

phases. During the first phase, which occurred prior to 1985, 4,950 square feet of pier was removed. During the second phase, which occurred between 1985 and the present, 4,500 square feet were removed. The larger, 12,000 square foot pier plus a proposed 3,720 square foot extension would be used as a foundation for 28 residential units. This larger pier is a relieving platform type of construction which is supported by timber pilings and has a timber deck set below mean low water surrounded by a concrete retaining wall. The entire structure is filled with common fill material and paved with asphalt. This type of structure is stronger than an open structure and provides protection to pilings from the rot and ice abrasion that is concentrated between the mean low water and mean high water lines.

The applicant's project includes a request to construct a 550-foot long replacement bulkhead to within a maximum of 18 inches in front of the old, deteriorated bulkheads on the three properties. This would involve the filling of approximately 800 square feet of open water State wetlands.

At the hearings, the applicant's representatives stated that while the existing timber pilings under the pier are sound enough to support the three-and-one-half story buildings proposed, as an extra measure of safety the applicant proposes to drive new concrete pilings through the pier's deck and support the weight of the building on these new pilings. The diameter of these new pilings would be about 14 inches. The proposed pier extension (3,720 square feet) would be entirely built on new pilings. The total area of bottom filled by the pilings would be approximately 150 square feet. The applicant's representatives stated that not only would it be less expensive to use new concrete pilings instead of bulkheading around the pier and filling underneath it, but that the new pilings should be good for at least 75 years, and perhaps indefinitely, with proper maintenance, thus eliminating the need to ever fill beneath the pier.

The proposed pier extension would shade an additional 3,720 square feet of open water. No SAV is present within the project vicinity. Shading of open water prevents light from reaching algae and phytoplankton and thus reduces primary productivity. During the hot months of the year the pier structures will tend to block wave action and thus reduce turbulent mixing, which along with photosynthesis, is a major factor in oxygenating deeper water. This reduction of turbulence assists in the development of stratification, which results in a layer of warm, oxygenated water overlying colder, anaerobic waters. This condition exacerbates water quality problems and degrades fish habitat. Shading is proposed to be offset by the removal of deteriorated piers and relieving