

WATERFRONT SITE - DOVER, NH



- City owned parcel
- 29 acres with 1,900 ft. of Cochecho River shoreline
- Adjacent to downtown and Henry Law Park
- Previous site of WWTP and DPW facility
- Largest sewer pump station located on site
- Access via Makem Bridge and River Street

DOVER WATERFRONT HAS RICH HISTORY AS SEAPORT SERVED BY GUNDALOWS AND SCHOONERS USED BY TEXTILE MILLS



1888 DRAWING

FARMHOUSE

COAL SHED

COCHECHO WATERFRONT

COCHECHO RIVER HAS LONG HISTORY OF FLOODING



COCHECHO WATERFRONT

CITY AND CWDAC HIRED A PROJECT TEAM LED BY UNION STUDIO TO ASSIST IN DEVELOPMENT OF CONCEPT PLANS IN 2015



UNION STUDIO
ARCHITECTURE & COMMUNITY DESIGN

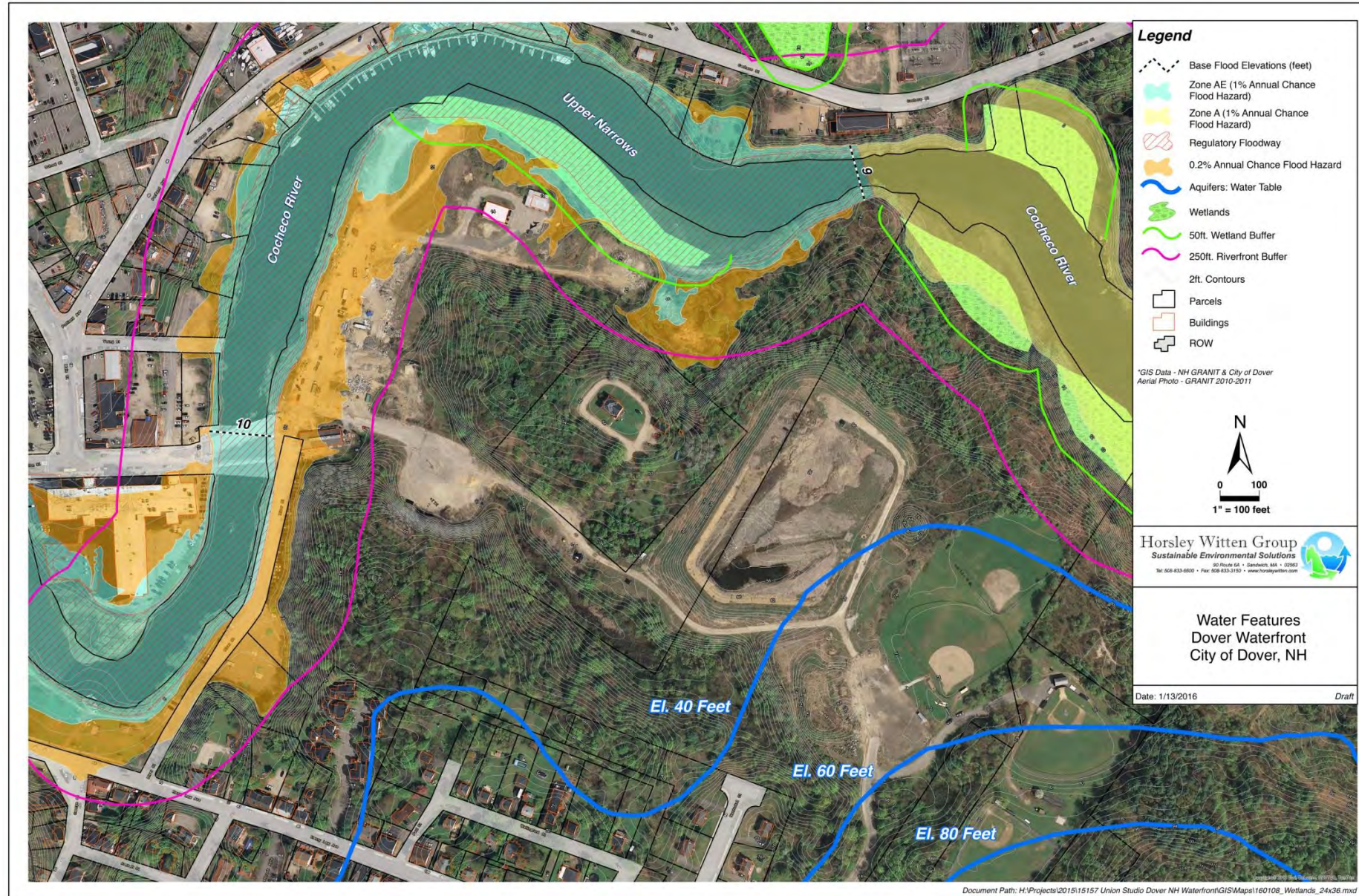


ABRAMSON & ASSOCIATES, Inc.
Real Estate Advisory Services



COCHECHO WATERFRONT

CONSULTANTS MAPPED FLOODPLAINS AND WETLANDS ON SITE



COCHECHO WATERFRONT

SEA LEVEL RISE DATA FOR COASTAL NH PUBLISHED IN 2014

2014 SCIENCE AND TECHNICAL ADVISORY PANEL REPORT SUMMARY

Sea-level Rise, Storm Surges, and Extreme Precipitation in Coastal New Hampshire: Analysis of Past and Projected Future Trends

Climate change is expected to have significant impacts on critical infrastructure and natural and cultural resources in coastal New Hampshire over the next century and beyond.

This report is intended to help municipal and state decision-makers prepare for projected sea-level rise and other coastal hazards and minimize the risks those hazards pose to municipalities and state assets.



SEA-LEVEL RISE

Global sea levels have been rising and are expected to continue rising well beyond the end of the 21st century. Rising seas pose significant risks to our communities and ecosystems, cultural resources and other coastal property and infrastructure.

PROJECTIONS

Forecasting rates of global greenhouse gas emissions is challenging, but research shows that current greenhouse gas concentrations and current or accelerated emissions will continue to influence sea levels in the future.

PRECIPITATION

Mean annual precipitation in the northeastern United States increased by approximately 5 inches (more than 10%) between 1895 and 2011.

PROJECTIONS

Annual precipitation is expected to increase by as much as 20% between 2071 and 2099 compared to the late 20th century. Most of the precipitation increases will be in winter and spring in the form of rain or snow. Fall and summer will experience less of an increase.

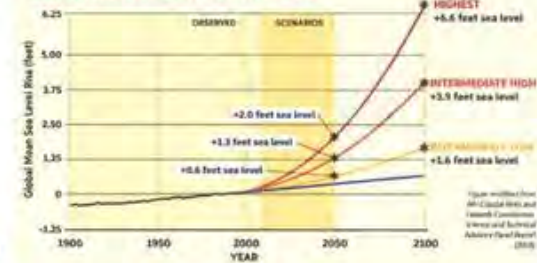
EXTREME PRECIPITATION

The Northeast experienced a 50% increase in total annual precipitation from storms classified as extreme events between 1901 and 2012. Here, "extreme" is defined as the number of times each year that the 24-hour rainfall amount exceeds the largest 1% of precipitation events in that year.

PROJECTIONS

Extreme precipitation events are projected to increase in frequency and in the amount of precipitation produced. In particular, the rainfall amount produced by hurricanes is projected to increase. However, current climate models and analyses are not as good at projecting future changes in the frequency or magnitude of extreme precipitation events.

SEA-LEVEL RISE SCENARIOS AT 2050 AND 2100



PROCESSES CAUSING SEA LEVELS TO RISE



STORM SURGE

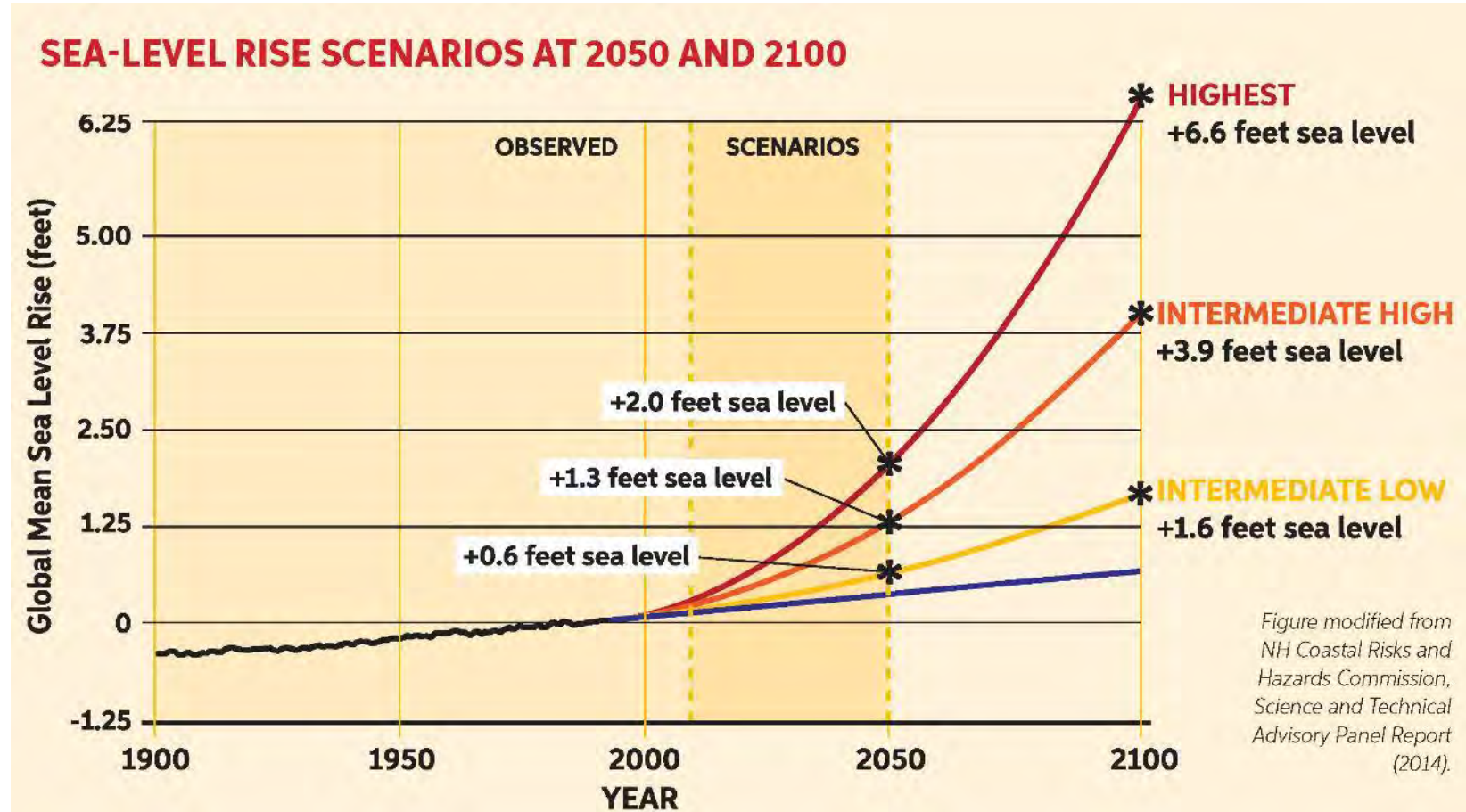
The New Hampshire coast is significantly impacted by both Nor'easters and hurricanes. Winds from these storms drive ocean water towards the land, resulting in the short-term rise in water levels called storm surge. The actual height of a flood is determined by factors such as storm intensity, forward speed, storm area size, coastline characteristics, and angle of approach to the coast, in addition to tide height. Nor'easters can impact the region for several days and produce a storm surge with or without the addition of inland runoff from heavy precipitation. Over the past ten years the largest storm surges observed in New Hampshire occurred during Nor'easters.



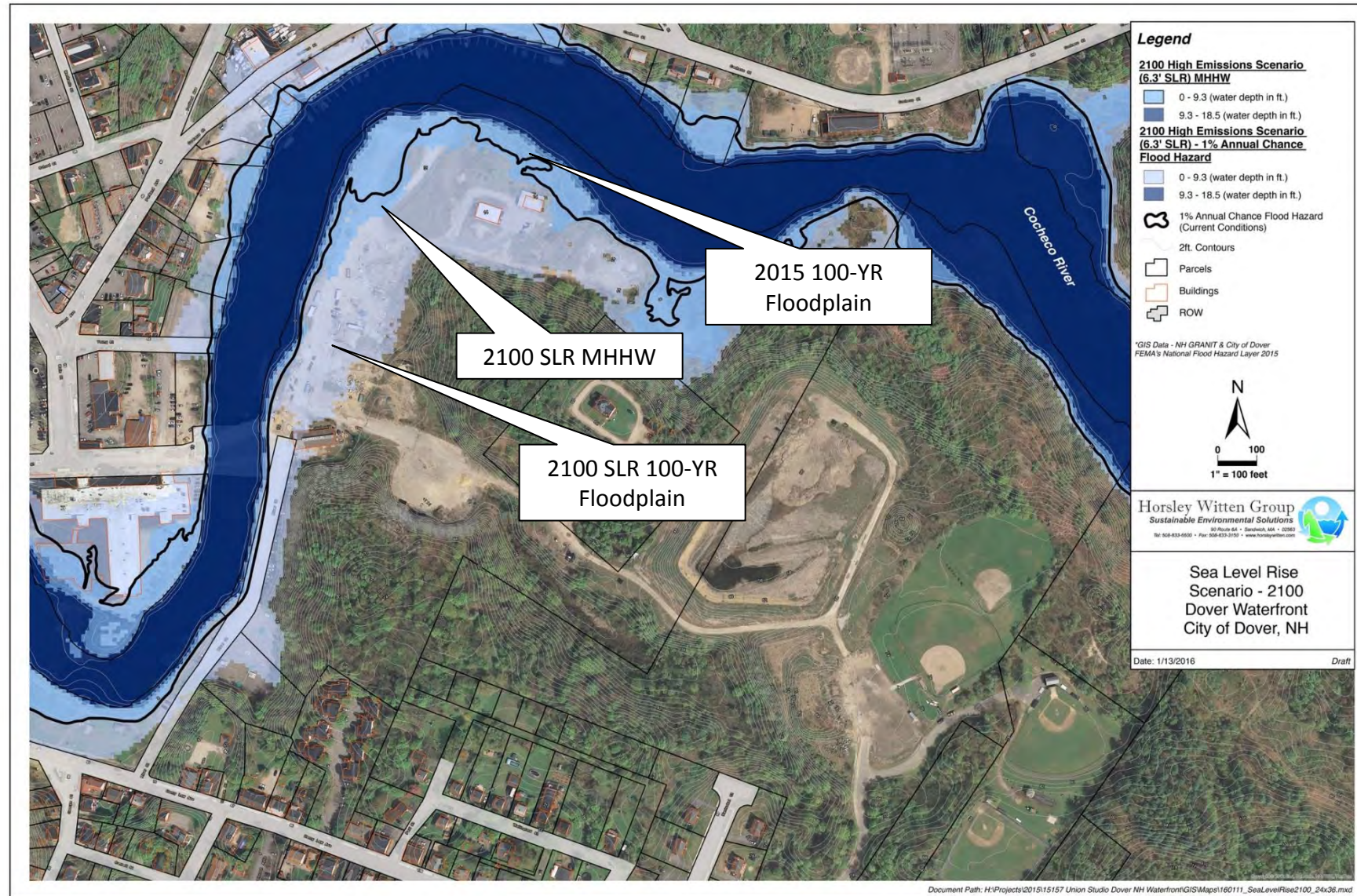
PROJECTIONS

Considering changes in water levels due to sea-level rise alone, today's extreme storm surge events (i.e. 100-year flood) will have a greater inundation extent and occur more frequently over time. Due to increased coastal development, there has been a significant increase in impacts from hurricanes nationwide over the 20th century. However, there is some uncertainty in the projection of trends in hurricane frequency and intensity in any given region, and no research confidently finds a trend in the frequency and intensity of Nor'easters.

CITY REQUIRED CONSULTANTS TO USE SLR PROJECTIONS FOR 2100 IN SITE DESIGN AND GRADING PLANS FOR SITE

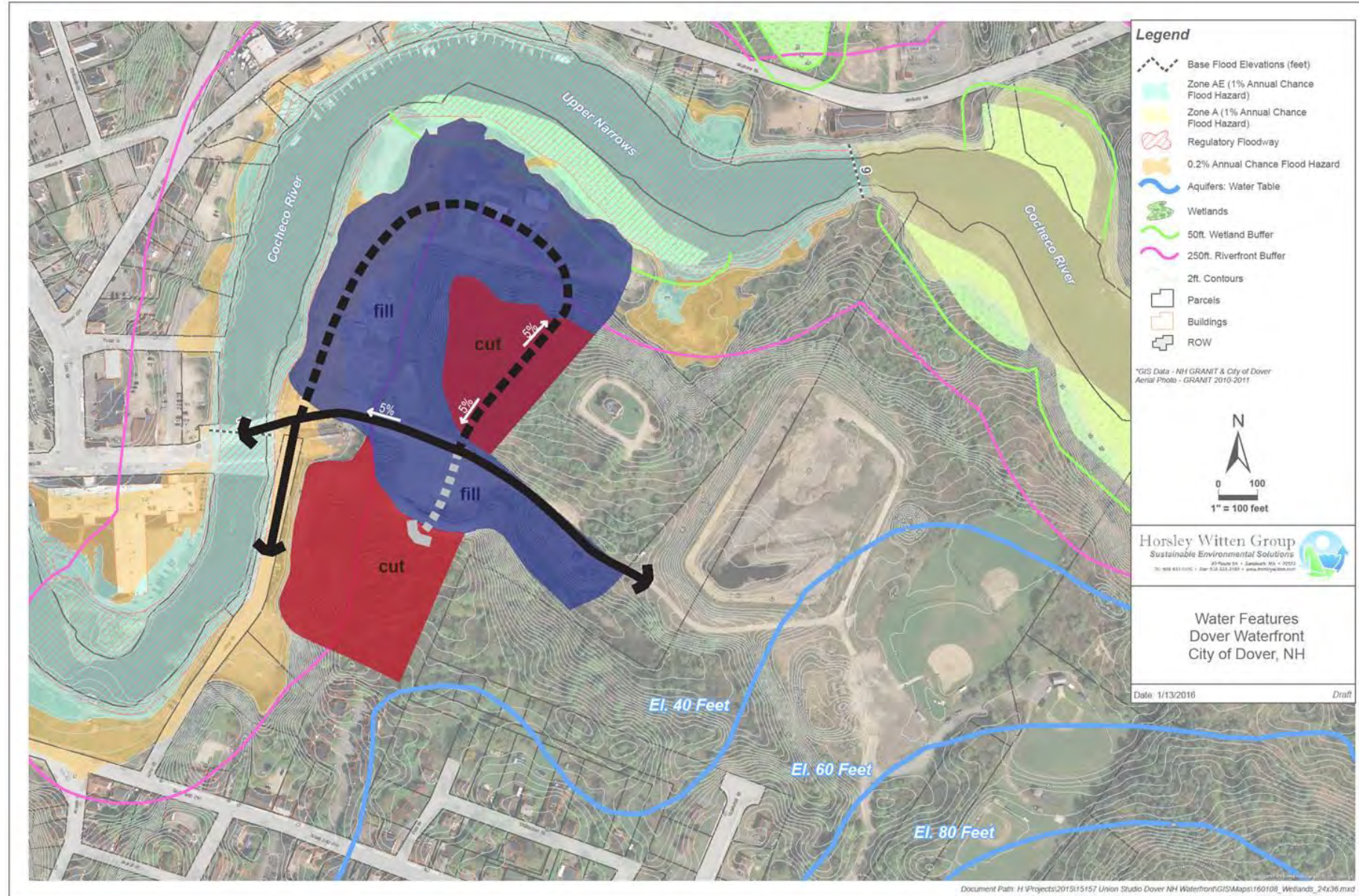


CONSULTANTS PRODUCED MAP OF 2100 SEA LEVEL RISE OF 6.6 FEET AND FLOODPLAIN TO EXAMINE WORST CASE SCENARIO



COCHECHO WATERFRONT

CONSULTANTS HAVE DEVELOPED PRELIMINARY SITE GRADING PLANS



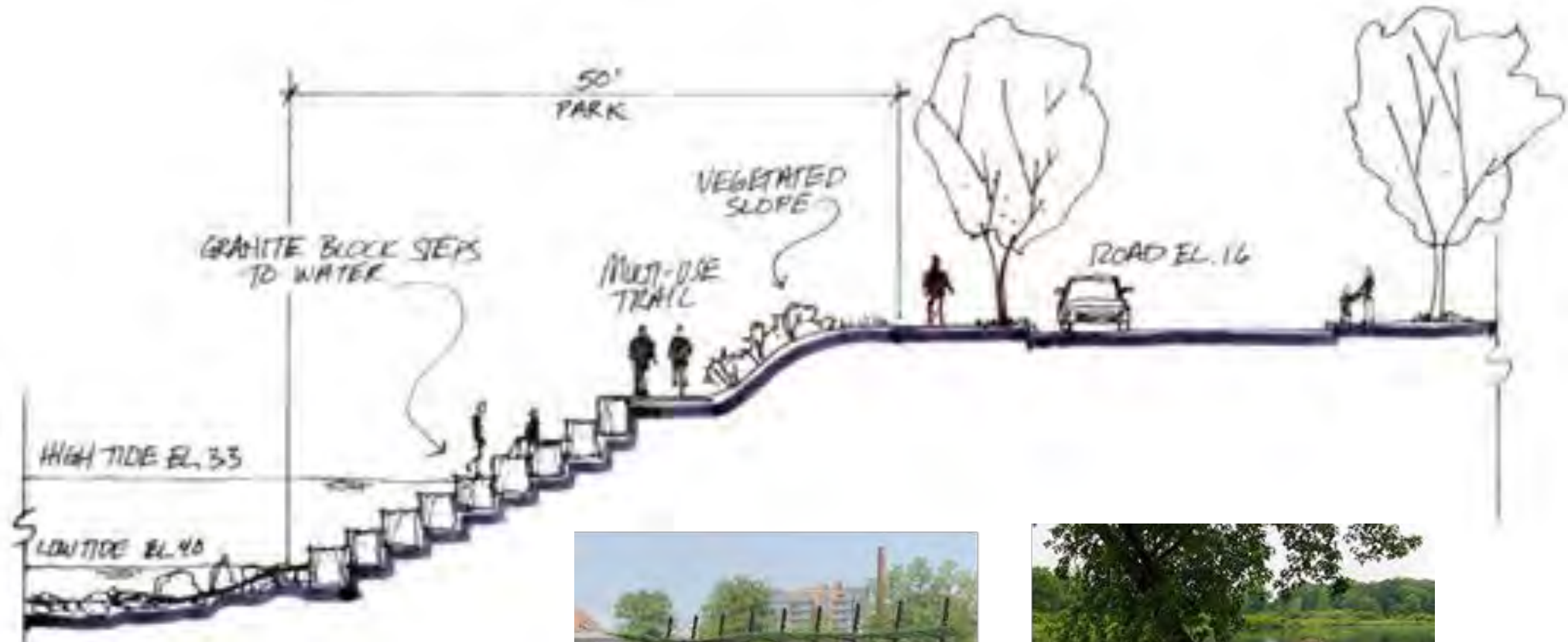
COCHECHO WATERFRONT

SHORELINE TREATMENT OPTION - URBAN



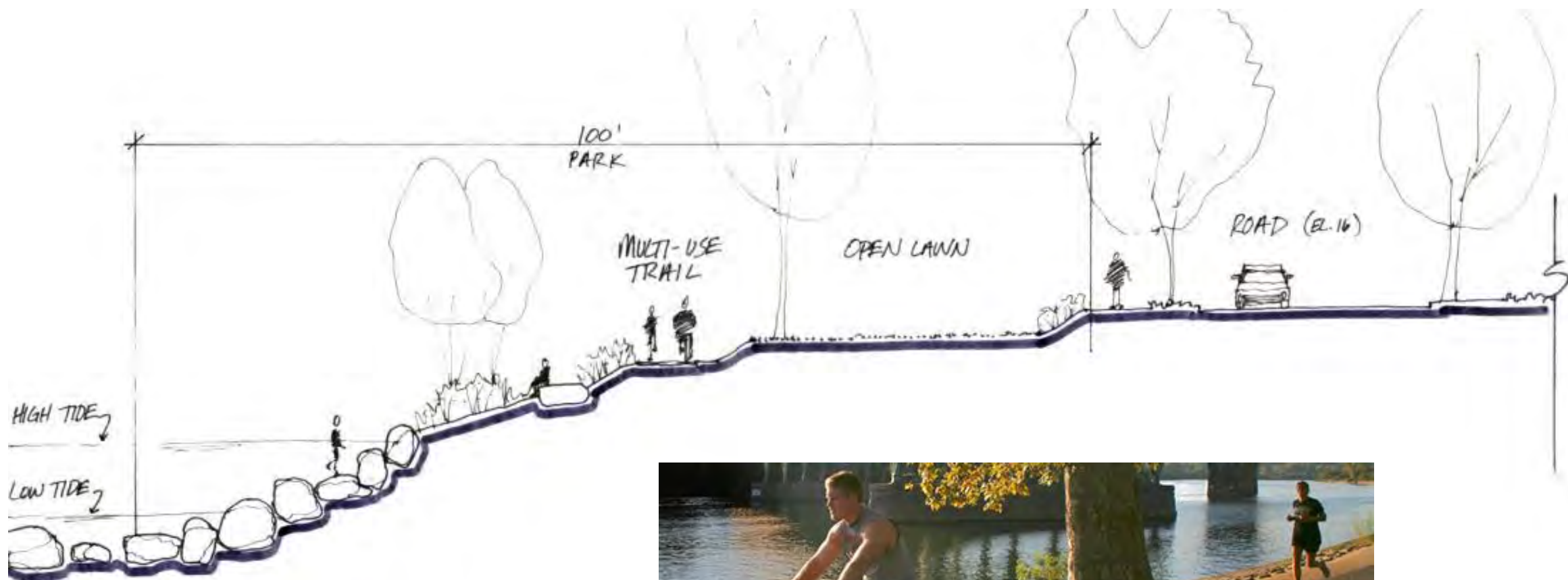
COACHECHO WATERFRONT

SHORELINE TREATMENT OPTION – GRANITE BLOCK STEPS



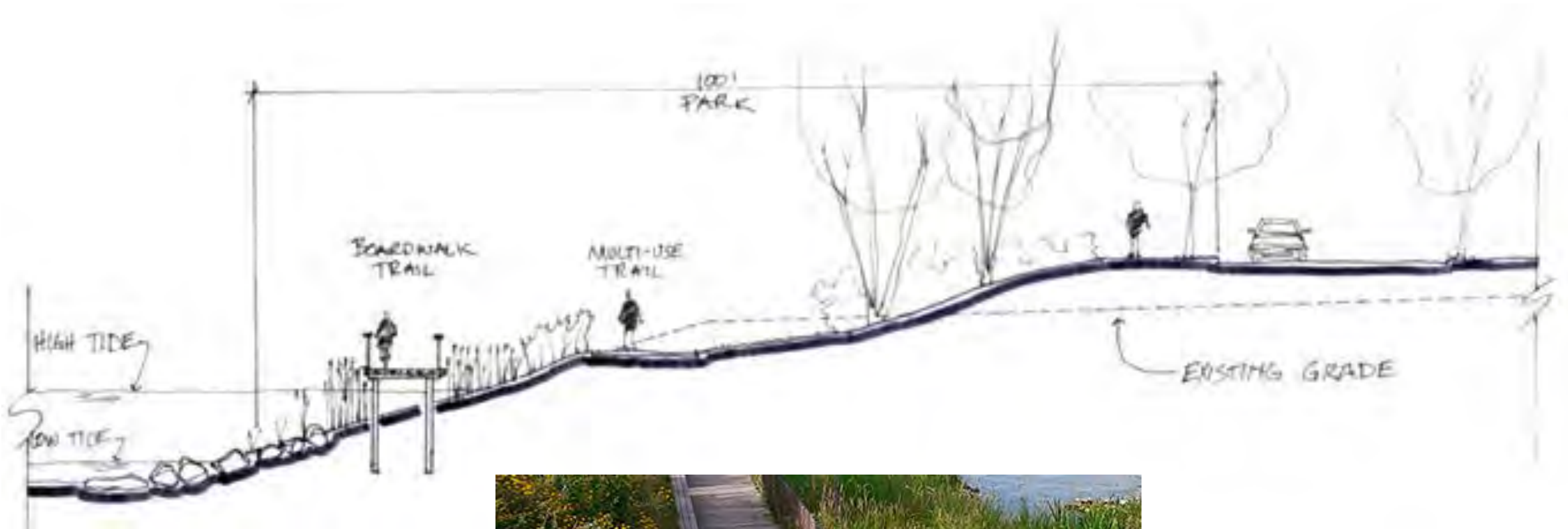
COACHECHO WATERFRONT

SHORELINE TREATMENT OPTION – NATURAL PARK



COACHECHO WATERFRONT

SHORELINE TREATMENT OPTION – NATURAL GREEN SPACE/BOARDWALK



COACHECHO WATERFRONT

RECOMMENDED PRELIMINARY DESIGN FROM CONSULTANTS



COCHECHO WATERFRONT