of private boat ramps for any successful applicant with little stipulations regarding use. Nevada issues authorizations for private boat ramps but only in approved shoreline areas and they enforce numerous restrictions and stipulations regarding their use, particularly at Lake Tahoe.

Lastly, the Division's experience in overseeing the use of private boat ramps on other sovereign land units was also helpful in the development of criteria and alternatives. Several private, commercial boat ramps are currently permitted by FFSL on portions of Utah Lake, the Great Salt Lake, and the Colorado River.

FFSL utilized the data, opinions, observations and feedback collected from these various sources to develop the alternative permitting strategies and

criteria by which the alternative permitting strategies were compared and analyzed. A detailed description of each alternative and associated criteria are provided in the following sections.

2.2 Alternatives Considered

FFSL used feedback and information gathered from the various sources described in Section 2.1 to develop four alternative permitting strategies to be considered as part of the Bear Lake CMP amendment process. These four permitting strategies are summarized below.

Alternative 1: Unregulated Use.

Currently, FFSL lacks clear policy guidance concerning the permitting, construction, location and use of seasonal or permanent boat ramp structures by adjacent landowners for private access to sovereign lands. This has resulted in adjacent landowners using a variety of methods to access sovereign lands. A land use survey conducted by FFSL in 2012 revealed the presence of 64 permanent boat ramps structures on sovereign lands. Of these, the division had previously authorized only five of the ramps. In addition, many other adjacent landowners are utilizing a variety of materials to create temporary access to the water's edge for recreation and launching of watercraft. These materials include carpet, rubber mats, used tires, wooden planks, metal grates and even cardboard. These materials are often left littering the shoreline once they are no longer useful. As they are partially buried in sand and soft soils, they can become hazards to other users of the public shoreline. As the water rises, some of these materials break free from the bed of the lake and become navigational hazards. FFSL has observed the placement of seasonal and permanent ramp structures in wetland areas and other areas of sensitive fish and wildlife habitat. Some materials like treated wood, rubber and carpet can leach toxic compounds into the water as they deteriorate, resulting in adverse impacts to water quality, fish, wildlife and humans.

Under this alternative, it is assumed that FFSL continues to operate without an established policy regarding the use of seasonal or permanent boat ramp and access structures on sovereign lands of Bear Lake.

Alternative 2: Regulated Ramps with no Density Limit

According to 2013 parcel data provided by the Rich County Assessor's Office, there are approximately 600 adjacent landowners to sovereign lands at Bear Lake. Under this alternative, any of these adjacent landowners could apply to construct a private, permanent boat ramp structure.

In order to minimize potential adverse impacts that may result from the permitting of private boat ramp structures, FFSL would require the following stipulations for any permanent ramp structure as part of this proposed alternative:

- 1) Adjacent landowners would be required to submit a request for authorization using an FFSL-designated application form to construct a permanent boat ramp. Each applicant would also be required to pay an application fee. Applicants would still need to apply for a beach launch permit in addition to applying for a boat ramp permit.
- 2) Every applicant would have to submit proof of adjacent land ownership.
- 3) FFSL would regulate the materials, construction and types of equipment used to construct permanent ramps.
- 4) Construction of seasonal or permanent ramps in areas designated as Class 5 or Class 6 resource protection areas in the Bear Lake Comprehensive Management Plan could be allowed or prohibited on a case-by-case basis.
- 5) Ramp structures would only be allowed in areas that FFSL has designated as open to motorized vehicle use.
- 6) FFSL would place limits on the size of all ramp structures.
- 7) Permanent boat ramps would have to be placed a minimum distance from adjacent property lines and be constructed at right angles to the existing shoreline.
- 8) Applicants desiring to use seasonal ramp systems instead of a permanent ramp structure would need to submit an application to FFSL. Applicants would be restricted to using materials approved in advance by FFSL such as pierced steel plank (PSP), aluminum roll-out ramps (ex. Rollaramp), roll-out polyester mats (ex. Mobimat), concrete mats, or high density polyethylene (HDPE) geoblock mats (ex. Geoterra or SolGrid). Other similar ramp systems would be considered on a case-by-case basis. The use of seasonal materials would be limited to the period between May 1st and October 31st of each year. All seasonal ramp systems would have to be removed by the landowner by October 31st or be subject to penalties by FFSL.
- 9) Under this alternative, FFSL would not implement a density limit for permanent boat ramps.

Alternative 3: Community Boat Ramps

A community boat ramp would be considered a permanent, non-commercial structure that provides access for the launching and retrieval of watercraft and vehicular/pedestrian access to the water's edge for a minimum of seven (7) adjacent landowners, or for a homeowners' association that owns a common

area that is adjacent, upland property. Under this alternative, a group consisting of at least seven (7) upland, residential landowners or an HOA could form a “boat ramp association” and submit an application for a community boat ramp to FFSL. Members of a community boat ramp association would not need to be immediate (contiguous) neighbors to one another to form an association. Each member of a non-HOA association would need to provide verification of ownership of adjacent, upland property. Community boat ramps would afford property owners direct access to sovereign lands while reducing the number of installed structures when compared to Alternatives 1 and 2.

The requirements for obtaining a community boat ramp authorization and stipulations regarding their construction and use would be the same as those proposed previously under Alternative 2; however, under this alternative, a cap on the density, or total number of permanent ramps allowed in a given area of shoreline, would be implemented by FFSL.

There are likely to be circumstances under which some adjacent, residential landowners are unable to participate in a community boat ramp association. This could be due to the absence of willing landowners within a reasonable distance or the inability to collaborate with adjacent landowners. In these instances, FFSL would consider allowing one landowner to construct a permanent ramp but the applicant would have to demonstrate extraordinary need.

Like Alternative 2, the use of seasonal, approved, portable ramp systems to gain access to sovereign lands by adjacent landowners would be permitted provided prior authorization from FFSL is obtained. The use of seasonal ramp systems would be limited to those identified in Alternative 2 with the same seasonal use restrictions.

Alternative 4: Public Boat Ramps

In this scenario FFSL would not authorize the use of seasonal or permanent boat ramp structures on Bear Lake sovereign lands. Adjacent landowners (only those with a beach launching permit) would have to launch and retrieve their watercraft without utilizing permanent ramps or seasonal ramp systems to traverse soft soils or marsh areas. Landowners unable to access the waters edge on sovereign lands due to poor soil conditions or low water levels would need to trailer their boat to a public access point in order to access sovereign lands. As a part of this alternative, FFSL would partner with local government entities and other state agencies through existing FFSL leasing mechanisms to construct and operate additional public, paved boat ramps in order to increase the availability of public access for the public and these adjacent landowners. The boat ramps would be located where FFSL, local governments and other

stakeholders have identified a need for additional access based on public and adjacent landowner feedback, field observations/data, and PIRG input. There are currently six public boat ramps at Bear Lake, including a five-lane boat ramp at the Bear Lake State Park Marina. However, most of these public boat ramps are located along the eastern shoreline whereas most demand for public access occurs along the southern and western shorelines. FFSL would coordinate with local government entities, the PIRG and state and federal agencies to determine funding sources for the construction of additional public boat ramps and launching facilities. This alternative assumes that FFSL would provide some level of financial support subject to legislative approval for the construction of the additional boat ramps as well as for ongoing operation and maintenance.

The size of each additional boat ramp and launching facility would be based on estimates of demand as well as location. The ramps would be paved and include sufficient parking and turnaround areas as well as basic restroom facilities. The ramps and launching facilities would be open to the general public, including upland, adjacent landowners. Adjacent landowners would not be given priority over the general public for access. The boat ramps could be used by adjacent landowners that do not wish to acquire a beach launch permit, have a beach launch permit but cannot access the water due to low water levels or poor soil conditions, or have property situated in an area where FFSL prohibits the launching of watercraft and access across sovereign lands using motorized vehicles.

2.3 Alternatives Dropped from Further Consideration

Some regulatory agencies that administer submerged and sovereign lands require that individuals and landowners launching watercraft do so by walk-in access only. This is problematic at Bear Lake for two reasons. First, walk-in access would be difficult due to the soft substrate within numerous marsh areas along the Bear Lake shoreline. The soft substrate is one of the primary reasons landowners have been using seasonal and permanent boat ramp structures to access the water. Second, walk-in access limits the type of watercraft to those that can be easily carried considerable distances. This means that landowners would be restricted to using canoes, kayaks, paddleboards, small jet skis and similar watercraft unless they launched from a public boat ramp. This is not ideal for Bear Lake since many adjacent landowners already own powerboats and larger watercraft that must be launched using mechanical or motorized assistance.

Another alternative dropped from further consideration involves the use of rail systems. These systems involve the placement of steel or aluminum tracks, or

rails to launch watercraft by utilizing electric or manual winch systems to push the watercraft into the water or pull them out of the water. Although the rail systems offer some benefits, such as portability and lessened environmental impact (compared to a concrete boat ramp structure), they can be prohibitively expensive. In addition, they pose a significant hazard to navigation because they require two to three feet of ground clearance which makes them hard to see from the water but high enough to cause damage to watercraft. Perhaps most importantly, they are not feasible given the topography of the Bear Lake shoreline and persistent low lake levels during the summer months. The rail systems need to be placed on a sloping shoreline in order to operate effectively and efficiently. With the exception of portions of the eastern shoreline, many areas of Bear Lake sovereign lands have little to no slope, making the use of launching rail systems difficult if not impossible. In addition, the installation of these systems would still leave adjacent landowners with no access during periods of low water.

2.4 Existing Unauthorized Boat Ramp Structures

As indicated previously, a land use survey conducted in 2012 revealed the presence of 59 permanent boat ramp structures on sovereign lands that have not been authorized by FFSL. After a great deal of deliberation and assistance from the Utah Attorney General’s Office, FFSL has decided to “grandfather” these structures into the selected permitting strategy. Any existing, permanent boat ramp structure installed prior to the effective date of the withdrawal for permitting of boat ramps will be considered grandfathered into the new permitting strategy. However, there are several conditions that must be met before these structures are considered “in compliance” with FFSL’s new policy. Each owner of an unauthorized structure will be required to apply for a permit from FFSL and all other applicable agencies (separately) and pay an applicable application fee in addition to a penalty fee to be determined by FFSL. FFSL will allow for basic repairs and maintenance of these structures going forward; however, complete replacement of an existing permanent ramp by current and all future landowners will be prohibited. If the structures become damaged beyond repair, the landowner will be required to remove any part or remnant of the structure left on sovereign lands. Any owner desiring to replace the ramp would need to apply to FFSL for prior authorization. As a result, all of the following alternatives presented in this analysis assume that the existing unauthorized ramp structures will be grandfathered into FFSL’s preferred permitting strategy.

3.0 Selection of Criteria and Analysis of Alternatives

3.1 Selection of Criteria

FFSL is required to consider several different factors when deciding whether or not to permit a proposed action on sovereign lands. The installation of any seasonal ramp system or permanent ramp structure on sovereign lands may create a variety of beneficial and/or detrimental impacts. To account for the potential impacts resulting from implementation of the proposed alternative permitting strategies described in Section 2.0, FFSL developed a set of criteria that were used to compare and contrast the alternatives strategies.

Aggregation and analysis of the information provided by the sources described in Section 2.1 revealed 11 criteria that were used to compare and contrast the various permitting alternatives. The 11 criteria, listed in no particular order, include impacts to the following:

- Navigation and Public Safety,
- Shoreline Habitat, Wetlands and Vegetation,
- Water Quality,
- Fish, Wildlife and Endangered/Threatened Species,
- Local Economy
- Recreation,
- Cultural Resources,
- Adjacent Landowner Costs,
- Administrative and Financial Burden to Regulatory Agencies,
- Capacity to Address Future Demand, and
- Ease of Adjacent Landowner Access.

Many of these criteria are important considerations for multiple regulatory agencies in addition to FFSL. For example, navigation and public safety are of upmost concern to State Parks while shoreline habitat, vegetation, and water quality are important considerations for DWR and the Utah Division of Water Quality (DWQ).

3.2 Criteria Dropped from Further Consideration

There were two criteria dropped from further consideration in the amendment process. The criteria and the reasoning for their exclusion are described below.

3.2.1 Aesthetic Impacts

The aesthetic impact of structures on a lakeshore is often subjective based on an individual's perspective and attitudes (Washington Department of Natural Resources, 2009). Some individuals may find a shoreline with ramps, piers, boats and boat masts appealing while others will prefer an undisturbed shoreline. Determining community attitudes concerning the aesthetics of a proposed action require lengthy, expensive public attitude surveys, which may not be conclusive if the number of participants or respondents is low. Many public agencies have spent a great deal of time and money conducting detailed public attitude surveys and visual impact assessments and have still failed to develop a clear consensus of attitudes regarding the aesthetic impacts of shoreline structures on publicly-owned lakes and rivers. For this reason, FFSL excluded the aesthetic impact criterion from further consideration.

3.2.2 Economic Impact to Adjacent Property Value

FFSL acknowledges the potential impact to property value of adjacent, upland parcels that could result from the implementation of many of the alternatives considered. However, determining the impact to property value is complex, site specific, and difficult to ascertain without the benefit of detailed studies. Furthermore, FFSL has no statutory obligation to consider impacts to adjacent property value in its management decisions for sovereign lands. Therefore, FFSL has determined that consideration of impacts to adjacent property value is beyond the scope of this analysis.

3.3 Analysis of Alternatives

3.3.1 Qualitative Analysis

FFSL used the established set of criteria to compare and contrast the four alternatives to determine the desired permitting strategy. Readily ascertainable sources of research data were used to estimate the performance of each alternative against the criteria when possible. In addition, FFSL utilized anecdotal observations and experiences gathered from its long-term management and oversight of sovereign lands and associated natural resources to estimate potential impacts.

Simple qualitative scales were established to provide some measure to compare the performance of each alternative against the criteria. These scales include the following:

- Impacts to natural, cultural and recreational resources are estimated as having major, moderate, minor, or negligible impacts. Positive impacts are

considered the same as negligible/no impacts for the purpose of this analysis. A negligible or positive impact is preferred.

- Impacts to the local economies of the Bear Lake area are measured as having a high impact, moderate impact, low impact or no impact. All impacts are considered positive. A high impact is desirable.
- In analyzing landowner costs and financial burden to administrative agencies, an alternative is estimated as having one of the following: 1) significant costs, 2) moderate costs, 3) low costs or 4) no costs. No costs or low costs are always preferred.
- Each alternative's capacity to address future demand is measured as either possessing a high capacity, medium capacity, low capacity or no capacity. An alternative with a high capacity to address future demand is desired.
- An alternative's effects on landowner access are characterized as unrestricted, restricted, limited or no access. It is assumed most adjacent landowners prefer unrestricted access with little to no stipulations regarding placement, maximum dimensions or construction while FFSL and other regulatory agencies would prefer a scenario in which access is provided but standards are implemented to minimize potential negative impacts to natural, cultural and recreational resources.

It is imperative to note that these qualitative assessments of the performance of each alternative are estimates based on the best available information and knowledge gained from the experiences of FFSL and other sovereign land programs in adjoining states. Most studies on the impacts of shoreline development and recreation have focused on coastal environments and do not generalize well to inland lakes and reservoirs (Kelty & Bliven, 2003). In addition, there is a great deal of existing research data regarding boat docks, bulk heads, jetties, marinas, breakwaters, and similar structures but data regarding the installation and use of permanent and seasonal boat ramp structures is currently lacking.

3.2.3 Cumulative Impacts

The following analysis of the alternatives assumes that multiple permanent boat ramp structures and seasonal ramp systems would be placed on sovereign lands. Therefore, the analysis considers the overall cumulative impacts that may result from the construction and use of multiple seasonal and permanent structures on sovereign lands rather than the impacts that may result from a single structure or isolated use.

3.4 Performance of Alternatives Against Selected Criteria

3.4.1 Criterion 1: Navigation and Public Safety

There are many types of watercraft in use at Bear Lake at any given time of the year including kayaks, canoes, small fishing and pleasure boats and large power boats. Other activities such as water skiing, kiteboarding, paddle boarding and jet skiing are prevalent. Maintaining safe navigation for these various uses is one of the basic tenets of the Public Trust Doctrine and is critically important to FFSL. Unimpeded navigation and safety of those that use the lake are also important to other state agencies, particularly State Parks. State Parks not only manages Bear Lake State Park and Marina but also is responsible for enforcement of boating regulations, Coast Guard regulations and other law enforcement activities, search and rescue operations, and removal of navigational hazards at Bear Lake. The preferred permitting strategy minimizes the introduction of potential navigational hazards or activities that impede or interfere with safe navigation.

Alternative 1: Unregulated Use

Major Adverse Impact: It is reasonable to assume that with no restrictions on size, length, and construction of boat ramps, some landowners are going to construct structures that may interfere with navigation. The current conditions at Bear Lake increase the potential for adverse impacts to navigation, especially during periods of low water levels typically observed during the summer season. The relatively flat shoreline, especially along the western portions of the lakebed, would require the construction of very long ramps. Ramps with slopes of less than 12 percent are problematic because the flatter the slope, the farther a vehicle must back into the water so that a boat can float free of its trailer (Minnesota DNR, 2008). During periods of low water levels, these long ramps may become hidden just below the water surface and could damage outboard motors including smaller boats with trolling motors (WDNR Shoreline Management Plan, 2011). In addition, construction of boat ramps may require the installation of cofferdams and similar structures during construction. These structures could pose risks to safe navigation and use of the shoreline if not properly marked with reflective warning indicators.

The unregulated use of permanent boat ramp structures also creates a diffused pattern of launching and retrieval of motorized watercraft. This can adversely impact safe navigation for other boaters because it is safer to have concentrated launching and retrieval points that are well marked and established (WDNR Shoreline Management Plan, 2011).

Currently, many adjacent landowners place an assortment of materials and structures on the lakebed to provide traction for motorized access across the soft soils of exposed lakebed. These materials become floating navigational hazards if they are not removed and properly stored on upland property during high water levels. In addition, these materials often become partially buried if left unmaintained resulting in safety concerns for beachgoers and other users recreating along the exposed shoreline. The absence of regulation concerning the types of permissible materials and duration of use by FFSL would only exacerbate this existing problem.

Alternative 2: Regulated Ramps with no Density Limit

Moderate Adverse Impact: Assuming the implementation of stipulations regulating the size, construction, placement and use of permanent ramps and seasonal ramp systems, the potential for adverse impacts to navigation and public safety are significantly reduced when compared to Alternative 1. Limiting the length of permanent ramps improves safe navigation, especially in near-shore areas. Restricting the use of materials to obtain traction for motorized launch vehicles to approved portable ramp systems will help eliminate potentially dangerous obstacles and debris from creating navigational hazards in both near-shore areas and deep water as well.

Alternative 3: Community Boat Ramps

Minor Adverse Impact: The use of a community ramp authorization system may reduce the total number of permanent structures on sovereign lands by as much as 80 percent compared to the unregulated scenario in Alternative 1 and the unlimited access proposed in Alternative 2, thereby drastically reducing the potential for navigational hazards compared to these alternatives. Like Alternative 2, the use of seasonal ramp systems could help prevent materials like steel grates, tires, carpet, wood, engine blocks and other unauthorized objects from being abandoned, which can become hazards as water levels fluctuate.

Alternative 4: Public Boat Ramps

Negligible/No Impact: The construction and operation of public boat ramp facilities in place of private boat ramps would almost completely negate potential adverse impacts to safe navigation, unlike the other three alternatives. Public boat ramps would be operated and maintained by state and/or local government agencies that would ensure ramps and all related structures would be properly signed, marked, and delineated to ensure safe navigation. The public ramps would also likely be limited in length thus avoiding potential navigation hazards from long ramps that extend too far from adjacent upland

parcels. Furthermore, government agencies operating the public ramps are much more likely than adjacent landowners to avoid using structures and materials that could become navigational hazards if dislodged from the lakebed during high water levels, ice floes, or severe storms.

3.4.2 Criterion 2: Shoreline Habitat, Wetlands and Vegetation

The Bear Lake CMP indicates that the western shoreline of Bear Lake has already been heavily impacted by historic and existing agricultural uses and residential development. According to the U.S. Environmental Protection Agency's (USEPA) 2010 National Lakes Assessment, lakes with poor lakeshore habitat are three times more likely to be in poor overall biological condition than lakes with good quality shorelands and nearshore areas (USEPA, 2009). Additionally, several studies have demonstrated that undisturbed, natural riparian and lacustrine shores have higher biological integrity for both terrestrial and aquatic habitats than agricultural or developed land uses (Henry et al 1999, Teels et al 2006). Responsible shoreline management at Bear Lake is imperative if the biological function of the remaining, ecologically intact shoreline and nearshore areas are to be preserved. Preserving the ecological function of the shoreline habitat helps minimize flooding, protects valuable wildlife habitat (both aquatic and terrestrial) and improves water quality. Maintaining existing areas of native vegetation is critical as a food source for wildlife and fish as well as protection against shoreline erosion. Preservation of wetlands, which have already been adversely impacted by recreation, invasive species, mowing by adjacent landowners and illegal off-road vehicle use, is critical as well. Wetlands provide many benefits such as flood control, filtering runoff from adjacent upland areas, critical habitat for fish and bird species as well as their food sources and protection against wave erosion and ice floe damage during the winter (USEPA, 2006). Goals 4.5.2 (Bear Lake Fishery Protected and Enhanced) and 4.5.3 (Native Vegetation and Wildlife Habitat Areas Protected and Enhanced) in the Bear Lake CMP identify protection of shoreline habitat, critical lands, and wetland areas as critical to the overall health of the lake. In addition, the Bear Lake CMP includes research that shows that many of the fish species present in Bear Lake use shallow, rocky areas along the shoreline as spawning grounds during the winter months. The Bear Lake CMP states, "there exists a need to preserve and protect rocky habitats that are used during spawning periods as well as other shoreline cover types for early life stages, both of which are sensitive stages for many species of fishes" (Utah, 2009).

Considering the importance of intact shoreline habitat, FFSL must evaluate potential impacts to shoreline habitat from the use of boat ramps and potential alternatives. Other state and federal agencies are concerned with shoreline

protection too, including the USACE, which has jurisdiction over wetland areas and waters of the United States, and the Utah Division of Wildlife Resources (DWR), which is concerned with the preservation of critically important habitat areas required to sustain healthy wildlife and fish populations.

The preferred permitting strategy will create minimal long-term, detrimental impacts to shoreline habitat, wetlands and vegetation resources.

Alternative 1: Unregulated Use

Major Adverse Impact: Unrestricted use of private boat ramps, both seasonal and permanent, would certainly lead to further habitat fragmentation, reduced vegetation and increased human activity along the Bear Lake shoreline. According to the Ohio Department of Natural Resources (2003), a single-lane, paved boat ramp should be at least 20 feet wide in order to accommodate most modern motorized watercraft. The length of some of the existing paved ramps along the eastern shoreline at Bear Lake range from 100 feet to 200 feet in length (based on measurements from Google Earth) and they are still far short of the water line during low water periods. Assuming boat ramp dimensions would be 20 feet wide and 150 feet long, each ramp would permanently impact at least 3,000 square feet of shoreline habitat or wetlands. This permanent disturbance doesn't account for the short-term impacts incurred during construction of the ramps, which could double the total minimum area impacted to for each permanent ramp. In addition, paved ramp structures provide relatively few, if any, ecological functions and can have detrimental impacts to aquatic communities, even those located outside the immediate footprint of the structure (Johnson et al., 2008).

Alternative 2: Regulated Ramps with no Density Limit

Moderate Adverse Impact: Potential adverse impacts would be reduced when compared to Alternative 1 because FFSL would implement stipulations limiting the size, location, and construction of permanent structures and use of seasonal ramp systems. However, the sheer number of potential permanent structures under this alternative would still present the potential for significant impacts.

Alternative 3: Community Boat Ramps

Minor Adverse Impact: The use of community boat ramps could lessen the total number of ramps required to accommodate adjacent landowners by 80 percent or more, thereby lessening the overall impact when compared to the unregulated scenario in Alternative 1 and Alternative 2, which places no cap on the density of ramps. The ability of FFSL to regulate the type and placement of seasonal ramp systems such as steel matting would also greatly reduce adverse

impacts to wetland areas and rocky substrates in fish spawning areas. However, the construction of the community ramps and use of seasonal ramp systems would have minor adverse impacts to shoreline habitat.

Alternative 4: Public Boat Ramps

Minor Adverse Impact: The overall number of boat ramps developed under this alternative would be far less than the number of ramps likely to be built under any other alternative. In addition, FFSL and its partners would have the ability to oversee all aspects of construction and operation/maintenance to ensure that the boat ramps create as little impact to shoreline habitat and adjacent wetland areas as possible. FFSL and other agencies may even be able to acquire funding to offset potential adverse impacts by creating mitigation sites at other shoreline locations within the sovereign lands of Bear Lake. However, some minor adverse impacts are unavoidable during the construction and operation of a permanent boat ramp structure in shoreline areas.

3.4.3 Criterion 3: Water Quality

UAC R652-2-200 states that FFSL shall consider impacts to water quality when deciding what activities to allow on sovereign lands. Furthermore, Goal 4.3.1 (Threats to Water Quality in Bear Lake from Use of Sovereign Lands Diminished) of the Bear Lake CMP is to identify water quality impacts resulting from sovereign lands leases and uses, and to develop water quality control mechanisms that maintain state beneficial use designations for Bear Lake waters. Preserving the water quality of Bear Lake, including its famous azure blue color, is extremely important to all stakeholders including recreational users, adjacent landowners, Garden City and other local economies and downstream users such as municipalities and irrigators. Short-term, minimal impacts to water quality from actions on sovereign lands are undesirable but may occasionally be unavoidable. However, FFSL must avoid authorizing uses that could create long-term, sustained degradation of water quality at Bear Lake. The preferred permitting strategy will minimize potential short-term and sustained detrimental impacts to water quality and clarity.

Alternative 1: Unregulated Use

Major Adverse Impact: The construction and operation of boat ramps, particularly paved boat ramps, create numerous adverse impacts to water quality. Adverse impacts resulting from the construction and use of one ramp may be relatively limited but the cumulative short-term and long-term impacts to water quality from many boat ramps are significant. Boat ramp construction and disturbance to shoreline sediment from propeller wash and launch vehicles can increase short-term and long-term turbidity levels in surrounding waters.

Increased turbidity has been shown to adversely impact benthic invertebrate communities (Lerberg et al., 2000). Increases in suspended solids and turbidity have profound adverse impacts on aquatic vegetation and benthic habitats including lower levels of dissolved oxygen, reduced light transmittance, reduced egg buoyancy, and respiration of fish (Johnson et al., 2008). Dredging is required to construct paved boat ramps and sometimes to maintain them as well. Dredging of the lakebed is often associated with significant adverse impacts to benthic organisms, fish habitat and aquatic vegetation (Johnson et al., 2008). Dredging activities on sovereign lands are currently limited to those that are deemed reasonably necessary by the Director as stated in UAC R652-70-1300.

There are other concerns as well. According to the USEPA, boat ramps can often serve as conduits for the introduction of pollutants such as overboard sewage and pet waste, sediments, petroleum hydrocarbons from fuel and oil drippings on boats and launch vehicles, toxic metals from hull and boat maintenance, and liquid and solid wastes from boat engines (USEPA, 1993). The introduction of these pollutants can cause decreased levels of dissolved oxygen harming aquatic organisms and fish. Heavy metals bind with fine lake sediments and introduce toxic compounds into the water column each time there is a disturbance. These toxic compounds can be ingested by fish and other aquatic organisms that are then consumed by humans (USEPA, 2003). Some types of pavement materials can also be harmful to water quality and aquatic life (USEPA, 1993). In addition, boat ramps are directly associated with increases in near-shore boat traffic. Boat traffic in shallow areas is known to cause erosion of the shoreline and the re-suspension of sediments from the lakebed (Crawford et al., 1998).

Alternative 2: Regulated Ramps with no Density Limit

Major Adverse Impact: Regulating the construction methods timing and types of construction materials will help reduce short-term potential impacts to water quality but, with no cap in place to limit density, many of the impacts identified in Alternative 1 are just as likely to occur under this alternative since there would likely be no reduction in the overall number of launch vehicles and motorized watercraft in nearshore areas or the total number of permanent ramp structures placed on sovereign lands. Restricting the use of materials to gain traction for launch vehicles to approved portable ramp systems will also help reduce potential water pollutants, but not enough to offset the impacts from permanent structures.

Alternative 3: Community Boat Ramps

Moderate Adverse Impact: Potential impacts to water quality would be significantly reduced when compared to Alternatives 1 and 2 by concentrating access points and drastically reducing the total number of permanent ramp structures. Like Alternative 2, restricting the use of materials used to launch watercraft in sensitive areas will help prevent pollutants emanating from these sources.

Alternative 4: Public Boat Ramps

Minor Adverse Impact: Short-term and long-term impacts to water quality would occur as a result of the construction and operation of public boat ramps. However, these impacts would be minor compared to the other alternatives that are expected to allow a significantly higher number of structures on sovereign lands that also lack the strict oversight of operation and maintenance present at a public boat ramp. In addition, the lack of permanent and seasonal ramp systems to assist in gaining access would result in less vehicular traffic along the shoreline and reduce the number of motorized watercraft operating in nearshore areas. In addition, it is assumed (for the purposes of this analysis) that regulatory agencies are more likely to implement best management practices (BMPs) that protect water quality during construction and long-term operation than individual landowners, even if required to do so by their permits.

3.4.4 Criterion 4: Fish, Wildlife and Endangered/Threatened Species

As per UAC R652-2-200, FFSL must consider impacts to wildlife, including fish and endangered/threatened species, in its management decisions for sovereign lands. Adverse impacts to wildlife and fish species in and surrounding Bear Lake are undesirable because they are important to the overall ecological health of the lake ecosystem. Adverse impacts are also likely to harm wildlife-based recreational opportunities such as hunting, bird watching, and recreational fishing. According the Bear Lake CMP, recreational fishing increased 50 percent between 1999 and 2009, and Bear Lake is becoming renowned for cutthroat trout and trophy lake trout.

The Bear Lake CMP indicates that, as of May 2009, there are 15 wildlife and 7 plant species federally listed as threatened or endangered or listed by the state as Species of Concern. Some of the key species that may be present or nesting within sovereign land boundaries include the American white pelican (*Pelecanus erythrorhynchos*), grasshopper sparrow (*Ammodramus savannarum*), three-toed woodpecker (*Picoides tridactylus*), western toad (*Bufo boreas*), and white-tailed prairie dog (*Cynomys leucurus*). In addition, Bear Lake contains four species of endemic fish, including the Bonneville cisco (*Prosopium gemmifer*), Bonneville

whitefish (*Prosopium spilonotus*), Bear Lake whitefish (*Prosopium abyssicola*), and the Bear Lake sculpin (*Cottus extensus*). FFSL must consider impacts to these species from any proposed shoreline development in order to comply with existing state statutes and rules as well as federal regulations, including the Endangered Species Act, Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

UAC R652-70-200 allows FFSL to classify sovereign lands based upon their current and planned uses. Classifications 5 and 6 are intended to protect potential resource preservation options such as wildlife habitat. The entire bed of Bear Lake below a water elevation of 5,902 feet above mean sea level (AMSL) has been designated Class 5 by FFSL, which means a large portion of the bed of the lake is protected for potential resource preservation options (see Map C, Bear Lake CMP). Many portions of the eastern shoreline between elevations 5,902 feet AMSL and 5,923 feet AMSL are designated as Class 6 areas so that the Division can protect existing resource preservation uses such as fish spawning habitat in these areas (see Map C, Bear Lake CMP). Goals 4.5.2 (Bear Lake Fishery Protected and Enhanced) and 4.5.3 (Native Vegetation and Wildlife Habitat Areas Protected and Enhanced) of the Bear Lake CMP include as priorities the identification and protection of important fish habitat areas on sovereign lands as well as identification and protection of suitable locations to conserve long-term viable habitat for wildlife and fish species. As such, management decisions involving shoreline development at Bear Lake must consider impacts to existing and potential wildlife habitat areas along the Bear Lake shoreline. The preferred permitting strategy will minimize impacts to existing and potential wildlife habitat and threatened/endangered species or species of concern.

Alternative 1: Unregulated Use

Major Adverse Impact: Construction and installation of boat ramps could create short-term impacts to surrounding wildlife habitat while more permanent impacts would result from clearing of vegetation along the shoreline for ramp access (Kelty and Bliven, 2003). In addition, the increased use of launch vehicles along the shoreline and an increase in motorized watercraft in nearshore areas would create adverse impacts to fish spawning areas and feeding habits, nesting birds and even terrestrial wildlife utilizing nearshore areas for food forage and cover from predators. Significant impacts are likely to occur during the construction of the ramps as well. Short-term impacts include destruction of fish habitat by construction vehicles and excessive noise that may temporarily affect both aquatic and terrestrial species. Noise from equipment and boats have been shown to have adverse impacts to fish and shoreline wildlife such as migratory birds and mammals (Johnson et al., 2008).

Long-term impacts from construction are the result of the dredging of lake sediments that is often required to construct the ramps. Dredging permanently destroys underwater habitat including aquatic vegetation and grasses that many organisms depend on for survival (USEPA, 2003).

Alternative 2: Regulated Ramps with no Density Limit

Moderate Adverse Impact: While the potential total number of seasonal ramp systems and permanent ramp structures may be similar to the unregulated scenario in Alternative 1, FFSL’s ability to control the location and site requirements of these structures would help reduce potential adverse impacts to sensitive and critical habitat areas such as endemic fish spawning grounds along the eastern shoreline when compared to Alternative 1. Also, restrictions imposed on the use of unapproved materials and structures would help improve water quality and habitat along the shoreline by prohibiting materials known to contribute to water quality degradation and disturbance to the lakebed. However, because the number of permanent structures would still be large, moderate impacts would likely be unavoidable.

Alternative 3: Community Boat Ramps

Minor Adverse Impact: The potential for adverse impacts to wildlife, fish and threatened/endangered species are reduced significantly when compared to Alternatives 1 and 2 since the number of seasonal and permanent structures on sovereign lands could be reduced by as much as 80 percent. However, minor adverse impacts would still likely occur during construction and use of seasonal ramp systems and permanent ramp structures.

Alternative 4: Public Boat Ramps

Moderate Adverse Impact: While the number of total boat ramps that would be constructed is drastically lower than that under the first three alternatives, this alternative would require the additional construction of parking and turnaround areas, public restrooms and possibly even picnic areas on the shoreline or immediately adjacent upland. This would require a much larger footprint of permanent disturbance than the use of community boat ramps included under Alternative 3. Of particular concern would be adverse impacts to wildlife and threatened/endangered species since most of the short-term and long-term disturbance required for construction and operation of the public facilities would occur on upland areas where habitat is already limited from disturbance and geographical influences.

3.4.5 Criterion 5: Local Economy

Even though FFSL is not required to consider potential impacts to local economies resulting from its management decisions on sovereign lands, FFSL does recognize that management decisions may have direct and indirect impacts on local economies. This is particularly pertinent to Bear Lake because the surrounding communities are very small and their economies are largely dependent upon Bear Lake and its resources. Therefore, any management decisions that may impact tourism, recreational opportunities, public and private access, and/or the environmental condition of Bear Lake are likely to have at least some impact to local economies and small businesses. The desired permitting strategy will create positive impacts for local economies.

Alternative 1: Unregulated Use

Moderate Positive Impact: The construction and use of boat ramps on public resources are generally viewed as having a positive impact on local economies (USACE, 2012). Construction of permanent ramp structures generate jobs and revenue for local contractors as well as revenue for building supply companies that sell construction materials. In addition, increased access facilitates increasing numbers of recreational boaters and fisherman, who contribute to local economies by purchasing goods and services such as gas, food, fishing supplies, boat maintenance and repair and other services. While an unregulated environment is undesirable for FFSL and other regulatory agencies, the unrestricted use of sovereign lands for the construction of permanent ramp structures would likely create a positive impact for the local economy, albeit a moderate impact.

Alternative 2: Regulated Ramps with no Density Limit

Moderate Positive Impact: Similar to Alternative 1, the ability of any adjacent landowner to build a permanent ramp or seasonal ramp system on sovereign lands will increase access to Bear Lake, thereby increasing recreational use of the public resource. In addition, local contractors and construction supply companies are expected to see minor to moderate increases in revenue since it is likely that landowners will continue their desire for permanent access to sovereign lands in spite of stipulations regulating the size and construction of permanent structures. The requirement by FFSL to use approved seasonal ramp systems, such as portable rollup mats or geoblock, could create revenue increases for local companies assuming they made these ramp systems or similar items available for retail sale.

Alternative 3: Community Boat Ramps

Minor Positive Impact: The positive impacts resulting from the implementation of this alternative would be the same as those described in Alternatives 1 and 2. However, the positive impacts would be lessened because the number of permanent structures could be reduced by up to 80%.

Alternative 4: Public Boat Ramps

Moderate Positive Impact: Even though no private, permanent ramp structures would be constructed on sovereign lands under this alternative, it does call for the construction of additional large public ramps with associated parking areas, restroom facilities and picnic areas. These are larger projects that could significantly increase short-term revenue for local building contractors and construction supply companies. In addition, increased public access will ease overcrowding on existing public access points, improve user experiences and, thereby, encourage further growth in tourism and recreational users.

3.4.6 Criterion 6: Recreation

Recreational access and opportunities are arguably more important at Bear Lake than any other sovereign land unit that FFSL currently manages. Bear Lake has become a regional tourist destination with annual visitation exceeding 300,000 individuals (Utah, 2009). Tourists are likely drawn to Bear Lake from all parts of Utah and surrounding states due to the abundance of recreational opportunities and the pristine character of the lake with its turquoise water. Recreational activities are almost entirely water-based and consist of shore and boat fishing, waterskiing, boating, sailing, jet skiing, kayaking, canoeing, day-camping, sun bathing, picnicking, and swimming among others. However, recreational capacity is an emerging management concern due to overcrowded beaches and high volumes of boat traffic, particularly along the western shoreline (Utah, 2009). Any decision regarding the use of seasonal ramp systems and permanent boat ramps by adjacent landowners must consider potential impacts to recreational capacity.

The Bear Lake CMP also discusses the importance of user perception in the enjoyment of the lake during recreational activities. The CMP states, “Recreation experiences are known to be dependent on perceptions such as how well a site is managed, cleanliness, sense of safety... and whether the site is too crowded.” It is important that FFSL select a management strategy regarding boat ramps that enhances the user experience at Bear Lake, both for tourists and adjacent landowners. To accomplish this, FFSL must avoid permitting uses that create safety issues, detract from the aesthetic values of the lake, contribute to pollution and water quality degradation and/or further diminish recreational capacity.

Alternative 1: Unregulated Use

Moderate Adverse Impact: Continuation of the current unregulated scenario will further alter recreational uses along the shoreline. Positive impacts are likely for adjacent landowners, as they will have unfettered access to sovereign lands using any materials to assist in access. However, these positive impacts are outweighed by the negative impacts to other recreational uses such as bird watching, hunting, sun bathing, boating and fishing. As discussed previously, the unabated construction of permanent ramps and unregulated use of materials and structures to gain access further degrades shoreline habitat, disrupts fish behavior, and negatively impacts wildlife. In addition, the construction of permanent ramps and use of seasonal ramp systems on sovereign lands imparts a feeling in the general public that these areas of sovereign lands are private and restricted from public access. This diminishes the user experience for the general public and tourists. Lastly, adverse impacts to public safety and navigation are likely under this alternative, further impairing the user experience for all recreationalists at Bear Lake.

Alternative 2: Regulated Ramps with no Density Limit

Moderate Adverse Impact: Even with stipulations in place, the possibility for hundreds of permanent structures on sovereign lands has the potential to degrade passive recreational uses such as fishing, wildlife/bird watching, sun bathing, beach walking, boating and hunting due to increased boat traffic and nearshore traffic as well as further degradation and fragmentation of shoreline habitat. A potential positive aspect is the improved oversight of seasonal ramp systems would aid in reducing navigational hazards and safety issues that can diminish recreational enjoyment for other users, which makes this alternative marginally better than Alternative 1.

Alternative 3: Limited Access Using Community Boat Ramps

Minor Adverse Impact: Adverse impacts to recreational resources is greatly reduced under Alternative 3 due to the drastic reduction in the number of potential permanent ramp structures and the implementation of guidelines regarding the use of seasonal ramp systems in place of unapproved materials and structures. The drastically reduced number of private structures along the shoreline should enhance the user experience for non-landowners recreating at Bear Lake, particularly because it reduces the feeling of private ownership of the shoreline by adjacent landowners.

Alternative 4: Public Boat Ramps

Positive Impact: Under this alternative, adjacent landowners would still have the ability to acquire a beach launching permit from FFSL and obtain direct

access to sovereign lands, but they would not be able to utilize permanent ramps or seasonal ramp systems to assist them in gaining access. The result is adjacent landowners still have access, but other recreational user experiences are not diminished by the construction and use of permanent and private ramp structures. Furthermore, the construction of additional public access ramps would alleviate congestion on existing ramps, enhancing the recreational experience for all users and increasing availability of public access.

3.4.7 Criterion 7: Cultural Resources

In accordance with UAC R652-60 and UC 65A-2-2(1), FFSL must take into account the effect of sovereign land uses on any district, site, building, structure or specimen that is included in or eligible for inclusion in the State Register or National Register of Historic Places. The Bear Lake CMP indicates that potential cultural resources within sovereign land boundaries have not been identified to date and that only three sites with cultural and historical significance have been identified near the lake. However, there is a great deal of historical information available that demonstrates intense use of Bear Lake and surrounding shorelines by Native Americans and European settlers. Therefore, FFSL must assume that any shoreline area may contain potential cultural resources and, as such, must consider potential impacts to these resources. The preferred permitting strategy will minimize or negate the potential for damage or destruction of cultural resources.

Alternative 1: Unregulated Use

Major Adverse Impact: Unmitigated construction and use of private boat ramps along the shoreline of Bear Lake poses a significant risk of adverse impacts to cultural resources. The construction of permanent ramps requires extensive excavation and soil disturbance so the potential for encountering and disturbing cultural resources is high, especially considering the number of potential structures and the widespread occurrence of unauthorized construction activities in the past.

Alternative 2: Regulated Ramps with no Density Limit

Major Adverse Impact: FFSL's ability to implement stipulations controlling the construction, use and maintenance of permanent structures under this alternative slightly reduces the overall potential for adverse impacts to cultural resources when compared to Alternative 1. However, the sheer number of potential permanent structures that may be built and the excavation and soil disturbance that would be required to build these structures under this alternative still poses major adverse risks for cultural resources on Bear Lake sovereign lands.

Alternative 3: Limited Access Using Community Boat Ramps

Minor Adverse Impact: That potential for adverse impacts to cultural resources are greatly reduced compared to Alternatives 1 and 2 due to the much lower number of permanent structures required, which will significantly reduce the amount of required soil disturbance, dredging and excavation.

Alternative 4: Public Boat Ramps

Moderate Adverse Impact: Even though the number of permanent structures is the lowest among the alternatives considered, the potential for adverse impacts is higher than Alternative 3 and equal to that of Alternative 2 due to two factors; 1) the footprint of public access areas will be large due to the construction of large parking areas, turnaround areas, restroom facilities and other associated structures, and 2) much of the disturbance will occur on adjacent upland property where cultural resources are more likely to be encountered based on information in the Bear Lake CMP.

3.4.8 Criterion 8: Adjacent Landowner Costs

The adjacent landowner costs takes into consideration the estimated dollar amount that an adjacent, upland landowner would have to pay to access the water with their boat or other recreational watercraft. For example, it considers how much money an adjacent landowner would pay to utilize a public boat ramp to launch their boat versus the costs associated with constructing and maintaining a private, permanent boat ramp. Each alternative is rated as having no, low, moderate or significant costs. Lower cost alternatives are preferred. This criterion does not consider ongoing costs such as insurance, liability, or maintenance costs, which are beyond the scope of this analysis.

Alternative 1: Unregulated Use

Significant Costs: Constructing a 20-foot wide, 150-foot long ramp using 4,000 pounds per square inch (PSI) concrete and utilizing cast-in-place construction techniques can cost anywhere from \$10,000 to \$25,000 depending on a number of variables.

Alternative 2: Regulated Ramps with no Density Limit

Significant Costs: Construction costs are the same as Alternative 1. Landowners would also see an increase in costs associated with the use of seasonal materials since FFSL would require the use of approved, portable ramp systems specifically designed for use in traveling over soft soils and marsh areas. The price of these systems varies based on the dimension and type of system, but the average price appears to be approximately \$20 per square foot.

Alternative 3: Community Boat Ramps

Moderate Costs: One of the main benefits of utilizing a community permitting approach is it allows adjacent landowners to share the costs of installing structures such as boat ramps. Both short-term costs, such as construction costs, and long-term costs, such as ongoing maintenance costs, are shared among multiple owners lowering the total financial burden for each participant. Compared to Alternatives 1 and 2, this is a much more desirable alternative for an adjacent landowner from a financial perspective. Costs for seasonal ramp systems would be the same as that identified under Alternative 2.

Alternative 4: Public Boat Ramps

No Costs: Utilizing existing and planned future public access ramps would incur little to no short-term or long-term costs for adjacent landowners as all construction and maintenance costs would be paid by the public agency constructing and managing the public boat ramp. Some costs would be incurred if an adjacent landowner opted to utilize a private boat ramp owned by an HOA or similar organization, but this would be unlikely provided that enough public access is available to accommodate demand for access.

3.4.9 Criterion 9: Administrative and Financial Costs

The administrative costs incurred from a management decision is an important consideration for FFSL given its limited staff resources and the fact that it manages over 1.5 million acres of sovereign lands. Allowing the development, use, and storage of any structure on sovereign lands requires direct oversight to ensure compliance with rules and regulations, public safety requirements and stipulations of the permit. There are also administrative costs in reviewing applications and development of permits and authorizations. FFSL is not the only agency impacted by its management decisions. Other agencies will incur additional administrative burdens as well, which must be considered in the selection of a preferred permitting strategy. Rather than using a dollar amount to evaluate this criterion, which would be difficult to estimate, the criterion is judged using the same qualitative system as the adjacent landowner costs criterion (significant, moderate, low or no increases in costs).

Alternative 1: Unregulated Use

Moderate Increase: FFSL would incur little to no additional costs under this alternative. However, other agencies such as DSP would continue to incur administrative costs by providing the equipment and personnel required to ensure safe navigation and public safety that could be compromised by the unregulated use of permanent ramps and seasonal ramp systems on sovereign lands.

Alternative 2: Regulated Ramps with no Density Limit

Significant Increase: State Parks and other regulatory agencies may experience a small reduction in administrative and financial costs when compared to Alternative 1 since newly developed stipulations would require adequate marking of ramps for navigational safety and use of temporary materials would be restricted to the seasonal use of approved, portable ramp systems. However, FFSL would see a significant increase in financial and administrative costs when compared to Alternative 1, negating any reduction experienced by other agencies. The increased demand for permitting, inspection, environmental monitoring and law enforcement as a result of private boat ramp use on public lands can greatly increase budgetary and staffing needs for the responsible regulatory agency (New Mexico, 2010). FFSL would need to expend additional personnel time and use of equipment to review permit applications and enforce the implementation of new stipulations. The hiring of additional staff would likely be required during peak season to assist with oversight and enforcement activities.

Alternative 3: Limited Private Access Using Boat Ramps

Low Increase: Administrative and financial costs are low when compared to the other alternatives. The reduced number of permanent structures would minimize the increased time spent reviewing permit applications and drafting authorizations. Less field time would also be required to oversee the construction and use of permanent ramps under the community approach since the total number of structures would be much lower than under Alternatives 1 and 2.

Alternative 4: Public Boat Ramps

Significant Increase: Managing additional public access ramps and associated areas would incur significant administrative and financial burdens on the regulatory agencies, particularly FFSL and State Parks. These agencies would experience exorbitant short-term costs due to construction, even if grants and other sources of funding could be acquired. In addition, significant increases in money, personnel, time and equipment would be needed for ongoing maintenance and oversight. This alternative would likely incur the highest administrative and financial costs for regulatory agencies of the alternatives considered.

3.4.10 Criterion 10: Capacity to Address Future Demand

It is likely that future demand for private access to Bear Lake from adjacent, upland property owners will increase as more areas along the shoreline continue to be developed for residential use. Therefore, the preferred permitting strategy must possess inherent flexibility so that it can be deployed

and easily implemented on any part of Bear Lake where potential development may occur. A strategy that is easily replicated on all areas of the lake is also important to other regulatory agencies that will assist FFSL in the implementation of the selected permitting strategy.

Alternative 1: Unregulated Use

No Capacity: The lack of a clear policy regarding use of seasonal materials and permanent ramp structures at Bear Lake is not sustainable. Without oversight of the design, size, placement, density and periods of use, conflicts between adjacent landowners and between landowners and the general public will inevitably worsen as demand for access and the number of users increases. Furthermore, irreversible adverse impacts to natural and cultural resources would continue to degrade the lake's ecosystem.

Alternative 2: Regulated Ramps with no Density Limit

Low Capacity: The lack of a limit on the density of permanent ramp structures minimizes this alternative's capacity to address future demand. This is the result of several factors. First, it is not easily replicated in varying shoreline habitats because it lacks flexibility and adaptability to changing shoreline conditions since most of the structure would be permanent, paved features. Allowing all adjacent landowners to construct and use a permanent ramp may seem to address future demand but this unlimited approach would interfere with the ability of FFSL and other regulatory agencies to address future demands in public access and amenities, recreational opportunities, habitat and wetland preservation and protection of shoreline habitat. In addition, the unrestricted development of the shoreline with private boat ramps would significantly increase the administrative burden for many regulatory agencies, thereby potentially limiting the capacity to address future demand as a result of financial constraints.

Alternative 3: Community Boat Ramps

High Capacity: The dramatic reduction in the number of permanent structures and a limit on the number of structures per linear feet of shoreline (density limit) create an approach that can be more easily replicated on other areas of the lake with differing shoreline characteristics and adjacent landowner needs for access. This alternative also would allow FFSL to address the future demand for private access while also addressing increased demands related to public access and recreation and preservation of cultural and natural resources.

Alternative 4: Public Boat Ramps

Medium Capacity: This alternative can be easily replicated on other parts of the lake and possesses adaptability in that the design of each public access ramp

can be altered to accommodate specific shoreline conditions and resource concerns. However the ability to address future demand for private and public access is limited due to the immense financial and administrative burdens that this alternative places on regulatory agencies. While it may address short-term increases in demand for access, addressing those demands over many years would prove difficult utilizing public access points only.

3.4.11 Criterion 11: Accessibility for Adjacent Landowners

Accessibility for adjacent landowners refers to the relative ease with which an adjacent landowner can access sovereign lands for recreational purposes or to launch watercraft. For the purposes of analysis, it is assumed that an adjacent landowner will prefer to access the sovereign lands from their own private property rather than trailer their boat to a marina or public boat ramp. An alternative's accessibility is rated as having unrestricted, restricted, limited or no access for adjacent landowners. An unrestricted level of access to sovereign lands is undesirable by FFSL.

Alternative 1: Unregulated Use

Unrestricted Access: Maintaining the current policy would allow adjacent landowners to gain access to sovereign lands utilizing any means they deem sufficient. While this is likely desirable to many adjacent landowners, this alternative is undesirable to FFSL and other regulatory agencies.

Alternative 2: Regulated Ramps with no Density Limit

Unrestricted Access: Establishing guidelines and stipulations on the construction and use of boat ramp structures will help minimize adverse impacts to natural, cultural and recreational resources. However, since this alternative still allows each adjacent landowner to access sovereign lands from their property, accessibility will remain high. This alternative would likely be as desirable as Alternative 1 for adjacent landowners even with stipulations in place. The regulated scenario is an improvement over Alternative 1 from FFSL's perspective, but still conflicts with other goals and statutory obligations of FFSL.

Alternative 3: Community Boat Ramps

Restricted Access: The community ramp approach prevents unfettered access to sovereign lands by adjacent landowners by allowing controlled access from designated, approved locations. While landowners may not be able to directly access sovereign lands using permanent means, they can still gain access using approved, seasonal ramp systems or by participating in a community boat ramp association. However, this alternative is likely not as desirably as Alternatives 1 and 2 for adjacent landowners.

Alternative 4: Public Boat Ramps

No Access: Under this alternative adjacent landowners would still be allowed to access sovereign lands under their beach launching permits. However, the indication of no access refers to the inability to utilize permanent boat ramps or seasonal ramp systems to gain access during times when launching of watercraft is difficult because of low lake levels, soft soils or other conditions. As a result, landowners would have to trailer their boat to a public access ramp when these conditions are present. Therefore, for the purposes of this analysis, the landowners are seen as having no access when compared to the other alternatives.

4.0 Selected Permitting Strategy

Table 4-1 provides a basic quantitative summary of the comparison of alternatives based on the criteria provided in the previous section. The quantitative analysis reveals that Alternative 3: Community Boat Ramps is the preferred permitting strategy. When compared to the other alternatives the community boat ramp approach scores well in almost every category except for positive impacts to the local economy and adverse impacts to water quality. Few positive impacts to local contractors or building supply companies are anticipated due to the low number of new permanent structures that would be built under the alternative. In addition, the community boat ramp approach will do little to increase tourism. As for water quality, short-term and long-term adverse impacts are likely from permanent structures, especially during construction. However, these impacts are low relative to the unrestricted access proposed in the No Action Alternative and Alternative 2. The potential for adverse water quality impacts will also be lessened with increased oversight of construction methods and materials for permanent ramps, use of portable ramp systems, and requirements for proper long-term maintenance of the ramps by the community association/owners.

The community boat ramp approach is desirable because it has a high capacity for meeting future demand for access but does so in a manner that limits adverse impacts to recreation, shoreline habitat, fish/wildlife, safe navigation, and cultural resources. In addition, costs for constructing and maintaining a permanent ramp structure are shared between multiple property owners. Only the public boat ramp option has lower adjacent landowner costs but the lower costs come at the expense of private access to sovereign lands. The community boat ramp strategy is viewed by FFSL as a balance between affording adjacent private landowners direct access to the water and minimizing adverse impacts to the shoreline habitat as well as natural and cultural resources.

FFSL believes that this permitting strategy is consistent with rule, statute, the Bear Lake CMP and the mandate to manage sovereign lands under multiple-use, sustained-yield principals. By implementing a community boat ramp permitting strategy that is built upon rigorous standards and stipulations regarding their use, FFSL has concluded that private access to Bear Lake can be accommodated while preserving the essential components of the Public Trust Doctrine, namely preservation of navigation, recreation and public access.

Section 5.0 outlines the specific stipulations, standards and requirements of the community boat ramp permitting strategy and how FFSL intends to implement the strategy.

Table 4-1. Quantitative Comparison of Alternatives

		ALTERNATIVES			
		Alternative 1: Unregulated Use	Alternative 2: Adjacent Landowner Boat Ramps	Alternative 3: Community Boat Ramps	Alternative 4: Public Boat Ramps
CRITERIA	Navigation/Public Safety	0	1	2	3
	Shoreline Habitat/Vegetation	0	1	2	2
	Water Quality	0	0	1	2
	Fish/Wildlife/T&E	0	1	2	1
	Local Economy	2	2	1	2
	Recreation	1	1	2	3
	Cultural Resources	0	0	2	1
	Adjacent Landowner Costs	0	0	1	3
	Administrative Costs	1	0	2	0
	Capacity to Address Future Demand	0	1	3	2
	Landowner Access	3	3	2	0
TOTAL SCORE:		7	10	20	19

Rating System:

For Capacity to Address Future Demand & Impacts to Local Economy:

High Capacity/Impact = 3
 Medium Capacity/Impact = 2
 Low Capacity/Impact = 1
 No Capacity/Impact = 0

For Landowner Accessibility:

Unrestricted Access = 3
 Restricted Access = 2
 Limited Access = 1
 No Access = 0

For Landowner & Admin. Costs:

No Costs = 3
 Low Costs = 2
 Moderate Costs = 1
 Significant Costs = 0

For All Other Impacts:

Negligible/Positive Impacts = 3
 Minor Adverse Impacts = 2
 Moderate Adverse Impacts = 1
 Major Adverse Impacts = 0

5.0 Implementing the Permitting Strategy

The permitting procedures for community boat ramps will comply with existing permitting procedures required by rule. Refer to UAC R652 for FFSL permitting processes and requirements. This section is intended to outline the specific requirements, stipulations, and limitations that FFSL will utilize to implement the community boat ramp permitting strategy.

5.1 Community Boat Ramp Associations

5.1.1 Definition of Community Boat Ramp

FFSL defines a community boat ramp as a sloping, stabilized roadway constructed on the shoreline for the purposes of launching watercraft from vehicular trailers by seven (7) or more adjacent, residential upland landowners or for a homeowners' association that possesses a common area adjacent to sovereign lands. Interested landowners must create a community boat ramp association that will be responsible for construction and maintenance of the ramp and assume all associated liability. The community boat ramp association may collect fees from participating landowners for construction and ongoing maintenance; however, no association will be allowed to charge fees for public access. The imposition of a fee for the maintenance or use of a community boat ramp by owner-members or members of a homeowners' association served by a community boat ramp will not result in the boat ramp being characterized as a "commercial" entity by FFSL.

5.1.2 Who May Apply

Only adjacent, upland property owners or a homeowners' association with an adjacent, upland common area to Bear Lake may apply to FFSL for a community boat ramp permit. Each participating landowner or landowners' association will be required to submit proof of legal landownership before the application will be considered by FFSL. Members of a community boat ramp association do not need to be contiguous landowners to one another to form an association.

5.1.3 Application Process

The application process for a community boat ramp will adhere to the application processes outlined in UAC R652-40 and UAC R652-70. Applicants will need to complete a General Permit application form available on the FFSL website or by hardcopy upon request. An executed, signed and notarized copy of a Community Boat Ramp Association Agreement must be submitted with the general permit application for those applicants that are not members of a

homeowners' association. The agreement must, at a minimum, include the notarized signatures of all participating landowners and state that they are entering into an agreement to operate and maintain a community boat ramp structure. A statement of assumed liability must also be included. An example of an acceptable community boat ramp association agreement is included in Exhibit A. The application package must also contain design details and drawings of the proposed boat ramp structure. Other supporting information may also be requested by FFSL at its sole discretion.

General permits issued by FFSL for community boat ramps will have a maximum term of 10 years, which can be renewed by the association or HOA at least 30 days prior to the expiration date of the permit, assuming the boat ramp is in compliance with existing requirements and has been properly maintained.

5.1.4 Exemptions and Exceptions

FFSL understands that there may arise situations in which landowners are unable to form a community boat ramp association either due to a lack of adjacent property owners in close proximity or the inability to coordinate and form an association with at least six adjacent landowners.

Proximity of Adjacent Landowners

Most residential landowners along the shoreline of Bear Lake own less than 150 linear feet of shoreline frontage and are situated in close proximity to other adjacent landowners; therefore, creation of community boat ramp associations is feasible in most cases. However, there are a small number of landowners along the northwest and eastern portions of Bear Lake that own large parcels with several hundred feet or more of linear shoreline frontage. It may be difficult for these landowners to form a community boat ramp association since adjacent landowners may be situated such great distances that creation of a community boat ramp association would prove impractical. Therefore, FFSL will exempt landowners from the community boat ramp association requirement in cases where the landowner can demonstrate ownership of a single parcel or group of contiguous parcels containing linear shoreline frontage that equals or exceeds 1,500 feet in length. However, these landowners will only be allowed to own, operate and maintain one boat ramp at Bear Lake. Any boat ramps authorized under this special circumstance will be subject to the same construction stipulations and permitting requirements as community boat ramps. Furthermore, if the parcel or parcels subject to the authorization are subdivided at any time in the future, the applicant will be required to submit an application to FFSL to amend the existing authorization in order to convert it to a community boat ramp permit. Any parcels adjoining

sovereign lands that are subdivided will be subject to the community boat ramp permitting requirements set forth in this CMP amendment, rule, code and statute.

Inability to Form Community Boat Ramp Association

FFSL acknowledges situations may arise preventing the creation of community boat ramp associations. For example, a landowner may be unable to find adjacent landowners willing to enter into a community boat ramp association agreement because they have no desire or need for a boat ramp or are reluctant to acquire the associated liability. In other cases, landowners may be partially or fully surrounded by parcels owned by local, state, or federal government agencies and private entities that are legally prevented from entering into community boat ramp association agreements. Under these extenuating circumstances, FFSL will consider applications for the placement of boat ramps on Bear Lake from single landowners without requiring the landowner to be part of a community boat ramp association.

Any authorization granted to a single landowner for a boat ramp will be amended to a community boat ramp permit as conditions allow. The applicant will be required to provide written, signed and notarized documentation from at least six adjacent landowners that are legally able but unwilling to enter into an association agreement. The documentation must include a signed statement declaring that these landowners refuse to enter into a community boat ramp association agreement and agree to forfeit their ability to apply for a boat ramp on sovereign lands in the future. Any ramps authorized under these extenuating circumstances will be subject to the same construction stipulations and permitting requirements as community boat ramps. Furthermore, ramps constructed under this scenario will also be subject to maximum density requirements set forth by FFSL. The Division will consider such applications on a case-by-case basis. The presence of this extenuating circumstance does not provide any guarantee or right to the landowner to construct a boat ramp on sovereign lands. As conditions such as occupancy of adjacent land or changes in ownership of adjacent land occur, FFSL will amend the single landowner authorizations to convert them to community boat ramp permits. FFSL will review such authorizations annually to ascertain the need for amendment.

5.1.5 Siting Considerations

Proposed locations for boat ramps will be a primary consideration during review of the application package. Boat ramps will be considered when there is demonstrated need for improved beach access, adequate access to the ramp is available and FFSL deems the proposed site suitable for the placement of a permanent ramp.

Adequate access will be an important consideration during the application process. Under existing rules, operators of motorized vehicles can travel a maximum of 500 feet on sovereign lands parallel to the shoreline for the purposes of launching and retrieving watercraft. This means that any landowner situated more than 500 linear feet from the proposed community ramp entrance would be required to access the ramp using adjacent, private property. Applicants for a community boat ramp would be required to demonstrate to FFSL that all association members would have the ability to access the ramp without violating the above-referenced parallel travel rule.

FFSL will also base its decision to authorize ramps on the land use management classifications identified in Section 2.6 and depicted on Map C of the Bear Lake CMP. Portions of shoreline designated as Class 2 and Class 3 areas are the best suited for potential placement of boat ramp structures. Class 1 areas could also be suitable only if the proposed ramp would not interfere with existing recreational leases. Class 4 areas (areas being inventoried for resources) may be suitable for a permanent ramp structure depending on the presence of important natural resources such as wetland areas, sensitive habitat or other resources requiring preservation. Permanent boat ramps will be considered within Class 5 areas (potential resource preservation areas) and Class 6 areas (resource preservation areas) on a case-by-case basis.

FFSL will consider each community boat ramp application on a case-by-case basis. Therefore, while Class 2 and Class 3 areas are open for consideration of any use, this does not imply that authorization of a community boat ramp is guaranteed within these classification areas. FFSL will utilize site-specific information, data, observations and input from other regulatory agencies in determining final approval.

5.1.6 Maximum Density Requirement

FFSL will limit the density of private, non-commercial, community boat ramps to a maximum of two (2) community boat ramp structures per 1,000 linear feet of shoreline. This density limit is required to minimize adverse impacts to natural and cultural resources, navigation, public recreation and adjacent property.

5.1.7 Adjudication of Boundaries

FFSL is authorized by the provisions of Section 65A-10-3 to enter into agreements with the owners of lands adjoining navigable lakes for the purpose of establishing the boundaries of the sovereign lands of the State. It is important for both FFSL and the adjacent landowner that the precise location of the sovereign land boundary is adjudicated. Adjudication of the boundary

enhances the ability of adjacent landowners to maintain compliance with FFSL and other state rules by removing uncertainty as to whether a landowner's activities are occurring on upland, private property or lands owned by the state. Furthermore, boundary adjudication is important to FFSL because defined boundaries enhance the division's ability for planning and management of sovereign lands. In order to facilitate the adjudication of boundaries at Bear Lake, community boat ramps will only be considered for adjacent property owners who are in the process of or have completed adjudication of the boundary between sovereign lands and their parcel/s. Landowners that are in the process of adjudicating the boundary will be issued a two-year permit for a community boat ramp assuming all other requirements and stipulations have been satisfied.

5.1.8 Need for Other Regulatory Approvals

Applicants for community boat ramps may need other regulatory approvals such as local building permits prior to constructing a ramp on sovereign lands. Applicants will need to demonstrate that other regulatory approvals and authorizations have been acquired or are in the process of being secured by providing copies of other authorizations or any other documentation (such as copies of email correspondence between the regulatory agency and applicant).

5.1.9 Design Specifications

Ramp Size – Construction and Finished

The USACE issued Nationwide Permit (NWP) 36 in 2012 for the construction of boat ramps in waters of the United States. So long as the criteria specified in NWP 36 are met, the construction of a boat ramp in regulated waterways does not require the issuance of an Individual Permit by USACE. The criteria that must be met include the following:

- 1) The discharge of concrete, rock, crushed stone or gravel into forms or in the form of pre-cast concrete planks/slabs must not exceed 50 cubic yards.
- 2) A boat ramp may not exceed 20 feet in width.
- 3) The base material must be crushed stone, gravel or other suitable material.
- 4) The excavation is limited to the area necessary for site preparation and all excavated material is removed to an area that has no waters of the United States.
- 5) No fill material is placed in special aquatic sites, including wetlands.

These USACE requirements are in accordance with existing FFSL rules. As such, to streamline the permitting process for applicants, FFSL will adopt the

same standards for the construction of boat ramps on sovereign lands as those identified above and in NWP 36. Therefore, all applicants for boat ramps on Bear Lake sovereign lands must design their ramps so that they do not exceed 20 feet in width, discharge no more than 50 cubic yards of material onto sovereign lands for the construction of the ramp, limit the excavation area to that necessary for site preparation, and avoid any disturbance in areas identified by FFSL as restricted or protected. FFSL will consider any length of ramp so long as the applicant proposes to remain below the 50 cubic yard threshold. Therefore, length will be a factor of ramp width and depth of the gravel base.

Construction Material

There are generally three types of materials used to construct boat ramps (Ohio DNR, 2003) including gravel/rock, asphalt and concrete.

Gravel/Rock

Ramps constructed of gravel and large rock such as riprap are much less expensive than concrete or asphalt ramps and generally do not require any particular grade or slope to perform effectively (Ohio DNR, 2003). However, they can be a challenge to maintain, particularly accumulated debris removal and are better suited for the launching of small, lightweight watercraft. If constructed properly, ramps utilizing gravel and riprap can be beneficial to aquatic ecosystems by providing hiding/resting areas for fish as well as grounds for spawning and deposition of eggs (Ohio DNR, 2003).

Asphalt

Asphalt ramps lack the structural strength to span a soft sub-base like those that are present along the Bear Lake shoreline. They also lack the required surface roughness for adequate traction (Ohio DNR, 2003). In addition, asphalt typically is subject to rapid deterioration from wave action and relocation due to strong water currents and has the biggest potential for adverse environmental impacts.

Concrete

Concrete ramps can either be cast-in-place or precast. Cast-in-place concrete ramps are constructed in the desired location using form boards and poured concrete as well as cofferdams, if necessary, to keep the site dry until the concrete has cured. Pre-cast concrete planks are small, manageable slabs of concrete or concrete mats that are either cast off-site and transported to the building location or cast on adjacent upland land and then pushed into the desired location using a bulldozer or other heavy equipment. Cast-in-place techniques are generally lower in costs than pre-cast systems (Ohio DNR, 2003). Concrete ramps are durable, resistant to breakage and have the mass to

stay in place during high water events. It also provides good traction for launching of boats, particularly if a V-groove finish is used. Concrete, particularly pre-cast slabs and mats are a better option than asphalt when considering potential environmental impacts; however, gravel is still the best option from an environmental protection perspective. In contrast, concrete far outperforms gravel/rock in durability, traction, and maintenance.

Construction Materials Allowed by FFSL

Precast and cast-in-place concrete ramps are deemed suitable for use at Bear Lake by FFSL. FFSL prefers the use of precast concrete slabs or concrete mats rather than cast-in-place concrete ramps because the overall impact to soils, shoreline habitat and other natural resources is much lower. However, FFSL will consider cast-in-place proposals if properly designed, the proposed location is in an area identified by FFSL as suitable for cast-in-place construction techniques, and construction can be completed during periods of low water elevations such that dewatering operations can be avoided.

In addition, FFSL will also consider ramps constructed of gravel and riprap. Gravel/riprap ramps provide a less expensive alternative for adjacent landowners while still providing adequate means of access. The placement of gravel and riprap along the shoreline has also been shown to have beneficial impacts to aquatic ecosystems in some instances.

FFSL will not allow asphalt boat ramps due to their potential for harmful environmental impacts as well as their inability to withstand wave erosion, ice floes and other harsh conditions typically present at Bear Lake.

Construction Specifications

The following construction specifications are intended to be the minimum design criteria that FFSL will utilize in determining whether to approve applications for boat ramps at Bear Lake. Applicants may propose alternative specifications so long as the minimum design specifications and requirements are satisfied. Applicants will be required to submit detailed engineering drawings/plans of the proposed boat ramp. A licensed professional qualified to design such structures in the State of Utah must stamp the drawings/plans.

Minimum Specifications for Concrete Boat Ramps – Cast-in-Place, Pre-cast & Concrete Mats:

- 1) Ramps shall be constructed as close as possible at a 90-degree angle to the existing shoreline.
- 2) All ramps must be situated a minimum of 25 feet from adjacent property lines.
- 3) Ramp slope may not exceed a maximum of 15 percent.

- 4) No docks, floating platforms or canopies of any kind will be permitted for use in association with a boat ramp on sovereign lands. Such devices require separate permits.
- 5) No aboveground or underground utilities will be permitted.
- 6) Ramps must be constructed such that passage on sovereign lands by members of the public is not hindered.
- 7) Silt curtains/fence must be used during the construction phase of any ramp. FFSL will indicate if other site-specific erosion control measures are required during the application review process.
- 8) All excavated soil, sand and other materials must be completely removed from sovereign lands.
- 9) Cast-in-place requires a minimum concrete thickness of six (6) inches. Pre-cast planks must be a minimum of eight (8) inches thick. Smaller pre-cast planks less than 10 feet long and two (2) feet wide may be used to span smaller areas. The smaller planks may be less than eight (8) inches thick as long as the plank thickness is sufficient to prevent the plank from breaking apart. Applicants proposing to use smaller planks must submit manufacturer's information/data/drawings so that FFSL can evaluate the suitability for placement of smaller planks on the portion of sovereign lands specified in the application.
- 10) One (1) inch, non-skid V-Groove finishes must be used for each concrete surface in order to provide adequate traction for both vehicles and pedestrians. Grooves should be designed to channel water and debris to the sides of the ramp at 45-degree angles.
- 11) For cast-in-place, cut-off walls should be constructed down both sides and across the lower end of the cast-in-place portion of the launch ramp. The two-foot deep, tapered cut-off walls around the perimeter of the ramp help protect it from being undermined in case of erosion protection (riprap) failure.
- 12) The cast-in-place ramp should be reinforced with #4 steel rebar, in both directions, in a 12"x 12" grid.
- 13) The concrete should be placed on a 6" thick compacted leveling course of 3/4"-0" aggregate base.
- 14) The preferred concrete compressive strength is a minimum 4,000 pounds per square inch (PSI).
- 15) A riprap apron must be placed at the toe and along both sides of the ramp at a minimum thickness of two feet in order to prevent scour and undercutting during power loading and unloading of motorized boats. The riprap must be placed on a layer of geotextile fabric. The median riprap diameter should comply with Utah Department of Transportation guidelines for erosion control (typically D50). The length of the apron

- must be three (3) feet minimum, which will be considered part of the total length when calculating cubic feet of fill material.
- 16) For pre-cast ramps, plank/panel lengths must not exceed 30 feet and interlocking tongue and groove planks/panels must be used to eliminate gaps between planks/panels that can expose the aggregate base to erosion.
 - 17) Pre-cast planks/panels and concrete mats must be anchored using minimum one-half inch rebar anchor stakes that are a minimum 36 inches long. Anchor stakes should be placed at intervals in accordance with manufacturer's recommendations.

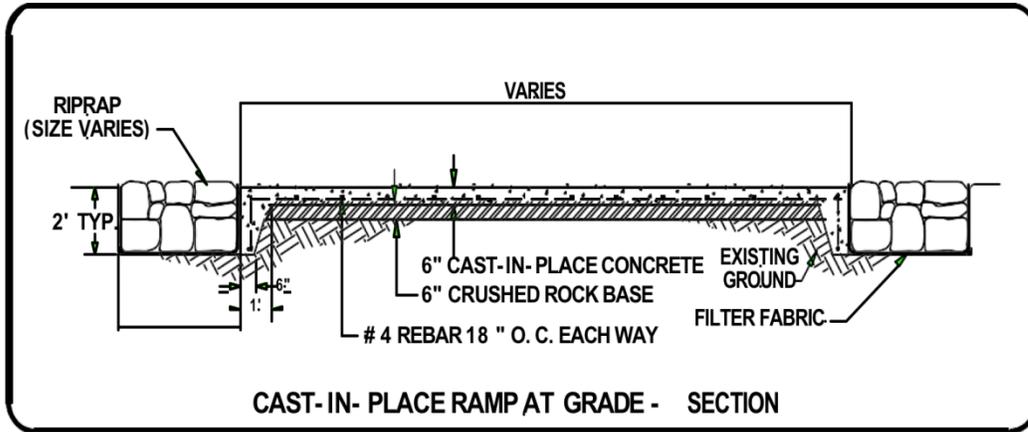


Figure 1.

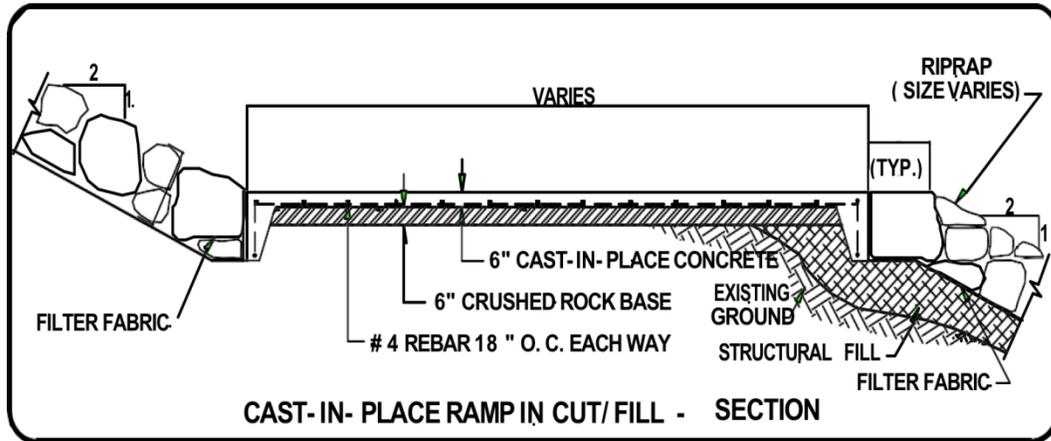


Figure 2.

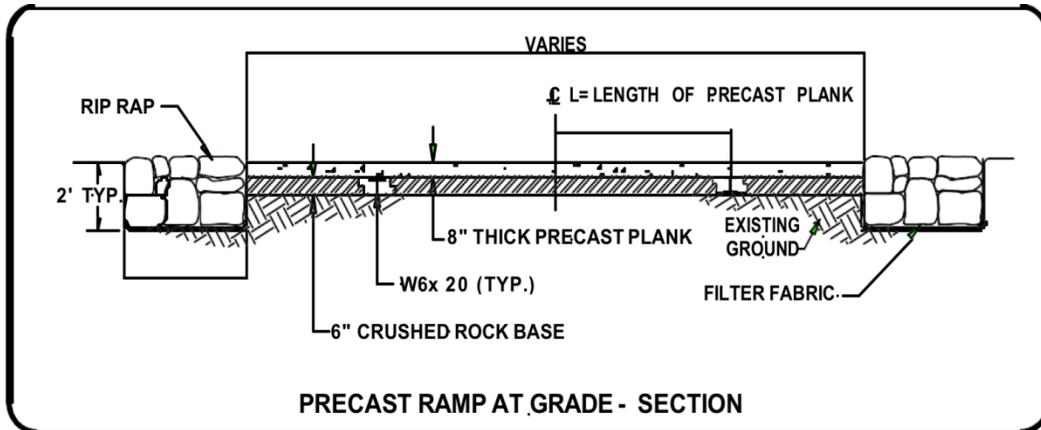


Figure 3.

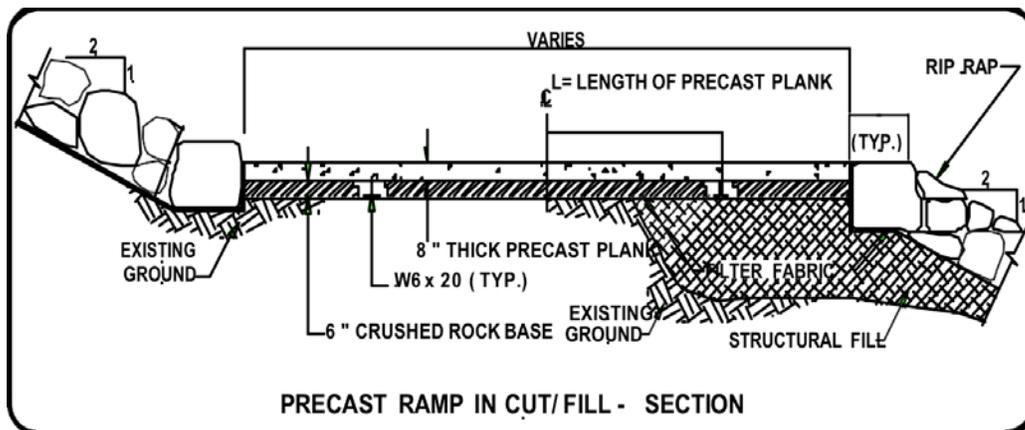


Figure 4.

Note: Figures 1 – 4 obtained from Ohio Department of Natural Resources, 2003

5.2 Use of Seasonal Ramp Systems

Under the beach launching permit program adjacent landowners are allowed to launch and retrieve their watercraft using motorized equipment. There is no requirement that the landowner utilizes a boat ramp and, during periods of low water levels, many landowners need to travel hundreds of feet to reach the water's edge. During this process they often encounter areas of standing water or soft surfaces that hinder or impede the use of motorized equipment to launch and retrieve watercraft. As a result, many landowners have resorted to using a variety of materials and objects to increase traction and accessibility. These objects are often left in place once they become damaged or unusable creating navigational hazards as well as hazards for people recreating along the shoreline. In addition, many materials such as tires and wood become flotsam that migrates during higher water levels resulting in dangers to navigation as well as littering the pristine shoreline. In order to mitigate this historical problem, FFSL will begin strictly regulating the use of materials used by adjacent landowners to access sovereign lands.

5.2.1 Definition of Seasonal Ramp Systems

Seasonal ramp systems include any product or device that can be used to gain access over soft soils and marshy areas of sovereign lands but are portable in design such that they can be completely removed from sovereign lands at the end of the season and stored on upland property for use during subsequent seasons. Seasonal use at Bear Lake is defined as a period beginning April 30 through October 1 of each year. All seasonal ramp systems must be removed by October 1. Ramps not removed by October 1 will be removed by FFSL at the permittee's expense. Examples of seasonal structures that FFSL will consider for use at Bear Lake include the following:

- Pierced Steel Planking (PSP) or Marston Mat (see Figure 1 below)
- Roll-out polyester matting such as Mobimat® (see Figure 2 below)
- Aluminum matting such as Rollaramp® (see Figure 3 below)
- High-density polyethylene (HDPE) geoblocks such as Geoterra® or SolGrid® (see Figure 4 below)

FFSL will consider other portable structures as well but they must be easily deployed and retrieved for seasonal use, constructed of durable materials that will not degrade over short periods of time, and constructed of materials that will not contribute to degradation of water quality from sustained exposure to water and other natural forces.



Figure 5. Example of pierced steel planking being used for boat launching activities



Figure 6. Example of polyester rollout matting

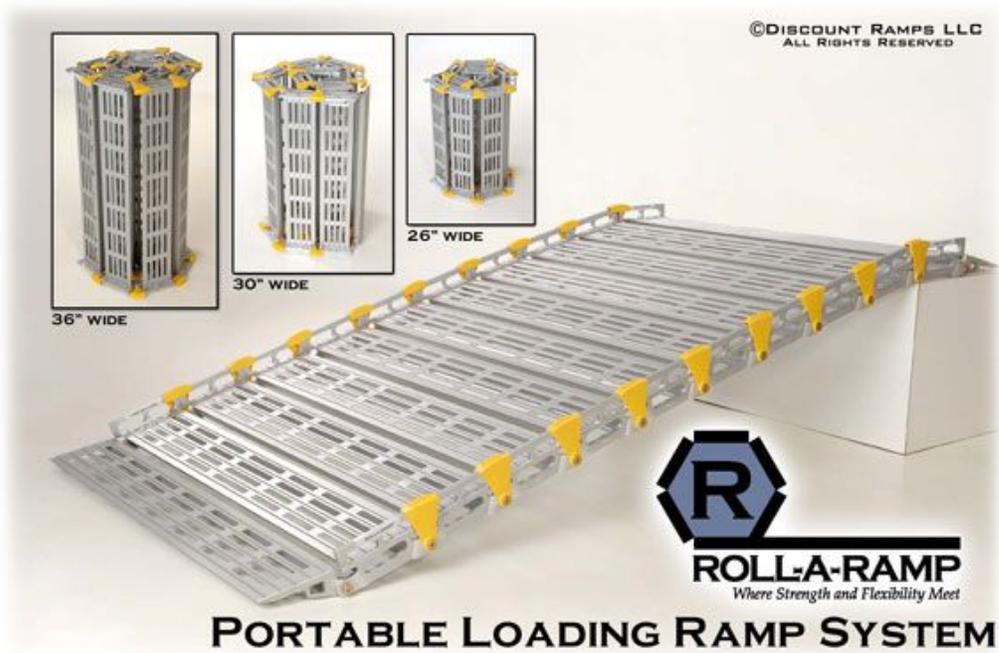


Figure 7. Example of aluminum rollout matting



Figure 8. Example of geoblock material

5.2.2 Forbidden Structures and Materials

Historically, adjacent landowners have used a variety of materials and structures to gain access to sovereign lands over soft soils and marshy areas. The landowners have often abandoned these structures once they were no longer useful. This is proven problematic because many of these materials have become navigational hazards to recreational boaters during periods of high water or litter the shoreline, creating hazards to members of the public recreating along the beaches and water's edge. Going forward, FFSL will forbid the use of any unauthorized materials or structures on Bear Lake sovereign lands to gain access to the water's edge. These materials include but are not limited to:

- Tires, rubber or rubber matting of any kind
- Wooden pallets, particle board or any other wooden material
- Plastic
- Concrete blocks (cinder blocks), brick or other building or demolition debris
- Engine blocks or any other automotive parts
- Sand bags
- Geotextile fabric not incorporated as part of a permanent boat ramp
- Rocks or gravel, either obtained from sovereign lands or off-site
- Logs
- Carpet
- Any other materials that FFSL deems unacceptable now or in the future

Any landowner found to be utilizing unauthorized materials to gain access to sovereign lands may be subject to civil and criminal penalties by FFSL and other regulatory agencies.

5.2.3 Who May Apply for Seasonal Ramp Systems

Any adjacent, upland landowner who has obtained a beach-launching permit may apply for authorization to utilize a seasonal structure for access to sovereign lands. Unlike the community boat ramp, applicants do not need to be a part of any association in order to apply.

5.2.4 Application Process

FFSL will utilize a similar application process as that used for the authorization of boat docks on sovereign lands. FFSL will require all applicants to include a non-refundable application fee as well as a refundable permit fee with the application package. The permit term will be for a period of three (3) years beginning the date the authorization becomes effective and expiring December

31st of the third year. Permittees will be able to renew the authorization by submitting an approved application to renew to FFSL at least 30 days prior to the expiration date of the permit.

5.2.5 Siting Considerations

Generally, seasonal structures will be allowed by FFSL in areas that are approved for the launching of watercraft using motorized equipment. However, FFSL may deny authorization if the applicant proposes to deploy the seasonal ramp system in an area that has been identified by FFSL or other regulatory agencies as a portion of shoreline that should be protected from motorized access.

5.2.6 Need for Other Regulatory Approvals

Applicants requesting authorization to use seasonal ramp systems may need prior approval from other regulatory agencies depending on the type of ramp system, location of use, size of ramp system and other factors. Examples of agencies that may have regulatory jurisdiction include but are not limited to State Parks, USACE and the Utah Division of Water Quality. Applicants must be able to demonstrate to FFSL that consultation with other regulatory agencies has occurred regarding the proposed use of a seasonal ramp system, if applicable. It is the responsibility of all applicants to identify the additional regulatory requirements of other state and federal agencies that may be applicable and to ensure that compliance with those requirements is achieved.

5.2.7 Stipulations for Use of Seasonal Materials

- 1) All seasonal structures must be placed within property boundaries and must be situated at least 25 feet from each adjacent property line.
- 2) No applicant will be permitted to place seasonal structures more than 200 feet beyond an elevation of 5,923.65 AMSL.
- 3) The maximum total width of any seasonal structure is 15 feet.
- 4) Multiple property owners may share the use of a single seasonal structure but the permittee may not charge for this use.
- 5) Only adjacent property owners will be allowed to obtain permits for seasonal structures related to the motorized launching of watercraft.
- 6) Each structure must be anchored to the shoreline using anchor pins that are at least 36 inches in depth. Each separate structure must be anchored securely such that it does not break free or otherwise become compromised during periods of high water.
- 7) A placard constructed of durable materials or “Tyvek®” type tag must be securely affixed to each seasonal structure. The placard/tag must include the first five (5) letters of the permittee’s last name (in the case of

- community boat ramps, the designated contact individual) followed by the last three (3) digits of the permit number (ex. Nesbi282).
- 8) When possible, seasonal structures should be removed in advance of known extreme weather events where wave action is expected to be above average.
 - 9) Seasonal structures may be placed on Bear Lake sovereign lands beginning May 1 and must be removed by October 31 of each year. Seasonal ramp systems not removed by October 31 will be removed by FFSL at the permittee's expense.
 - 10) Motorized equipment may be used to deploy and retrieve seasonal structures but only within portions of sovereign land designated by FFSL as approved for motorized access to launch and retrieve watercraft.
 - 11) Anchoring of seasonal structures using anchor lines will be permitted as long as the anchor lines are not elevated above the shoreline surface and are clearly marked with flagging such that a reasonable person would be able to see the location of an anchor line from a distance of 10 or less.
 - 12) Seasonal structures must be placed on top of the soil surface. Dredging and excavation of soil is not authorized for the placement of these structures. Removal of rocks and vegetation is only allowed to the extent necessary to safely secure the structures. Rocks may not be removed from sovereign lands.
 - 13) The owner, at the owner's expense, must permanently remove structures from sovereign lands once the structure is deemed unsafe or unusable by FFSL, a partner agency or the permittee. If structure is permanently removed by permittee, FFSL must be notified in writing prior to removal.

5.3 General Stipulations and Requirements

In addition to the minimum design specification and stipulations outlined for permanent and seasonal ramp structures there are other general stipulations regarding the installation and use of all structures on sovereign lands. These stipulations include but are not limited to:

- 1) UAC R652-60 requires that FFSL “take into account the effect of sovereign land uses on any district, site, building, structure or specimen that is included in or eligible for inclusion in the State Register or National Register of Historic Places, and allow the State Historic Preservation Officer a reasonable opportunity to comment with regard to the undertaking.” To comply with this requirement, FFSL, at its sole discretion, may require that the applicant hire a certified contractor to

- complete a cultural resource survey prior to any disturbance of sovereign lands. The need for such a survey will be determined on a case-by-case basis by FFSL with input from other regulatory agencies.
- 2) The posting of “No Trespassing”, “Private Property” or other signage forbidding entry is forbidden on any ramp structure that is situated partially or fully on sovereign lands. At no time shall the general public be denied access to sovereign lands of Bear Lake on or around the ramp or other structures for fishing or other recreational uses.
 - 3) For permanent ramp structures, the permittee shall provide valid and sufficient insurance coverage as evidenced by a current Certificate of Insurance and Policy. The insurance coverage must remain in effect at all times. If the coverage is allowed to expire, the owner will be required to immediately remove the ramp from Bear Lake. Coverage amounts are to be determined by FFSL prior to authorization.
 - 4) The authorization of a community boat ramp or seasonal access structure does not include permission for the placement of any buoy, including a mooring buoy. The installation of buoys is authorized under a separate permitting process.
 - 5) Construction of jetties, breakwaters or other similar structures is not conveyed to the applicant as part of any authorization to construct or install a ramp structure.
 - 6) No fencing or other similar material used to prevent access to the ramp by animals, birds, or humans will be allowed.
 - 7) Accumulated debris may be removed by hand or mechanized equipment. Pressure washers may also be utilized but no cleaning solvents or other chemicals additives are allowed.
 - 8) Maintenance of watercraft is not permissible on sovereign lands whether the watercraft is in or out of the water.
 - 9) Installation of power or water supply to any ramp structure on sovereign lands is prohibited.
 - 10) Vegetation and trees on sovereign lands may only be removed for construction of a ramp structure or for maintenance of the ramp if vegetation or trees are hindering access. Removal methods may include mowing or cutting of vegetation at the surface, but should involve minimal soil disturbance unless specifically authorized by FFSL.

FFSL may add, delete or otherwise amend stipulations and requirements for any community boat ramp authorization as conditions change or unforeseen circumstances arise necessitating such a change.

6.0 Conclusions

Based on the results of the comparative analysis of feasible alternatives, FFSL has selected a community boat ramp permitting strategy to enable adjacent, upland landowners to access the water's edge at Bear Lake. In addition, FFSL will permit the use of approved seasonal ramp systems for adjacent landowners who have no desire or ability to assume the financial and legal liability associated with construction and maintenance of a permanent ramp structure. FFSL has concluded that the community boat ramp strategy and use of approved seasonal ramp systems provides a compromise between permitting unrestricted access by adjacent landowners and protecting natural and cultural resources as well as the public trust values of navigation and public access.

The community boat ramp approach has many benefits. Compared to other alternatives considered, potential impacts to shoreline habitat, vegetation, wildlife, water quality and cultural resources are greatly reduced. The alternative can be easily replicated on other parts of the lake to meet future demand for private access and, in so doing, does not jeopardize public access. It also provides financial benefits for adjacent landowners by allowing them to pool their financial resources to acquire a better quality ramp than they might otherwise be able to purchase on their own.

The permitting of approved seasonal structures enables landowners to gain access to sovereign lands without the need to construct a permanent ramp structure. By strictly regulating the use of seasonal structures, FFSL hopes to eliminate the use of materials such as wood, tires and other unauthorized structures that have historically been used by adjacent landowners. These materials have often been abandoned on sovereign lands to become navigational and recreational hazards.

Many sources have been used by FFSL to develop fair but stringent requirements to ensure that the community boat ramp strategy is implemented in a manner consistent with the Bear Lake CMP, rule, statute and Public Trust Doctrine. These sources include the permitting strategies of adjoining states such as Idaho, Nevada and Arizona as well as federal regulatory agencies that have extensive experience in boat ramp permitting such as the USACE, Bureau of Reclamation, and NOAA.

FFSL intends to utilize an adaptive management approach in its implementation of the community boat ramp permitting strategy. The adaptive management approach allows FFSL the flexibility to adjust the requirements,

stipulations and other factors used in implementing the strategy as needed. Since the community boat ramp approach is a new strategy for FFSL, it is expected that adjustments in implementation will likely be required as “on-the-ground” experience is gained. FFSL will continue to work with its partners in the Bear Lake Regional Commission and PIRG as well as the public and other regulatory agencies to ensure that the community boat ramp strategy is effectively implemented.

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ATTACHMENT A
SAMPLE COMMUNITY BOAT RAMP ASSOCIATION
AGREEMENT

Sample Community Boat Ramp Association Agreement

Note: This sample agreement is provided as an example only and is not intended as an endorsement or recommendation of this agreement by the Division of Forestry, Fire and State Lands (Division). Applicants may replicate and use the following sample agreement, but the Division does not endorse or guarantee the validity of this document. Applicants are encouraged to consult with an attorney regarding their community boat ramp association agreement.

Community Ramp Bylaws and Ramp Association Agreement General Permit Number XXXXXX

Each association member must be an adjacent upland property owner on Bear Lake and agree to comply with all applicable rules and regulations as well as the conditions set forth in the General Permit issued by the Division of Forestry, Fire and State Lands (see General Permit XXXXX for a complete list of stipulations and requirements).

The community ramp association (“Association”) is a joint-use legal commitment. Access, maintenance, costs, and other such matters concerning the community ramp (“permitted facility”) are codified via the signatures on this document.

Now, therefore, in consideration of the mutual benefits to be derived here from, the parties covenant and agree as follows:

- 1) Primary Point of Contact: The Association shall nominate a primary point of contact for communication with the Division and any other government agencies or interested parties. The primary point of contact should be a member of the Association that is readily accessible in the event of an emergency related to the operation of the permitted structure.
- 2) Ownership and Use: Each household shall have an undivided equal ownership interest in the community ramp. If future new members are added to the Association, they will have an equal share with the other members.
- 3) Membership Expansion: If the current members of the Association unanimously agree to include new members from adjacent properties, the new member(s) must sign the agreement and agree to all its provisions after approval from the Division.
- 4) Exclusive Use: Only members (“Owners” or “Members”) in good standing (defined as having no unpaid dues, late charges, or fine assessments, and not having been denied access to the facilities for reason of previous misuse) of the Association are authorized to ramp their boats/watercrafts at the community ramp. No other individuals are permitted to utilize the ramp and its facilities.
- 5) Liability: The members of the Association assume liability for the community ramp including damage negligently caused to private or public property resulting directly or indirectly from the operation, use, or maintenance of the ramp structure.
- 6) Expenses: All expenses related to the installation, maintenance, removal, or payment of penalties incurred due to failure to comply with applicable laws, rule, and requirements of the General Permit shall be divided among the Association members on an equal basis based on interest and ownership rights.

- 7) Repairs, Maintenance, and Improvements: Any member identifying a need for repair, maintenance or improvement of the ramp shall notify all other Association members in a timely manner. Any repairs, maintenance or improvements to the ramp shall be approved by a simple majority of Association members prior to undertaking such actions. Only individuals or third parties that have been previously approved by a simple majority of Association members may conduct repair, maintenance or improvement activities. Any activities other than routine maintenance and repair must receive prior authorization from the Division of Forestry, Fire and State Lands.
- 8) Binding Effect: This Agreement shall not be assignable or otherwise transferable by any party hereto without the prior written consent of the other parties hereto and the Division of Forestry, Fire and State Lands, and any purported assignment or other transfer without such consent shall be void and unenforceable.

In addition to the above-stated requirements, all Association members shall abide by the following stipulations:

- No attempt shall be made to forbid the full and free use by the public of all navigable waters at or adjacent to the permitted structure.
- Construction, operation, maintenance or any other use of the ramp structure shall in no way interfere with free and safe navigation of any waters on sovereign/public lands.
- The use of the facility shall be limited ONLY to the launching and retrieval of recreational watercraft.
- Association members are prohibited from charging non-members for use of the permitted facility, and no commercial activity can be engaged in association with the facility.
- All vehicles used to launch and retrieve watercraft must remain within the alignment of the ramp while launching and retrieving watercraft.
- No waste cans, paper, debris or other refuse are to be left at the ramp or ramp area or disposed of into the water. Removal of all trash from the permitted facility is the responsibility of each member and their guest/s.
- Members shall not create visual or noise disturbances while utilizing the permitted facility.
- An Association member may only launch and retrieve one boat/personal watercraft at a time at the permitted facility.
- Use of electrical cords and electrical devices are prohibited on or immediately surrounding the permitted facility. No electrical hookups are allowed on the structure and no method of temporary power supply such as generators or similar equipment may be utilized on the permitted structure.
- Boat/watercraft owners and operators must minimize speed and wake while entering and exiting the ramp areas so as to do no harm to ramps or other boats/watercraft and shoreline areas. Power loading and unloading should be minimized to the fullest extent possible to avoid erosion and scour at the toe of the ramp.
- No fire of any kind, including fire contained in a charcoal burner, is permitted on the permitted structure or on a boat/watercraft while the boat/watercraft is in use at the permitted structure.

- No fireworks or other explosives are permitted on boats/watercrafts or on the permitted structure at any time.
- The storage of gasoline, oil or other hazardous and flammable substances is not allowed on or immediately surrounding any permitted facility.
- Any ramp structure or appurtenances damaged or destroyed by negligence or improper use shall be replaced at the offending member's expense.
- No ramp boxes, lockers, storage containers, or boarding steps of any kind may be left on the permitted structure.
- No child under 16 years of age shall be allowed on the permitted structure while unsupervised. An adult must be present when the ramp and ramp related facilities are being used by youth under age 16. No boat/watercraft operators under the age of 16 may utilize the ramp.
- Violation of the Association rules shall be grounds for suspension of usage and/or revocation of authorization. The Association may terminate, subsequent to a simple majority vote by all members, ramp privileges and/or ownership rights of any member for documented abuse or negligence in abiding by these rules in whole or in part. Upon termination of privileges, the offending member shall have right to refund of financial interests in the permitted structure limited to that originally invested in the purchase and/or construction of the structure. Ongoing financial obligations such as maintenance costs, membership dues or any other financial interests paid as part of Association membership shall not be refunded to the offending member by the Association in part or in whole.

It is the ramp owners' responsibility to notify the Division by written correspondence within 30 days of any of the following events or changes in membership:

- Any changes in the designated point of contact for the Association.
- Changes in contact information for any Association members.
- Membership changes or any other transition of membership resulting from life changes such as a transfer of parcel ownership, death, divorce, remarriage or other circumstances that may alter membership in the Association.
- Any Association decision to expand its membership to include additional members from adjacent properties. The Division, prior to amending the agreement, must approve this amendment.

This is the entire agreement between the parties. There are no other understandings, verbal or written. This agreement may be modified only by written agreement between parties.

**Points of Contact for Members of the Community Boat Ramp Association
General Permit Number XXXXXXXXX**

Primary Point of Contact:

Name:

Address:

Home Phone:

Mobile Phone:

Work Phone:

Email Address:

Point of Contact 2:

Name:

Address:

Home Phone:

Mobile Phone:

Email Address:

Point of Contact 3:

Name:

Address:

Home Phone:

Mobile Phone:

Email Address:

Point of Contact 4:

Name:

Address:

Home Phone:

Mobile Phone:

Email Address:

Point of Contact 5:

Name:

Address:

Home Phone:

Mobile Phone:

Email Address:

Point of Contact 6:

Name:

Address:

Home Phone:

Mobile Phone:

Email Address:

Point of Contact 7:

Name:

Address:

Home Phone:

Mobile Phone:

Email Address:

In signing this agreement, I/we agree to abide by all rules, regulations and stipulations pertaining to the permitted facility as provided in this agreement, the General Permit issued by the Division of Forestry, Fire and State Lands, and the State of Utah. I/we certify ownership of adjacent, upland property on Bear Lake.

Signature of All Association Members (only one individual from each household need sign):

Signature 1: _____

Signature 2: _____

Signature 3: _____

Signature 4: _____

Signature 5: _____

Signature 6: _____

Signature 7: _____

STATE OF _____)

: §

COUNTY OF _____)

On the _____ day of _____, 2016, personally appeared before me, signer(s) of the above instrument who duly acknowledged to me that s/he/they executed the same.

Given under my hand and seal this _____ day of _____, 2016.

Notary Public