

Parking in Wickford, RI with Green Infrastructure

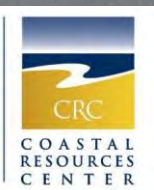
**URI Junior Landscape Architecture Studio
Professor Richard Sheridan**

Date: March 17th, 2016

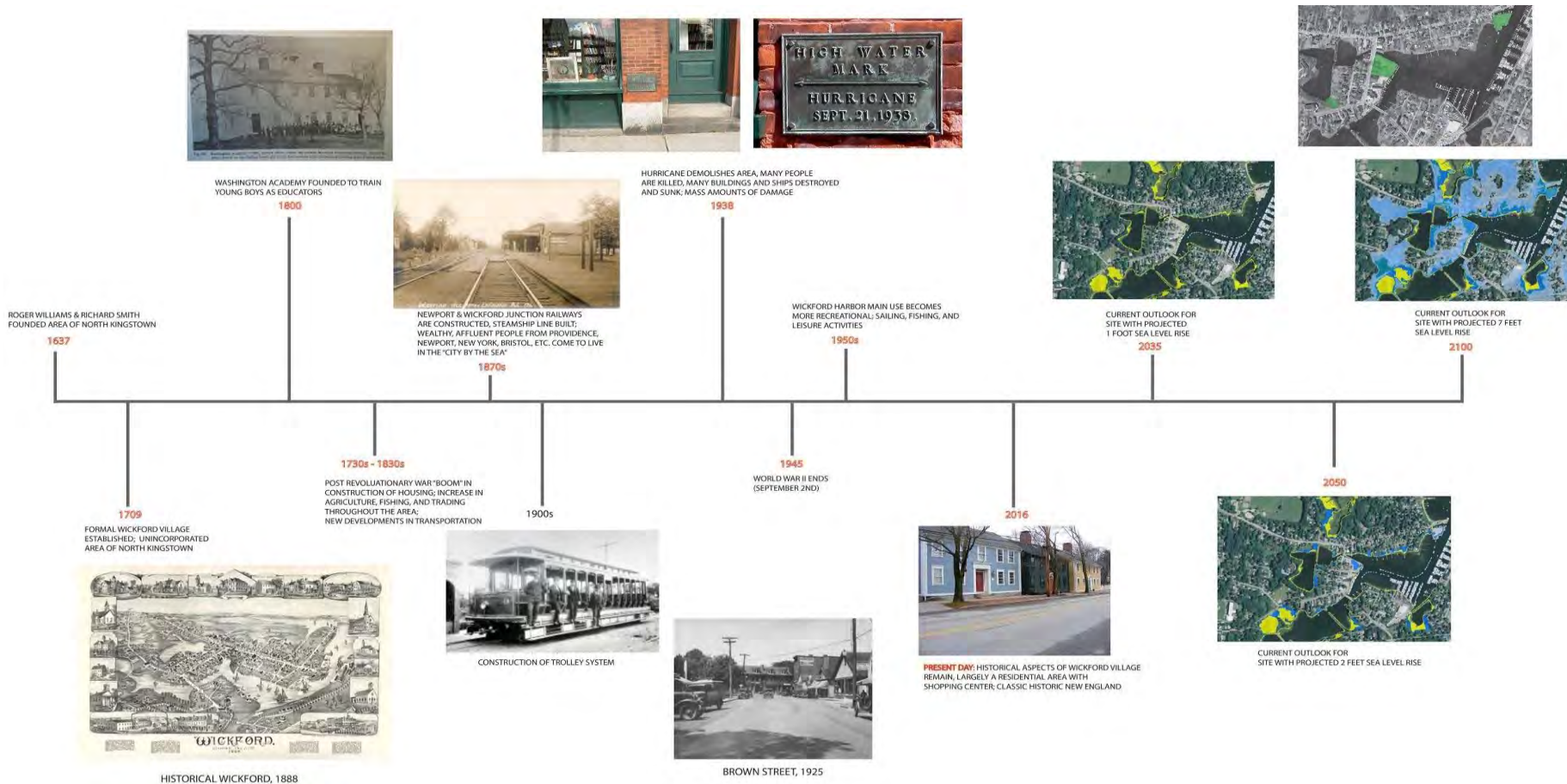
Time: 2:30 p.m. - 5p.m.

Location: North Kingstown Free Library

In association with **RI Green and Resilient Infrastructure Project (GRIP)**, and funded by **U.S. Department of the Interior** and **Rhode Island Sea grant**.



HISTORICAL ANALYSIS



VISUAL CONNECTIVITY

COLONIAL INFLUENCE

- SMALL-TOWN FEEL, HUMAN-SCALE TRADITIONAL NEW ENGLAND LOOK, "PICTURESQUE WATERFRONT STREETS"
- CLASSICALLY STYLED TRIM AND LOTS OF BRICK ELEMENTS AND FLAGSTONE
- SYMMETRY WITH FEATURES ON HOUSE, CENTRAL CHIMNEY



NAUTICAL/MARITIME INFLUENCE

- WOODEN POSTS, ROPES, RIVERSTONES, AND DECKING
- MARITIME THEMED ELEMENTS ON BOTH LAND AND SEA (ANCHOR STATUE, MOONSTONE, BOATS, AND BENCHES)



TOWN HAS MAINTAINED THE INTEGRITY OF THE EXISTING HISTORICAL ARCHITECTURE THROUGHOUT THE YEARS BUT PARKING LOTS LACK THE SAME CHARACTER. THE LOTS ACT AS A TRANSITION ZONE FROM VEHICULAR TO PEDESTRIAN MOVEMENT AND SERVE AS "ENTRANCES" TO THE TOWN.

SITE CONNECTIVITY



LOCAL COMPANIES UTILIZE THE NORTHERN LOT FOR THEIR BUSINESSES. CREATING A WORKING WATERFRONT WHERE CLAMMERS AND OTHER PROFESSIONS THAT OBTAIN SEA LIFE FOR PROFIT CAN OPERATE. LOCAL RESTAURANTS RELY ON THIS WATERFRONT BECAUSE THIS IS WHERE MOST, IF NOT ALL OF THEIR SEAFOOD COMES FROM.

THE MAIN PARKING LOT LOCATED IN THE HEART OF THE WICKFORD COVE CONTAINS DOCKS ALONG THE PERIMETER OF THE LOT. THESE BOAT SLIPS ARE GENERALLY USED BY THE WICKFORD BOAT COMPANY WHERE LOCALS CAN RENT BOATS, KAYAKS AND OTHER WATER SPORT PRODUCTS FOR THE DAY. THIS IS A GREAT OPERATION BECAUSE IT DRAWS PEOPLE INTO THE TOWN. THE LOT ITSELF IS COMPOSED OF 125 PARKING SPACES THAT HAS POTENTIAL TO BE REDESIGNED TO ACCOMMODATE MORE LOCALS.

THE NEW EXPANSION LOT IS IN THE PROCESS OF BEING DESIGNED AND BUILT. THIS LOT HAS POTENTIAL TO ACCOMMODATE MORE LOCALS FOR PARKING AND SHOULD REDUCE THE CONGESTION ON MAIN STREET.

WHEN DESIGNING, FLOOD PROOFING AND PROPER SPACE PLACEMENT ARE FACTORS THAT NEED TO BE ACCOMMODATED FOR. IT IS IMPORTANT TO ENSURE THAT ANY PROPOSED DESIGN ACCOMMODATES AND OR IMPROVES THE KEY ELEMENTS OF THESE PARKING LOTS THAT WERE STATED.

WICKFORD EVENTS

THE EVENTS ARE TO BRING THE COMMUNITY TOGETHER AND ACTS AS A FUNCTIONING WATERFRONT FOR THE COMMUNITY.

EVENTS UTILIZES MAIN STREET, WICKFORD, THE WATERFRONT AND PARKING LOTS REGARDING TO THE SITE.

- **"HORRIBLES" PARADE** (WEEKEND OF HALLOWEEN)
 - ANNUAL FUN, FESTIVE COSTUME PARADE FOR CHILDREN, ENDING WITH ENTERTAINMENTS AND FOUR-LEGGED FURRY FRIENDS
 - STARTS AT ST. **PAUL'S** CHURCH (55 MAIN STREET, WICKFORD) AND CONCLUDES AT THE MUNICIPAL PARKING LOT BY THE TOWN DOCK
- ANNUAL FESTIVAL OF LIGHTS (EARLY DECEMBER)
 - CONCERTS AND HAYRIDES
 - SANTA ESCORTED BY KAYAKS
- WICKFORD ANNUAL ART FESTIVALS (SUMMER - JULY)
 - 80,000 -100,000 ATTENDS WITHIN A 48-HOUR PERIOD
- WICKFORD **FARMER'S** MARKET (JUNE - OCTOBER)
 - LOCATION: TOWN PARKING LOT (63 BROWN STREET)



FARMER'S MARKET



ART FESTIVAL



ART FESTIVAL



FESTIVAL OF LIGHTS



CONCERTS



"HORRIBLES" PARADE

PARKING LOT ANALYSIS



LOT SIZE: 44,300 SQFT
PARKING SPOTS: 50
TOWN OWN
WORK - RECREATION



LOT SIZE: 20,750SQFT
PARKING SPOTS: N/A
PRIVATE LOT



LOT SIZE: 58,806 SQFT
PARKING SPOTS: 125
TOWN OWN / PRIVATE
MULTI-USE

CIRCULATION ANALYSIS

- THE 25MPH SPEED LIMIT IS OFTEN IGNORED, CAUSING DANGEROUS CONDITIONS FOR PEDESTRIANS (LACK OF POLICE PRESENCE, AND SPEED BUMPS).
- RIGHTS OF WAY AT EITHER END OF BROWN STREET CAN BE CONFUSING TO BOTH PEDESTRIANS THAT MAY BE CROSSING AND DRIVERS WHO ARE NOT FAMILIAR WITH THE AREA.
- CROSSWALKS ALONE MAY NOT BE SUFFICIENT FOR HEAVY PEDESTRIAN TRAFFIC IN SUMMER (NO TRAFFIC LIGHTS).
- GOOD CONNECTION BETWEEN PEDESTRIAN WALKWAYS, VEHICULAR ROADWAYS AND PUBLIC AND PRIVATE BOAT DOCKS.
- WICKFORD CURRENTLY HAS NO BICYCLE LANES.



SEA LEVEL RISE



-THIS PICTURE TO THE LEFT IS OF NORTHERNMOST PARKING LOT



-THE PICTURE TO THE LEFT IS OF THE CENTRAL PARKING LOT AS WELL AS NARRAGANSETT ELECTRIC COMPANY PARKING LOT

Legend

1-ft Sea Level Rise, Water Depth



2-ft Sea Level Rise, Water Depth



3-ft Sea Level Rise, Water Depth



5-ft Sea Level Rise, Water Depth



7-ft Sea Level Rise, Water Depth



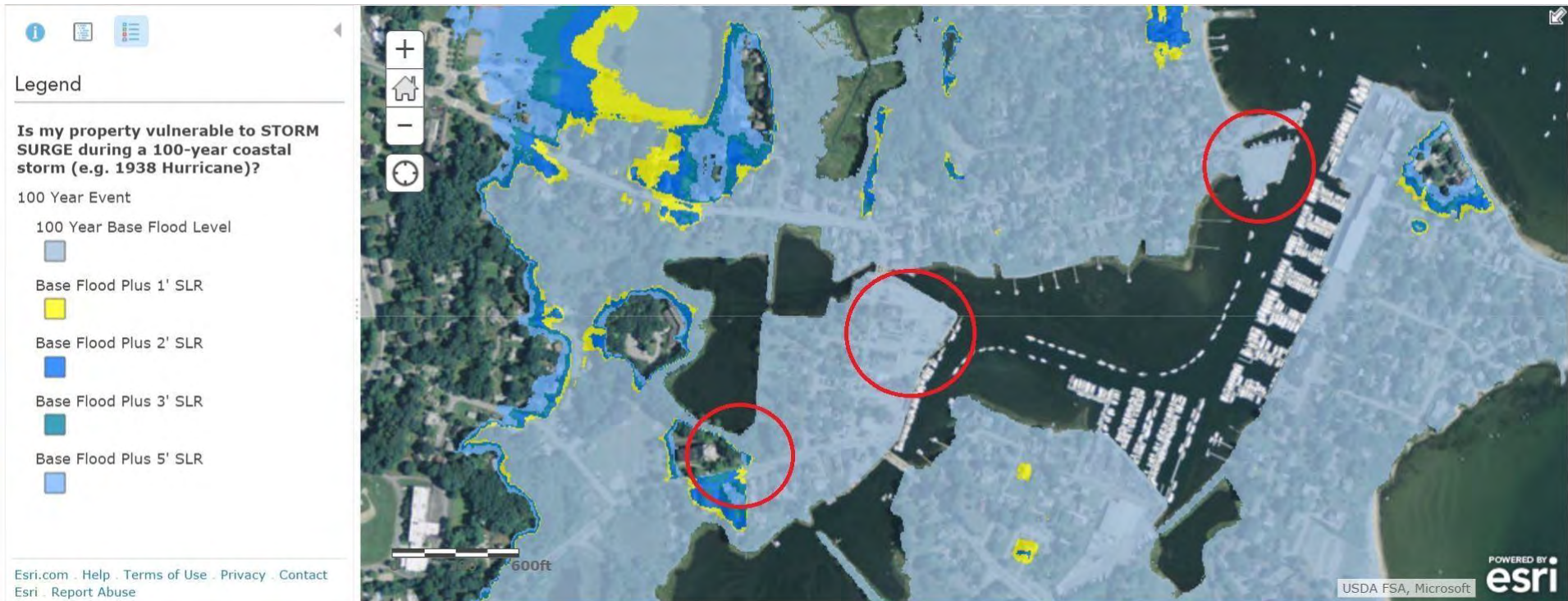
-THE TIDES IN THIS PICTURE ARE FROM HURRICANE SANDY, RESULTING IN ABOUT 5 FT ABOVE MHHW



-THE TIDES IN THIS PICTURE ARE 2 FT ABOVE MHHW SPRING 2015

SEA-LEVEL RISE

According to the EPA, 20 year storm events are expected to occur 2-5 times more often in the next century. This map of Wickford shows the flood level for a 100 year storm, which will see a similar increase in frequency.



WATER TABLE ANALYSIS



NOTE:

AS YOU HEAD FARTHER SOUTH TOWARDS SHAYNA'S PLACE THE THRESHOLD OF THE WATERTABLE GETS CLOSER TO THE GROUND SURFACE.

- BEHIND THE TOWN HALL ANNEX THE WATER TABLE IS 24" BELOW
- BEHIND SHAYNA'S PLACE THE WATER TABLE IS 12" BELOW

WATER TABLE ANALYSIS



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WATER TABLE ANALYSIS

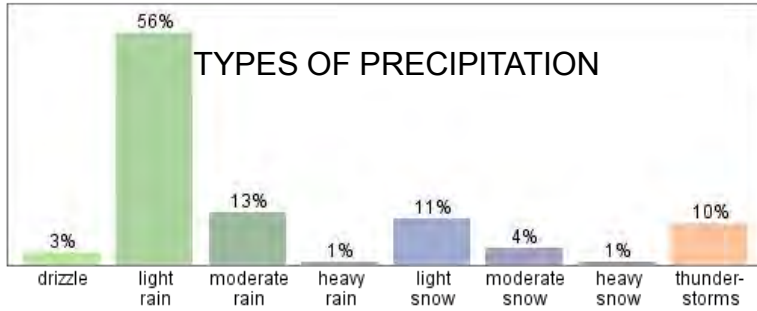


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STORMWATER RUNOFF



- 48.6 INCHES OF RAINFALL ANNUALLY
- 31.1 INCHES OF SNOWFALL ANNUALLY
- 118 DAYS WITH PRECIPITATION ANNUALLY

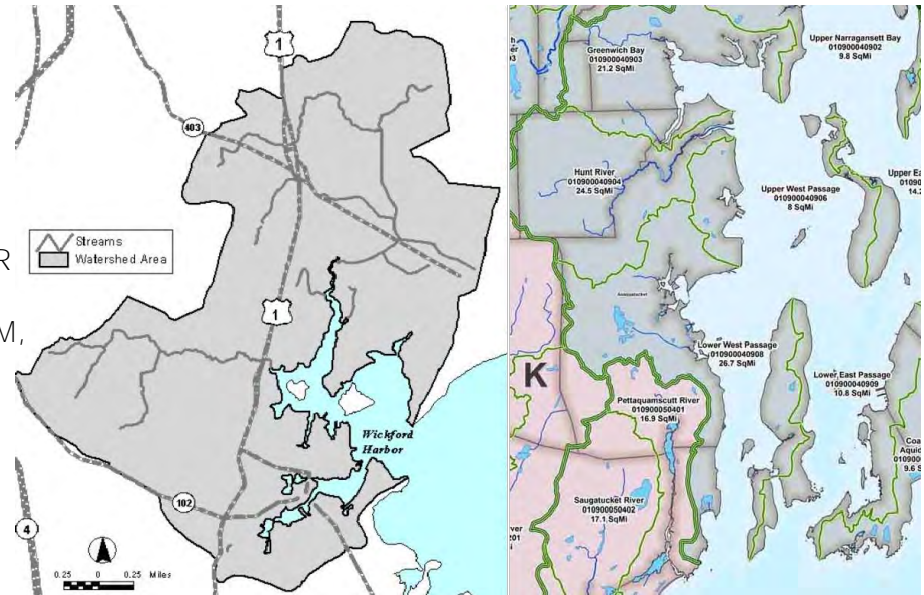
3 MAIN POLLUTANTS STORMWATER RUNOFF FAILING SEPTIC SYSTEMS EROSION

- **PATHOGENS** FROM FAILING ONSITE TREATMENT (WATER BORN VIRUSES, BACTERIA)
- TOO MANY **NUTRIENTS** FROM SEDIMENT, SALT, CALCIUM, METALS AND PESTICIDES
- BOAT DISCHARGE, SURFACE RUNOFF, PET WASTE
- 23% OF WATERS ARE CLOSED FOR SHELLFISHING
- 10% OF WATERS ARE CLOSED FOR RECREATION

WICKFORD WATERSHEDS

- 4500 ACRES
- HIGH WATER TABLE
- LARGE NETWORK OF UNDERGROUND WATER SYSTEMS

THE MAIN GOAL OF THE TOWN OF WICKFORD IS TO **PROTECT** THE EXISTING QUALITY OF THE WATERSHEDS AND TO **RESTORE** THEM TO THE BALANCED AND HEALTHY ECOSYSTEM OF BEFORE



STORMWATER RUNOFF

WAYS TO COLLECT OR TREAT STORMWATER AND FIRST FLUSH

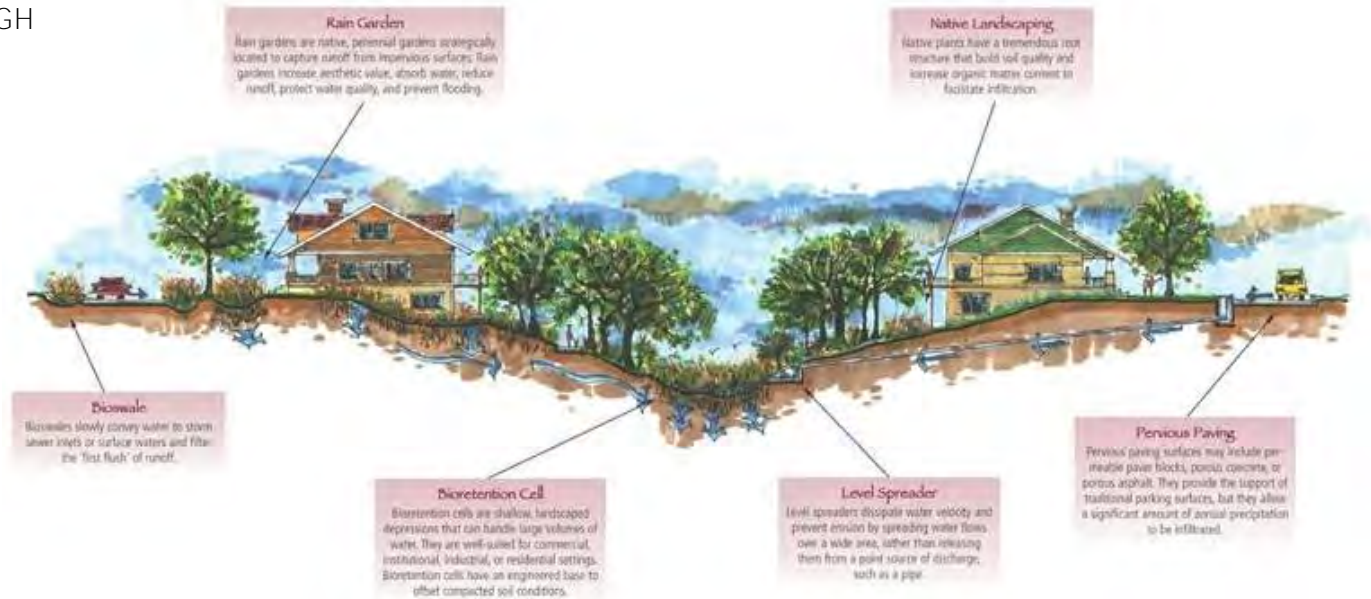
- DETENTION PONDS
- WETLANDS, BIOSWALES, RAIN GARDENS
- VEGETATION
- PERMEABLE PAVEMENTS
- STORM DRAINS
- DECREASE IMPERVIOUS SURFACES
- LOW IMPACT DEVELOPMENT

GREEN INFRASTRUCTURE // LOW IMPACT DEVELOPMENT

“DEVELOPMENT WHICH THOUGH ITS LOW NEGATIVE ENVIRONMENTAL IMPACT EITHER ENHANCES OR DOES NOT SIGNIFICANTLY DIMINISH ENVIRONMENTAL QUALITY.”

APPLICATIONS:

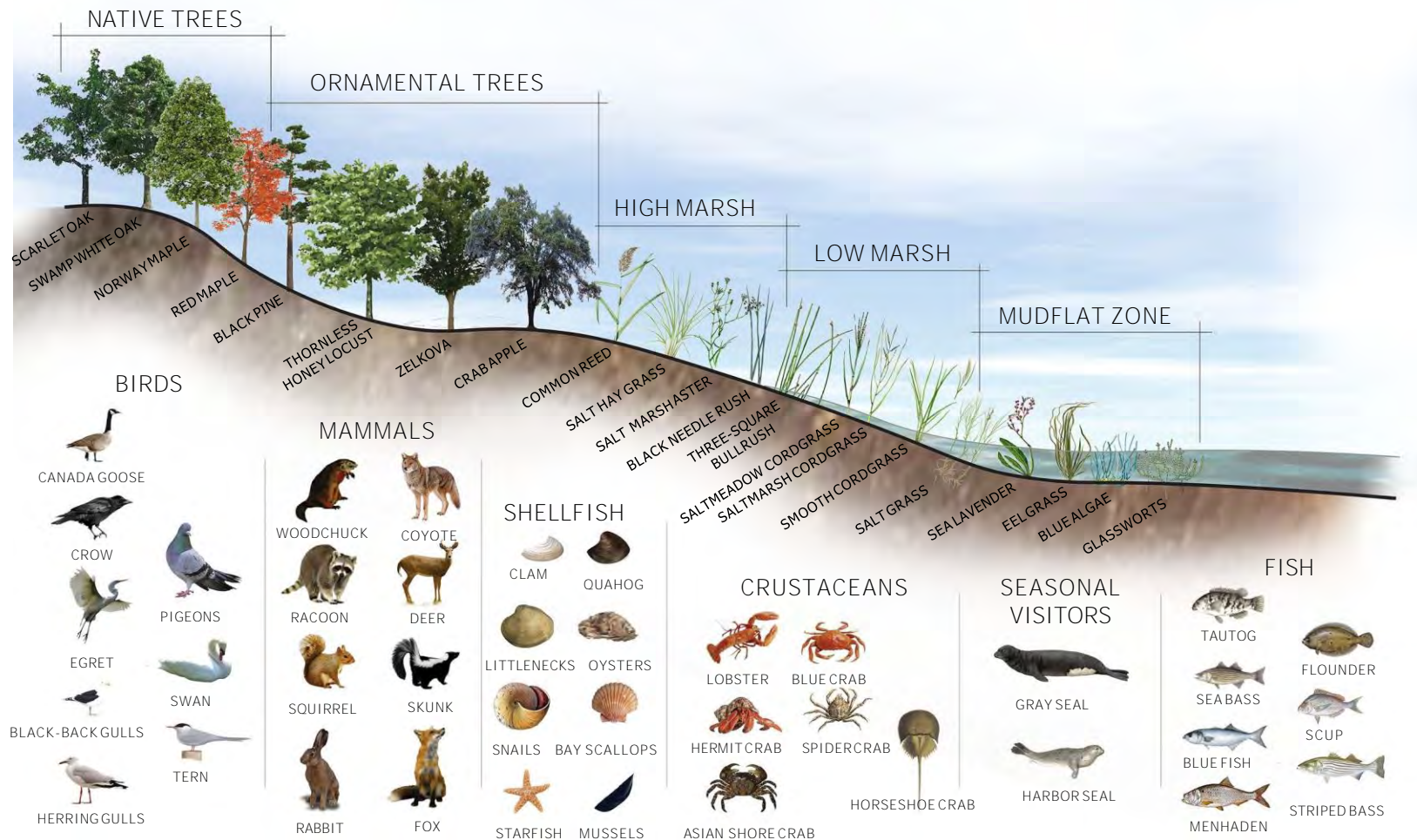
- SWALES
- BIORETENTION AREAS
- GREEN ROOFS



WICKFORD LID GOALS

1. ADHERENCE TO URBAN DESIGN AESTHETICS THAT SHOWCASE VIEWS OF NARRAGANSETT BAY
2. USE OF DIVERSE MIX OF SUSTAINABLE, LOW MAINTENANCE VEGETATION THROUGHOUT EACH DEVELOPMENT SITE.
 - a. ALLOW AESTHETIC APPEAL.
 - b. NATURAL VEGETATIVE BUFFER BENEFITS WATER QUALITY.
 - c. PROTECT HABITAT VALUE FOR WILDLIFE.
3. AN INFILTRATION APPROACH TO STORMWATER MANAGEMENT THROUGH THE USE OF LOW IMPACT DEVELOPMENT TECHNIQUES.

HABITAT & VEGETATION



WATER USE

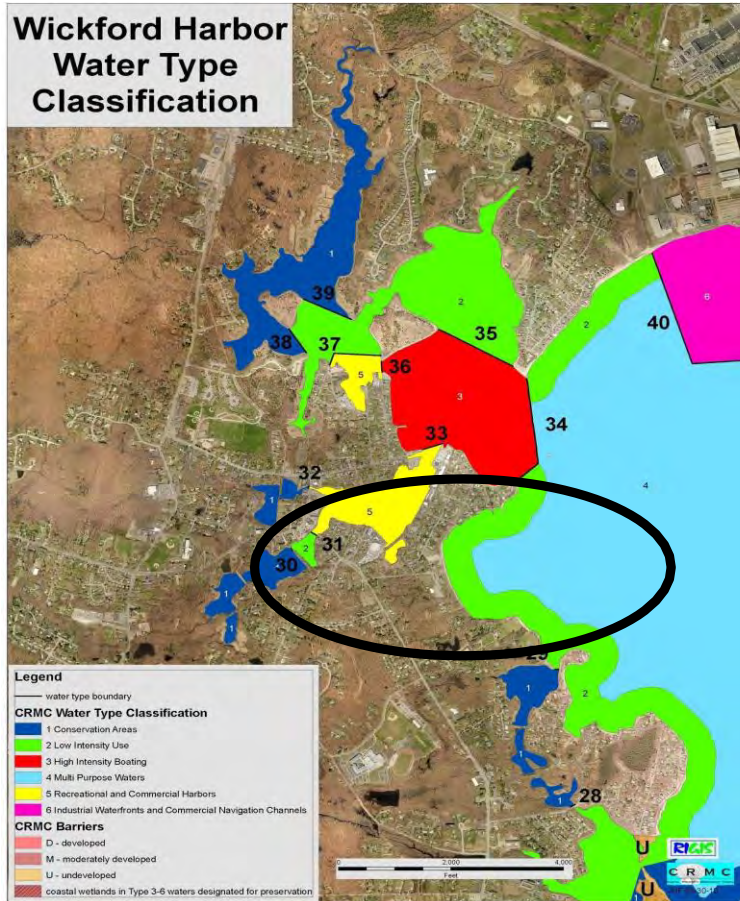


ZONES:

- 1 CONSERVATION AREAS
- 2 LOW INTENSITY USE
- 3 HIGH INTENSITY BOATING
- 5 RECREATION & COMMERCIAL USE

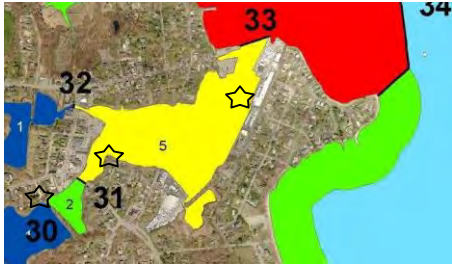
EACH ONE OF THESE ZONES INVOLVES OUR SITE. THIS BECOMES IMPORTANT WHEN UNDERSTANDING WHAT THESE WATERS CURRENTLY DO FOR THE PUBLIC.

THIS ALSO HELPS TO SHOW WHERE POLLUTANTS COULD BE COMING FROM.



WATER USE

FOR SOME **IT'S**
WORK AND PLAY...



MAIN STREET LOT



PHILLIPS STREET LOT



BROWN STREET LOT



MAIN STREET LOT

Student Site Designs



Parking in Wickford, RI with Green Infrastructure

**URI Junior Landscape Architecture Studio
Professor Richard Sheridan**

In association with **RI Green and Resilient Infrastructure Project (GRIP)**, and funded by **U.S. Department of the Interior** and **Rhode Island Sea grant**.

MAIN STREET LOT

WICKFORD, RI



PROJECT BY: BRYNN ARMSTRONG
PREPARED FOR: RICHARD SHERIDAN
LAR 344 - SPRING 2016



NEW DOCK IN PLACE WILL ORGANIZE BOATS MORE EFFECTIVELY THAN THE PREVIOUS PILLERS.

20' STREET LAMPS WILL BE SPARSELY PLACED AROUND THE PARKING LOT.

SOLAR TRASH BINS AROUND THE SITE WILL HELP ELIMINATE WASTE FROM VISITORS.

FISHERMAN'S CLEANING AREA

WATERVIEW WALKWAYS WILL ENTICE THE PEOPLE OF THE COMMUNITY.

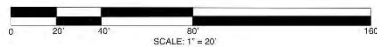
OVERFLOW BIORETENTION ALONG THE SIDEWALK WILL CATCH STORM WATER RUN OFF FROM THE PARKING LOT

PUBLIC RESTROOMS

BIOSWALE AT THE EDGE OF THE PARK WILL CATCH ANY STORM AND RAIN WATER BEFORE GETTING TO THE PARKING LOT. PENINSULA WILL BE PITCHED TO LEAD WATER TO AN OVERFLOW SWALE ALONG THE RIGHT SIDE OF THE SIDEWALK

NATIVE TREES PLANTED AROUND THE SITE. NOTE: THE USE OF FRAGRANT TREES WILL HELP ELIMINATE THE ODOR COMING FROM THE FISHING BOATS.

-Eastern Red Cedar, *Jurisperus virginiana*
-Littleleaf Linden, *Lilja cordata*



BROWN STREET LOT

WICKFORD, RI



PROJECT BY: BRYNN ARMSTRONG
 PREPARED FOR: RICHARD SHERIDAN
 LAR 344 - SPRING 2016



CROSS SECTION NTS

FIRST BIOSWALE IN THE LOT TO BE FILLED WITH STORM WATER BEFORE REACHING OTHER BIOSWALES AT THE CAPS OF PARKING AISLES.

RUNE STONE RELOCATED TO THE ENTRANCE OF THE BROWN STREET PARKING LOT TO ATTRACT PEOPLE TO THE PARKING LOT

RITE-AIDS NEW GREEN ROOF WILL HELP STOP RAIN WATER FROM LEAKING THROUGH THE CEILING. THE ROOF TOP IS EQUIPT WITH A PICNIC AREA AND SOLAR PANELS. CRUSHED STONE PATHS WILL ALSO HELP REMOVE ANY CONTAINMENTS FROM RAIN WATER

WATERVIEW WALKWAYS WILL ENTICE THE PEOPLE OF THE COMMUNITY.

AREA FOR DUMPSTERS, DUMP TRUCK WILL TURN TO FOLLOW THE WAY OF THE ROAD AND THEN CAN BACK UP AND COLLECT TRASH FROM THE DUMPSTERS

PARK AREA WITH BENCHES OVER-LOOKING THE HARBOR AS WELL AS PICNIC TABLES. NEW PARK CAN BE USED BY EMPLOYEES OF THE SURROUNDING BUSINESSES FOR LUNCH BREAKS AS WELL AS THE REST OF THE COMMUNITY.

*BENCHES FACING THE EAST WILL ATTRACT PEOPLE TO SIT AND LOOK OUT ONTO THE HARBOR AS WELL AS THE SUN RISING.

HANDICAP PARKING SPOTS AVAILABLE NEAR THE PUBLIC RESTROOMS AND LIBRARY PARK, AS WELL AS THE NEW WATERFRONT PARK.

NEW DECK CAN SERVE AS A STAGE FOR OUTDOOR MUSIC AND RECREATIONAL EVENTS



4 Brown St

NOTES:

*TREES THAT ARE NATIVE TO RHODE ISLAND WILL BE PLANTED AROUND THE SITE AND WILL HELP ENHANCE THE AESTHETICS OF WICKFORD VILLAGE. SOME NATIVES INCLUDE:

- Eastern Red Cedar, *Juniperus virginiana*
- Red Maple, *Acer rubrum*
- Littleleaf Linden, *Tilia cordata*
- Norway Maple, *Acer platanoides*

*ONE-WAY EXIT AND ENTRANCE WILL HELP CONTROL THE CONGESTION OF OUTGOING AND INCOMING OF TRAFFIC.

*SOLAR TRASH BINS AROUND THE SITE WILL HELP ELIMINATE WASTE FROM VISITORS.

*20' STREET LAMPS WILL BE SPARSELY PLACED AROUND THE PARKING LOT.

PHILLIPS STREET LOT

WICKFORD, RI



PROJECT BY: BRYNN ARMSTRONG
PREPARED FOR: RICHARD SHERIDAN
LAR 344 - SPRING 2016



CROSS SECTION NTS

50' VEGETATIVE BUFFER BETWEEN PARKING LOT AND CONSERVATIONAL ZWATER

12 NEW PARKING SPOTS FOR OVERFLOW PARKING

LOT WILL BE PITCHED TO LEAD STORM AND RAIN WATER TO THE BIOSWALE IN THE CENTER OF THE LOT

TELEPHONE POLE

NOTES:

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BROWN STREET LOT

WICKFORD, RI



THIS LOT IS LOCATED AT THE HEART OF HISTORIC WICKFORD AND FUNCTIONS AS THE MAIN LOCATION FOR THE TOWN'S MANY EVENTS THROUGHOUT THE YEAR. ADDING MORE OPEN LAWN SPACE AND CREATING A RIVERFRONT PARK CATER TO THE TOWN'S NEED FOR A MULTIFUNCTIONAL OUTDOOR AREA, GIVING BOTH RESIDENTS AND TOURISTS A PLACE TO REST AND ENJOY THE SCENIC WATERFRONT. THIS PLAN ADDRESSES THE SITE'S CURRENT ISSUES WITH STORM SURGES AND FLOODING, AND ENHANCES ITS ALREADY STRONG FEATURES (SUCH AS THE ANCIENT RUNESTONE, THE ANCHOR SCULPTURE, AND THE SCENERY).

PLANT LIST FOR WICKFORD PARKING:

QUERCUS BICOLOR
PINUS RIGIDA
LIQUIDAMBAR STYRACIFLUA
PRUNUS MARITIMA
SYMPHORICARPOS ALBUS
PANICUM VIRGATUM
CAREX STRICTA

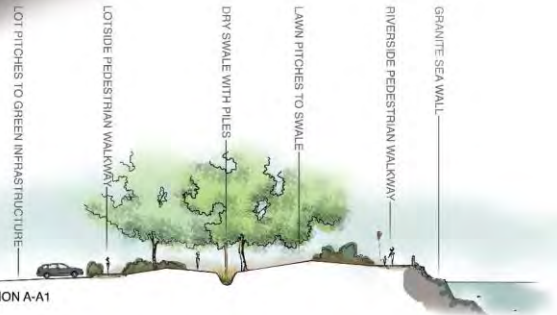


PROJECT BY: EMILY CONDON
PREPARED FOR: PROF. RICHARD SHERIDAN
LAR 344

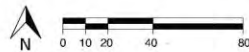
- BUILT UP GRANITE SEA WALL 2FT AND LOOSE GRAVEL
- PEDESTRIAN WALKWAY INCREASES DRAINAGE AND PROTECTS AGAINST FLOODING
- POROUS ASPHALT PAVEMENT, 26" DEEP, HELPS WITH DRAINAGE
- ONE WAY VEHICULAR MOVEMENT, SIMPLIFIES CIRCULATION THRU SITE (95 PARKING SPOTS)
- DEPRESSION IN PAVING WITH UNDERGROUND CATCHMENT, TREATS STORMWATER AND RELEASES IT INTO GROUNDWATER OVER TIME
- EXPOSED AGGREGATE CONCRETE SIDEWALK
- ANCHOR SCULPTURE MOVED TO CENTER OF BRICK PLAZA, FORMAL ENTRANCE TO PARK
- DRY SWALE WITH RIVER ROCKS AND SALT TOLERANT GRASSES, WOOD PILES IN GRID, EDGED WITH GRANITE
- CHASSIS LAWN GRADED APPROX. 3 FT ABOVE LOT, PITCHING TOWARDS SWALE SYSTEM AND CATCHMENTS
- RUNESTONE GARDEN WITH NATIVE GRASSES, SHRUBS, AND SIGNAGE RELATING TO WICKFORD HISTORY
- PUBLIC DOCKS FOR VISITORS WITH BOATS
- WOODEN PILE AND ROPE BARRIER, 3FT TALL



VIEWS FROM PEDESTRIAN WALKWAY
INSPIRATION FOR DRY SWALE GRID, WOOD PILING IN SWALES ALIGN WITH PILING IN COVE



SECTION A-A1
NTS



PHILLIPS STREET LOT

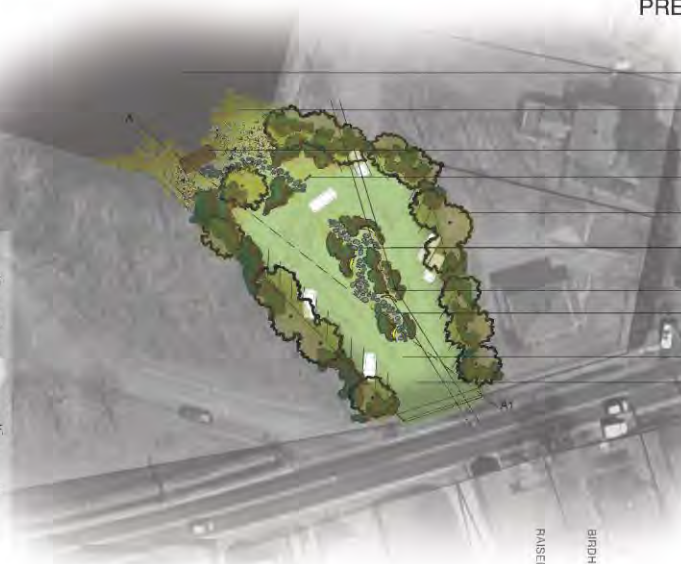
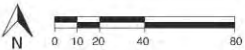
WICKFORD, RI



BECAUSE THIS LOT IS CURRENTLY UNDEVELOPED AND ADJACENT TO CONSERVATIONAL WATER, THIS PLAN AIMS TO PRESERVE ITS NATURALISTIC CHARACTER WHILE ALSO ADDING GREEN INFRASTRUCTURE FOR VEHICULAR CIRCULATION AND STORMWATER MANAGEMENT. BY USING STRUCTURED FESCUE MIX GRASS AND GRAVEL RUNNERS INSTEAD OF CONVENTIONAL PAVING, THE SITE RETAINS ITS UNTOUCHED APPEARANCE AND ASSISTS WITH STORMWATER RUNOFF. SALT TOLERANT WETLAND GRASSES AND NATIVE SHRUBS RESPECT THE 50 FT BUFFER, BUT A RURAL FLAGSTONE PATH LEADING DOWN TO A RAISED OUTLOOK INVITES VISITORS TO ENJOY THE SCENIC WATERFRONT. THE WETLAND GRASSES SURROUNDING THE OUTLOOK WILL TRAP PHYSICAL POLLUTION AND TREAT RUNOFF. BIRDHOUSES PLACED IN THE SITE WILL ATTRACT MORE WILDLIFE TO THE AREA. AN INTERACTIVE SCULPTURE GARDEN REPRESENTING QUAHOG CLAMSHELLS TIE THE LOT INTO THE MARINE CULTURE OF HISTORIC WICKFORD AND MAKE THE SITE A POINT OF INTEREST FOR TOURISTS AND RESIDENTS. THE BRONZE SHELLS AND NATIVE FLOWERING SHRUBS CONCEAL UTILITY POLES AND CONNECT PEDESTRIAN MOVEMENT FROM PHILLIPS ST. TO THE WATERFRONT.



SKETCHES OF SCULPTURE GARDEN
BRONZE QUAHOG CLAMSHELLS WITH NATIVE FLOWERING SHRUBS
NTS



PROJECT BY: EMILY CONDON
PREPARED FOR: PROF. RICHARD SHERIDAN
LAR 344

- CONSERVATION WATER
- 50 FT BUFFER OF NATIVE GRASSES AND WETLANDS, WITH BIRDHOUSES ON WOOD PILING TO ATTRACT MORE WILDLIFE
- RAISED OUTLOOK WITH VIEWS OF THE WATER
- SIGNAGE RELATING TO CONSERVATION AND NATIVE PLANT AND WILDLIFE
- SCREENING FOR RESIDENTS, TALL SHRUBS AND DENSE TREES
- INTERACTIVE SCULPTURE GARDEN, QUAHOG CLAMSHELLS EMERGING FROM GROUND WITH NATIVE SHRUBS
- UTILITY POLES
- FLAGSTONE PATH LEADING DOWN TO WATERFRONT/OUTLOOK
- ONE WAY VEHICULAR CIRCULATION THRU SITE (23 PARKING SPOTS)
- STRUCTURED FESCUE-MIX GRASS WITH GRAVEL RUNNERS ON DRIVEWAY FOR VEHICLES



- RAISED PLATFORM OVERLOOKING WATER
- BIRDHOUSES ON WOOD PILING
- STRUCTURED GRASS PAVING
- CLAMSHELL SCULPTURES
- SLOPE PITCHES TO GRASS PATHERS
- PEDESTRIAN SIDEWALK

MAIN STREET

WICKFORD, RI

PROJECT BY: BENJAMIN CONGDON
PREPARED FOR: PROF. RICHARD SHERIDAN

A **GREEN ROOF** is a roof of a building that is partially or completely covered with vegetation and a growing medium, planted over a waterproofing membrane.

Green roofs serve several **PURPOSES** for a building, such as absorbing rainwater, providing insulation, creating habitat for wildlife, increasing benevolence and decreasing stress of the people around the roof by providing a more aesthetically pleasing landscape, and helping lower urban air temperatures & mitigate.

Green roofs **EMPLOY** the natural functions of plants to filter water and treat air in urban and suburban landscapes.

The two **TYPES** of greenroof:

- I. **INTENSIVE** roofs are thicker, have a minimum depth of 5.0 inches (12.5 cm), and can support a wider variety of plants but are heavier & require more maintenance
- II. **EXTENSIVE** roofs are shallow, ranging in depths below 5.0 inches (12.5 cm) to 7.9 inches (20 cm) thick, are lighter than intensive green roofs, and require minimal maintenance.

BROWN ROOFS, or 'BIO-DIVERSE ROOFS,' are designed for industrial brownfield sites, supporting rare species of plants, animals and invertebrates.

Currently, these habitats are **UNDER-THREAT** increasingly in demand for redevelopment.
Design mitigates the loss of habitat by zoning flat-roofs of new developments with a layer of locally sourced materials.

Built typically similar to **GREEN ROOFS**, with the main difference being the choice of **GROWING** medium, always **LOCALLY** sourced:

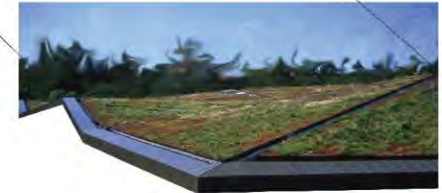
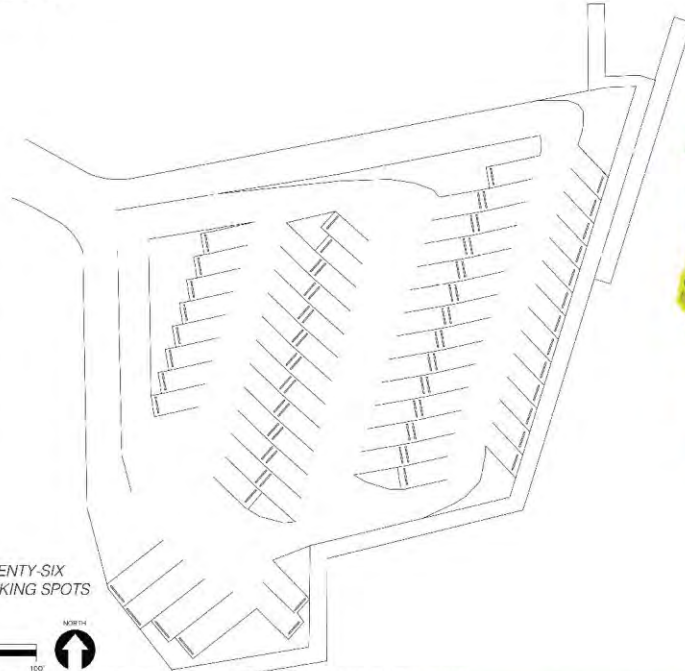
- RUBBLE
- GRAVEL
- SOIL
- or - SIMILAR ORGANIC matter

BROWN ROOFS are allowed to self-colonize after construction, via spiders & insects, providing a feeding site for insectivorous birds.

BROWN ROOF

- 13 ft. above lot.
- material sourced from Brown street site.

SEVENTY-SIX
PARKING SPOTS



THE PRINCIPLE OF **LOW IMPACT DEVELOPMENT** IS TO USE NATURE AS A MODEL AND MANAGE RAINFALL AT THE SOURCE, ACCOMPLISHED THROUGH SEQUENCED IMPLEMENTATION OF RUNOFF PREVENTION STRATEGIES, RUNOFF MITIGATION STRATEGIES, AND FINALLY, TREATMENT CONTROLS TO REMOVE POLLUTANTS

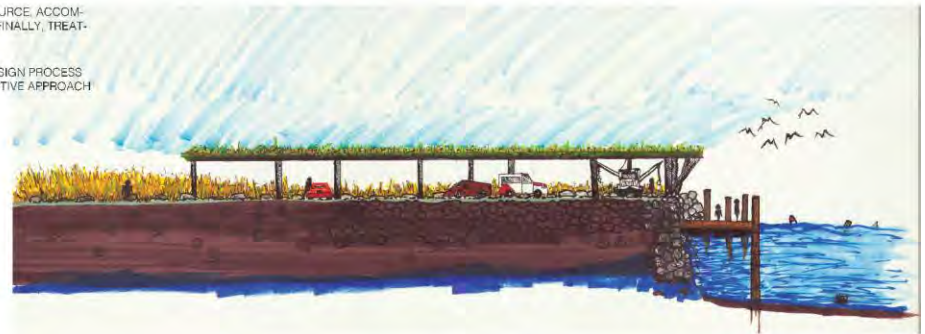
LOW IMPACT DEVELOPMENT TECHNIQUES ARE MORE THAN JUST PRACTICES AND PRODUCTS. IT IS A STRATEGIC DESIGN PROCESS TO CREATE A SUSTAINABLE SITE THAT MIMICS THE UNDEVELOPED HYDROLOGIC PROPERTIES OF THE SITE. IT REQUIRES A PRESCRIPTIVE APPROACH THAT IS APPROPRIATE FOR THE PROPOSED LAND USE.

THE PROCESS used to MANAGE STORMWATER INCLUDE:

1. PRE-TREATMENT
2. FILTRATION
3. INFILTRATION
4. STORAGE & RE-USE

CORE REQUIREMENTS designing for **LOW IMPACT DEVELOPMENT**

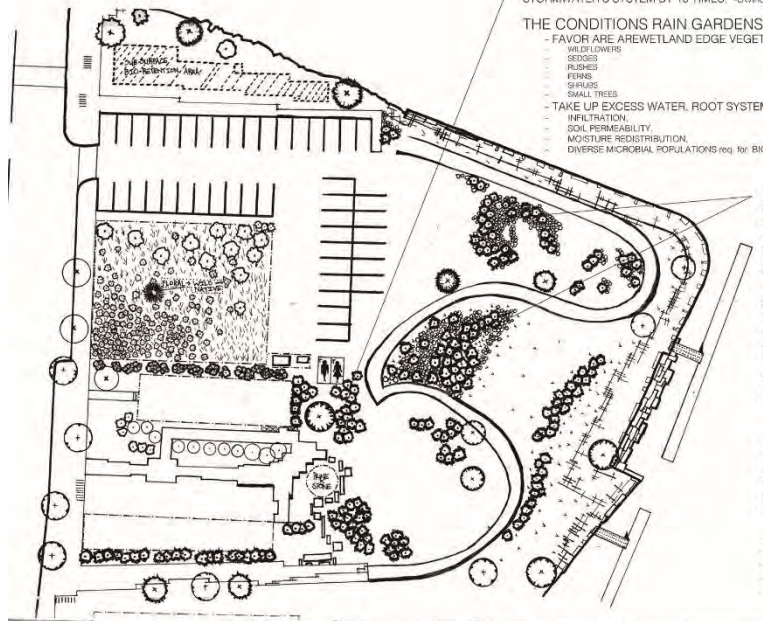
1. CONSERVE NATURAL AREAS WHEREVER POSSIBLE
2. MINIMIZE THE DEVELOPMENT IMPACT ON HYDROLOGY
3. MAINTAIN RUNOFF RATE & DURATION FOR THE SITE
4. INTEGRATED MANAGEMENT PRACTICES SCATTERED THROUGH-OUT SITE
 - o DECENTRALIZED, MICROSCALE CONTROLS THAT INFILTRATE, STORE, EVAPORATE, & DETAIN RUNOFF CLOSE TO THE SOURCE.
5. IMPLEMENT POLLUTION PREVENTION, PROPER MAINTENANCE AND PUBLIC EDUCATION PROGRAMS.



BROWN STREET

WICKFORD, RI

PROJECT BY: BENJAMIN CONGDON
STUDENT OF PROF. RICHARD SHERIDAN
CREDIT: LAR 343



RAIN GARDENS ARE DESIGNED TO CAPTURE THE INITIAL FLOW OF STORM WATER AND REDUCE THE ACCUMULATION OF TOXINS FLOWING DIRECTLY INTO NATURAL WATERWAYS THROUGH GROUND FILTRATION. ALSO, THE CUMULATIVE STORAGE CAPACITY OF NATURAL RAIN GARDENS EXCEEDS A CONVENTIONAL STORMWATER'S SYSTEM BY 10 TIMES. - ENVIRONMENTAL PROTECTION AGENCY

THE CONDITIONS RAIN GARDENS

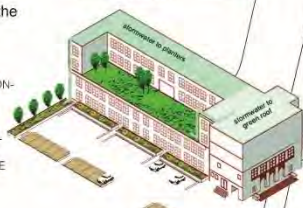
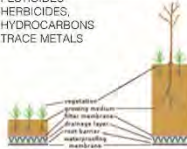
- FAVOR ARE AREWETLAND EDGE VEGETATION
- WILDLOWERS
- SEDGES
- RUSHES
- IRIS
- SPIRAEAS
- SMALL TREES
- TAKE UP EXCESS WATER, ROOT SYSTEMS ENHANCE INFILTRATION.
- SOIL PERMEABILITY
- MOISTURE REDISTRIBUTION
- DIVERSE MICROBIAL POPULATIONS req. for BIOFILTRATION



BIOSWALES ARE LANDSCAPE ELEMENTS DESIGNED TO REMOVE SILT & POLLUTION FROM SURFACE RUNOFF WATER. THEY CONSIST OF A SWALES DRAINAGE COURSE WITH GENTLY SLOPED SIDES (less than 6%). THE WATER'S FLOW PATH, ALONG WITH THE WIDE AND SHALLOW DITCH, IS DESIGNED TO MAXIMIZE THE TIME WATER SPENDS IN THE SWALE, WHICH AIDS THE TRAPPING OF POLLUTANTS & SILT. BIOSWALES ARE COMMONLY USED IN PARKING LOTS, WRAPPED AROUND THE PARKING LOT DESIGNED TO TREAT RUNOFF BEFORE RELEASING IT TO THE WATERSHED.

UN-TREATED STORMWATER IS A SOURCE OF A WIDE VARIETY OF POLLUTANTS WASHED OFF HARD OR COMPACTED SURFACES DURING RAIN EVENTS. THESE POLLUTANTS INCLUDE:

- VOLATILE ORGANIC COMPOUNDS
- PESTICIDES
- HERBICIDES,
- HYDROCARBONS
- TRACE METALS



Design Goals:

- a. USE OF DIVERSE MIX OF SUSTAINABLE, LOW MAINTENANCE VEGETATION IN SITE DEVELOPMENT
- b. AN INFILTRATION APPROACH TO STORM WATER-MANAGEMENT WITH LOW IMPACT DEVELOPMENT TECHNIQUES
- c. ALL PARKING DEVELOPMENT MUST ENHANCE OR NOT-SIGNIFICANTLY DAMAGE ENVIRONMENTAL QUALITY.
- d. STRICT DESIGN POLICY OF PRESERVE, PROTECT, AND WHERE POSSIBLE, RESTORE NATIVE COASTAL RESOURCES OF THE SITE
- e. ANY ENVIRONMENTAL ALTERATION OF COASTAL RESOURCES WILL BE MEASURED, JUDGED & REGULATED AGAINST PRESERVATION AND RESTORATION.

Planning & Management Programs developed around the following standards & Criteria:

- a. NEED & DEMAND FOR VARIOUS ACTIVITIES AND THEIR IMPACT UPON ECOLOGICAL SYSTEMS.
- b. DEGREE OF COMPATIBILITY OF VARIOUS ACTIVITIES.
- c. WATER QUALITY STANDARDS SET BY THE DIRECTOR OF ENVIRONMENTAL MANAGEMENT.
- d. CONSIDERATION OF PLANS, STUDIES, SURVEYS, INVENTORIES FROM PUBLIC & PRIVATE SOURCES.
- e. CONSIDERATION FOR CONTIGUOUS LAND-USES & TRANSPORTATION FACILITIES.
- f. MARINE RESOURCES DEVELOPMENT PLAN GOVERNS LAND-USE MANAGEMENT RESPONSIBILITIES.



FOURTY-TWO PARKING SPOTS



PHILLIPS STREET

WICKFORD, RI

THE PRINCIPLE OF LOW IMPACT DEVELOPMENT IS TO USE NATURE AS A MODEL AND MANAGE RAINFALL AT THE SOURCE, ACCOMPLISHED THROUGH SEQUENCED IMPLEMENTATION OF RUNOFF PREVENTION STRATEGIES, RUNOFF MITIGATION STRATEGIES, AND FINALLY, TREATMENT CONTROLS TO REMOVE POLLUTANTS.

LOW IMPACT DEVELOPMENT TECHNIQUES ARE MORE THAN JUST PRACTICES AND PRODUCTS. IT IS A STRATEGIC DESIGN PROCESS TO CREATE A SUSTAINABLE SITE THAT MIMICS THE UNDEVELOPED HYDROLOGIC PROPERTIES OF THE SITE. IT REQUIRES A PRESCRIPTIVE APPROACH THAT IS APPROPRIATE FOR THE PROPOSED LAND USE.

THE PROCESS used to MANAGE STORM-WATER INCLUDE:

1. PRE-TREATMENT
2. FILTRATION
3. INFILTRATION
4. STORAGE & RE-USE

CORE REQUIREMENTS designing for LOW IMPACT DEVELOPMENT

1. CONSERVE NATURAL AREAS WHEREVER POSSIBLE
2. MINIMIZE THE DEVELOPMENT IMPACT ON HYDROLOGY
3. MAINTAIN RUNOFF RATE & DURATION FOR THE SITE
4. INTEGRATED MANAGEMENT PRACTICES SCATTERED THROUGH-OUT SITE
5. DECENTRALIZED, MICROSCALE CONTROLS THAT INFILTRATE, STORE, EVAPORATE, & DETAIN RUNOFF CLOSE TO THE SOURCE.
6. IMPLEMENT POLLUTION PREVENTION, PROPER MAINTENANCE AND PUBLIC EDUCATION PROGRAMS.

TWENTY-FOUR
PARKING SPOTS



PROJECT BY: BENJAMIN CONGDON
PREPARED FOR: PROF. RICHARD SHERIDAN

PERMEABLE PAVING IS A RANGE OF SUSTAINABLE MATERIALS AND TECHNIQUES FOR PERMEABLE PAVEMENTS WITH A BASE AND SUBBASE THAT ALLOW THE MOVEMENT OF STORMWATER THROUGH THE SURFACE. IN ADDITION TO RUNOFF, THIS EFFECTIVELY TRAPS SUSPENDED SOLIDS & FILTERS POLLUTANTS FROM THE WATER.



WICKFORD PARKING BROWN STREET LOT

WICKFORD, RI



PROJECT BY: ROMEO D'ANDREA
 PREPARED FOR: PROF. RICHARD SHERIDAN
 LAR 344



NATIVE VEGETATION RECOMMENDATION:

DECIDUOUS:

- ACER RUBRUM
- AMELANCHIER CANADENSIS
- BETULA LUTEA
- FRAXINUS AMERICANA
- GLEDITSIA TRIACANTHOS VAR. INERMIS
- NYSSA SYLVATICA

CONIFER:

- JUNIPERUS VIRGINIANA
- PICEA GLAUCA

SHRUB:

- CLETHRA ALNIFOLIA
- JUNIPERUS HORIZONTALIS
- RHODODENDRON MAXIMUM

GRASS:

- PANICUM VIRGATUM
- SPOROPOLOUS WRIGHTII



SCALE: 1" = 20'



RAISED RIP-RAP WALL PREVENTS INUNDATION DURING TIDAL AND STORM SURGE EVENTS

VEGETATED SWALES PLANTED WITH SEDGES AND OTHER NATIVE SALT TOLERANT PLANTS CAPTURE FIRST FLUSH AND HELP FILTER STORMWATER RUNOFF

PEDESTRIAN WALKWAY ALONG WATER WITH BENCHES FOR SEATING AND AREAS FOR RECREATIONAL FISHING

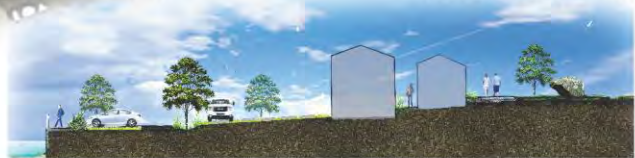
PICNIC AREAS ALONG WATER INCREASE PERMEABLE SURFACES WHILE ENCOURAGING TOURISTS AND LOCALS TO ENJOY THE AREA

GREEN ROOF ON RITE AID TO REDUCE/REUSE STORMWATER RUNOFF

LIGHTING PROVIDES SAFETY FOR PEDESTRIANS AND DRIVERS AT NIGHT

ANGLED PARKING PAVED WITH STRUCTURED GRASS (FESCUE BLEND) REDUCES IMPERMEABLE SURFACES (121 TOTAL)

SECTION A - A'



WICKFORD PARKING MAIN STREET LOT

WICKFORD, RI



PROJECT BY: ROMEO D'ANDREA
 PREPARED FOR: PROF. RICHARD SHERIDAN
 LAR 344



RAISED RIP-RAP WALLS WHERE STORM SURGE AND TIDAL EVENTS INUNDATE PARKING AREA

NATIVE SALT TOLERANT VEGETATION ACTS AS SWALE/BUFFER BETWEEN PARKING LOT AND THE BAY

ACCESS POINTS THROUGH BUFFER CONNECTING LOT AND COMMERCIAL DOCKS

STRUCTURED GRASS FOR ALL PARKING SPACES (65 TOTAL)

SOLAR LIGHTING PROVIDES SENSE OF SAFETY

PUBLIC BATHROOMS WITH COMPOSTING TOILETS

COMMERCIAL DOCK LOADING ZONE (STRUCTURED GRASS)



NATIVE VEGETATION RECOMMENDATION

DECIDUOUS:

ACER RUBRUM
 AMELANCHIER CANADENSIS
 BETULA LUTEA
 FRAXINUS AMERICANA
 GLEDITSIA TRIACANTHOS VAR. INERMIS
 NYSSA SYLVATICA

CONIFER:

JUNIPERUS VIRGINIANA
 PICEA GLAUCA

SHRUB:

CLETHRA ALNIFOLIA
 JUNIPERUS HORIZONTALIS
 RHODODENDRON MAXIMUM

GRASS:

PANICUM VIRGATUM
 SPOROBOLUS WRIGHTII

SECTION A - A'

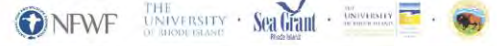


0 20' 40' 100'

SCALE: 1" = 20'

WICKFORD PARKING PHILLIPS STREET LOT

WICKFORD, RI



PROJECT BY: ROMEO D'ANDREA
 PREPARED FOR: PROF. RICHARD SHERIDAN
 LAR 344

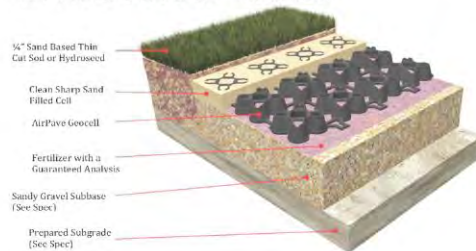


- NATIVE SALT TOLERANT PLANT BUFFER, REMOVE INVASIVES
- PEDESTRIAN ACCESS TO SCENIC VIEW OF COVE
- SMALL SWALES BETWEEN PARKING CAPTURE RUNOFF
- VEGETATIVE BUFFER AND FENCE BETWEEN LOT AND ADJACENT RESIDENTIAL PROPERTY
- STRUCTURED GRASS PARKING AREA (19 SPACES TOTAL)
- ONE-WAY TRAFFIC PATTERN AND ANGLED PARKING MAXIMIZE THE AVAILABLE PARKING
- LIGHTING FOR NIGHTTIME SAFETY



SCALE: 1" = 20'

STRUCTURED GRASS



SECTION A - A'



SCALE: 1" = 20'

NATIVE VEGETATION RECOMMENDATION

DECIDUOUS:
 ACER RUBRUM
 AMELANCHIER CANADENSIS
 BETULA LUTEA
 FRAXINUS AMERICANA
 GLEDITSIA TRIACANTHOS VAR. INERMIS
 NYSSA SYLVATICA

CONIFER:
 JUNIPERUS VIRGINIANA
 PICEA GLAUGA

SHRUB:
 CLETHRA ALNIFOLIA
 JUNIPERUS HORIZONTALIS
 RHODODENDRON MAXIMUM

GRASS:
 PANICUM VIRGATUM
 SPOROBOLUS WRIGHTII

WICKFORD PARKING MAIN STREET LOT



WICKFORD, RI

PROJECT BY: ZACHARY DRIVER
PREPARED FOR: PROF. RICHARD SHERIDAN



PARKING LOT

- 54 SPOTS TOTAL
- SUPER PERVIOUS PAVER XERIPAVE
- APPROXIMATELY 26,466 sqft
- REDUCED BY 30%
- ACCUMULATES APPROX. 740 sqft RAINWATER
- ONE WAY TRAFFIC
- ALL PITCHES GRADUALLY TOWARDS BIOSWALE

VEGETATION

- TREES: NYSSA SILVATICA, QUERCUS PALUSTRIS, GLEDITSIA TRIACANTHOS V. ENERIMIS
- SHRUBS: ILEX VERTICILLATA, ROSA PALUSTRIS, ROSA VIRGINIANA, VACCINIUM CORYMBOSUM, ILEX GLABRA
- GRASSES/GROUND COVER: SPARTINA ALTERNIFLORA, SPARTINA PATENS, CAREX LURIDA, ANDROPOGON GLOMERATUS

PORTABLE BATHROOMS

RELOACTED MEMORIAL

RAISED 3' AROUND ENTIRE PERIMETER

PARKING LOT: PERMEABLE XERIPAVE PAVER, 2% PITCH TOWARDS CENTRAL BIOSWALE

BOARDWALK OVERLOOK

SOLAR POWERED PICNIC SHELTER: WILL BE SUFFICIENTLY STORM PROOFED

SECTION A - A'

Scale: NTS

BIOSWALE: COLLECTS FIRST FOOT OF RAINWATER RUNOFF



DOCK AND OPEN TRANSITIONAL SIDEWALK (CONCRETE) AREA FOR COMMERCIAL USE.

PERMEABLE PARKING SURFACE. ONE WAY TRANSIT.

BIORETENTION CELL. ALL POLLUTANTS ARE CAPTURED AND HELD HERE.

SOLAR POWERED PICNIC SHELTER. WILL BE SUFFICIENTLY STORM PROOFED.



WICKFORD PARKING BROWN STREET LOT



WICKFORD, RI



ACCESS FOR RITEAID SUPPLY TRUCKS

RITE AID WITH SOLAR PANELS, GREEN ROOF, AND A PUBLIC ACCESS BOARDWALK AREA...

PARKING LOT

- 105 SPOTS TOTAL
- SUPER PERVIOUS PAVEMENT XERIPAVE
- APPROXIMATELY 32,995 sqft. REDUCED BY 60%
- ACCUMULATES APPROX. 940 sqft RAINWATER
- ONE WAY TRAFFIC
- ALL PITCHES GRADUALLY TOWARDS BIOSWALE

VEGETATION

- TREES: NYSSA SYLVATICA, QUERCUS PALUSTRIS, GLEDITSIA TRIACANTHOS, Y. ENERIMIS
- SHRUBS: ILEX VERTICILLATA, ROSA PALUSTRIS, ROSA VIRGINIANA, VACCINIUM CORYMBOSUM, ILEX GLABRA
- GRASSES/GROUNDCOVER: SPARTINA ALTERNIFLORA, SPARTINA PATENS, CAREX LURIDA, ANDROPOGON GLOMERATUS

PROJECT BY: ZACHARY DRIVER
PREPARED FOR: PROF. RICHARD SHERIDAN

FIGURE 1. PERSPECTIVE VIEW LOOKING NORTH WEST ALONG SURROUNDING PATH. SHOWS THE PROJECTED STORM SURGE/ SEA LEVEL RISE.



FIGURE 1.

ALONG THE WHOLE EDGE OF PARKING LOT IS RAISED 3' TO PREVENT TIDAL FLUCTUATIONS AND STORM SURGE INUNDATION

GREEN SPACE SURROUNDING THE PARKING LOT TO PROVIDE A PEDESTRIAN PATH AS WELL AS A SHADY ENVIRONMENT TO ENJOY THE VIEW OF THE BAY, ACTS AS FLOOD FLAIN IN STORM SURGE EVENTS.

MULTIPLE BIOSWALE SYSTEM. ALL POLLUTANTS THAT ARE COLLECTED FROM PARKING LOT IS PITCHED TO THIS POINT

ONE WAY PARKING LOT WITH HANDICAPPED SPOTS IN MOST CONVENIENT LOCATIONS. PAVED WITH XERIPAVE.

BOARDWALK PLATFORM THAT PROVIDES A PLACE FOR LOCALS AND TOURISTS TO RESIDE.



WICKFORD PARKING PHILLIPS STREET LOT



NFWF



WICKFORD, RI

PROJECT BY: ZACHARY DRIVER
PREPARED FOR: PROF. RICHARD SHERIDAN



PARKING LOT

- 15 SPOTS TOTAL
- 'SUPER PERVIOUS PAVER' XERIPAVE
- APPROXIMATELY 8,185 sqft OF SURFACE AREA
- ACCUMULATES APPROX. 228 sqft RAINWATER
- ONE WAY TRAFFIC
- ALL GRADUALLY PITCHES INTO ADJACENT BIOSWALES

VEGETATION

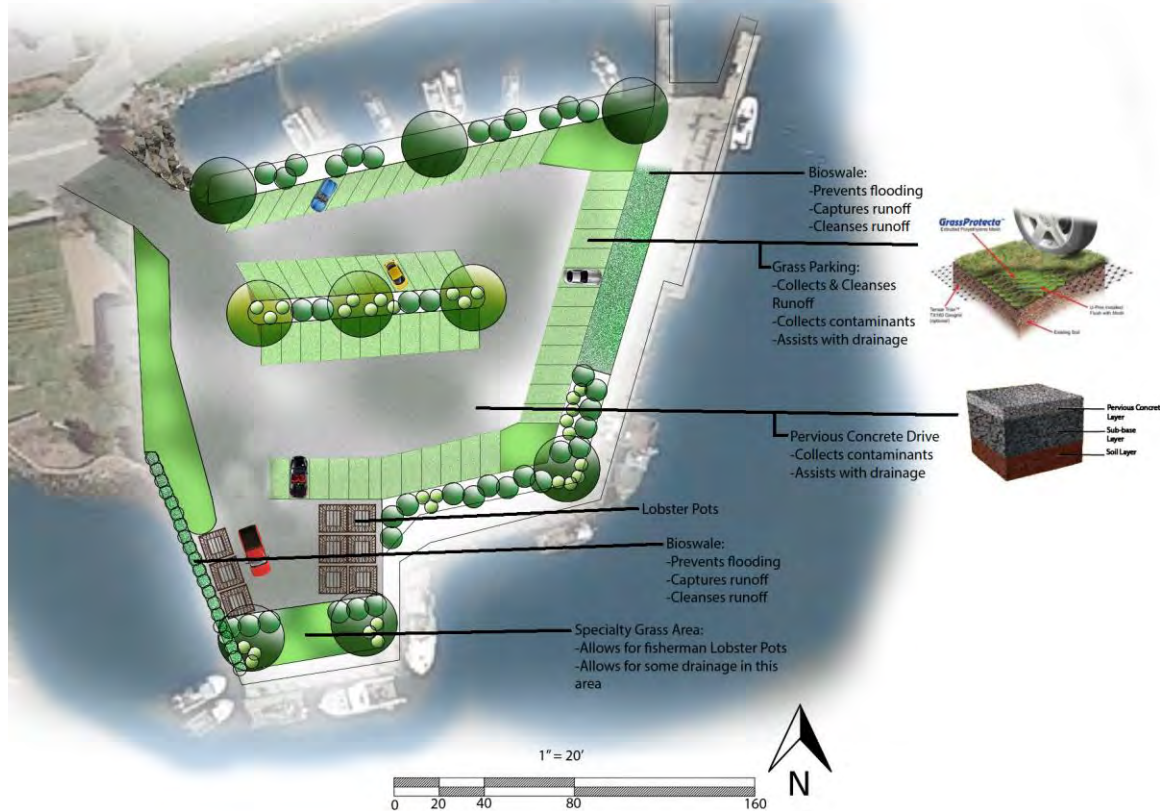
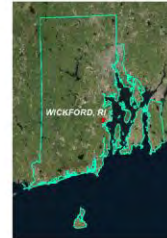
- TREES: NYSSA SYLVATICA, QUERCUS PALUSTRIS, GLEDITSIA TRIACANTHOS V. ENERIMIS
- SHRUBS: ILEX VERTICILLATA, ROSA PALUSTRIS, ROSA VIRGINIANA, VACCINIUM CORYMBOSUM, ILEX GLABRA
- GRASSES/GROUNDCOVER: SPARTINA ALTERNIFLORA, SPARTINA PATENS, CAREX LURIDA, ANDROPOGON GLOMERATUS



MAIN STREET PARKING LOT

WICKFORD, RI

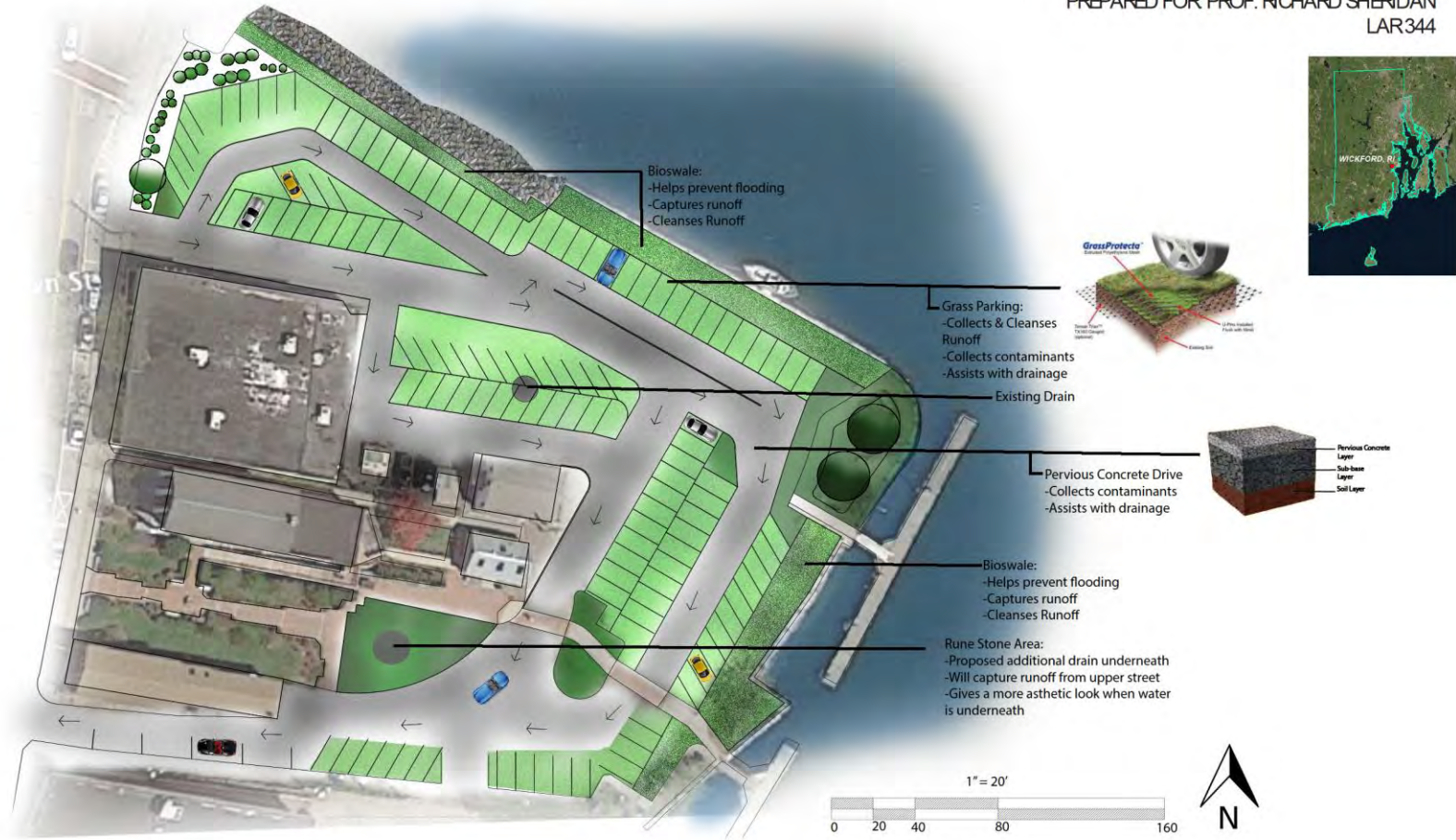
PROJECT BY: GABRIELLA D'ANGELIS
 PREPARED FOR PROF. RICHARD SHERIDAN
 LAR344



BROWN STREET PARKING LOT

WICKFORD, RI

PROJECT BY: GABRIELLA D'ANGELIS
PREPARED FOR PROF. RICHARD SHERIDAN
LAR344

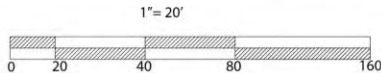
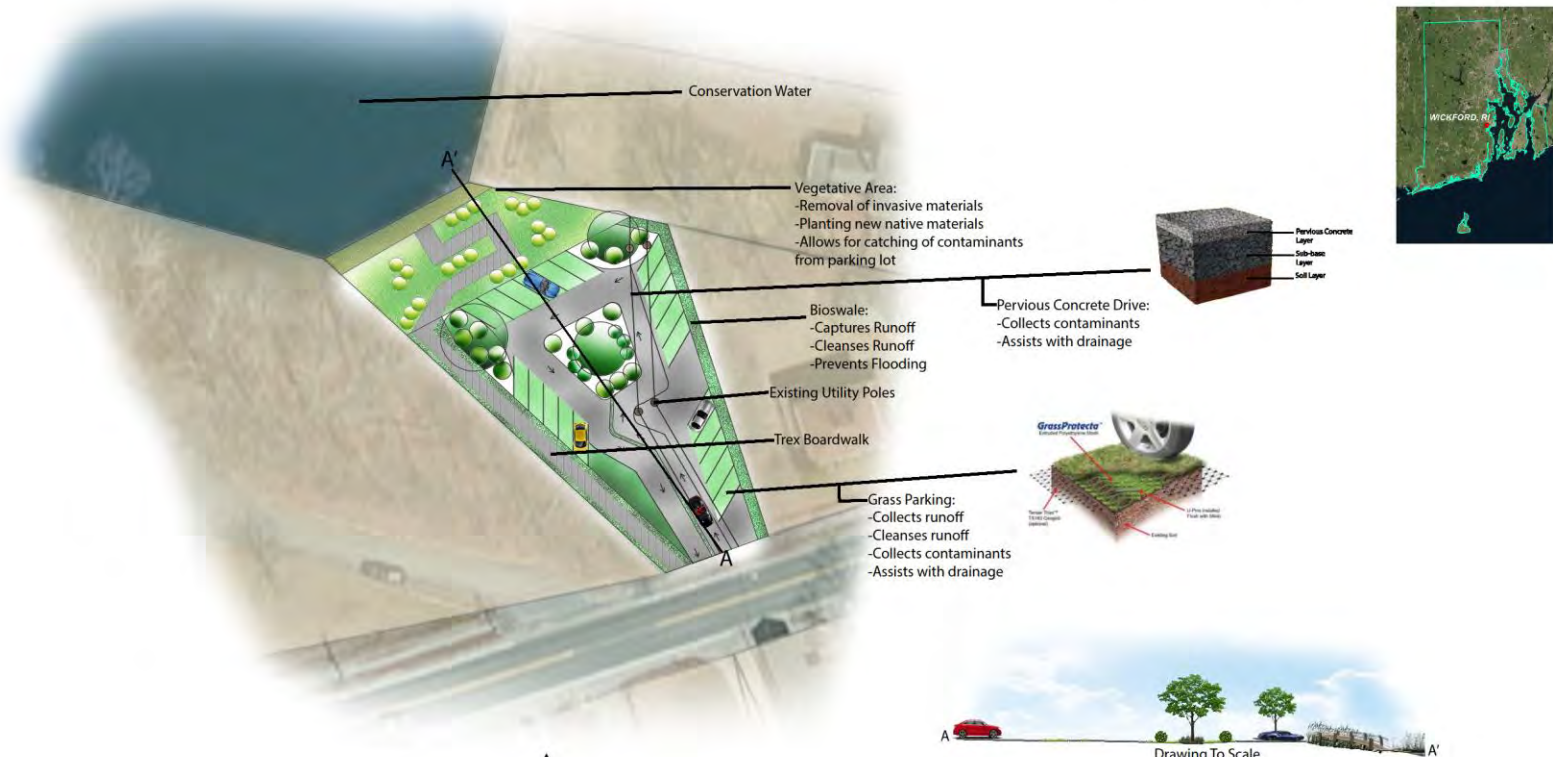
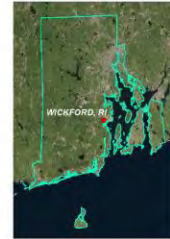


PHILLIPS STREET PARKING LOT

WICKFORD, RI



PROJECT BY: GABRIELLA D'ANGELIS
 PREPARED FOR PROF. RICHARD SHERIDAN
 LAR344



WICKFORD PARKING MAIN STREET LOT

WICKFORD, RI

PROJECT BY: PABEL FERNANDEZ
PREPARED FOR: PROF. RICHARD SHERIDAN



SHADE STRUCTURE



CROSS SECTION



SCALE: 1"=20'

WICKFORD PARKING BROWN STREET LOT

WICKFORD, RI

THE UNIVERSITY OF RHODE ISLAND

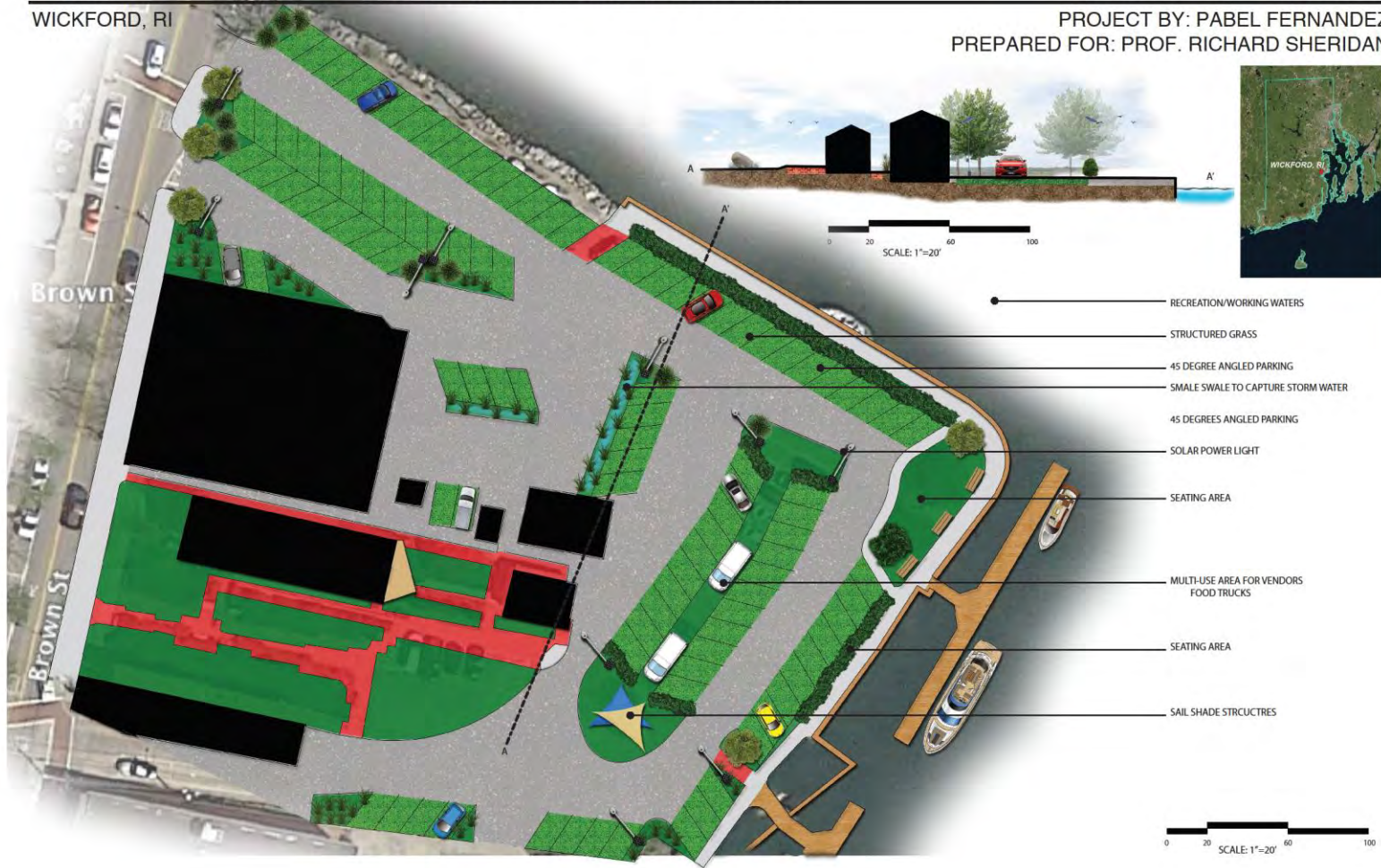


THE UNIVERSITY OF RHODE ISLAND



NFWF

PROJECT BY: PABEL FERNANDEZ
PREPARED FOR: PROF. RICHARD SHERIDAN

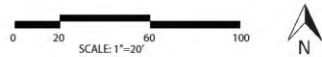
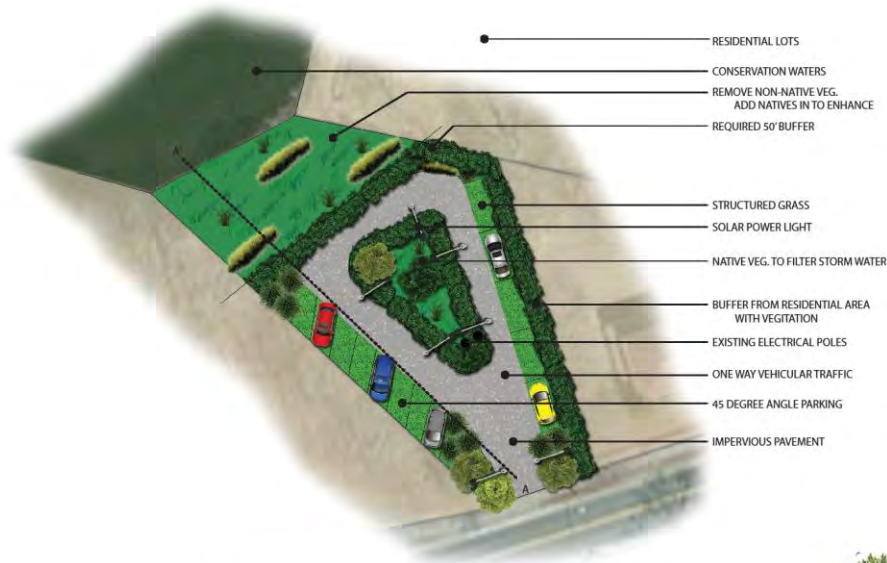


WICKFORD PARKING PHILLIP STREET LOT

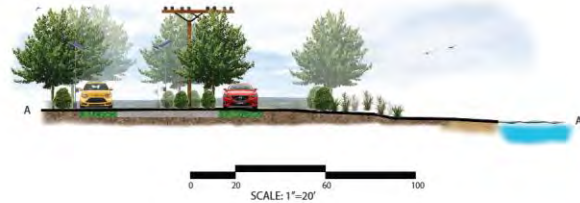
WICKFORD, RI



PROJECT BY: PABEL FERNANDEZ
PREPARED FOR: PROF. RICHARD SHERIDAN



CROSS SECTION



MAIN STREET LOT

WICKFORD, RI



PROJECT BY: OLIVIA FOW
 PREPARED FOR: PROF. RICHARD SHERIDAN
 LAR 344

THIS WORKING WATERFRONT WAS DESIGNED TO ACCOMMODATE THE MANY LOCAL FISHERMEN THAT USE THIS LOT WHILE ALSO RESPONDING TO THE NEEDS OF A SPACE THAT IS VULNERABLE TO SEA LEVEL RISE, STORM SURGE AND FLOODING. THE GOALS OF THE DESIGN WERE TO MOVE THE VEHICLES AWAY FROM THE WATER AND IMPLEMENT GREEN INFRASTRUCTURE TO DEAL WITH THE WATER ISSUES WHILE STILL ALLOWING EASY ACCESS AND USEFUL RECREATIONAL SPACE.



EXTENDED 8' DOCKS ALLOW EASY WATER ACCESS FOR FISHERMEN AND RECREATIONAL USE

FISHERMEN'S MEMORIAL NODE

TWO WAY TRAFFIC ON POROUS PAVEMENT TO ALLOW STORMWATER TO PERCOLATE THROUGH SLOWLY WHILE FILTERING OUT TOXINS

NATIVE GRASS AND TREE BUFFER - CREX LURIDA, ANDROPOGON GLOMERATUS, CAREX ATRICATA, QUERCUS PALUSTRIS, ACER RUBRUM, NYSSA SYLVATICA - BETWEEN WATER AND PARKING AREA TO WORK AS A CATCHMENT ZONE FOR STORM SURGE WATER, RUNOFF, AND ANY SEA LEVEL RISE THAT WILL OCCUR IN THE NEAR FUTURE. THE PLANTS WILL DETAIN WATER ALLOWING IT TO SLOWLY RELEASE INTO THE GROUND WHILE TOXINS AND CHEMICALS ARE FILTERED OUT BY THE ROOTS

30' DOCK AREA WITH A GRADE LEVEL 6" NATIVE BUFFER ZONE ALLOWING FISHERMEN TO PULL UP TO THE DOCKS AND ACCESS THE WATERFRONT WITHOUT HAVING TO CROSS THE NATURAL BUFFER

NATIVE GRASS AND TREE BUMP OUTS ARE PLANTED AT GRADE LEVEL IN ORDER TO EFFECTIVELY CATCH RUNOFF AND POLLUTION

FESCUE STRUCTURED GRASS PAVERS, LOW MAINTINANCE AND WORK TO CATCH ANY CHEMICALS OR POLLUTANTS FROM PARKED OR PASSING CARS AND BOATS

COMPOSTING PUBLIC RESTROOMS

BOULDER SEATING OFFERS AESTHETIC CONNECTIVITY TO THE BROWN AND PHILLIPS STREET LOTS WHILE BLOCKING OFF VEHICULAR ACCESS TO THE RECREATIONAL DOCK

15' DOCK, KEEPS CARS AND POLLUTANTS AWAY FROM FRAGILE WATER ECOSYSTEM AND PROVIDES SPACE FOR TOWN EVENTS SUCH AS MARKETS OR FESTIVALS

2' WIDE STAIRS DOWN TO WATER FOR RECREATIONAL USE. RESTRICTED BOAT ACCESS TO PROTECT ECOSYSTEM



REF:

BROWN STREET LOT

WICKFORD, RI

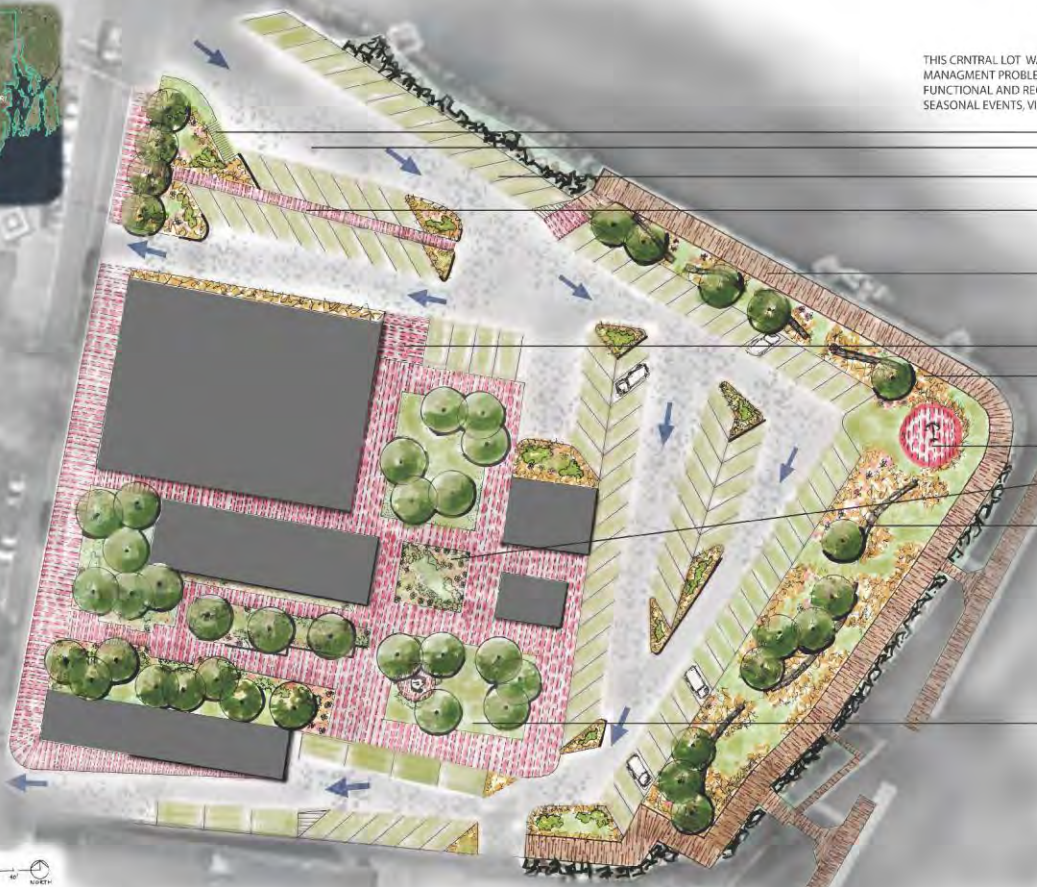


PROJECT BY: OLIVIA FOW

PREPARED FOR: PROF. RICHARD SHERIDAN

LAR 344

THIS CENTRAL LOT WAS DESIGNED TO ADDRESS FREQUENT STORM SURGE EVENTS, STORMWATER MANAGEMENT PROBLEMS AND SEA LEVEL RISE USING GREEN INFRASTRUCTURE. THIS LOT IS FUNCTIONAL AND RECREATIONAL; OFFERING 120 PARKING SPACES AND PLENTY OF GREEN SPACE FOR SEASONAL EVENTS, VISITORS AND LOCALS TO ENJOY.



- BIKE RACKS
- POROUS PAVEMENT FOR STORM WATER FILTRATION
- STRUCTURED GRASS PAVERS KEEP PARKING LOT GREEN ALL YEAR, RETAIN STORMWATER RUNOFF AND CATCH POLLUTANTS
- PEDESTRIAN CROSSING ZONE. BRICK PAVERS CONTINUE THE "HISTORIC VILLAGE" FEEL TRANSITIONING INTO DOCKS AND DRAWING VISITORS INTO THE WATERFRONT PARK
- EXTENDED DOCKS FOR FUNCTIONAL BOATING AND WATERFRONT ACCESS WHILE ALLOWING SPACE FOR SEASONAL EVENTS AND PEDESTRIAN CIRCULATION AROUND THIS NEW WATERFRONT GREEN SPACE.
- BRICK AREA FOR DUMPSTERS AND UTILITY ACCESS
- NATIVE GRASS AND PERENNIAL BEDS - CAREX LURIDA, CAREX STRICTA, ANDROPOGON GLOMERATUS, ASCLEPIAS INCARNATA VAR. PULCHRA, EUPATORIUM PERFOLIATUM - PLANTED AT GRADE LEVEL FOR MOST EFFECTIVE STORMWATER CATCHMENT AND TREATMENT
- BRICK NODE, HOME TO ANCHOR SCULPTURE AND FUNCTIONAL FOR TOWN EVENTS
- NATIVE WILDFLOWER, PERENNIAL, AND GRASS MEADOW COLLECTS RUNOFF FROM CITY STREETS
- SEA WALL ROCK SCULPTURE AND SEATING WALL OFFER SCREENED VIEWS OF PARKED CARS AND WATER FRONT CREATING A QUIETER RHODE ISLAND EXPERIENCE. PREVENTS STORM WATER FROM FLOWING INTO PARKING LOT IN STORM SURGE EVENTS.
- LIBRARY PARK EXTENDED TO CREATE A TOWN SQUARE AND TO INCREASE PEDESTRIAN CIRCULATION TO ANCIENT RUIN STONE AND TO WATERFRONT PARK



PHILLIPS STREET LOT

WICKFORD, RI

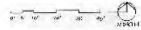
PROJECT BY: OLIVIA FOW
 PREPARED FOR: PROF. RICHARD SHERIDAN
 LAR 344



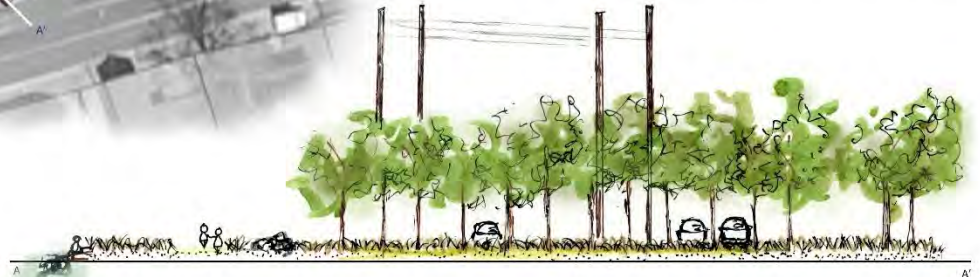
THE GOAL OF THIS PLAN WAS TO CREATE A WORKING PARKING LOT THAT PROVIDES AS MANY SPACES AS POSSIBLE FOR USE DURING SEASONAL EVENTS WHILE RESPECTING THE NEEDS OF A CONSERVATIONAL SITE. THIS LOT WAS INTENDED TO REMAIN AS NATURAL AS POSSIBLE RESPONDING TO STORM WATER SURGES AND SEA LEVEL RISE; ALLOWING FOR OPTIONAL RECREATIONAL USE AND A BEAUTIFUL FUNCTIONAL PARKING LOT.



- 50' REPAIRIAN BUFFER ZONE TO PROTECT CONSERVATIONAL LAND ON SITE
- STAGGERED ROCK SWALES ACT AS CATCHMENT AND RETENTION BEDS FOR STORM WATER RUNOFF AND STORM SURGE EVENTS, NATIVE GRASSES AND TREES - CAREX LUHRDA, ANDROPOGON GLOMERATUS, CAREX STRICTA, ACER RUBRUM, NYSSA SYRATICA, QUERCUS PALUSTRIS - FILTER OUT TOXINS AS THE WATER PERCOLATES THROUGH THE GROUND. THE SWALES ALSO PROVIDE SPACIAL DEFINITION FOR THE OPTIONAL GRASS PATHWAY TO THE WATERFRONT
- SMALL GRASS WALKWAY OF RED FESCUE GRASS FOR A LOW MAINTAINANCE OPTIONAL WALK WAY TO THE WATER FOR VIEWS OF THE COVE
- STRUCTURED GRASS PAVERS CATCH POLLUTANTS FROM PARKED CARS, ALLOW WATER TO SLOWLY PERCOLATE THROUGH AND KEEP THE SPACE LOOKING NATURAL AND GREEN AS IT IS A CONSERVATION SITE
- EMERGING FROM THE GROUND IS A WAVE LIKE ROCK SCULPTURE TO HIDE VIEWS OF UTILITY LINES AND TO ADD AN INTERESTING VISUAL ELEMENT CONNECTING THE LOT VISUALLY TO THE SEA WALL IN THE BROWN STREET LOT AND THE ROCK BENCHES IN THE MAIN STREET LOT
- NATIONAL GRID UTILITY LINES
- TALL REED GRASSES SCREEN VIEWS OF RESIDENCE LIVING NEXT TO THE SITE
- ONE WAY VEHICULAR MOVEMENT THROUGH THE SITE. POROUS PAVEMENT IS USED TO ALLOW STORMWATER TO PERCOLATE THROUGH AND FILTER OUT FIRST FLUSH TOXINS



THIS CIRCULATION DIAGRAM BREAKS DOWN THE DIFFERENT SPACES IN THE LOT. THROUGH THE DESIGN PROCESS THE LOT WAS INTENDED TO STAY AS GREEN AS POSSIBLE TO MOST EFFICIENTLY TREAT STORM SERGES AND RESPOND TO SEA LEVEL RISE. GRASS PAVERS, PAVEMENT, AND VEGETATIONAL SPACE ARE THE THREE SPACES REPRESENTED HERE.



A' NTS

MAIN STREET LOT

WICKFORD, RI



PROJECT BY: CASEY HARRINGTON
 PREPARED FOR: PROF. RICHARD SHERIDAN
 LAR 344



RECREATIONAL BOAT DOCK

PARK DESIGN
 -BENCHES AND SHADE
 FOR WORKER

HANDYCAP PARKING

LOAD/ UNLOAD AREA
 -20 FOOT SPACES FOR WORKERS

WORKING DOCKS

BIO SWALE
 -COLLECTING AND FILTRATING
 STORM WATER

PARKING LOT DESIGN
 -ONEWAY CIRCULATION
 -PERVIOUS PAVEMENT
 -3 ADDED SPACES
 -RESTROOM

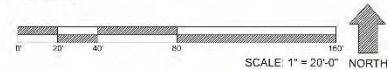
PERVIOUS CONCRETE (4-8")

BASE/SUBBASE (6" MIN)

FILTER FABRIC
 SUBGRADE

DESIGN CONCEPT:

Parking lot design includes; consideration of sea level rise, storm water issues, and non point pollutants while improving parking for the village of Wickford. This is made up of pervious concrete composed of coarse aggregate to allow percolation. This design focuses on adding extra parking for the public, improving water drainage, while considering the "working" docks. The entire lot pitches towards two bio swales that will collect and filtrate storm water as well as pollutant runoff. There is a 20' load/unload area running parallel to the docks to give room for commercial fisherman (trailors). Over all this lot provides 10 extra spaces for Wickford as well as permanent bathrooms. Previous design had 47 parking spaces, new design will have 50 spaces.

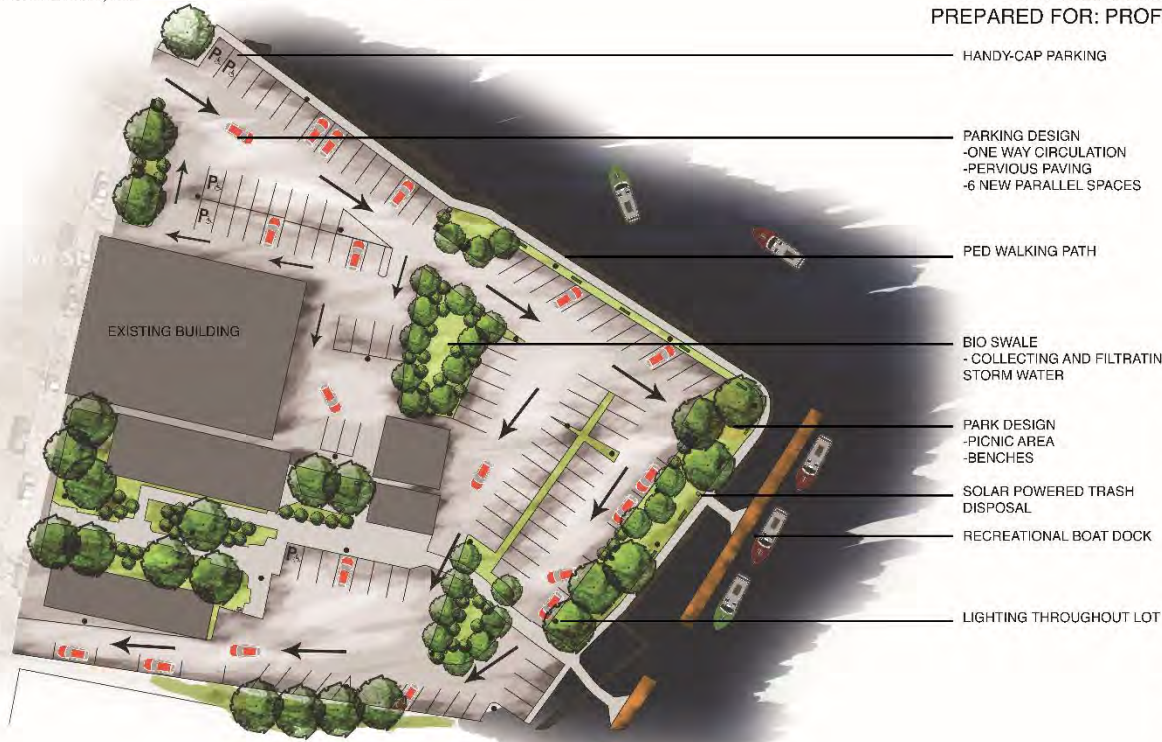


BROWN STREET LOT

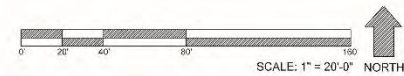
WICKFORD, RI



PROJECT BY: CASEY HARRINGTON
PREPARED FOR: PROF. RICHARD SHERIDAN
LAR 344



DESIGN CONCEPT:
Parking lot design includes; consideration of sea level rise, storm water issues, and non point pollutants while improving parking for the village of Wickford. This is made up of pervious concrete composed of course aggregate to allow percolation. The entire lot pitches towards two main bio swales that will collect and filtrate storm water and pollutants. Green space has been added to the existing picnic area to enjoy the beautiful recreational marina. 6 spaces were lost for this green area but necessary to create an attractive atmosphere (note: these spaces are moved to the new Phillip st. lot). Previous design had 122 parking spaces, new design will have 128 spaces.

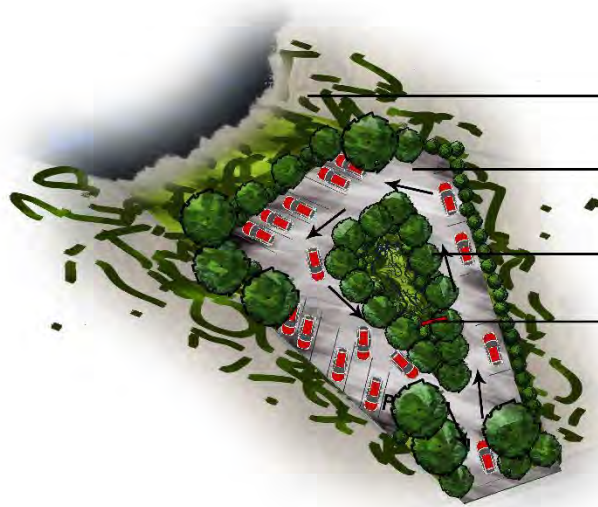


PHILLIP STREET LOT

WICKFORD, RI



PROJECT BY: CASEY HARRINGTON
PREPARED FOR: PROF. RICHARD SHERIDAN
LAR 344



50 FOOT BUFFER

PARKING DESIGN

- PERVIOUS PAVEMENT
- ONE-WAY CIRCULATION
- 19 TOTAL SPACES
- 1 HANDY-CAP SPACE

BIO SWALE

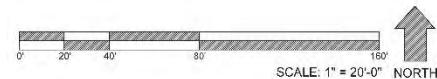
- COLLECTING AND FILTRATING
NON POINT POLLUTANTS

EXISTING TELEPHONE POLE



DESIGN CONCEPT:

Parking lot design includes; consideration of sea level rise, storm water issues, and non point pollutants while improving parking for the Village of Wickford. This lot is made up of pervious concrete composed of coarse aggregate to allow percolation. The entire lot pitches towards a bio swale located in the center of the lot. This will collect and filtrate non point pollutants. This lot design provides the village with 19 extra parking spaces (parallel, 60 & 90 degree spaces). A 50 foot buffer is implemented for wildlife protection considering "Type 1" water.

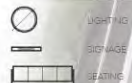


WICKFORD PARKING BROWN STREET LOT

WICKFORD, RI



PROJECT BY: KELVIN HUANG
 PREPARED FOR: PROF. RICHARD SHERIDAN
 LAR 344



VEGETATIVE RECOMMENDATION

- ACER RUBRUM
- AMELANCHIER CANADENSE
- BETULA ALLEGANIENSIS (LUTEA)
- FRAXINUS AMERICANA
- GLEDITSIA TRIACANTHOS VAR. INERMIS
- NYSSA SYLVATICA
- PLATANUS X ACERIFOLIA
- JUNIPERUS VIRGINIANA
- PINUS MUGO
- PICEA GLAUCA
- PICEA MARCMILLERIANA
- PICEA MURRAYANA
- PICEA SITICENSIS
- PINUS MUGO
- CLETHRIFOLIUM
- JUNIPERUS HORIZONTALIS
- RHODODENDRON MAXIMUM
- PANICUM VIRGATUM
- SPOBOLOUS WRIGHTII

- EXISTING SEAWALL
- BRICK PAVEMENT USED AS A DESIGN ELEMENT FOR PED. WALKWAY AS A FOCUS ELEMENT
- CONCRETE PAVEMENT FOR MAIN PED. CIRCULATION ALONG THE WATERFRONT W/ SEATING & SCENIC VIEWS
- RECREATIONAL WATERS THAT ACTS AS A SCENIC WATERFRONT HARBOR
- ELEVATED PLATFORM CONSTRUCTED W/ PERMEABLE COBBLESTONE PAVEMENT FILTRATES STORMWATER RUNOFF
- BIORETENTION CELL FILTRATION SYSTEM HELPS DRAINAGE & FLOOD CONTROL DURING POOR WEATHER CONDITIONS & FILTRATES STORMWATER RUNOFF
- RITE AID GREEN ROOF IMPLEMENTATION
- SEPTIC SYSTEMS
- NAUTICAL SCULPTURE
- BIORETENTION CELL FILTRATION SYSTEM HELPS DRAINAGE & FLOOD CONTROL DURING POOR WEATHER CONDITIONS & FILTRATES STORMWATER RUNOFF
- ELEVATED STRUCTURE ON PILING ABOVE BIORETENTION CELL AREA PROVIDES PREPARATION FOR SEA LEVEL RISE, BUT ALSO ENHANCES VIEWS
- TOWN HALL
- RECREATIONAL DOCK USE BY SITE VISITORS BY BOAT RESTROOMS
- PARKING SPACES BITCHED AT 3% TOWARDS BIORETENTION CELL FILTRATION SYSTEMS TO DICTATE THE FLOW OF STORMWATER RUNOFF, 104 PARKING SPACES
- NARRAGANSETT RUNE STONE
- COMMUNITY VOLUNTEERED PERENNIAL GARDEN
- ONE-WAY VEHICULAR CIRCULATION WITH PERVIOUS CONCRETE PAVEMENT W/ 60 DEGREE PARKING SPACES
- SHAYNA'S PLACE
- GRANITE BLOCKS WITH 3' RISE ABOVE GRADE ACTS AS A BARRIER
- OPEN SPACE W/ SCENIC VIEWS AND SHADE
- LARGER PARKING DIMENSIONS TO ACCOMMODATE HANDICAP VEHICULAR REGULATIONS



WICKFORD PARKING PHILLIPS STREET LOT

WICKFORD, RI

PROJECT BY: KELVIN HUANG
 PREPARED FOR: PROF. RICHARD SHERIDAN
 LAR 344



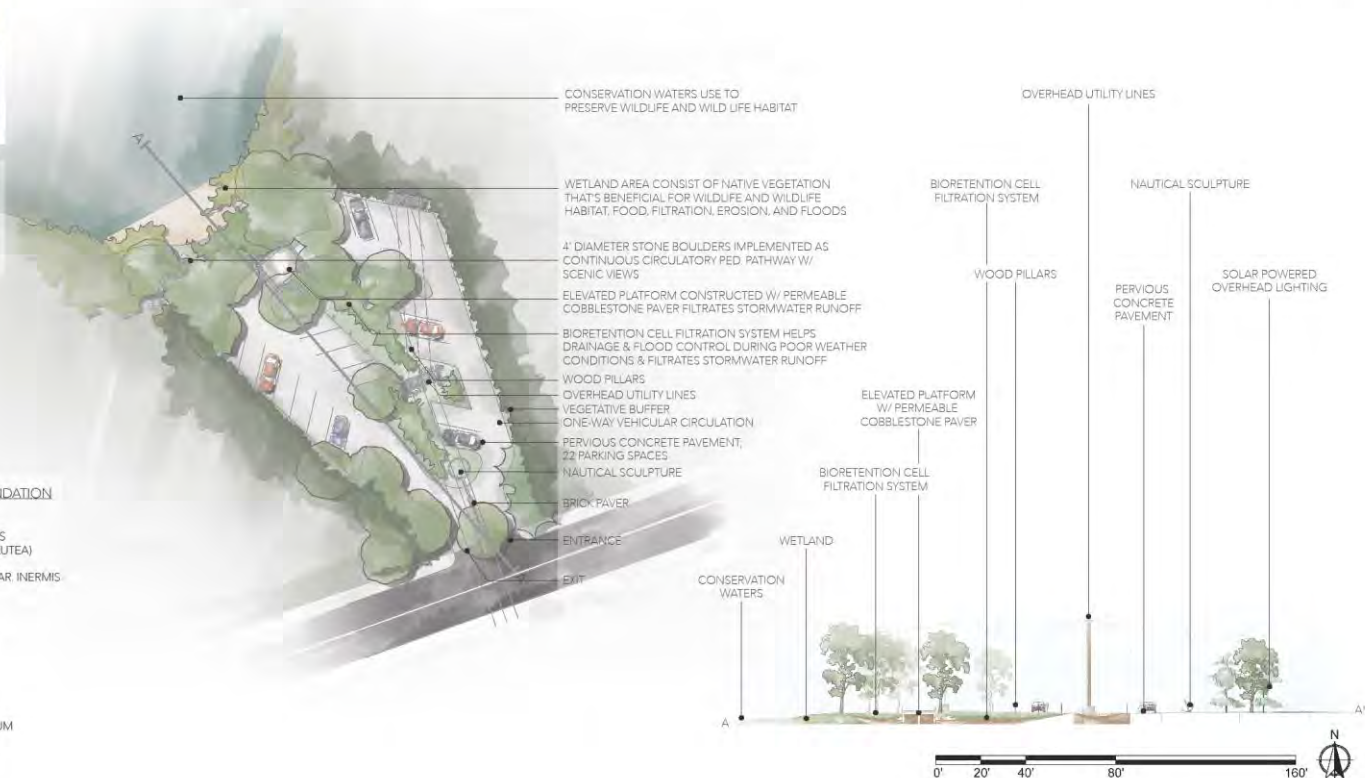
VEGETATIVE RECOMMENDATION

- ACER RUBRUM
- AMELANCHIER CANADENSIS
- BETULA ALLEGHANIENSIS (LUTEA)
- FRAXINUS AMERICANA
- GLEDITSIA TRIACANTHOS VAR. INERMIS
- NYSSA SYLVATICA
- PLATANUS X ACERIFOLIA

- JUNIPERUS VIRGINIANA
- PICEA GLAUCA
- PICEA PUNGENS
- PINUS MUGO

- CLETHRA ALNIFOLIA
- JUNIPERUS HORIZONTALIS
- RHODODENDRON MAXIMUM

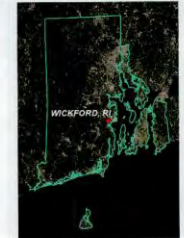
- PANICUM VIRGATUM
- SPOROBOLUS WRIGHTII



MAIN STREET LOT

WICKFORD, RI

PROJECT BY: KATIE MEEGAN
PREPARED FOR: PROF. RICHARD SHERIDAN



Bioswale/ rain garden to capture sediment and filter water that outflows into the bay

Extended boardwalk / dock for fishermen; similar to Brown Street docks, floatable and able to rise with the tide and similarly connected to pilings

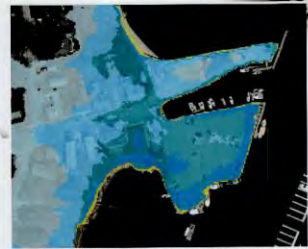
Permeable paves that allow water to filter through the ground and water will not collect and flood on the surface

Port-a-potty's for fishermen remain, but are screened from public view by plantings and shrubbery

Fisherman's memorial

Structured grass parking, decreases the amount of permeable pavement, allows water to be filtered before it runs back into the bay; grasses will also capture oils and pollutants from cars, and will be low maintenance, only needing to be mowed a few times a month

Expansion of Fisherman's memorial park, and green space; creation of a park that will allow people to enjoy the view of the bay and residential houses



Will future SEA LEVEL RISE affect my property?

Sea Level Rise Scenarios

- MHHW Plus 2' SLR
- MHHW Plus 3' SLR
- MHHW Plus 5' SLR
- MHHW Plus 7' SLR

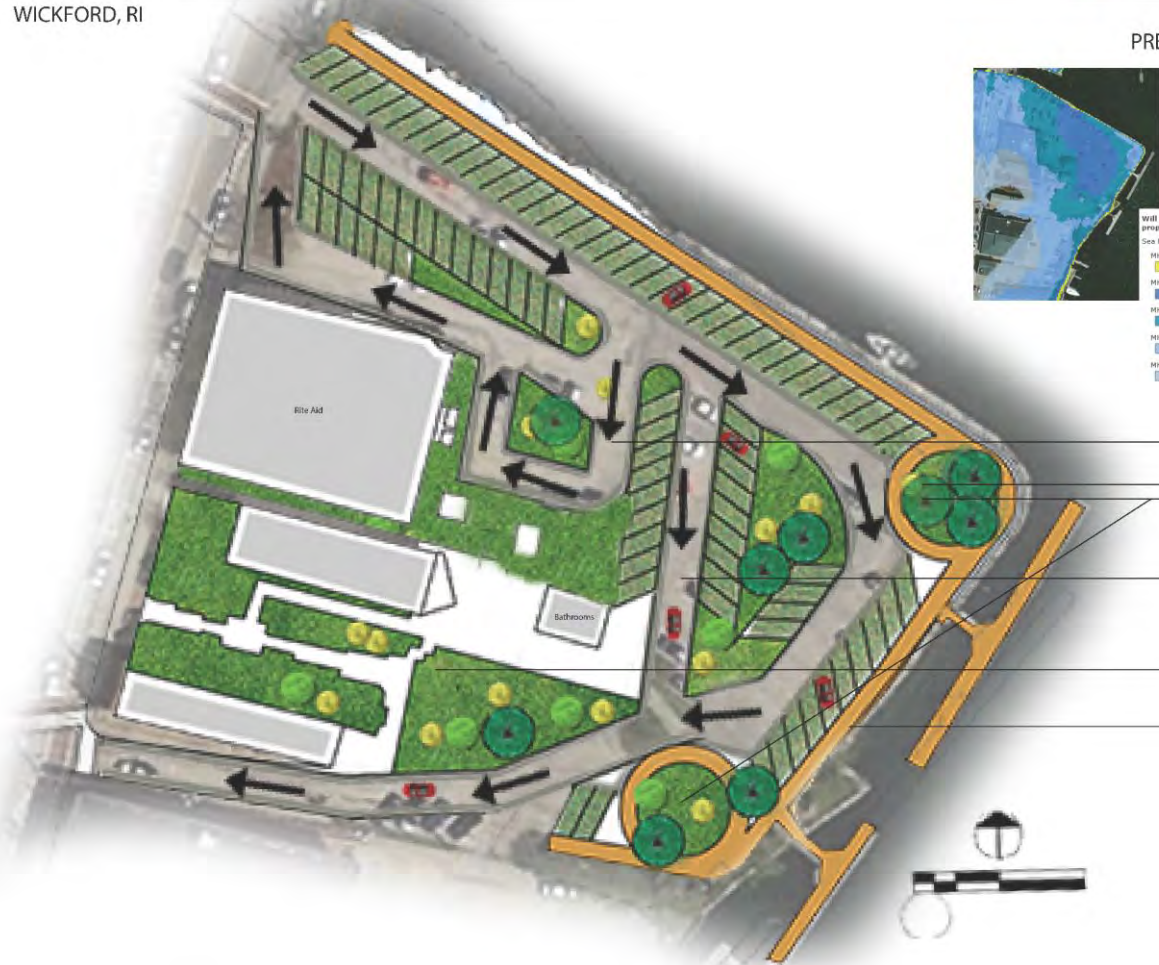


Section: 1" = 10'-0"

BROWN STREET LOT

WICKFORD, RI

PROJECT BY: KATIE MEEGAN
PREPARED FOR: PROF. RICHARD SHERIDAN



Will future SEA LEVEL RISE affect my property?

Sea Level Rise Scenarios

- MHW Plus 2' SLR
- MHW Plus 3' SLR
- MHW Plus 3' SLR
- MHW Plus 5' SLR
- MHW Plus 7' SLR



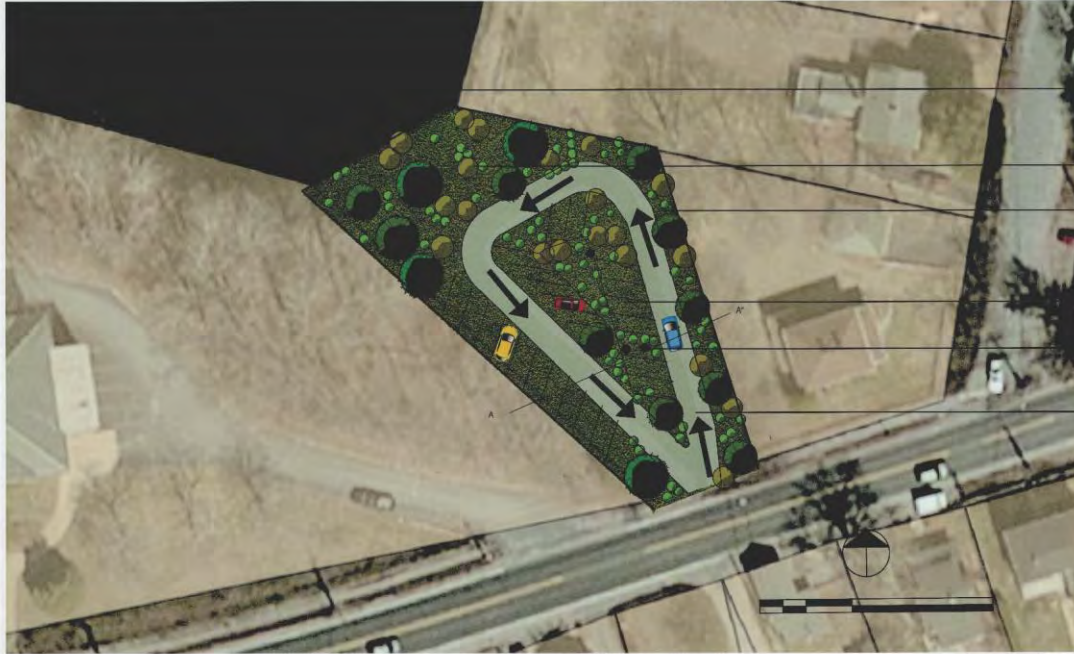
- Roundabout for delivery and garbage trucks to enter and exit efficiently; official use only
- Anchor Monument
- Addition of more park space for performance venue, farmer's market, and other gathering space will allow for more enjoyable and greener atmosphere
- One way circulation; 20 foot wide road to accommodate emergency as well as utility vehicles
- Narragansett Race Stone
- Floatable bio-bank, extended around parking lot



PHILLIPS STREET LOT

WICKFORD, RI

PROJECT BY: KATIE MEEGAN
PREPARED FOR: PROF. RICHARD SHERIDAN



Conservation Waters: protected for habitat and no boating or commercial use is allowed

50 Foot coastal buffer for conservation waters

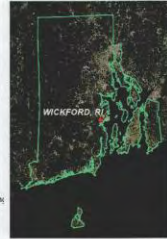
Vegetative screening for adjacent residences, provides protection from noise and light pollutants as well as unappealing aesthetic qualities of parking lot view

Structured grass parking, decreases the amount of permeable pavement, allows water to be filtered before it runs back into the bay; grasses will also capture oils and pollutants from cars, and will be low maintenance, only needing to be mowed a few times a month.

Adding telephone poles

Permeable pavers for roadway, allow water to seep through the ground and be filtered because it runs back into the bay; permeability prevents massive puddles from forming

Circulation is one way to create easier flow and 60 degree angled parking spaces allows for accommodation of more spaces.



Storm Surge/Sea Level Rise in 100 years

Will future SEA LEVEL RISE affect my property?

Sea Level Rise Scenarios

100yr Plus 1' SLR

100yr Plus 2' SLR

100yr Plus 3' SLR

100yr Plus 5' SLR

100yr Plus 7' SLR

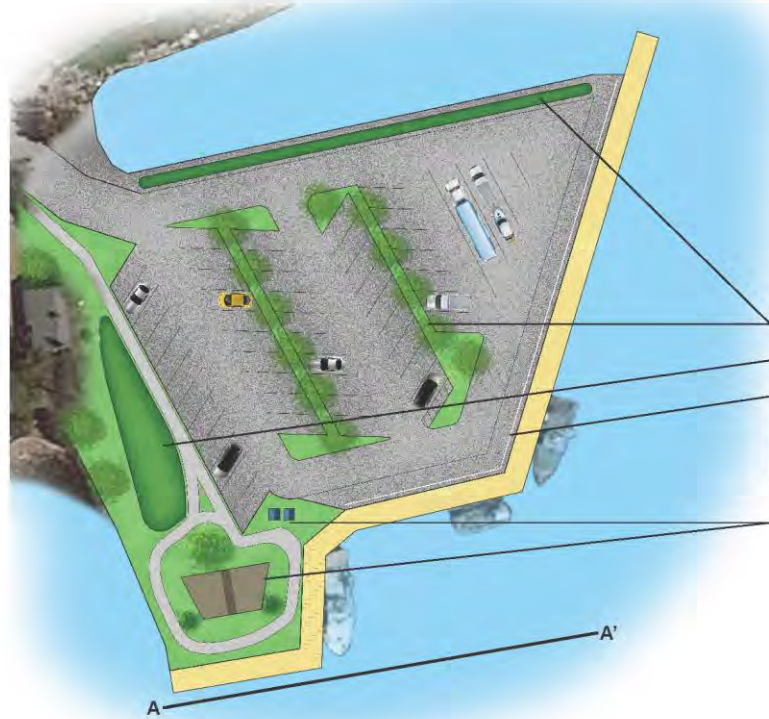


Cross Section: 1" = 10'-0"

MAIN STREET LOT

WICKFORD, RI

PROJECT BY: KYLE SAVASTANO
PREPARED FOR: PROF. RICHARD SHERIDAN



GOALS: MAINTAIN FUNCTIONALITY OF WORKING DOCK, ADDRESS INDUSTRIAL RUNOFF AND STANDING WATER, CREATE A MORE COMFORTABLE AND AESTHETICALLY PLEASING ENVIRONMENT

MULTI-FUNCTIONAL LOT

- PAVED AREA REDUCED FROM APPROXIMATELY 38,000 SQ. FT. TO 26,500 SQ. FT. (30% REDUCTION)
- LOST ONLY TWO PARKING SPACES (50 TO 48)
- EASTERN SIDE OF LOT RESERVED FOR BOATS AND TRAILERS
- LAYOUT KEEPS TRAFFIC FLOW A SAFE DISTANCE FROM WORKING DOCK AND OUT OF THE WAY OF FISHERMEN

WATER MANAGEMENT

- PLANT BUFFERS BETWEEN ROWS OF PARKING AND ON NORTHERN EDGE OF LOT FILTER RUNOFF
- LOT PITCHES INTO BIOSWALE ON WEST SIDE - LOCATED WHERE STANDING WATER CURRENTLY COLLECTS
- TRENCH DRAIN CATCHES INDUSTRIAL RUNOFF OBSTRUCTING THE WORKING DOCK



TRENCH DRAIN ARCHETYPE

AESTHETIC IMPROVEMENTS

- TREES BETWEEN ROWS OF PARKING CREATE A VISUAL BUFFER BETWEEN WORK AREA AND RECREATIONAL/OVERFLOW AREA
- MICRO PARK INCLUDES RESTROOMS AND A PICNIC SHELTER WITH SCENIC VIEWS OF THE BAY
- SIDEWALK EXTENDS FROM MAIN ST. INTO PARK AREA AND PROVIDES A CONNECTION FOR PEDESTRIANS



SECTION A - A'
VERTICAL SCALE: 1" = 10'



BROWN STREET LOT

WICKFORD, RI



PROJECT BY: KYLE SAVASTANO
PREPARED FOR: PROF. RICHARD SHERIDAN

GOALS: PREVENT FLOODING OF LOT AND NEARBY BUILDINGS, SIMPLIFY PARKING LAYOUT, CREATE A FOCAL POINT IN THE TOWN

FLOOD PREVENTION

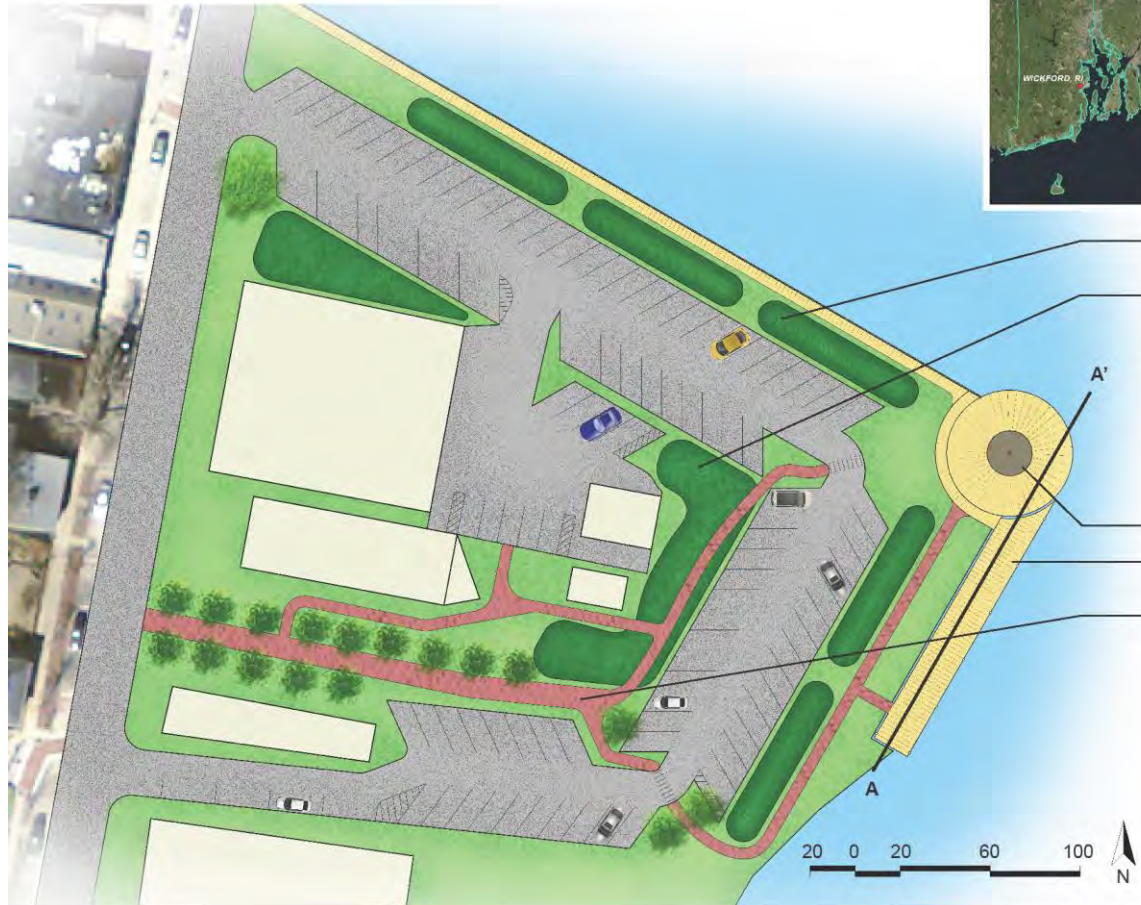
- PAVED AREA RAISED 2 FEET AND PITCHED TOWARDS BIOSWALES LOCATED ON EITHER SIDE
- LOT SET BACK 20 FEET FROM WATER, BIOSWALES CATCH RUNOFF AND PROVIDE A BUFFER FROM STORM SURGES AND HIGH TIDES
- INNER SWALES CAPTURE RUNOFF AND PROTECT BUILDINGS ON SITE FROM FLOODING

PARKING

- PAVED AREA REDUCED FROM APPROXIMATELY 57,000 SQ. FT. TO 38,000 SQ. FT. (33% REDUCTION)
- PARKING SPACES REDUCED FROM 122 TO 108 (ONLY 12% REDUCTION)
- SIMPLE AND EFFICIENT ONE WAY PARKING LAYOUT

CREATE A FOCAL POINT

- WATERFRONT STAGE WITH A 360 DEGREE VIEW CAN HOST PERFORMANCES AND LOCAL EVENTS
- WIDENED FLOATING DOCK AND OPEN GREENSPACE PROVIDE ROOM FOR RECREATIONAL ACTIVITIES OR FOOD MARKETS
- BRICK PATH WITH ALLEE DRAWS PEDESTRIANS INTO THE SITE AND ESTABLISHES A WALKING CONNECTION TO SHOPS AND STORES ON BROWN STREET



SECTION A - A'
VERTICAL SCALE: 1" = 10'



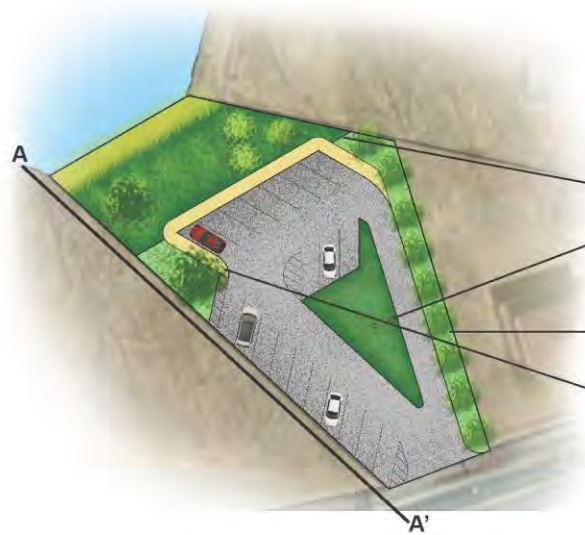
PHILLIPS STREET LOT

WICKFORD, RI

PROJECT BY: KYLE SAVASTANO
PREPARED FOR: PROF. RICHARD SHERIDAN



GOALS: MAXIMIZE NUMBER OF PARKING SPACES WHILE MINIMIZING DISTURBANCE OF CONSERVATIONAL LAND AND ADJACENT RESIDENTIAL PROPERTY



PARKING

- 20 SPACES IN APPROXIMATELY 8,700 SQ. FT. OF PAVEMENT
- A 5 FOOT RETAINING WALL ENSURES THAT THE LOT WILL BE SAFE FROM STORM SURGES AND RISING SEA LEVELS
- LAYOUT WORKS AROUND EXISTING POWER LINES TO MAXIMIZE PARKING IN A SMALL AND CONFINED AREA

MINIMIZE DISTURBANCE

- LOT PITCHES INWARD TO CENTRAL BIOSWALE
- A 10 FOOT PLANT BUFFER GIVES PRIVACY TO THE RESIDENCE ON THE EAST SIDE
- 50 FOOT SETBACK FROM CONSERVATIONAL WATER - INTRODUCE NATIVE PLANTS TO HELP WITH FILTRATION OF POLLUTANTS
- A DECK EXTENDING INTO THE BUFFER ZONE PROVIDES EXCELLENT VIEWS OF SCENIC ACADEMY COVE



SECTION A - A'
VERTICAL SCALE: 1" = 10'



WICKFORD PARKING MAIN STREET LOT

WICKFORD, RI

PROJECT BY: JOSEPH TRICARICO
PREPARED FOR: PROF. RICHARD SHERIDAN
CLASS: LAR344



SALT TOLERANT PLANTS THAT CAN BE USED:

TREES

- THUJA PLICATA
- JUNIPERUS VIRGINIANA
- NYSSA SYLVATICA
- GYMNOCLADUS DIOKA

SHRUBS

- ARCTOSTAPHYLOS UVA-URSI
- HYDRANGEA
- MYRICA PENNSYLVATICA
- RIBES ALPINUM
- VIBURNUM DENTATUM

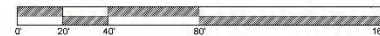
CONIFERS

- PICEA GLAUCA
- PICEA PUNGENS VAR. GLAUCA
- PINUS MUGO
- LARIX SPP.

PERENNIALS

- ARMERIA MARITIMA
- HEMEROCALLIS SP.
- HOSTA SP.
- PENNISETUM ALOPECUROIDES

LOT IS PITCHED AT A 2 PERCENT SLOPE TOWARDS THE MAIN BIOSWALE TO ENSURE THAT STORMWATER RUNOFF WON'T POOL UP IN THE ACTUAL LOT.



SCALE: 1" = 20'-0"

WICKFORD PARKING BROWN STREET LOT

WICKFORD, RI



PROJECT BY: JOSEPH TRICARICO
 PREPARED FOR: PROF. RICHARD SHERIDAN
 CLASS: LAR344



SALT TOLERANT PLANTS THAT CAN BE USED:

TREES

- THUJA PLICATA
- JUNIPERUS VIRGINIANA
- NYSSA SYLVATICA
- CYNOCLADUS DIOKA

SHRUBS

- ARCTOSTAPHYLOS UVA-URSI
- HYDRANGEA
- MYRICA PENNSYLVATICA
- RIBES ALPINUM
- VIBURNUM DENTATUM

CONIFERS

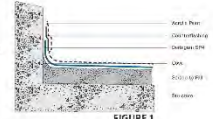
- PICEA GLAUCA
- PICEA PUNGENS VAR. GLAUCA
- PINUS MUGO
- LARIX SPP.

PERENNIALS

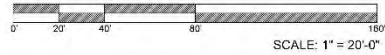
- ARMEIHI MARITIMA
- HEMEROCALLIS SP.
- HOSTA SP.
- PENNISETUM ALOPECUROIDES



- BIOSWALE THAT ABSORBS AND FILTERS STORM WATER RUNOFF
- 10 FOOT WIDE BIOSWALE BORDERING THE PERIMETER OF THE LOT. THIS WILL ABSORB, FILTER AND REDUCE STORMWATER RUNOFF
- WALKWAY THAT IS MADE FROM TURFSTONE. THIS WILL FILTER AND ABSORB STORMWATER RUNOFF.
- THIS LOT IS COMPOSED OF 87 SPOTS POSITIONED AT A 45 DEGREE ANGLE
- BIOSWALE THAT WILL HELP ABSORB AND FILTER STORMWATER RUNOFF
- MAIN BIOSWALE THAT WILL ABSORB AND FILTER ANY REMAINING STORMWATER RUNOFF. THE BACK WALL OF RITE-AID WILL BE LINED AND WATERPROOFED TO ENSURE NO WATER DAMAGE WILL HAPPEN. IT IS OFTEN CALLED "WATERPROOFING MEMBRANES" (FIGURE 1) THERE ARE RAISED WALKWAYS INTERTWINED IN THE SWALE FOR PEOPLE TO ENJOY. THE WALKWAY WILL BE MADE FROM TURFSTONE.
- UNLOADING SPACE FOR DELIVERY TRUCKS
- EXISTING SEPTIC TANKS THAT WILL BE REMOVED
- BIOSWALE THAT FILTERS AND ABSORBS RUNOFF.
- EASY ACCESS AREA FOR DUMPSTERS



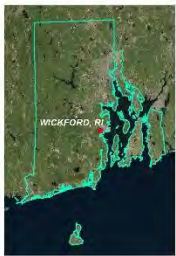
LOT IS PITCHED TOWARDS THE CENTER, OR MAIN BIOSWALE AT A 2 PERCENT SLOPE SO ALL STORMWATER RUNOFF CAN BE FILTERED AND ABSORBED. ACCESS FLOODING SHOULDN'T BE AN ISSUE DUE TO THE LAYERS OF BIOSWALES THAT THE STORM WATER WILL HAVE TO GO THROUGH BEFORE REACHING THE MAIN SWALE



WICKFORD PARKING PHILLIPS STREET LOT

WICKFORD, RI

PROJECT BY: JOSEPH TRICARICO
PREPARED FOR: PROF. RICHARD SHERIDAN
CLASS: LAR344



ENTIRE LOT IS PITCHED AT A 2 PERCENT SLOPE TOWARDS THE WATER LEADING ALL RUNOFF WATER INTO THE MAIN BIOSWALE. ANY ACCESS WATER THAT DOES NOT GET ABSORBED WILL DRAIN BACK INTO THE OCEAN. THIS WILL ENSURE THAT NO FLOODING CAN OCCUR.

SALT TOLERANT PLANTS THAT CAN BE USED:

TREES

- THUJA PLICATA
- JUNIPERUS VIRGINIANA
- NYSSA SYLVATICA
- GYMNOCLADUS DIOKA

SHRUBS

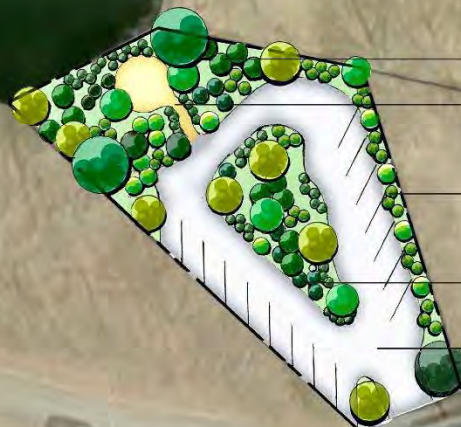
- ARCTOSTAPHYLOS UVA-URSI
- HYDRANGEA
- MYRICA PENNSYLVATICA
- RIBES ALPINUM
- VIBURNUM DENTATUM

CONIFERS

- PICEA GLAUCA
- PICEA PUNGENS VAR. GLAUCA
- PINUS MUGO
- LARIX SP.

PERENNIALS

- ARMERIH MARITIMA
- HEMEROCALLIS SP.
- HOSTA SP.
- PENNISETUM ALOPECUROIDES



MAIN BIOSWALE WHICH STRETCHES 50 FEET FROM THE WATER THAT WILL ABSORB AND FILTER RUNOFF WATER

PATH THAT LEADS TO A LOOKOUT AREA SURROUNDED BY MAIN BIOSWALE THAT PEOPLE CAN ENJOY. THIS PATH WILL BE MADE FROM A MATERIAL CALLED "TREX DECK"

10 FOOT BUFFER FROM PROPERTY LINE. ACTING AS A VISUAL BUFFER

EXISTING TELEPHONE POLE

CENTRAL BIOSWALE WHICH WILL CAPTURE FIRST FLUSH OF STORMWATER RUNOFF

PARKING LOT IS COMPOSED OF 15 SPACES AND ARE POSITIONED AT A 45 DEGREE ANGLE. THE LOT WILL BE MADE OF ASPHALT.



SCALE: 1" = 20'-0"

