



COMMUNITY FORESTRY MANAGEMENT PLAN

2016 - 2020

BOROUGH OF AVALON, CAPE MAY COUNTY, NJ

October 15, 2015



PREPARED FOR: THE BOROUGH OF AVALON
3100 Dune Drive
Avalon, NJ 08202

PREPARED BY: THE LOMAX CONSULTING GROUP, LLC
PO Box 9, 1435 Route 9 North
Cape May Court House, NJ 08210

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Community Forestry Management Plan

1. Municipal/County Information Form (*Attachment A*)

Municipality	Borough of Avalon
County	Cape May County
Address	3100 Dune Drive, Avalon, NJ 08202
Contact Name and Title	Scott J. Wahl, Business Administrator
Phone #	609-967-7057
Fax # and E-mail	609-967-5795 / swahl@avalonboro.org
Organization Name	Borough of Avalon
Mayor/County Freeholder's Signature	Mayor
Date of Management Plan Submission	XXXXXXXXXXXX
Time Period Covered in Management Plan	2016 through 2020
Community Stewardship Incentive Program (CSIP) Practices Identified in Management Plan	<input checked="" type="checkbox"/> CSIP #1 Training <input checked="" type="checkbox"/> CSIP #2 Community Forestry Ordinance Establishment <input checked="" type="checkbox"/> CSIP #3 Public Education and Awareness <input checked="" type="checkbox"/> CSIP #4 Arbor Day <input checked="" type="checkbox"/> CSIP #5 Tree Inventory <input checked="" type="checkbox"/> CSIP #6 Hazard Tree Assessment <input checked="" type="checkbox"/> CSIP #7 Storm Damage Assessment <input checked="" type="checkbox"/> CSIP #8 Tree Maintenance and Removals <input checked="" type="checkbox"/> CSIP #9 Insect and Disease Management <input checked="" type="checkbox"/> CSIP #10 Wildfire Protection <input checked="" type="checkbox"/> CSIP #11 Tree Planting <input type="checkbox"/> CSIP #12 Tree Recycling <input type="checkbox"/> CSIP #13 Sidewalk Maintenance Program <input type="checkbox"/> CSIP #14 Storm Water Management <input checked="" type="checkbox"/> CSIP #15 Other

Official Use Only Certification

The above named municipality/county has made formal application to the New Jersey Forest Service. I am pleased to advise you that after our review, the NJ Forest Service has concluded that this plan meets the standards set forth by the State and the NJ Community Forestry Council and is approved for the period covered.

Signed _____

State Forester

Approved Date _____

2. INTRODUCTION

A. Background

The Borough of Avalon (Borough) has prepared this Community Forestry Management Plan (CFMP) to establish programs that recognize the unique nature of its tree resources and to plan future programs that will protect and enhance these resources.

Through the forestry planning process, the Borough has established goals and objectives to provide forest and tree streetscapes for the benefit of the residents, visitors and inhabitants of the naturally occurring forest biotic communities. In 2001 the state Forest Service and the New Jersey Community Forestry Council approved the CFMP (**APPENDIX A**) proposed to cover the period from June 1999 to May 2004. While this Plan was implemented in 2001 and actions were undertaken by the Borough, no Plan updates were prepared between 2005 and 2009. Between 2010 and 2015 the revised and updated Plan has been implemented. The Plan presented herein has resulted in the review of work accomplished and updates the Community Forest Management Plan, approved in 2001 and 2010. Further, the current five year schedule of activities (2016 to 2020) is consistent with the original goals and objectives.

The Plan recognizes that the Borough, a barrier island, seashore resort community, experiences a unique set of opportunities and challenges. One of the most important aspects of the Borough is that it owns and controls virtually all of the forest, park and streetscape assets within its boundaries. In addition, the Borough leadership and administration, supported and advised by the Avalon Environmental Commission, the Borough Planning and Zoning Board, Green Team and the Avalon Garden Club, are committed to the maintenance and enhancement of its natural resources consistent with its Master Plan and the Sustainable Jersey Program.

The principal challenge faced by the Borough revolves around the resort nature of the community, with a relatively small year round population that expands significantly in the summer. Forests are a critical asset, which require full year care. Further, the overall weather or climatic conditions of the Borough ranges from moderate to severe at times. The droughty, sandy soil of the barrier island in the coastal plain has low water and nutrient holding capacities. The soil composition of the Borough combined with the effects of frequent coastal storms results in flooding with saline water and salt spray that often kills the

windward side of the deciduous trees and shrubs. These challenges require a carefully studied approach to the management of the Borough's forest resources.

Notwithstanding these challenges, the Borough expresses, through this Plan, its intention to protect and enhance the trees, forested areas and streetscape for the benefit of the residents of, and visitors to, the Borough. Further, the Borough through implantation of its Plan, seeks to avoid accidents caused by its tree resources in public areas, thereby obtaining liability protection for damage and/or injury caused by trees.

B. Mission Statement

The mission of the Borough CFMP is to protect, enhance and sustain a healthy community forest and shade tree resources that will improve the quality of life for the residents, visitors and wildlife that inhabit this unique barrier island Borough

The approach to fulfilling this mission entails engaging the community through education and outreach programs while concurrently enlisting support and guidance from the Borough Mayor and Council, the Forestry Committee of the Environmental Commission, the Borough Planning and Zoning Board, the Department of Public Works and their community forestry and landscape architectural consultants. This community-wide effort will ensure that the values expressed by the community include appropriate management and improvement of the open space and active recreational areas in addition to the streetscapes of the residential and commercial districts. While enhancing the tree/forest resources, the Borough is committed to promoting the safety and welfare of its citizens by inventorying the extent and condition of our trees and by maintaining them, while still recognizing the limits of its resources.

C. Goals and Objectives

GOAL 1

Review and adopt the CFMP

Objectives:

- A. Review the Dune Vegetation Management Plan (DVMP) which is a component of the CFMP and update the program based on five years of experience.
- B. Continue implementation of the Dune Vegetation Management Plan.
- C. Seek public comments, adopt and initiate implementation of the updated CFMP.

- D. Review the Borough organizational structure for management of tree/forest resources.
- E. Review and continue training for the Tree Management Committee of the Avalon Environmental Commission.
- F. Review and revise appropriate portions of the Borough Ordinances relating to forest and shade tree management consistent with the adopted and approved CFMP, including updating the List of Acceptable Vegetation for landscaping, living fences and dune management.

GOAL 2

Inventory the Community Forest Resources within the Borough

Objectives:

- A. Conduct an inventory of the naturally occurring forest areas on public property within the Borough.
- B. Conduct an inventory of the active recreational park and streetscape tree resources on public property in the Borough.
- C. Establish a map of the Borough for inventorying existing trees and tracking landscape improvements on public property.
- D. Inventory the invasive trees threatening the integrity of the Maritime Forest of the Avalon Dune system and public safety on the beach paths south of 15th Street.
- E. Inventory annually trees on public property that may be hazardous and prepare a list of such trees for the Avalon Department of Public Works.

GOAL 3

Develop a plan for tree resource enhancement within the Borough

Objectives:

- A. Identify areas within the Borough streetscapes that could benefit from the planting of selected tree species.
- B. Identify areas within the Borough parks and properties that could be enhanced by the planting of selected tree species.
- C. Complete a list of tree species suitable for planting in the Borough's diverse land uses and environmental conditions.
- D. Provide standards and procedures for streetscape tree planting and maintenance.
- E. Establish and train Borough staff regarding the annual pruning program that enhances and strengthens trees while reducing the frequency of emergency situations associated with coastal storm damage and utility failures.

GOAL 4

Develop outreach initiatives that encourage public awareness and support of Community Forestry Programs.

Objectives:

- A. Disseminate information with the assistance of the Public Information Officer for dissemination to the public concerning the value of trees in the Borough.
- B. Disseminate information to guide the public to use suitable trees and shrubs in the community to minimize water requirements, minimize insect and disease damage and to maximize sustaining pollinators and wildlife.
- C. Disseminate information to the public for guidance in appropriate maintenance, including fertilization and pruning, of the trees and shrubs. Engage the public, landscapers and arborists in Best Management Practices Seminars, mailings and other programs held in the Borough.
- D. Prepare a plan that coordinates planting, care and management of the Borough tree resources utilizing the Department of Public Works, the Tree Management Committee of the Avalon Environmental Commission, the Avalon Garden Club and other volunteer organizations and interested citizens.
- E. Incorporate forestry messages in community communication vehicles (website and newsletters), Avalon Free Public Library resources, public relations news releases and events, such as the Arbor Day celebration. Consult with the Public Information Officer to update a schedule of outreach communications opportunities and events.

GOAL 5

Provide educational opportunities in support of the CFMP.

Objectives:

- A. Develop an education plan identifying target groups, including but not limited to Borough staff, garden and environmental groups, homeowners, students and tourists and prepare appropriate information and tools.
- B. Expand the number of Borough personnel and volunteers who have attended CORE and advanced training required by the Community Forestry Act.
- C. Provide an educational program to professional landscapers and demolition contractors concerning Borough Ordinances and the selection and care of native trees and other vegetation to conserve water while minimizing disease and insect damage.
- D. Develop a school program, in connection with the Borough School Board and the Environmental Commission, which provides insight into the value of trees, forested

habitats in the community and Arbor Day activities.

- E. Maintain the newly installed interpretive (educational) trail along the existing access path to the beach through the maritime forest in the dune system. Establish potential additional stations on the path that correspond to an educational brochure.

GOAL 6

Develop a plan for sustaining and enhancing forestry resources in the Borough

Objectives:

- A. Coordinate with the Mayor and the Council to allocate Borough resources to continue implementation of the CFMP.
- B. Train Borough personnel regarding the importance of maintaining tree resources and responding to inquiries or reports from the public concerning tree-related issues.
- C. Develop the Commemorative Tree Plantings Program with a brochure describing the opportunities for the residents to participate in the program.

GOAL 7

Develop a natural tree destruction response plan addressing tree damage

Objectives:

- A. Identify risks to the community from trees and conditions in public areas resulting from potential tree failure on Borough property.
- B. Develop a plan, in consultation with Borough emergency management personnel, to respond to tree damage episodes, especially coastal storms. This plan will include rapid response services, required Borough personnel and equipment and public safety protocols and will outline the clean-up and disposal of tree debris. Borough Department of Public Works personnel will be trained to treat tree damage episodes quickly and safely.

D. Liability Statement

Although street trees are an asset to the community, it is inevitable that they mature and require care, maintenance and eventually replacement. Care and maintenance, in addition to planting "the right tree in the right place," can help insure that community trees not only contribute to the aesthetic environmental and economic vitality of the area, but also reduce the potential hazards to public safety. Our community must work within a reasonable budget that may not be able to meet each and every need of our community forest immediately. Therefore, it is the intent of this

Plan to focus available resources to the greatest need and work step-by-step towards a healthy forest with commensurate reduced risks to public safety.

The Borough believes that by taking logical steps outlined in the CFMP that it will achieve long-term benefits to the environment and public safety.

The Borough also wants to become more pro-active in the management and care of its trees. Through inventory and hazard assessment, the Borough will position the Avalon Tree Committee of the Environmental Commission to advise that corrective action be taken prior to structural tree failure and other hazardous tree related conditions. It is acknowledged that not all hazardous conditions can be predicted; it is much like trying to predict which tooth might break next. Good maintenance and care will reduce the probability, but unexpected events may still occur.

Following this Management Plan will demonstrate that the Borough is devoting reasonable levels of resources in a planned manner to mitigate the number of tree-related incidents/accidents and thereby reduce its exposure to liabilities and increase public safety.

3. Community Overview - Past, Present and Future...

A. Introduction

The second five year Community Forestry Management Plan (CFMP or Plan), prepared by The Lomax Consulting Group in 2010 and submitted by Dr. Brian Reynolds of the Avalon Environmental Commission, was approved by Michael V. D’Errico, State Coordinator of Community Forestry of the New Jersey Forest Service on November 18, 2010 (**APPENDIX A**). The Borough initiated the Plan and engaged in a variety of forestry activities, such as Arbor Day celebrations and planning and completing the streetscaping of Veteran’s Plaza and commercial areas of the community. The current Plan updated the mission, goals, objectives and organizational structure of the Borough, in addition to updating Borough ordinances and continuing public outreach programs. The Borough has continued operating the program by coordinating forestry training for staff and volunteers, planting trees and shrubs around new public buildings, supporting the forestry/landscaping efforts of the Avalon Environmental Commission and Garden Club and addressing the invasive Japanese black pine and bamboo issues through the Dune Vegetation Management Plan. Further, tree damage due to damaging vine growth, principally in the maritime forest, is being addressed, including pilot vine control efforts in the dune environs. In addition, the Borough has initiated a living fence ordinance program offering the public the option of a wide range of acceptable plants.

This CFMP has addressed increased community interest in managing forest resources and has addressed forest/tree issues on public lands as they have arisen.

B. Environmental Context

The Borough is located on the northern portion of Seven Mile Beach Barrier Island within Cape May County’s Atlantic Ocean Coast. It is bordered to the west by the New Jersey Intercoastal Waterway and tidal marshes of Middle Township; to the east it is bordered by the Atlantic Ocean; the Borough of Stone Harbor borders to the south; and to the north Avalon is bordered by Townsend’s Inlet and Sea Isle City. The Borough encompasses approximately 4.2 square miles, as illustrated in **FIGURE 1 (APPENDIX B)**. The Avalon motto, “Cooler by a Mile” refers to the geography of the Borough, which extends approximately 1 mile farther east than some of the other barrier island resorts.

In order to place the CFMP in a meaningful context, it is noteworthy that the beaches, foredunes of the Atlantic coast and the tidal marshes of the back bays (western portion of the Borough) are devoid of tree/forest resources with one very special exception (**FIGURE 1 – APPENDIX B**). The high energy waves associated with coastal storms and tidal fluctuation, in addition to the saline water (ranging to 35 ppt), have precluded the use of these areas by trees. However, freshwater wetlands ecosystems have become established in the interdunal swales. The swale within the seaward portion of the secondary dunes supports a scrub-shrub biotic community and the landward swale supports a well developed hardwood swamp biotic community. A unique maritime forest associated with the ridges of uplands in the tidal marshlands, especially but not limited to Cedar Island in the northwestern portion of the Borough, and to filled land on either side of Avalon Boulevard.

The Zoning Map of the Borough (**FIGURE 2 – APPENDIX B**) illustrates the distribution of the environmentally sensitive areas of the community in Public Conservation (P-C) and Public Use (P-U) Districts.

FIGURE 3 (APPENDIX B) illustrates the distribution of the open space areas in the Borough. **FIGURES 4A and 4B (APPENDIX B)** illustrate ecological communities (underlined below) occurring in the Borough. These Figures identify the areas in the Borough suitable for application of the CFMP. The naturally occurring Maritime Forest in the western portions of the Dune Complex provides the opportunity for tree management and enhancement. Similarly the Borough's Parks, Gardens and Dune Drive, in addition to the Streetscapes, provides the opportunity for significant programmatic tree enhancement. These areas require routine tree inspection and maintenance. However, the fragmented maritime forest resources associated with the tidal marshes are not included in the Management Plan because of their isolated nature and habitat value. Trees that fail in this environment will not result in injury or damage to the community and its residents.

C. History

The Borough was incorporated in 1891 upon the consolidation of three separate communities named Avalon, Peermont and Holiday Beach. Within two years of the Borough's founding, the West Jersey Railroad began laying tracks for the entire length of the island, connecting to the Cape May Line. The establishment of this railway enabled the community to grow and attract people for beach excursions from greater distances including the Philadelphia metropolitan area. To this day the vast majority of the Borough's tourism is derived from metropolitan and

suburban areas in the four state area (Delaware, Pennsylvania, New York and New Jersey).

D. Culture

The culture of the community revolves around the natural resources of the community, namely the extensive natural areas including pristine beaches, maritime forests and tidal marshes. The majority of properties are utilized for seasonal vacation homes; consequently, during the summer, from Memorial Day until Labor Day, the population increases dramatically during the tourist season. As of the 2010 census, there were 1,334 people residing in the Borough. Residents of the community are largely receptive to environmental stewardship as is evident through the Green Team initiative and have a broad base of community involvement deeply rooted in natural resource conservation.

E. Community Values

Community values and public policy often have strong ties with one another. Accordingly, the establishment of the dune line by Borough Ordinance has had a profound affect on the community over the course of time. The establishment of this dune line has essentially preserved the remaining dune environment along the oceanfront and has significantly added to the charm and unique character of the community. This extensive dune system provided a protective barrier during the historic 1962 storm and Hurricane Sandy (2012) that devastated the southern New Jersey coastal areas. As such, the Borough has historically recognized the natural resources of the community and embraces efforts to maintain and enhance this natural asset. The balanced environmental ethic and values of the Borough are illustrated by the Mayor's and Council's support of the work at the Avalon Environmental Commission, the Green Team, Garden Club and volunteer programs, in addition to the Borough Ordinances (**APPENDIX C**) that have established standards for environmental protection and enforcement.

Tree resources of the Borough were inventoried during the summer/fall of 2009 for purposes of identifying the distribution of trees on the newly established forestry base maps for the municipality (**APPENDIX D**). Commonly occurring streetscapes of the community include: American sycamore, aristocrat pear, Bradford pear, Japanese black pine and eastern red cedar. Dominant tree species of the naturally occurring forestlands of the community include eastern red cedar, black cherry, sassafras, hackberry, sweet gum, winged sumac, American holly and Japanese black pine. The Japanese black pine is an invasive species that has been displacing significant stands of natural dune vegetation and has become susceptible to the Blue Stained Fungus transmitted by the Turpentine Beetle. Efforts are underway to control escaped bamboo

that has become established in a limited area of the Borough Dune System. This major community effort described in the Dune Vegetation Management Plan, (**APPENDIX E**) has resulted in the restoration of more than 17 blocks of the oceanfront dune system. Similarly, reevaluation of streetscape trees has resulted in the removal of Bradford Pears from the Acceptable Plant Material List.

The relevant Borough Ordinances and Amendments related to tree resources are presented in **APPENDIX C**. They include:

1. Municipal Recreation Facilities Ordinance **Chapter 9, and the Amendments dated October 14, 2009**
2. Subdivision and Site Plan Review Ordinance **Chapter 26**
3. Zoning Ordinance **Section t. Landscaping, Chapter 27**
4. **Acceptable Plant Material List (updated), List of Vegetation for Dune Areas (updated) and List of Living Fence Vegetation**

In summary, the preliminary tree inventory has established the geographical distribution and occurrence of the trees in the community. The location and numbers of trees have been established in the streetscapes, as shown by the base maps presented in **APPENDIX D**. The invasive Japanese black pine and bamboo problems have been inventoried and a Dune Vegetation Restoration Plan has been implemented to restore the dune system. The Pilot Project has been initiated for the replacement of Japanese black pine with native vegetation (See Dune Vegetation Management Plan, **APPENDIX E**). The program has been refined to be highly successful and under the oversight of the Borough Environmental Commission.

The current Borough Land Use Plan and Ordinances address many environmental issues. However, the CFMP has brought focus on the tree resources of the Borough. The Dune Vegetation Management Plan has been integrated into relevant sections of the Planning and Zoning Ordinances of the Borough (**APPENDIX C**).

The Open Space of the Borough has been included in the CFMP inventory and management programs. While there are no State properties containing significant tree resources suitable for management, the Green Acres Program has been a partner with the Borough in securing environmentally sensitive areas and these areas are included in the Plan.

4. Community Forestry Program Administration

Two groups within the Borough are committed to overseeing the management of the municipal tree resources, as illustrated in the Organizational Chart. The Tree Committee of the Avalon Environmental Commission is responsible for the tree inventory, assessment, planning and education, while the Avalon Department of Public Works is responsible for the maintenance and care of municipal trees. Any maintenance requests beyond the capability or expertise of the Department of Public Works are contracted to professional landscapers or certified tree experts on an "as needed" basis.

The membership of the current Avalon Environmental Commission includes:

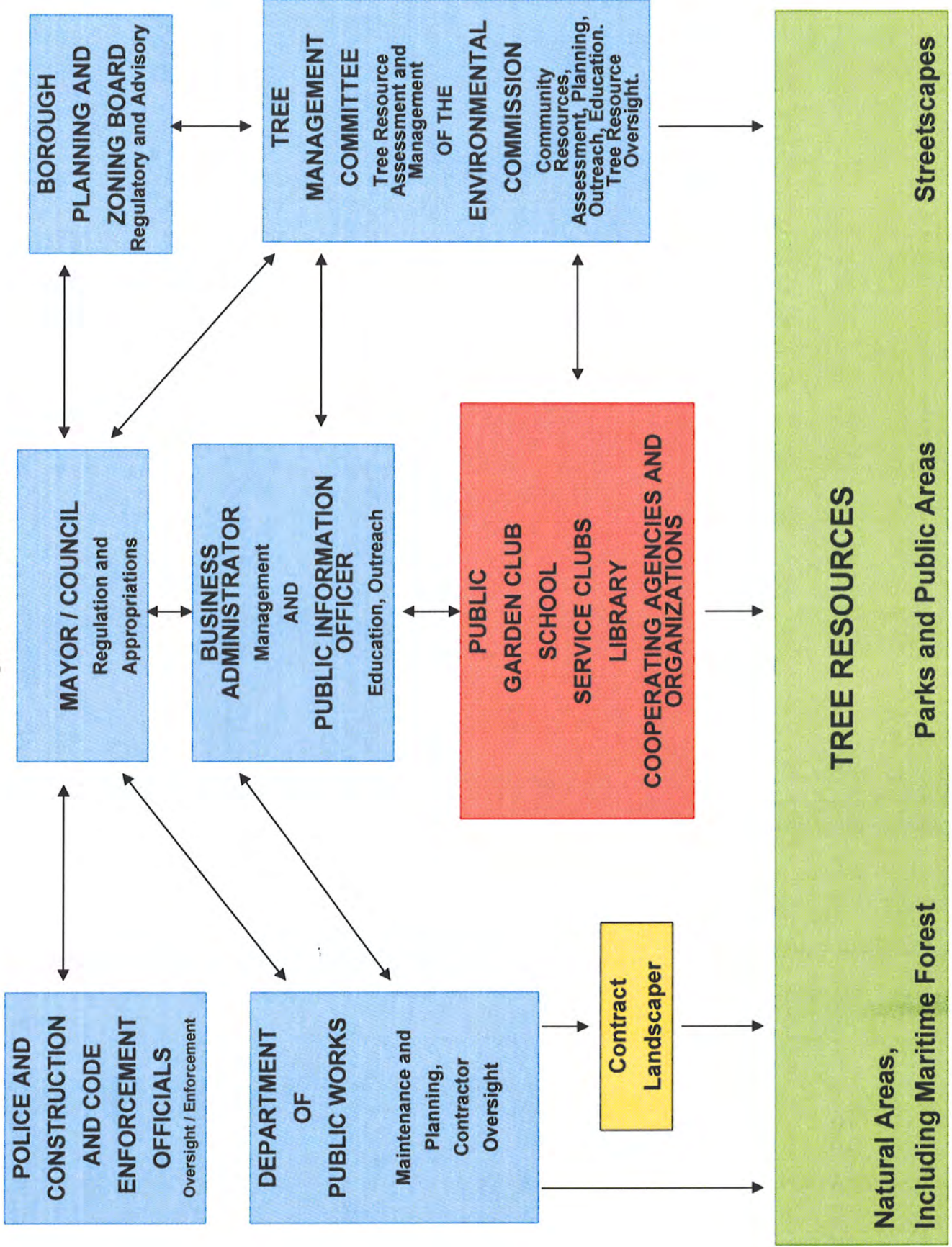
Dr. Brian Reynolds – Chairman
Kevin Coyle
Joseph Dvorak
Stuart Friedman
Debanne Macaluso
Donna Rothman
Beth Tipping

The Department of Public Works is accessed through the Office of the Mayor and the Borough Administrator:

Martin Pagliughi, Mayor	Scott Wahl, Administrator
3100 Dune Drive	3100 Dune Drive
Avalon, New Jersey 08202	Avalon, New Jersey 08202
(609) 967-8471	(609) 967-7057

The organization and procedures of the Borough administration are imperative to the success of the community and the enhancement of its tree resources. The Borough Organizational Chart has been enclosed for your review. The Mayor and Council receive input from the Environmental Commission, Borough Planning and Zoning Board and the public. This input continues to provide a vision for the future of the community. There are strong working relationships with various departments and community groups within the Borough, each performing its individual duties to ensure a healthy, sustainable population of trees.

Borough of Avalon Organizational Chart



Requests for Municipal tree services are processed through one of two processes: (1) Borough tree service and maintenance requests or (2) new plantings on Borough properties. The Department of Public Works ultimately carries out the maintenance and service requests on Borough property and will use outside contractors, as appropriate. New plantings typically follow the protocol illustrated on the Organizational Chart to ensure that the new plantings are consistent with the vision of the Borough and to ensure that adequate comment has been provided by the Borough Planning and Zoning Board, the Environmental Commission and the public. After a consensus has been reached by the advisory commenters, the Borough Business Administrator implements the tree management and planting through either the Department of Public Works or volunteer organizations, such as the Garden Club.

5. Community Map

The Borough Vegetation Resources Maps are presented in Figures 4A and 4B in **APPENDIX B** and the Forestry Base Maps (Sheets 1 to 6, in addition to the Key Map), are presented in **APPENDIX D**. The sectional maps include a map number for orientation, north facing arrow and scale, in addition to a legend and the cultural features of the community, including roads. The tree resources are illustrated on these base maps, including an assessment map of the tree coverage associated with the streetscapes.

A well developed streetscape (designated as a green roadway) contains a minimum of 51 percent road edge coverage with trees. A roadway containing between 21 and 50 percent road edge coverage with trees (designated as a yellow roadway) is a moderately developed streetscape. A roadway containing between 0 and 20 percent road edge coverage with trees (designated as a red roadway) is a sparsely developed streetscape. It is anticipated that the implementation of the Commemorative Tree Planting Program will increase the number of shade trees in the community.

6. Training Plan

CORE training is required and has been provided for at least two members of the municipality: one public works employee, who is actively involved in the management of tree care maintenance and one volunteer who oversees tree resources associated with the CFMP. In addition, The Lomax Consulting Group has obtained CORE training for multiple employees, as well as additional continual education training, and has been approved by Bureau of Forestry for the preparation of the CFMP. Accordingly, the Borough has provided the necessary CORE training and additional Continuing Education Units (CEUs) to the Director of Public Works, William Macomber, and the Chairman of the Avalon Environmental Commission, Dr. Brian Reynolds. Additional guidance has also been provided to the Borough by Joseph Lomax of The Lomax Consulting Group who has prepared the CFMP for the Borough and has also been certified by the CORE training regiments, in addition to at least five CEUs per year over the last five years (**APPENDIX F**). The Borough is attempting to extend its training efforts to additional personnel in upcoming years, as outlined in the Goals section of this Plan; allocation of funds is reflected in the 2016 Statement of the Tree Budget.

The training proposed by the Borough includes the following:

1. Expanding the number of Borough staff (currently 1) and volunteers (currently 2) that are CORE trained and participate in skills training through Continuing Education Programs. The objective is to increase the number of trained staff and volunteers while increasing the depth of knowledge and experience of this working group.
2. Training the Tree Management Committee of the Avalon Environmental Commission regarding their roles and responsibilities, understanding the CFMP and Borough ordinances relating to tree resources management and strategies for implementing the Borough Tree Enhancement Program.
3. Training the Department of Public Works and the Tree Management Committee with respect to the identification and reporting of tree hazards, in addition to the process through which tree issues are resolved.

4. Training of the Department of Public Works to implement the Tree Pruning Program, including coordination with utility companies.

5. Conducting training programs for professional landscapers and demolition contractors regarding protection of the Borough tree resources in a manner consistent with Borough ordinances.

7. Public Education/Awareness/Outreach

The Borough has been involved in tree and vegetation resource management through its Municipal Departments, Environmental Commission, Planning and Zoning Board and affiliated organizations. The venues through which the community continues to be successful in public outreach and education are listed below.

Programs

- *Arbor Day Celebration*
- *Commemorative Tree Planting Programs*
- *Educational Table at Community Events*
- *Educational Information at Community Facilities, including interpretive signage on the Avalon Dune and Beach Trail*

Media Communications

- *Advertising events in local newspapers and on local radio and television stations*

Outreach to Groups

- *Community Organizations such as the Green Team, Avalon Garden Club and other volunteer organizations*

While the “Adopt-A-Tree” program would be a slight variation on a past theme, the success of “Adopt-A-Park Bench” indicates the support for such a program. It should be noted that, although no official program was created for tree adoption, trees were planted at the new Public Safety Building in remembrance of prominent individuals in the community. In a similar fashion, the members of the Avalon Garden Club have traditionally adopted landscaped islands along Dune Drive and transformed them into roadside gardens containing trees and shrubs that extend through the main avenue of the community. The Avalon Garden Club, in conjunction with the Borough, also hosts an Arbor Day Celebration within the community. Various community-wide events such as the Avalon Home and Land Owners Association (AHLOA) Community Connections event, which takes place annually in April, provides property owners and visitors the opportunity to learn more about membership and programs of local civic groups. Media communication opportunities for the Borough include a municipal website that posts public events and documents, and outreach opportunities such as the Borough television station, Public Access Cable Channel 97, as well as new releases in the local and regional newspapers.

8. Statement of Tree Budget

The Borough is distinctly different from most municipalities in that it has a unique and complex beach and dune system to protect. Furthermore, the trees and shrubs must be sustainable under unpredictable coastal storm conditions, in addition to flooding and salt spray conditions. The Borough has acted as steward of the landscape and allocated resources through the Community Forestry Management and the Dune Vegetation Management Plan processes. The Dune Vegetation Management Plan, approved by Borough Council in December of 2009, involves returning the native vegetation of the dunes through a continuing systematic process of replacing invasive species with more disease and drought resistant, native vegetation. The Community Forestry Management Plan addresses hazardous tree determinations and maintenance, in addition to tree planting, community outreach and education, training and tree program coordination with Borough Ordinances.

The 2016 Estimated Tree Budget includes Borough plantings and public funds associated with this project.

BOROUGH ESTIMATED TREE BUDGET 2016

Parks and Shade Tree Personnel Salaries: \$21,710 Clothing Allowance: \$500.00	\$22,210.00
Education and Training CORE Training / CEU Participation:(3 X \$250.00)	\$750.00
Tree Planting	\$4,000.00
Tree Maintenance Materials	\$300.00
Equipment Rental	\$3,940.00
Volunteer Time (250 hours @ \$25.68/hour) 1	\$6,420.00
Garden Club Donations Pruning shrubs and planting annuals in parks	\$500.00
Contracted Tree Work Pest Management and Planting \$2,290.00 (Contingency): Emergency Restoration Item / Flood Repair – Mulching and Pre-emergent Reapplication \$25,390.00	\$27,680.00
Consultant Fees (CFMP Implementation)	\$13,450.00
TOTAL	\$79,250.00

1 The Independent Sector, 9/21/15, National Value of Volunteer Time, State Values of Volunteer Time 2001–2014, Volunteer of Volunteer Time/Indexed New Jersey 2014 (www.independentsector.org/volunteer_time)

Volunteer groups and service clubs, such as the Avalon Garden Club and the Green Team, offer major contributions to the community. The Avalon Garden Club is not only involved in the planting and maintenance of many of the public parks and gardens within the community, but has also taken on the arduous task of transforming a number of the center islands in the main boulevard through town (Dune Drive) into aesthetically pleasing roadside gardens. Their estimated volunteer hours have been included in the 2016 Estimated Tree Budget as well.

9. Statement of Plan Implementation

The following Statement of Plan Implementation addresses the specific actions proposed to carry out the Borough CFMP's goals and objectives identified in Section 2.

A. Background

Between 2010 and 2015 the Borough has continued implementation of its community Forestry Management Plan with principal emphasis on (1) hazardous tree surveys, (2) tree maintenance in public areas and (3) control of invasives in environmentally sensitive areas and replacement with native vegetation. The Borough of Avalon and its Environmental Commission have initiated a pilot project controlling the damaging vines in Armacost Park in 2015, in coordination with NJDEP, U.S. Fish and Wildlife Service and the Natural Resource Conservation Service (USDA)

The Dune Vegetation Management Plan continues to address the invasive Japanese black pine, bamboo and damaging vines problems impacting the Borough's maritime forests. It was developed and presented to interested state and federal agencies, in addition to the Borough officials, the Borough Planning and Zoning Board, the Environmental Commission and the interested public. This Plan was approved by the Borough in 2009 and has restored more than fifteen blocks of oceanfront maritime forests. It is noteworthy that the Avalon Dune Vegetation Management Plan has served as a model for other communities in New Jersey and Delaware. Finally, relevant Borough Land Use Ordinances have been updated to incorporate the provisions of the Dune Vegetation Management Plan, living fences and acceptable landscaping vegetation for this barrier island.

B. Yearly Implementation Timeline

The following yearly implementation timeline defines the planned actions to achieve the goals and objectives discussed in Section 2.

Year 1, 2016

1. Review the Borough's Departments and Ordinances that relate to tree resources.
2. Review the Plan with the community officials, staff, Environmental Commission members, Tree Management Committee and interested public.
3. Identify tree hazards on Borough property and report to Tree Management Committee of the Avalon Environmental Commission and the Department of Public Works regarding required care and maintenance.

4. Update Borough personnel training.
5. Providing training, as appropriate, to Plan coordinators, managers and volunteers.
6. Establish a Base Map for the Borough's tree inventory on Borough property and train personnel in its use.
7. Conduct a Tree Inventory determining the tree resources on Borough property and their distribution in the Borough.
8. Continue staff and volunteer development through supporting their attendance at advanced training courses (C.E.U. qualifying training).
9. Continue tree hazard surveys annually within the Borough and update the schedule for care and maintenance.
10. Continue training Borough personnel in dealing with tree hazards.
11. Prepare application for Green Communities Grant 2016.
12. Identify areas of the Borough that warrant tree enhancement and establish priorities.
13. Update the list of tree species suitable for planting in the diverse land uses and environmental conditions. Provide that list of tree species to the public through the Borough's communication resources.
14. Finalize standards for a Tree Pruning Program and train Borough personnel in their use.
15. Update the communication networks for identifying and resolving tree related problems.
16. Continue the process with the Mayor and Council for allocation of Borough resources for implementation of CFMP.
17. Distribute a brochure that identifies the value of trees and guides how property owners can contact the Borough to resolve tree related issues.
18. Continue implementation of the Dune Vegetation Management Plan, including site specific dune vegetation assessments, replacing the Japanese black pine and bamboo with native vegetation and coordinating the approval and vegetation replacement process.
19. Incorporate the CFMP in school and community programs, especially for Arbor Day.
20. Complete outline for the Forestry Education Plan focusing on selection and care of planting materials, in addition to the value of trees and forest habitats in the Borough.
21. Conduct an education seminar for professional landscapers, demolition contractors and Code Enforcement Officers.
22. Develop a budget for the next year's program and seek supplementary funding sources.

Year 2, 2017

1. Review the Borough organizational structure for the management of tree resources to determine if an update is warranted.
2. Review and revise Borough Ordinances consistent with the adopted CFMP.
3. Publicize the CFMP and associated revisions to the Borough Ordinances.
4. Identify tree hazards on Borough property and report to Tree Management Committee of the Avalon Environmental Commission and the Department of Public Works regarding required care and maintenance.
5. Update Borough personnel training.
6. Develop a tree inventory database system and provide training in its use.
7. Finalize a tree enhancement/planting program establishing planting standards, priority locations, tree species and monitoring protocols for streetscapes.
8. Assess the effectiveness of the Tree Management Committee, provide needed training.
9. Update the Borough Tree Inventory Base Map, including the annual hazardous trees survey.
10. Continue staff and volunteer development through supporting their attendance at advanced training courses (C.E.U. qualifying training).
11. Prepare application for Green Communities Grant 2018.
12. Initiate the Tree Pruning Program.
13. Evaluate and revise communication networks, as needed, for identifying and resolving tree related problems.
14. Continue implementation of the Dune Vegetation Management Plan in the maritime forest, as funding and sponsors allow.
15. Incorporate the CFMP in school for Arbor Day and community programs.
16. Develop and present the Forestry Education Plan focusing on the selection and care of planting materials and the value of trees and forest habitats in the Borough.
17. Continue to offer an educational seminar for professional landscapers and demolition contractors.
18. Develop a budget for the next year's program and seek supplementary funding sources.

Year 3, 2018

1. Identify tree hazards on Borough property and report to Tree Management Committee of the Avalon Environmental Commission and the Department of Public Works regarding required care and maintenance.
2. Update Borough personnel training.

3. Update inventory of invasive tree and other vegetation threatening the integrity of the maritime forest dune system.
4. Continue the Dune Vegetation Restoration Plan consistent with the Dune Vegetation Management Plan, including training of Borough personnel.
5. Continue the streetscape enhancement tree planting program.
6. Update the Borough's Tree Inventory Base Map.
7. Continue staff and volunteer development through supporting their attendance at advanced training courses (C.E.U. qualifying training).
8. Identify tree hazards on Borough property and report to the Tree Management Committee of the Avalon Environmental Commission and the Department of Public Works regarding required care and maintenance.
9. Update training of personnel in identification/resolution of tree hazards.
10. Prepare application for Green Communities Grant 2019.
11. Evaluate the Borough Tree Pruning Program.
12. Presentation of the CFMP in school for Arbor Day and community programs.
13. Present the Forestry Education Plan focusing on selection and care of planting materials and the value of trees and forest habitats in the Borough on Arbor Day.
14. Conduct an educational seminar for professional landscapers and demolition contractors.
15. Develop a budget for the next year's program and obtain supplementary funding sources.

Year 4, 2019

1. Identify tree hazards on Borough property and report to Tree Management Committee of the Avalon Environmental Commission and the Department of Public Works regarding required care and maintenance.
2. Update Borough personnel training.
3. Continue implementation of the Dune Vegetation Restoration Plan consistent with the Dune Vegetation Management Plan.
4. Continue the Streetscape Enhancement Tree Planting Program based upon the priorities established by the Tree Management Committee.
5. Update the Borough Tree Inventory Base Map.
6. Continue staff and volunteer development through supporting their attendance at advanced training courses (C.E.U. qualifying training).
7. Prepare application for Green Communities Grant 2020.

8. Continue Tree Pruning Program.
9. Present CFMP in school for Arbor Day and community programs.
10. Present the Forestry Education Plan focusing on selection and care of planting materials and the value of trees and forest habitats in the Borough on Arbor Day.
11. Continue to offer an educational seminar for professional landscapers and demolition contractors.
12. Develop a budget for the next year's program and obtain supplementary funding sources.

Year 5, 2020

1. Identify tree hazards on Borough property and report to Tree Management Committee of the Avalon Environmental Commission and the Department of Public Works regarding required care and maintenance.
2. Update Borough personnel training.
3. Continue implementation of the Dune Vegetation Restoration Plan consistent with the Dune Vegetation Management Plan. Update training for Borough personnel.
4. Continue the Streetscape Enhancement Tree Planting Program based upon the priorities established by the Tree Management Committee.
5. Continue Tree Pruning Program using established standards finalized in 2016.
6. Update the Borough Tree Inventory Base Map, including hazardous trees.
7. Highlight the CFMP in school and community education and outreach programs, especially for Arbor Day.
8. Present the Forestry Education Plan focusing on selection and care of planting materials and the value of trees and forest habitats in the Borough to the public on Arbor Day.
9. Conduct an educational seminar for professional landscapers and demolition contractors.
10. Develop a budget for the next year's program and obtain supplementary funding sources.
11. Prepare next five (5) year Community Forestry Management Plan.

C. Summary

Four basic elements of the Community Forestry Management Plan include Tree Inventory and Assessment, Tree Hazard Identification and Management, Tree Maintenance and Care and Tree Planting, as discussed below.

1. A Tree Inventory and Assessment process will be completed during this five year Plan, documenting the distribution of trees on Borough property. This survey includes potential tree hazards on the Base Map which shows the trees in the streetscape, as well as public areas of natural woodlands, parks and public facilities. The assessment will include the current tree cover in each streetscape throughout the Borough.

2. The Tree Hazard Identification and Management was initiated and continued in areas subject to public use, i.e. beach paths, parks and roadways. Dead and dying trees and tree growth into utility lines occurrences are being catalogued.

Continued training of Borough staff and volunteers during all five years of the Plan is intended to increase awareness and improve reporting of hazardous trees. The development of Tree Management Standards will serve as a guide, including the ANSI A300 Standard Practices, i.e. the Best Management Practices Tree Pruning, Utility Pruning of Trees and Integrated Vegetation Management. These Management Standards will be used for routine inspections of all streetscapes and park trees.

3. Concurrently Tree Maintenance and Care of the Borough trees will be continued utilizing the communication network to the Department of Public Works and the community organizations. The established Best Management Practices (ANSI A300) will be employed. The methodical replacement of Japanese black pine and bamboo with native species of tree and shrubs will continue to receive considerable attention, subject to available resources.

4. Tree Planting efforts for the next five years will be the focus of the Community Forestry Management Plan in priority areas, such as streetscapes and using native plants to replacement of the Japanese black pine in the Maritime Forest where it has created significant hazards to the natural ecosystem and the risk of fire. In addition, the Education and Outreach Programs are expected to encourage support for increasing the trees in a streetscape throughout the Borough.

The foundation component of the Plan is the development of the Tree Enhancement /Planting Program for streetscapes, similar to the tree planting that has been initiated around public buildings and the commercial area of the Borough. This Program includes establishing planting standards consistent with the ANSI A300 Best Management Tree Planting and Fertilization Practices, in addition to establishing priority locations, an updated tree species list and

monitoring protocols. A Commemorative Plant-a-Tree Program will be initiated to encourage community participation in enhancing the trees in the streetscapes of the Borough.

Central to all four basic elements of the Plan are the education, outreach and continued training of Borough staff and volunteers. The Borough will continue to face challenges from environmental conditions and management of invasive species intruding into its natural ecosystems. The Community Forestry Management Plan, as proposed, will address these challenges. The environmental ethic of the Borough and its residents is a critical strength; however, tightening budgets will require that the Borough seek supplementary funds to aid in the implementation of the Plan.

10. Community Stewardship Incentive Program

In recognition that the CORE Training and continued education requirements have been met and that the CFMP will be approved, the Borough anticipates that it will be eligible to apply for Community Stewardship Incentive Program (CSIP) grants helpful in implementing this Management Plan. The 15 CSIP practices are addressed below in terms of their location in the Plan along with a brief summary of the goals and objectives relating to each practice.

CSIP #1 Training

Training is one of the foundation components of the CFMP update, as identified in Sections 2,C. “Goals and Objectives.” Training of the Environmental Commission and Borough personnel is proposed to efficiently implement the Dune Vegetation Management Plan (Goal 1); review and evolve the Tree Management Committee of the Environmental Commission (Goal 1); implement program of tree maintenance and public outreach (Goal 6); and implement the tree damage management program (Goal 7).

The specific components of the Yearly Implementation Timeline (Section 9, B) include:

2016 – Actions 2,4, 5,6,8,10,14 (Pages 21 and 22)

2017 – Actions 5,6,8,10,17 (Page 23)

2018 – Actions 2,4,7,9,14 (Pages 23 and 24)

2019 – Actions 2,6,11 (Pages 24 and 25)

2020 – Actions 2,3, 9 (Page 25)

In summary, the Borough Tree Inventory and Assessment component of the Plan will be completed by the Tree Management Committee and the qualified consultant who will educate the Borough personnel and volunteers regarding its importance and use. The Tree Hazard Identification and Management aspects of the Plan will be implemented through the above-mentioned training of Borough personnel and volunteers. The ongoing Tree Maintenance and Care component of the Plan will be accomplished through the use of trained Borough personnel and contract landscapers, as required. Finally the Tree Planting training portion of the Plan will include selection and planting of trees and shrubs that are appropriate to barrier island conditions and Borough tree planting goals.

CSIP#2 Community Forestry Ordinance Establishment

The Borough has established and/or refined a significant base of municipal ordinances to protect and manage its tree resources, the 2010-2014 CFMP. The Sections of the ordinances germane to tree preservation, as required, are presented in **APPENDIX C** of this Plan. These ordinances associated with the CFMP and relevant portions of the Dune Vegetation Management Plan (Goal 1); CFMP (Goal 1); are being incorporated in the Borough Master Plan revision. Similarly, ordinances will be revised to address emergency issues.

The Borough Council is adopting the CFMP Update in 2015 (Goal 1). Review and monitor the Tree Management Committee of the Avalon Environmental Commission to oversee the protection of the Borough's tree resources (Goal 1). The Borough intends to review the Tree Management Committee of the Environmental Commission to ensure implementation of the Plan. This Committee will conduct separate meetings from the Commission and will maintain separate records of its meetings and activities. The Borough will evaluate the role of this Committee and determine how it should be modified to achieve Goal 1.

The specific components of the Yearly Implementation Timeline Section 9, B include:

2016 -- Actions 1,2,3,5, 21 (Pages 21 and 22)

2017 -- Actions 1,2,3,8 (Page 23)

In summary, the Borough proposes incorporation of appropriate components into their ordinances and Master Plan. As such, the Borough will establish the regulatory management and oversight framework to protect its tree resources.

CSIP #3 Public Education and Awareness

The education and outreach components are foundation elements of this Plan. While community education is inherent within many of the Plan Goals, Goals 4 and 5 focus the use of Borough resources (Public Information Officer, cable television channel, website, library and school events) to inform the public of the value of their tree resources and how the Borough intends to protect, preserve and enhance these resources. The completed interpretive trail, using the beach access path through the maritime forest, will continue to be used to educate the residents and visitors about the importance of trees in the protective dune system (Goal 5). The trail will be evaluated concerning its effectiveness and whether it should be further developed with additional interpretive resources. Community programs at the library and volunteer activities are outreach events that will incorporate appropriate aspects of the Plan (Goal 4).

Outreach materials included in the Plan are information regarding the value of trees; a guide to trees suitable for use in the coastal environment; and a guide for care and maintenance of trees (Goal 4). Educational/outreach materials will also include the interpretive brochure for the maritime forest (Goal 6).

The specific components of the Yearly Implementation Timeline Section 9, B include:

2016 – Actions 2,8,10,13,15,17,19,20,21 (Pages 21 and 22)

2017 – Actions 3,8,10,13,14,15,16,17 (Page 23)

2018 – Actions 5,9,12,13,14 (Page 24)

2019 – Actions 4,6,9,10,11 (Pages 24 and 25)

2020 – Actions 4,7,8,9 (Page 25)

In summary, the Public Education and Awareness Program provides insights and experiences concerning the value, protection and care of its trees to the residents and the large tourist population. A diversity of venues and materials, as well as various outreach vehicles, are included in the Plan.

CSIP #4 Arbor Day

The Arbor Day Celebration is traditional and ongoing event in the Borough (Goal 4 and Goal 5). It is proposed that the variety of outreach and educational activities currently held by the Borough be evaluated and expanded as resources are available.

The specific components of the Yearly Implementation Timeline Section 9, B include:

2016 – Actions 17,19,20 (Page 22)

2017 – Actions 12,15,16 (Page 23)

2018 – Actions 12,13,14 (Page 24)

2019 – Actions 9,10 (Page 25)

2020 – Actions 7,8 (Page 25)

In summary, the Borough will continue to utilize the national focus on trees during the celebration of Arbor Day. This event continues to provide the venue through which the value, protection and care of the trees in the Borough are highlighted.

CSIP #5 Tree Inventory

The next major effort for the Borough is to conduct a Tree Inventory. The principal focus of Goal 2 is to inventory the community forest resources on public property (Goal 2), park/streetscape tree resources (Goal 2) and devise a standardized mapping system (Goal 2).

The specific components of the Yearly Implementation Timeline Section 9, B include:

2016 – Actions 6,7,8,12,13 (Page 22)

2017 – Actions 6,7,9,10,14 (Page 23)

2018 -- Actions 1,3,5,6,8,9 (Page 24)

2019 – Actions 4,5,6 (Page 24)

2020 – Actions 1,3,4,6 (Page 25)

The Tree Inventory is the critical component of the Plan to assess and manage the tree resources of the Borough. In order that the tree resources are accurately monitored and that a program/system is in place to identify the tree hazards, to program tree maintenance and care, and to improve the tree planting plan, a database system and mapping is essential. The Plan incorporates the development of this system and mapping, in addition to inventorying and assessing tree resource health and required care.

CSIP #6 Hazardous Tree Assessment

The inventory database and mapping of the tree hazard assessment will require updating annually. The organizational structure within the Borough, principally through the Offices of the Mayor and Public Safety, in addition to the Tree Management Committee, will continue to report hazardous tree conditions to the Department of Public Works (Goal 2). This Department will take corrective actions to address the hazardous conditions.

The specific components of the Yearly Implementation Timeline Section 9, B include:

2016 – Actions 3,4,5,8,9,10,12,18 (Pages 21 and 22)

2017 – Actions 4,5,10,,13,14,15 (Page 23)

2018 – Actions 1,2,3,8,9 (Pages 23 and 24)

2019 – Actions 1,2,6 (Page 24)

2020 – Actions 1,2,6 (Page 25)

In summary, the Borough recognizes its responsibility of assessing hazardous trees or stands of trees and dealing with the problems in a timely manner. The organizational structure for reporting and addressing tree problems is an important part of the Plan – the existing process will continue to be reviewed and revised as needed. The Borough has been proactive in managing its property and addressing the risks associated with the invasives, such as Japanese black pine and bamboo, especially along roadways and beach paths. The replacement program and the dune restoration program are presented in Appendix E.

CSIP #7 Storm Damage Assessment

The storm damages assessment is treated concurrently with CSIP# 5 and #6 and was effectively employed after Hurricane Sandy. The tree inventory database and mapping monitor the tree resources (Goal 2). The adoption of the Plan, including the Borough organizational structure and Tree Management Committee (Goal 1), positioned the Borough to respond to storm damage. The inventory and assessments described above function as a pre-storm assessment. Because of the intensity of the coastal storms and exposure of the Borough, all Borough tree resources are at risk. The Department of Public Works and Public Safety are experienced in addressing these challenges. The Plan provides the opportunity to re-evaluate the policies and procedures used by the Borough through Goal 7.

The specific components of the Yearly Implementation Timeline Section 9, B include:

2016 – Actions 3,5,6,7,9,10,18 (Pages 21 and 22)

2017 – Actions 1,4,5,6,9,10,11,14 (Page 23)

2018 – Actions 1,2,3,8 (Pages 23 and 24)

2019 – Actions 1,2,5 (Page 24)

2020 – Actions 1,2,6 (Page 25)

The Borough, exposed to severe coastal storms, has established a strategic approach to protecting the community from storm damage to the maximum extent possible. The adoption of this Plan continues to provide the Borough with storm damage assessment, especially in terms of the tree inventory, tree hazard identification and tree management and care.

CSIP #8 Tree Maintenance and Removals

Tree maintenance and removal is an important component of the Plan. Currently the Borough continues to implement the Dune Vegetation Management Plan (Goal 1) and routine care of trees in the community. As the streetscape and park trees are enhanced, the maintenance

program will require updating. This Plan Update addresses these needs in Goal 1, Adoption of the CFMP; Goal 2 Forest Inventory; Goal 3 Tree Resource Enhancement; Goal 6 Sustaining and Enhancing Forest Resources; and Goal 7 Tree Destruction Response Plan.

The specific components of the Yearly Implementation Timeline Section 9, B include:

2016 – Actions 3,4,5,7,9,10,12,13,14,15,18 (Pages 21 and 22)

2017 – Actions 4,5,7,10,12, 13,14 (Page 23)

2018 – Actions 1,2,3,4,7,8,9,11 (Pages 23 and 24)

2019 – Actions 1,2,3,4,6,8 (Pages 24 and 25)

2020 – Actions 1,2,3,4,5,6 (Page 25)

Recognizing the value of trees on Borough property, their maintenance and care is essential to protect this asset for the residents and visitors. The Tree Inventory and Assessment in the Plan provides the database system and maps to organize, prioritize and monitor the maintenance and care of the tree resources.

CSIP #9 Insect and Disease Management

Currently the Dune Vegetation Inventory and Assessment has identified the threats to the dune system in Avalon associated with the dieback of the Japanese black pine (Goal 1). To protect the maritime forest identified in the Inventory (Goal 2), the Borough has continued the dune restoration program that entails the replacement of this invasive species with a diversity of native, adapted plants.

The specific components of the Yearly Implementation Timeline Section 9, B include:

2016 – Actions 3,4,7,8,9,10,13,15,17,18 (Pages 21 and 22)

2017 – Actions 4,5,9,10,14,17 (Page 23)

2018 – Actions 1,2,3,4,7,8,9 (Pages 23 and 24)

2019 – Actions 1,2,3,6 (Page 24)

2020 – Actions 1,2,3,6,9 (Page 25)

The invasive Japanese black pine issue and the dieback that has been experienced in New York and Connecticut, as well as portions of Avalon, have highlighted the importance of being proactive in addressing insects and diseases that impact the community's tree resources. The Dune Vegetation Management Plan (**APPENDIX E**) has served as a model within the Borough for assessing and proactively addressing these issues. However, this issue serves to focus the

attention on tree inventory and hazardous tree assessment along with the need for additional training. The Tree Management Committee is expected, through its training and networking, to remain current regarding emerging tree insect and disease issues.

CSIP #10 Wildfire Protection

The Borough recognized the inherent potential risks associated with wildfire in its maritime forest of the dune system (Goal 1). Wildfires can result from an accidental occurrence (anthropogenic causes) or naturally from lightning. In either case the fire can spread to and destroy the forest ecosystem and residences or obscure visibility on this major access highway. In addition, a fire could volatilize the oils of poison ivy, one of the major plants associated with these forests. The dune forest health and fuel reduction are being addressed by removing the Japanese black pine through the Dune Vegetation Management Plan. The Department of Public Works is responding to these issues through Goal 2 and Goal 7.

The specific components of the Yearly Implementation Timeline Section 9, B include:

2016 – Actions 3,4,9,10,18 (Pages 21 and 22)

2017 – Actions 9,10,14 (Page 23)

2018 – Actions 1,2,3,4,8,9 (Pages 23 and 24)

2019 – Actions 1,2,3,6 (Page 24)

2020 – Actions 1,2,3 (Page 25)

The large quantity of combustible tinder associated with the stands of Japanese black pine and high exposure to anthropogenic sources of fire in the dune forest and adjacent to the gateway highway warrants continuing efforts to address these wildlife fire issues.

CSIP #11 Tree Planting

The planting of trees in the Borough has been almost as important as preserving the natural stands of trees and planted streetscapes. The Borough has continued to enhance the tree resources of the community through major planting efforts associated with native species replacing the Japanese black pine in the dunes, as illustrated in Appendix F. However, the replacement of the Japanese black pine in the maritime forests (Goal 1) and the limited number of trees in the streetscapes, as illustrated in Appendix E, focus attention on the need to plant appropriate trees in the community (Goal 2) and Goal 3. The Plan includes the development of strategies to encourage the community to contribute trees through the Commemorative Tree Planting Program (Goal 6).

The specific components of the Yearly Implementation Timeline Section 9, B include:

2016 – Actions 7,12,13,17,18,19,20 (Page 22)

2017 – Actions 7, 14,15,16,17 (Page 23)

2018 – Actions 4,5,12,13 (Page 24)

2019 – Actions 3,4,9,10 (Page 24)

2020 – Actions 3,4,7,8 (Page25)

Tree planting is another foundation element to enhancing the tree resources of the Borough. The Tree Inventory and Assessment aids in identifying the priority locations for the tree planting component of the Plan because it focuses limited resources on where and which trees should be planted. The environment, which can be severe and droughty, necessitates careful plant selection as presented in the Borough Ordinances and Dune Vegetation Management Plan Plant Lists (Appendices D and F). The Borough will require significant resources and community support to bring the streetscapes to a level enjoyed by many other communities, especially because overhead utility wires limit tree planting on most Borough streets.

CSIP #12 Tree Recycling

The tree resources of the Borough, at present, have not warranted a tree recycling program. While Christmas trees have been recycled in the past to encourage dune growth, this is no longer considered an appropriate use. As the Dune Vegetation Restoration Program is expanded, the Borough will continue to utilize the Cape May County Municipal Utilities Authority's program to recycle trees to mulch. As such, no components of the Plan focus specifically on recycling at this time. The priority of this Plan is to improve tree resources in the Borough.

CSIP #13 Sidewalk Maintenance Program

At present the preliminary tree inventories have not revealed a sidewalk problem because of the nature of the trees planted on this barrier island. The Borough Ordinances recognize that where the sidewalk to street distance is too small for trees, that trees should be planted on the house side of the sidewalk. As such, sidewalk maintenance does not continue to be a priority of the current Plan.

CSIP #14 Storm Water Management

The Borough is located on Seven Mile Beach Barrier Island which is flat and has low elevations (generally less than 12 feet above sea level). Further, it is underlain primarily by sand. As such, there is not a significant relationship between storm water management and the Community Forestry. The naturally occurring surface water table is generally within four feet of the ground surface. In some cases the ground water is brackish to saline. The precipitation either percolates rapidly into the ground, ultimately to be discharged into the surrounding tidal waters or mixed with flooding tidal waters during storm events. Therefore, the Plan currently does not focus on this consideration at this time.

CSIP #15 Other

The most important other community stewardship incentive that has been implemented is the Dune Vegetation Management Plan and the protection/restoration of the maritime forest, as presented in Appendix E and discussed in Goal 1. The principal expense is for Japanese black pine and bamboo removal and replacement with native species. In addition, the control of damaging vines that smother tree canopies, resulting in tree damage and loss, has become a priority in the protection of the Borough's property.

The Borough recognizes that all of the practices and the four required elements in Section 9 within its Management Plan have been developed in accordance with the unique needs and priorities of the Borough. The Plan and associated tree management activities will evolve further as the community's needs and priorities change with the information that the Borough acquires in carrying out the Plan. As such, the Borough intends to utilize the communication network within the Borough and resources available through the Bureau of Forestry in the Department of Environmental Protection and other resource management agencies and organizations.

The Borough and its residents appreciate the support received from the Bureau of Forestry in addressing its forestry resources.

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APPENDIX A

Borough of Avalon Community Forestry Management Plan Approval Letter (November 18, 2010)



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHRIS CHRISTIE
Governor

BOB MARTIN
Commissioner

KIM GUADAGNO
Lt. Governor

Division of Parks and Forestry
New Jersey Forest Service
Mail Code 501-04
P.O. Box 420
Trenton, NJ 08625
Tel. # 609-292-2532
FAX# 609-984-0378

Andrew Bednarek
Business Administrator
3100 Dunc Drive
Avalon, NJ 08202

November 18, 2010

Dear Andrew Bednarek:

Congratulations! I am pleased to advise you that after our review, the New Jersey Forest Service has concluded that Avalon Borough's second 5 year Community Forestry Management Plan meets the standards set forth by the State and New Jersey Community Forestry Council and is approved for 2010 through the 2014 calendar year.

The major goal of the state's Community Forestry Program is to educate all municipalities and counties in the state about the benefits of developing their own distinctive Community Forestry Management Plan. As these plans develop, the health of the tree cover will improve, the number of trees will increase and the awareness of our state's residents will rise.

As you know, a management plan is an essential guide to successfully achieving a healthy and safe community forest. The approval of your second 5 year Community Forestry Management Plan is a great accomplishment, and a testament to the growth and sustainability to your shade tree program. We look forward to continuing this partnership with you and your community, and your continued success.

If you are a participant of the Forest Service grant program, the next step would be to submit your expenditure report and financial documentation for reimbursement within 30 days. Please find the enclosed certificate of approval and a signed certification by the State Forester within your management plan.

Sincerely,

A handwritten signature in black ink that reads "Michael V. D'Errico".

Michael V. D'Errico
State Coordinator
Community Forestry

Attachment
c: file, Mayor

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Parks and Forestry
Forest Service

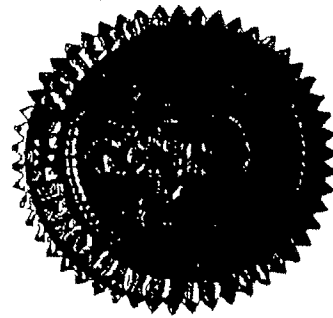
Hereby presents the

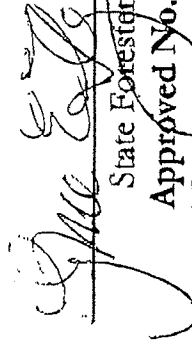
Certificate of Approval

awarded to

Avalon Borough

For the successful completion of an approved
2nd 5-year Community Forestry Management Plan in accordance with the
New Jersey Shade Tree and Community Forestry Assistance Act,
P.L. 1996, Chapter 135.




State Forester

Approved No. 117
November 12, 2010

APPENDIX B

FIGURES

- FIGURE 1.** The Borough of Avalon as shown on 2012 Orthophoto Aerial Mapping
- FIGURE 2.** The Borough of Avalon Zoning Map
- FIGURE 3.** Public Open Space Zoning Overlay shown on 2012 Orthophoto Aerial Mapping of the Borough of Avalon
- FIGURE 4A.** Distribution of Vegetation Resources (South) as shown on 2012 Orthophoto Aerial Mapping
- FIGURE 4B.** Distribution of Vegetation Resources (North) as shown on 2012 Orthophoto Aerial Mapping



Legend
 [Red Outline] Municipal Boundary

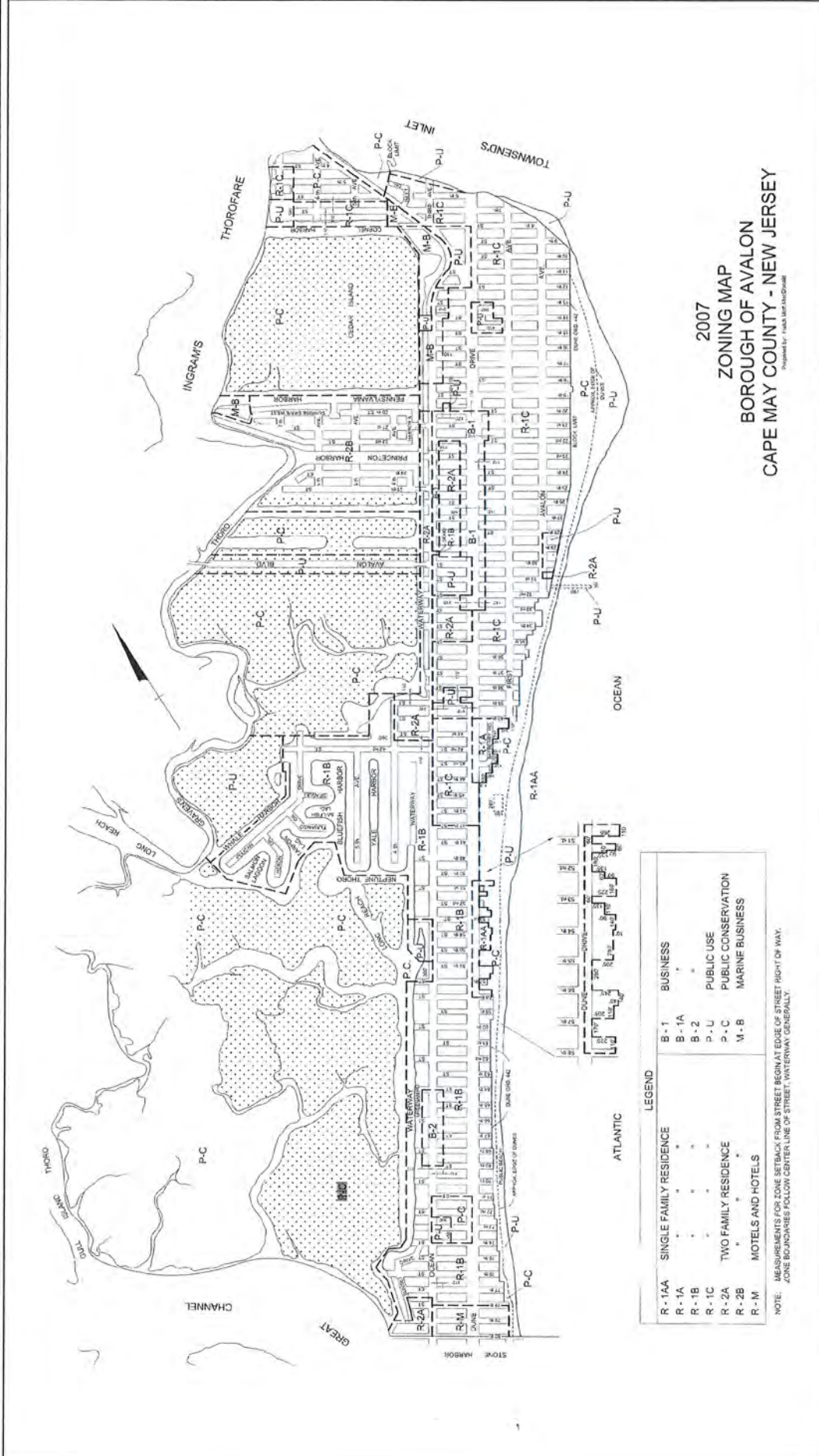
FIGURE 1: THE BOROUGH OF AVALON AS SHOWN ON 2012 ORTHOPHOTO AERIAL MAPPING

SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgisp.nj.gov/> & THE CAPE MAY COUNTY PLANNING DEPARTMENT

Project: 09-650/CAMP Revised 2015-2019 CEM/P/F para Pages 1-8
 Figure 1, 2012 Aerial Ortho

DATE: 9-10-15
 DRAWN BY: ACB
 1 inch = 1,500 feet

the LOMAX Consulting group



2007
ZONING MAP
BOROUGH OF AVALON
CAPE MAY COUNTY - NEW JERSEY
Prepared by: LOMAX CONSULTING GROUP



DATE: 9-10-15
DRAWN BY: ACB
1 inch = 1,500 feet

LEGEND	
R-1AA	SINGLE FAMILY RESIDENCE
R-1A	"
R-1B	"
R-1C	"
R-2A	TWO FAMILY RESIDENCE
R-2B	"
R-1M	MOTELS AND HOTELS
B-1	BUSINESS
B-1A	"
B-2	"
P-U	PUBLIC USE
P-C	PUBLIC CONSERVATION
M-B	MARINE BUSINESS

NOTE: MEASUREMENTS FOR ZONE SETBACK FROM STREET BEGIN AT EDGE OF STREET RIGHT OF WAY. ZONE BOUNDARIES FOLLOW CENTERLINE OF STREET, WATERWAY GENERALLY.

FIGURE 2: THE BOROUGH OF AVALON CURRENTLY APPLICABLE ZONING MAP, DATED 2007

SOURCE: ZONING MAP PROVIDED BY THE BOROUGH OF AVALON AT <http://avalonboro.net/mun-offices/department-of-administration/avalon-planning-zoning-board/>

Project/Drawn/09-650/CRMP Revised 2015-03-10 CRMP/ Figure 2, Borough of Avalon Zoning Map



Legend

- Municipal Boundary
- Public Conservation Zone
- Public Use Zone



the
Lomax
Consulting
group



DATE: 9-10-15	DRAWN BY: ACB	
		1 inch = 1,500 feet

FIGURE 3: PUBLIC OPEN SPACE ZONING OVERLAY SHOWN ON 2012 ORTHOPHOTO AERIAL MAPPING, BOROUGH OF AVALON

SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgin.nj.gov/> & THE CAPE MAY COUNTY PLANNING DEPARTMENT

Project/Drawn/09-650/CFMP/Revised/2015-2019/CFMPP/figure 3. Public Open Space Zoning Overlay



the **LOMAX** Consulting group

DATE: 9-10-15
 DRAWN BY: ACB
 1 inch = 1,000 feet

FIGURE 4A: DISTRIBUTION OF VEGETATION RESOURCES (SOUTH)
 AS SHOWN ON 2012 ORTHOPHOTO AERIAL MAPPING, BOROUGH OF AVALON
 SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgpa.nj.gov/> &
 THE CAPE MAY COUNTY PLANNING DEPARTMENT
 ProjectActive09-650CFMP Revised2015-2018 CFMPFigure PageFigure 4A: Distribution of Vegetation Resources (South)



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DATE: 9-10-15
 DRAWN BY: ACB
 1 inch = 1,000 feet

FIGURE 4B: DISTRIBUTION OF VEGETATION RESOURCES (NORTH)
 AS SHOWN ON 2012 ORTHOPHOTO AERIAL MAPPING, BOROUGH OF AVALON
 SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgin.nj.gov/> &
 THE CAPE MAY COUNTY PLANNING DEPARTMENT
 Project/Active/09-650/CFMP Revised 2015-2018 CFMP/Figure 4B, Distribution of Vegetation Resources (North)

APPENDIX C

Chapter 23 – Beach and Dune Protection,
and
Chapter 26 -- Subdivision and Site Plan Review
and
Chapter 27 -- Zoning

CHAPTER 23 BEACH AND DUNE PROTECTION

Editor's Note: Prior source history includes the 2000 Code § 9:10-1 et seq.

23-1 FINDINGS.

23-1.1 Statement of Purpose; State Aid Agreement.

a. The Borough of Avalon is situated on a barrier island known as Seven Mile Beach, one (1) of eight (8) barrier islands along the coast of New Jersey. Certain portions of the beach and dunes bordering on the Atlantic Ocean consisting of the entire length of the inlet and oceanfront shorelines from the Townsends Inlet Bridge to 80th Street, inclusive, and the same being the boundary lines of the Borough of Avalon, New Jersey, have in the past suffered, and will continue to suffer, severely from damage caused by storms and wind-driven storm tides, at which times the ocean encroaches upon the land and causes serious damage to public and private property and endangers the safety and welfare of the public. The Borough Council acknowledges that this encroachment of the ocean and the causing of overwash areas on the island is a normal and natural occurrence on a barrier island and, in fact, is the very mechanism by which a barrier island withstands the impact of a major coastal storm.

b. The situation created along the beach and dunes by reason of such storm tides and resulting damage has been so serious that many millions of dollars of both public and private funds have been expended for the replenishment of sand and vegetation, and erection of bulkheads, sand fences and other supportive structures intended to prevent encroachment by the ocean and beach and dune erosion.

c. Continuing beach erosion along the Atlantic seaboard, along with the gradual rise of the ocean level, has created an immediate and imminent danger to persons and property in the Borough of Avalon by reason of the destruction of the sand barriers which protect the Borough's oceanfront. Consequently, it has become necessary to the health and welfare of the public to maintain the integrity of the system of dune and supportive structures on both public and private property within the Borough of Avalon.

d. The interference with or the depletion of the beach and dunes tends to more easily permit encroachment by the ocean and, in the opinion of the Council of the Borough of Avalon, the conditions recited above make it imperative that it regulate and control the disturbance, removal or redistribution of sand and/or vegetation on or from the beach and dunes.

e. On July 13, 1994, the Borough of Avalon entered into a State Aid Agreement (the "State Aid Agreement") with the New Jersey Department of Environmental Protection (the "NJDEP") as a condition to the receipt by the Borough of Avalon of funds from the State of New Jersey for the purpose of beach and dunes restoration. The Borough of Avalon agreed therein, inter alia, to maintain in effect this Beach Protection Ordinance (the "Ordinance"), subject to prior approval of any amendment thereto by NJDEP, and to comply with certain procedural and substantive requirements set forth within the State Aid Agreement in the review of applications for development within the Beach Dune Area under the Ordinance. Those procedural and substantive requirements for the review and approval of such applications for development contained within the State Aid Agreement are incorporated herein. (The State Aid Agreement may be found in the Borough offices.) (Ord. No. 577-2006 § 9:10-1)

23-2 DEFINITIONS.

23-2.1 Word Usage.

As used in this chapter:

Beach or **beaches** shall mean as defined within N.J.A.C. 7:7E-3.22(a), as may be amended from time to time.

Beach dune area shall mean those areas of the Borough of Avalon consisting of beaches and/or dunes, as defined herein.

Dune or dunes shall mean as defined in N.J.A.C. 7:7E-3.16(a), as may be amended from time to time.

Erosion hazard area shall mean that area located oceanward of a line established by the Borough of Avalon in accordance with paragraph (2) of the State Aid Agreement.

Line of disturbance shall mean a line to be established by any person proposing to disturb, remove or redistribute any sand and/or vegetation within the Beach Dune Area in connection with any proposed improvement as described in subsection 23-3.2 hereof which shall demarcate both the area of the proposed improvement and the greater area of construction activity related to such proposed improvement and which shall be staked in the field, shown on a plan to be submitted pursuant to Section 23-4, paragraph e. hereof and the area of which shall be limited to a maximum distance of six (6) feet beyond the outward face of each horizontal dimension of the proposed improvement.

Overwash areas shall mean as defined in N.J.A.C. 7:7E-3.17(a), as may be amended from time to time. (Ord. No. 577-2006 § 9:10-2)

23-3 USE RESTRICTIONS.

23-3.1 Prohibited Acts.

Except as provided herein, it shall be unlawful for any person or persons, including any natural person, corporation, partnership, association or any of their agents or employees to disturb, remove, or redistribute any sand and/or vegetation on or from privately owned property located within the Beach Dune Area. (Ord. No. 577-2006 § 9:10-3.1)

23-3.2 Certain Exceptions on Private Property.

Notwithstanding the provisions of subsection 23-3.1 above, sand and/or vegetation may be disturbed, removed or relocated on or from privately owned property located within the Beach Dune Area under the following circumstances:

a. If, within the judgment of the Zoning Official, after consulting with the Code Enforcement Official, such disturbance, removal or redistribution is necessary in order to repair or to renovate an existing improvement, such repair or renovation shall not result in any horizontal or vertical expansion of such improvement, and any sand and/or vegetation disturbed, removed, replaced or redistributed as a result of such activity shall be within the Line of Disturbance and shall be restored when such repair or renovation is completed.

b. If, within the judgment of the Zoning Official, after consulting with the Code Enforcement Official, such disturbance, removal or redistribution is necessary in order to replace any improvement, or portion thereof, for any reason whatsoever, as long as the replacement does not represent a horizontal or vertical expansion of the area of the improvement to be replaced. In such event, the person seeking to make such improvement shall file an application pursuant to Section 23-4 below within one (1) year of the date of destruction or demolition of the improvement or portion thereof to be replaced, and the person seeking approval for such replacement improvement shall be required to demonstrate (i) that such replacement improvement will not result in a horizontal or vertical expansion of the area previously occupied by the replaced improvement, and (ii) any sand and/or vegetation disturbed, removed, replaced or redistributed as a result of such activity shall be within the Line of Disturbance, shall be the minimal amount necessary for the improvement, and shall be restored or replaced when such replacement is completed.

c. If, within the judgment of the Zoning Official, after consulting with the Code Enforcement Official, such disturbance, removal or redistribution will result from any construction or reconstruction which is not governed by paragraph a. or b. above, the person seeking to make such improvement shall file an application pursuant to Section 23-4 below, and shall be required to demonstrate (i) that there is no practicable or feasible alternative to construction or reconstruction in any area other than the Beach Dune Area; (ii) that such construction or reconstruction will not cause significant, adverse, long-term impacts on the natural functioning of the Beach and Dunes system, either

individually or in combination with other existing or proposed structures, land disturbances or activities; and (iii) any sand and/or vegetation disturbed, removed, replaced or redistributed as a result of such activity shall be within the Line of Disturbance, shall be the minimal amount necessary for the improvement, and shall be restored or replaced to the greatest extent possible when such construction or reconstruction is completed.

(Ord. No. 577-2006 § 9.10-3.2)

23-3.3 Approvals Conditioned Upon Certain Requirements.

In accordance with the State Aid Agreement, no approval shall be granted pursuant to subsection 23-3.2 to permit construction of swimming pools, tennis courts or similar structures as referenced in paragraph 1(b) of the State Aid Agreement unless the following conditions are satisfied:

a. The property owner has obtained a CAFRA permit or equivalent from the New Jersey Department of Environmental Protection approving construction of swimming pools, tennis courts or similar structures as proposed to the Borough; and

b. The New Jersey Department of Environmental Protection has either amended the State Aid Agreement to eliminate the prohibition against swimming pools, tennis courts or similar structures as referenced in paragraph (b) of the State Aid Agreement or the New Jersey Department of Environmental Protection has issued a letter to the Borough of Avalon waiving its right to enforce the default provisions of the State Aid Agreement if the Borough approves the construction of a swimming pool, tennis court or similar structure, as applicable to the particular application or the New Jersey Department of Environmental Protection otherwise authorizes the Borough to approve a swimming pool, tennis court or similar structure without penalty against the Borough; and

c. The applicant submits an application for approval in accordance with the provisions of Section 23-4, obtains approval from Borough Council as provided herein, and complies with all other applicable provisions of this chapter. (Ord. No. 577-2006 § 9:10-3.3; Ord. No. 620-2009 § 1)

23-4 APPLICATION.

Any person who requires approval for any of those activities described in subsection 23-3.2, paragraphs b. or c., or subsection 23-3.3, shall file with the Secretary of the Planning/Zoning Board an original and sixteen (16) typewritten copies of an application on forms supplied by the Secretary of the Planning/Zoning Board along with seventeen (17) copies of all plans and other documents. The application shall contain the following information:

a. Applicant's name and address.

b. Lot and block number of the property on which the improvement is proposed.

c. A concise statement of the construction activity for which approval is sought.

d. The reasons for such construction.

e. A plan containing all of the design elements which would be required for site plan review if such construction activity were subject to site plan approval pursuant to Chapter 26, Subdivision and Site Plan Review.

f. A plan showing the location, description and amount of sand and/or vegetation to be disturbed, removed or redistributed.

g. A plan showing the location, description and amount of sand and/or vegetation to be replaced and the type and location of any temporary or permanent fencing to be provided.

h. A plan demonstrating compliance with the Borough Stormwater Management Ordinance, the Borough's Beach Management Plan for the protection of Federal and State listed species, April 2009, as amended, and which identifies any path or other means of access to the beach in conformance with State and Federal laws.

i. A plan showing the existing topographical cross-section of the property and the beach and dunes both on the property and oceanward extended from the northward and southward boundaries of the property to the mean low water line and a topographical cross-section of such areas after construction of the proposed improvement. Such plan

shall be evaluated for compliance with the requirements of Section 23-3 with reference to the U.S. Army Corps of Engineers-Beach Program, or other acceptable methodologies to determine Beach Dune Area stability both before and after completion of the improvements.

(Ord. No. 577-2006 § 9:10-4; Ord. No. 620-2009 § 2)

23-5 REFERRAL TO ENVIRONMENTAL COMMISSION.

Upon receipt of an application deemed complete by the Secretary of the Planning/Zoning Board in accordance with Section 23-4 above, the Planning/Zoning Board shall forward a copy of the application to the Environmental Commission of the Borough of Avalon. The Environmental Commission shall have forty-five (45) days within which to consider the application and make any recommendations concerning same to the Planning/Zoning Board. Any such recommendations by the Environmental Commission shall be in writing. If the Environmental Commission should fail to act within forty-five (45) days of the date of such referral by the Planning/Zoning Board, the Planning/Zoning Board shall proceed to act on the application as herein specified. The Planning/Zoning Board shall give due regard to, but shall not be required to accept, any recommendation of the Environmental Commission. (Ord. No. 577-2006 § 9:10-5)

23-6 REFERRAL TO NJDEP.

In accordance with paragraph 1(a) of the State Aid Agreement, upon receipt of an application deemed complete by the Secretary of the Planning/Zoning Board in accordance with Section 23-4 above, the Planning/Zoning Board shall forward a copy of the application to the NJDEP, Bureau of Coastal Regulation, which will have forty-five (45) days within which to consider the application and provide its written comments to the Planning/Zoning Board with regard to the application's compliance with the Rules on Coastal Zoning Management (N.J.A.C. 7:7E-1 et seq.). The Planning/Zoning Board shall give due regard to, but shall not be required to accept, any recommendation of NJDEP. (Ord. No. 577-2006 § 9:10-6)

23-7 CONDUCT OF PUBLIC HEARING.

The Planning/Zoning Board shall commence a hearing on an application for approval pursuant to subsection 23-3.2, paragraph b. or c., or subsection 23-3.3, within forty-five (45) days after the earlier to occur of the expiration of the time within which the Environmental Commission shall act with reference to the application pursuant to Section 23-5 or the issuance of a report or recommendation by the Environmental Commission. The applicant shall provide proof of notice of such hearing to the Planning/Zoning Board Secretary at least three (3) days before the scheduled date of such hearing. Such notice shall be in the same manner as provided for land use applications under Chapters 26 and 27 and shall conform to the requirements of N.J.S.A. 40:55D-12.

At that time, the Planning/Zoning Board shall hear and consider testimony from the applicant's representatives and from any interested party. The applicant shall have the burden of producing competent evidence to demonstrate its right to relief pursuant to subsection 23-3.2, paragraphs b. or c., or subsection 23-3.3, with or without reasonable conditions which may be imposed by the Avalon Borough Council in order to accomplish the purposes of this chapter. In reviewing the application, the Planning/Zoning Board shall consider, at a minimum, the following factors:

- a. The size of the property.
- b. The size and type of the improvement sought.
- c. The location of the proposed improvement on the property.
- d. The elevation of the lot and the improvement.
- e. The size, elevation, and configuration of the sand and/or vegetation located on the property.
- f. The shore protection afforded by the dunes in the unaltered state compared to the shore protection afforded by the proposed improvement.

- g. The location, amount and type of sand and/or vegetation to be altered.
- h. The location, amount and type of any new sand and/or vegetation resulting from the proposed improvement.
- i. The danger to life and property from flooding or erosion damage likely to occur as a result of the proposed improvement.
- j. The susceptibility of the property and proposed improvement to flood damage.
- k. The relationship of the proposed improvement to the comprehensive plan and flood plain management program for that area.
- l. The expected height, velocity, duration and rate of rise and sediment transport of the flood waters and the effect of wave action expected at the property.

After reviewing the application and considering the evidence presented at the hearing as well as the factors identified above, the Planning/Zoning Board shall make findings of fact and submit those findings, together with all materials received during the application process and its recommendation concerning the merits of the application, to the Avalon Borough Council for a final determination. The Borough Council shall, within forty-five (45) days after receipt of the findings of fact and recommendations of the Planning/Zoning Board, make a final decision on the application at a public hearing scheduled by the Borough Council on twenty (20) days notice to the applicant. The applicant shall provide notice of the hearing as would be required under N.J.S.A. 40:55D-12 for land use applications. The applicant shall provide proof of notice of such hearing to the Borough Clerk at least three (3) days before the scheduled date of such hearing. Such notice shall be in the same manner as provided for land use applications under Chapters 26 and 27 and shall conform to the requirements of N.J.S.A. 40:55D-12. At such hearing, the applicant shall not be permitted to present additional information, materials, or evidence, but shall be permitted to comment on the findings and recommendations of the Planning/Zoning Board and to argue the merits of its application to the Borough Council. At the conclusion of the hearing, or within thirty (30) days thereafter if the Borough Council requires additional time to consider the application, the Borough Council shall issue its decision by a vote of a majority of members in attendance at the meeting.

(Ord. No. 577-2006 § 9:10-7; Ord. No. 606-2009; Ord. No. 620-2009 § 3)

23-8 RIGHT TO APPEAL.

The applicant shall have the right to appeal any decision of the Avalon Borough Council to the Superior Court of New Jersey. (Ord. No. 577-2006 § 9:10-8; Ord. No. 606-2009)

23-9 COMPLIANCE WITH OTHER BOROUGH ORDINANCES.

All proposed development as provided under subsection 23-3.2 shall be further subject to the applicant's compliance with all other applicable ordinances of the Borough of Avalon. (Ord. No. 577-2006 § 9:10-9)

23-10 APPLICATION FEES AND PROFESSIONAL FEES.

Each applicant for approval pursuant to subsection 23-3.2, paragraph b. or c., or subsection 23-3.3 shall submit with its application an application fee in the amount of one thousand dollars (\$1,000.00). In addition, each applicant seeking approval pursuant to subsection 23-3.2, paragraph b. or c., or subsection 23-3.3 shall also place in escrow with the Secretary of the Planning/Zoning Board a payment in the amount of two thousand five hundred (\$2,500.00) dollars to be applied toward payment of the professional fees of the Planning/Zoning Board in the review and consideration of that application. The same conditions as applicable to the disposition of escrow payment for professional fees for applications for land use approval under Chapters 26 and 27 of the Avalon Borough Code shall apply to the escrow payment required herein. Such application fees and professional fees shall be applicable to consideration of the application by both the Planning/Zoning Board and Environmental Commission. In the event the applicant is seeking approval pursuant to subsection 23-3.2, paragraph b. or c. and subsection 23-3.3 in the same

application the applicant shall only pay one application fee and one escrow payment. (Ord. No. 577-2006 § 9:10-10; Ord. No. 620-2009 § 4)

23-11 SUPPLEMENTATION OF DUNES.

Vegetation and sand fences may be utilized to supplement dunes in connection with any application. Any such vegetation shall be compatible with surrounding, existing vegetation and take into account the location, height and gradient of dunes supported by such vegetation and conform to the requirements for landscape improvements under subsection 27-7.3t in Chapter 27, Zoning, as well as the Standards for Beach and Dune Activity set forth at N.J.A.C. 7:7E-3A.1 et seq., each as may be amended from time to time. (Ord. No. 577-2006 § 9:10-11)

23-12 SAND AND/OR VEGETATION RESTORATION.

If sand and/or vegetation shall be disturbed, removed or redistributed on or from any property within the Beach Dune Area at any time and due to any cause, including, but not limited to, as a result of storm activity, upon direction of the Construction Official, the owner of that property shall restore and/or replace such sand and/or vegetation except that there shall be no such obligation to restore or replace a small amount of loose, windblown sand relocated on or from a property as a result of storm activity. (Ord. No. 577-2006 § 9:10-12)

23-13 INTERFERENCE WITH DUNE AND OTHER PROTECTED AREAS; TRESPASSING ON DUNES; REMOVAL OF VEGETATION OR FENCE PROHIBITED.

a. It shall be unlawful for any person or persons, including any natural person, corporation, partnership, association or anyone acting in their behalf or at their instance to remove any snow fence or vegetation which exists in the Beach Dune Area.

b. It shall be unlawful to trespass upon any dunes, except as paths are designated and marked for public use. (Ord. No. 577-2006 § 9:10-13)

23-14 NECESSITY OF MAINTENANCE.

Maintenance of the Beach Dune Area and any other natural protective barriers now existing or heretofore created are necessary and proper for the good government, order and protection of persons and property and for the preservation of the public health, safety and welfare of this Borough and its inhabitants; and it is an appropriate and necessary exercise of the Borough's police powers that the Beach Dune Area and other protective barriers be maintained in accordance with this chapter in order to provide protection deemed essential in the public interest. (Ord. No. 577-2006 § 9:10-14)

23-15 BULKHEADS DISALLOWED.

Bulkheads will not be allowed to supplement dunes, with those exceptions to this use restriction approved by NJDEP, Land Use Regulation Program, Coastal Area Review Section. (Ord. No. 577-2006 § 9:10-15)

23-16 VIOLATIONS, REMEDIES AND PENALTIES.

Upon violation of the provisions of this chapter, the Borough may, in addition to any other legal remedies available to it:

a. Commence an action before a court of law or administrative agency having jurisdiction to prevent such unlawful erection, construction, reconstruction, alteration, repair, conversion, maintenance or use; to restrain, correct or abate such violation; to prevent the occupancy of the structure, improvement or property; or to prevent any illegal act, conduct, use or activity on or about the property.

b. Revoke any permit or approval issued or granted pursuant to this chapter without regard to whether work has begun or a use has commenced pursuant to such permit or approval.

c. In addition to the rights of civil and administrative enforcement provided herein, any person who violates any provision of this chapter shall, upon conviction, be liable to the penalty stated in Chapter 1, Section 1-5. (Ord. No. 577-2006 § 9:10-16; New)

23-17 ENVIRONMENTAL COMMISSION PARTICIPATION IN RELATED PERMIT REVIEW.

The Environmental Commission is hereby directed to participate to the fullest extent possible in review by the NJDEP of applications for development within the Beach Dune Area in accordance with N.J.A.C. 7:7-4.1 et seq., as may be amended from time to time. To that end, the Borough Clerk shall promptly forward to the Environmental Commission copies of all such applications received by the Borough in accordance with applicable law. Thereafter, within fifteen (15) days of receipt of such application, the Environmental Commission shall provide NJDEP with any comments it deems appropriate with regard to such application and shall also notify NJDEP of its intent to participate as an interested party with regard to such application, requesting specifically that it be notified of any public hearing, modification of an application notice of decision, or notice of appeal with reference to such application. The Environmental Commission shall participate in any public hearing conducted by NJDEP in connection with such applications and shall provide testimony and/or written comment as it deems appropriate. Such written comment shall be provided to NJDEP within fifteen (15) days after completion of any public hearing. Within thirty (30) days of the grant of each permit application, the Environmental Commission may determine to appeal the grant of such permit to the Commission of NJDEP. If the Environmental Commission shall receive notice that any such permit application has been denied and a request has been made to NJDEP for an adjudicatory hearing to contest such denial within ten (10) days of its receipt of such notice, the Environmental Commission may file with NJDEP its written response to such a request and its intent to participate in the appeal process.

The provisions of this section are intended to authorize the Environmental Commission to undertake all those measures available to it under the law to assure that those regulations of NJDEP governing development within the Beach Dune Area are strictly enforced by NJDEP and in a manner consistent with the provisions of this chapter. (Ord. No. 577-2006 § 9:10-17)

CHAPTER 23 BEACH AND DUNE PROTECTION

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CHAPTER 26 SUBDIVISION AND SITE PLAN REVIEW

26-1 TITLE.

This chapter shall be known and may be cited as the "Subdivision and Site Plan Review Ordinance" of the Borough of Avalon, Cape May County, New Jersey. (Ord. No. 603-2008 § 26-1)

26-2 PURPOSE.

The purpose of this chapter is to:

- a. Promote orderly growth and development in the Borough of Avalon.
- b. Set forth a clear statement of development application requirements.
- c. Promote a desirable visual environment through creative development techniques, good civic design and arrangement.
- d. Improve the efficiency and safety of vehicular and pedestrian circulation systems within and outside individual developments.
- e. Encourage harmonious and efficient use of Borough land.
- f. Provide safeguards to minimize the impact of development on the environment including, but not limited to, soil erosion and sedimentation, air pollution and water pollution.
- g. Preserve existing trees and vegetation.
- h. Promote landscape design which is both functional and aesthetically pleasing using plants which are indigenous and appropriate to the character of the Borough of Avalon.
- i. Ensure the provision of adequate water supply, drainage and stormwater management, sanitary facilities and other utilities and services.
- j. Promote the establishment of appropriate population densities including providing reasonable opportunity for the development of affordable housing.
- k. Protect the public health, safety and general welfare through the preservation of the Borough beaches and dunes.
- l. And, through the positive application of high standards of design and construction, contribute to the overall quality of the environment and to further the goals and objectives of the Borough's Master Plan and subsequent re-examinations and the purpose of the Borough's Zoning Ordinance.
(Ord. No. 603-2008 § 26-2)

26-3 GRANT OF AUTHORITY.

The Borough of Avalon Planning/Zoning Board has been established and empowered to oversee subdivision, commercial and residential development by authority of N.J.S.A 40:55D-1 et seq. (herein after referred to as the Municipal Land Use Law or MLUL), applicable New Jersey case law and as authorized by the Avalon Borough Code, specifically Chapter 25, Land Use Procedures.

All action taken by the Planning/Zoning Board (herein after referred to as the "Board") shall be in conformance with the Municipal Land Use Law and applicable chapters of the Avalon Borough Code, including but not limited to Chapter 26, Subdivision and Site Plan Review and Chapter 27, Zoning. Board membership and participation shall be

in accordance with Chapter 25, Land Use Procedures.

In the event that any portion of this chapter is determined to be in conflict with applicable Federal, State or local law, only said portion of the chapter shall be deemed invalid and the remaining portions of same shall remain in full force and effect.

Appeals of decisions made by the Board under the grant of authority set forth above shall be in accordance with the requirements of the Municipal Land Use Law and Chapter 27, Zoning, of the Avalon Borough Code. (Ord. No. 603-2008 § 26-3)

26-4 DEFINITIONS.

Acceptable Plant Materials List. Plant materials that may be used on projects which are the subject of an application for zoning permit or approval of a site plan or subdivision by the Board, and may be used in any residential project.

Administrative Officer. The Secretary of the Board in matters involving the Board; the Municipal Clerk in matters involving the Governing Body; the Zoning Officer in matters involving the issuance of zoning permits, zoning certificates of occupancy and Zoning Ordinance enforcement; and the Municipal Tax Assessor in matters involving lists of names and addresses of owners to whom an applicant is required to give notice pursuant to the Avalon Borough Code.

Application for Development. The application form and all accompanying documents required by ordinance for approval of a subdivision plat, site plan development, conditional use, zoning variance or direction of the issuance of a permit pursuant to N.J.S.A. 40:55D-34 or 40:55D-36.

Approving Authority. The Board for the Borough of Avalon.

Awning and Canopy. A temporary or portable roof-like covering that projects from the wall of a building for the purpose of shielding openings from the elements.

Banner Sign. Any sign intended to be hung either with or without frames, possessing characters, letters, illustrations, or ornamentation applied to paper, plastic, or fabric of any kind. National flags, flags of political subdivisions, and symbolic flags of any holiday, season, affiliation, institution, or business shall not be considered banners for the purpose of this chapter.

Beach Protection Ordinance. This refers to the "Beach Protection Ordinance" as codified in Chapter 23, Beach and Dune Protection, of the Avalon Borough Code.

Beacon lights. Any light with one (1) or more beams, capable of being directed in any direction or directions or capable of being revolved automatically.

Block. The land surface area enclosed by adjacent street or road right-of-way lines.

Block Paver. A cement based product that is produced with aggregate, sand, water and color dye and typically has a surface area less than one hundred (100) square inches.

Board. The Avalon Planning/Zoning Board of Adjustment.

Buffer. Open spaces, landscaped areas, fences, walls, berms or any combination thereof used to physically separate or screen one use of a property from another so as to visually shield or block noise, lights, or other nuisances.

Bulkhead. A vertical shore or waterway protection structure installed to withstand the forces of waves and currents.

Cabana. A building containing abilities for changing outerwear associated with a pool, beach, or watercourse. No plumbing or cooking facilities are permitted in a cabana structure.

Certificate of Occupancy. A document which shall be deemed to authorize, and be required for, each

occupancy and use of a building or land to which it applies. A certificate shall only be issued upon completion of construction or alteration or prior to any change in occupancy of a building or land, only after the Zoning Officer is satisfied that said construction or change is in full compliance with the requirements of the Borough of Avalon Code. Maintenance of a valid certificate of occupancy shall be the responsibility of the property owner.

Chapter 25. This chapter shall be known and may be cited as the "Land Use Procedures Ordinance of the Borough of Avalon," as amended.

Chapter 27. This chapter shall be known and may be cited as the "Zoning Ordinance of the Borough of Avalon, Cape May County, New Jersey," as amended.

Condominium. An individual residential or commercial unit in a multi-unit building wherein each unit owner also owns the common areas, such as the hallways and elevators, as a tenant in common with the other unit owners.

Contiguous Land. Land that immediately abuts the parcel in question.

Conventional Development. Any development other than planned development.

Cul-de-sac. A minor land service street, closed at one (1) end and having adequate vehicle turning area at the closed end.

Days. Calendar days.

Deciduous. Plants that drop their foliage annually before becoming dormant.

Deck, Attached. A raised exterior floor, attached to the principal structure, with a minimum height of eight (8) inches measured from grade. Attached decks may not occupy yard areas.

Deck, Detached. A raised exterior floor, detached from the principal structure, with a minimum height of eight (8) inches measured from grade. Attached decks may occupy yard areas.

Density, Gross. The number of dwelling units per acre for a given area that includes streets or other common or public open spaces.

Density, Net. The number of dwelling units per acre for a given area that excludes streets and other common or public open spaces.

Developer. The legal or beneficial owner or owners of a lot or of any land proposed to be included in an application for development, including the holder of an option for contract purchase or other person having an enforceable proprietary interest in such land.

Development. The division of a parcel of land into two (2) or more parcels; the construction, reconstruction, conversion, relocation or enlargement of any building or other structure; any mining, excavation or landfill; any use or change in use of any building or other structure or land; or extension of use of land for which permission may be required pursuant to N.J.S.A. 40:55D-1 et seq.

Development Permit. Any permit or certificate of occupancy required to be issued for any development regulated by the Avalon Borough Code Zoning Chapter, Subdivision and Site Plan Review Chapter or Official Map Ordinances.

Development Regulation. A Zoning Ordinance, Subdivision Ordinance, Site Plan Ordinance, Official Map Ordinance or other municipal regulation of the use and development of land or amendment thereto adopted and filed pursuant to N.J.S.A. 40:55D-1 et seq.

Drainage. The removal of surface water or groundwater from land by drains, grading, or other means including control of runoff to minimize erosion and sedimentation during and after construction or development and also including alleviation of flooding.

Drainage Right-of-Way. The lands required for the installation of stormwater sewers and/or drainage ditches or the land area required along a natural stream, swale or other watercourse for preserving the channel or drainage way and providing for the flow or passage of water therein to safe guard the public from flood damage in

accordance with the provisions of Avalon development regulations or applicable State laws.

Driveway. A paved area used for ingress and egress of vehicles and allowing access from the street to a building, structure, facility or use.

Duplex. A building containing two (2) single family dwelling units totally separated from each other by an unbroken wall extending from ground to roof.

Erosion. The detachment or movement of soil or rock fragments by water, wind, ice or gravity.

Evergreen. A plant with foliage that remains green year-round.

FEMA. Federal Emergency Management Agency.

Final Approval. The official action of the Board taken on preliminarily approved major subdivision or site plans after all conditions, engineering plans and other requirements have been completed or fulfilled and the required improvements have been installed or guaranties properly posted for their completion.

Flagpole. A tall staff or pole on which a flag is raised.

Floodplain. A land area adjoining a river, stream or other water body that is likely to be flooded.

Food Service Establishments. A business which has a primary objective for the sale of prepared food and/or beverages for consumption by its customers, including but not limited to, restaurants, bars, taverns, ice cream parlors and stands, candy stores, coffee shops, pizza parlors, hot dog stands, cafes, delicatessens, diners, bakeries and seafood stores.

Garage, Private. A building, or part thereof, accessory to a principal building, providing for the storage of automobiles owned by the occupants of the main building to which the garage is accessory, including one (1) commercial vehicle with a hauling capacity of no greater than one (1) ton.

Gazebo. A small freestanding roofed structure used for outdoor living, entertaining and dining which is usually open-sided to provide ventilation and shade.

Holiday Decoration Sign. Temporary signs, in the nature of decorations, clearly incidental to and customarily and commonly associated with any national, local, or religious holiday or observance.

Identification Sign. A sign giving the nature, logo, trademark or other identifying symbol; address; or any combination of the name, symbol and address of a building, business, development, or establishment on the premises where it is located.

Lagoon. A body of salt or brackish water separated from the ocean or bay by a land mass or manmade structure.

Landscape Plantings. Lawn, trees, shrubs, groundcover, perennials and ornamental grasses.

Loading Space. Any off street space, not less than twelve (12) feet in width, forty (40) feet in length and fifteen (15) feet in height, available for the loading or unloading of goods, having direct access to a street or other public way and so arranged that no vehicle is required to back into the public right-of-way.

Lot. A parcel of land above or below water, occupied by or which may be occupied by a building and its accessory buildings, and including yards and other open spaces required by this chapter.

Lot Area. The total area within the property lines of a lot, exclusive of any area within a street right-of-way.

Maintenance Guaranty. Any security which may be accepted by the Borough of Avalon for the maintenance of any improvements required under the terms of the development regulations codified in the Avalon Borough Code.

Major Subdivision. Any subdivision not classified as a minor subdivision.

Mean Sea Level. For the purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which base elevations shown on a community's Flood Insurance Rate Map are referenced.

Minor Subdivision. Any division of land satisfying the following criteria:

- a. A subdivision of land that does not involve:
 1. The creation of more than three (3) lots, inclusive of any reserved parcel or parcels.
 2. Planned development.
 3. Any new street.
 4. Extension of any off-tract improvement.
- b. In counting lots to determine whether or not a proposed subdivision is a minor subdivision.
 1. All lots to be created by the proposed subdivision, including reserved parcels, shall be counted.
 2. All properties created by prior subdivisions subsequent to January 6, 1960 (date of final adoption of first Land Subdivision Ordinance of the Borough of Avalon), out of the original parcel of contiguous land under common ownership as it existed on January 6, 1960 shall be counted.
 3. No lot shall be counted twice.

Monument. An identifiable, fixed marker intended to locate the corners of specific property points. Monuments shall consist of but not be limited to concrete or steel materials so as to retain permanency.

Municipal Agency. The Avalon Board, or Governing Body when acting pursuant to the provisions of the Avalon Borough Code pertaining to the development regulations.

NGVD. National Geodetic Vertical Datum of 1929 or other datum, to which base elevations shown on a community's Flood Insurance Rate Map are referenced.

N.J.A.C. New Jersey Administrative Code.

N.J.S.A. New Jersey Statutes Annotated.

Nuisance (Invasive) Plants. Any plant, tree, bush, flower, vine, vegetable or grass, whether indigenous or nonindigenous, which could tend to interfere with the orderly landscape of a property, cause physical damage to the property, cause an unwanted physical ailment to humans, has the potential to cause hazardous or dangerous conditions, interferes with or retards the natural growth of landscaped areas or tends to grow or spread in an uncontrollable manner.

Official Map. A map adopted by ordinance pursuant to N.J.S.A. 40:55D-32 through 40:55D-36.

Off-Site. Any area located outside the lot lines of the lot in question but within the property (of which the lot is a part) which is the subject of a development application or contiguous portion of a street or right-of-way.

Off-Tract. Any area not located on the property which is the subject of a development application or a contiguous portion of a street or right-of-way.

On-Site. Any area located on the lot in question.

On-Tract. Any area located on the property which is the subject of a development application or a contiguous portion of a street or right-of-way.

Outdoor Dining. An area outside the primary physical structure of a food service establishment designated for the consumption of prepared foods and/or beverages which is generally exposed to the elements and not temperature controlled, although canopies, overhangs, roofs, umbrellas and awnings are permitted.

Patio. A paved, unenclosed, roofless area at ground level. "Patios" may occupy portions of required side or rear yard areas.

Performance Guaranty. Any security which may be accepted by the municipality, including cash, provided that the Borough shall not require more than ten (10%) percent of the total "performance guaranty" in cash.

Pergola. A structure with a defined support system for an open roof, either attached to the building or freestanding. The roof must maintain a maximum opacity of seventy (70%) percent.

Perimeter Buffer. The boundary or border of a lot, tract, or parcel of land.

Planned Development. Planned unit development, planned unit residential development, residential cluster, planned commercial development or planned industrial development.

Plat. A map or maps of a subdivision or site plan.

Preliminary Approval. The conferral of certain rights pursuant to N.J.S.A. 40:55D-46, 40:55D-48 and 40:55D-49 prior to final approval after specific elements of a development plan have been agreed upon by the Board and the applicant.

Renewable Energy Source. An energy source generated from natural resources such as sunlight, wind, rain, tides or geothermal heat, which are naturally replenished.

Residential. The use of a building exclusive to the dwelling of individuals for housing purposes including sleeping, eating, cooking, bathing and sheltering.

Resubdivision. The further division or relocation of lot lines of any lot or lots within a subdivision previously made or approved or recorded according to law; or the alteration of any street or the establishment of any new streets within any subdivision previously made and approved or recorded according to law, but does not include conveyance so as to combine existing lots by deed or other instrument. The designation of a subdivision as a "resubdivision" shall be determined on the basis of the tract or parcel of land affected without regard to any change in ownership.

Right-of-Way Line. The boundary line of land used or intended for use as streets or other public way and from which required setbacks for front yard and lot depths shall be measured. Where existing records are vague or show a lesser dimension, they shall be considered to be not less than fifty (50) feet apart, or twenty-five (25) feet from the street centerline.

Riprap. A layer of loose rock, aggregate, bagged concrete, gabions or concrete revetment blocks placed over an erodable soil surface.

Roof Line. The juncture of the roof and the perimeter wall of the structure.

Runoff Coefficient. Dimensionless factor intended to reflect drainage or runoff characteristics including land use, impervious cover, soil type, etc. It represents the percentage of peak producing rainfall that will become runoff.

Shade Tree. A tree, usually deciduous, planted primarily for overhead canopy.

Shed. A small structure, either freestanding or attached to a larger structure, serving for the storage or shelter of personal property and no larger than one hundred fifty (150) square feet in area.

Shrub. A woody plant that is never tree-like in habit and produces branches or shoots from near the base.

Sight Distance. The length of roadway ahead visible to the driver.

Sight Triangle. The triangular area intended to remain free of visual obstructions to prevent potential traffic hazards formed by two (2) intersecting street lines or the projection of such lines located a designated distance from the intersection of the street lines in accordance with the American Association of State Highway and Transportation Officials (AASHTO), Policy on Geometric Design of Highways and Streets, latest edition.

Sign. Any object, device, display or structure, or part thereof, visible from the street or from any other property, situated outdoors or indoors, which is used to advertise, identify, display, direct or attract attention to an object, person, institution, organization, business, product, service, event or location by any means, including words, letters, figure, design, symbols, fixtures, colors, illumination or projected images.

Sign Area. The area of a sign which is computed by multiplying the greatest width of the sign face by the greatest height of the sign face. The sign area shall include the sign face and any framing, trim or molding, but

shall not include the supporting structure. See **Signable Facade Area**.

Sign Face. The area or display surface used for the message.

Sign, "A" Frame, (or Sandwich Sign). A portable sign capable of standing without support or attachment, which when viewed perpendicular to the message, resembles the shape of the letter "A".

Sign, Animated or Moving. Any sign or part of a sign, which changes physical position by any movement, or rotation or which gives the visual impression of such movement or rotation.

Sign, Awning. A sign that is mounted on, painted on, or attached to an awning that is otherwise permitted by this chapter.

Sign, Bench. A sign painted on, located on or attached to any part of the surface of a bench, seat, or chair placed on or adjacent to a public place or roadway.

Sign, Billboard. A sign which contains a commercial message and which directs attention to a business, commodity, service or entertainment conducted, sold or offered at a location other than the premises on which the sign is located.

Sign, Bus Shelter. A sign which contains a commercial message and which directs attention to a business, commodity, service or entertainment conducted, sold, or offered at a location other than the bus stop or bus shelter on which the sign is located.

Sign, Canopy. A sign that is mounted on or painted on, or attached to a canopy that is otherwise permitted by this chapter.

Sign, Changeable Copy. A sign that is designed so that characters, letters, or illustrations can be changed or rearranged without altering the face of or the surface of the sign. The only portions of the sign exempted from the prohibition on flashing are the areas or portion that display time and temperature.

Sign, Community Information. A sign which contains messages of civic groups, churches or places of worship, and local special events which directs attention to a church or place of worship, facility, event, club, or organization.

Sign, Construction. A temporary sign erected on the premises on which construction is taking place, during the period of such construction, indicating the names of architects, engineers, landscape architects, contractors, or similar artisans, and the owners, financial supporters, sponsors, and similar individuals, or firms having a role or interest with respect to the structure or project.

Sign, Directional and Informational. Signs limited to directional messages, principally for pedestrian or vehicular traffic, such as "one-way," "entrance," and "exit." Window signs such as those that indicate hours of operation, credit card acceptance, and business affiliations are considered as informational signs. No sign with a commercial message legible from a position on the street shall be considered directional or informational.

Sign, Directory. Signs listing the tenants or occupants of a building or group of buildings. The respective professions or business activities may also be included as part of the sign.

Sign, Facade. See **Sign, Wall**.

Sign, Freestanding. Any immovable sign not affixed to a building.

Sign, Home Occupation. A sign containing only the name and occupation of a permitted home occupation.

Sign, Illuminated. A sign lighted by or exposed to artificial lighting either by lights on or in the sign or directed towards the sign.

Sign, Inflatable. Any display or object capable of being expanded by air or other gas and used on a permanent or temporary basis to advertise a product or event.

Sign, Marquee. A sign that is mounted, or painted on, or attached to a marquee that is otherwise permitted by this chapter.

Sign, Memorial or Nameplate. Memorial signs or tablets, names of building and date of erection when cut into any masonry surface, integral to the construction of a building, or when constructed of bronze or other incombustible material mounted on the face of a building, bench or other structure.

Sign, Neighborhood Identification. Signs which identify any type of housing development, by name.

Sign, Nonconforming. Any sign that does not conform to the regulations of this chapter.

Sign, Off-Premise. See **Sign, Billboard.**

Sign, Open House. An on-premises sign which identifies that a realtor or homeowner is conducting an "open house" at that residence pursuant to a permit and under conditions set forth under subsection 26-7.21.

Sign, Open House Directional. An off-premises sign directing the public to a residence where a realtor or homeowner is conducting an "open house" pursuant to a permit and under conditions set forth under subsection 26-7.21.

Sign, Political. A temporary sign announcing or supporting political candidates or issues in connection with any national, State or local election.

Sign, Portable. A sign that is not permanent, affixed to a building, structure or the ground such as an "A" frame, sandwich, or swinger sign.

Sign, Projecting. A sign that is wholly or partly dependent upon a building for support and which projects more than twelve (12) inches from such building.

Sign, Real Estate. A sign pertaining to the sale, rent or lease of the premises, or a portion of the premises, on which the sign is located.

Sign, Residential. A sign located in a district zoned for residential purposes that does not contain any commercial message except for goods or services legally offered on the premises on which the sign is located. See **Sign, Home Occupation.**

Sign, Roof. A sign mounted on or above the roof of a building. A sign that projects above the top walk or edge of a building with a flat roof, above the eave line of a building with a gambrel, gable, mansard or hip roof.

Sign, Special Event. Any sign sponsored by the Federal, State, County or local government and any sign sponsored by an agency, nonprofit group, public fundraising event required to notify the organizers, participants or general public of an event, parade route or other route such as a run or walk for charity or other semi-public or public purpose.

Sign, Street Banner. Any banner sign which is stretched across and hung over a public right-of-way.

Sign, Suspended. A sign hanging down from a marquee, awning, canopy, porch, or roof overhang that would otherwise exist without the sign.

Sign, Swinger. A portable sign capable of standing without support or attachment, which when viewed perpendicular to the message, resembles the shape of the letter "T," inverted. In no case shall swinger signs be permitted to actually swing.

Sign, Temporary. A sign constructed of paper, cloth, canvas, plastic, plywood, or other lightweight material intended to be displayed for a short period of time, normally less than thirty (30) days.

Sign, Time and Temperature. A sign or a portion of a sign whose sole purpose is to indicate the time and/or temperature.

Sign, Vegetative. A sign affixed to ground plane or vegetation to identify the vegetation and/or commemorate a person or event.

Sign, Wall. A sign fastened to or painted on the wall of a building or structure in such a manner that the wall becomes the supporting structure for, or forms the background surface of the sign and which does not project more than six (6) inches from such building, or structure.

Sign, Window. A sign that is applied to or attached to the exterior or interior of a window or located in such manner within a building that it can be seen from the exterior of the structure through a window.

Sign, "Yard Sales." An on-premises sign which identifies that an owner/tenant is conducting a "yard sale" which means: all general sales open to the public conducted from or on a premises for the purpose of disposing of personal property, including but not limited to all sales entitled yard, lawn, garage, attic, porch, room, flea market, tag, trunk, estate, or rummage sale, at that residence pursuant to a permit and under conditions set forth under Section 26-7, Design Standards. Official, governmental or charitable sales are excluded.

Sign, "Yard Sales," Directional. An off-premises sign directing the public to residence where an owner/tenant is conducting a "yard sale" which means: all general sales open to the public conducted from or on a premises for the purpose of disposing of personal property, including but not limited to all sales entitled yard, lawn, garage, attic, porch, room, flea market, tag, trunk, estate, or rummage sale, at that residence pursuant to a permit and under conditions set forth under Section 26-7, Design Standards. Official, governmental or charitable sales are excluded.

Signable Facade Area. The rectangular, continuous area on the wall of a building, which extends from the top line of windows and doors on the first floor, and the bottom line of the second floor windows, roof, or cornice above, in an area that is uninterrupted by windows, architectural details, or openings.

Single-Family Dwelling. A building containing one (1) dwelling unit and that is not attached to any other building by any means and is surrounded by open space and yards.

Site Plan. A development plan of one (1) or more lots on which is shown, the existing and proposed conditions of the lot as noted in Section 26-5, Site Plan Exemptions, and any other information that may be reasonably required in order to make an informed determination pursuant to the development regulations chapters of the Avalon Borough Code.

Special Flood Hazard Area. The maximum area of the flood plain that, on the average, is likely to be flooded once every one hundred (100) years (i.e., that has a one (1%) percent chance of being flooded each year).

Streamers/Pennants. A temporary group of small decorative flags strung on a flexible cord or string designed to attract attention to the property for open house purposes.

Street. Any avenue, boulevard, road, parkway, viaduct, drive, or other way which is an existing State, County or municipal roadway; or is shown on a plat heretofore approved pursuant to law; or is approved by official action pursuant to N.J.S.A. 40:55D-1 et seq., or is shown upon a plat duly filed and recorded in the office of the County Clerk and includes the land between the right-of-way lines, whether improved or unimproved, and may comprise pavement, shoulders, gutters, curbs, sidewalks, parking areas and other areas within the right-of-way lines.

Street Trees. Trees planted in the street right-of-way, between the sidewalk and curblin or between the right-of-way line and the streetline.

Subdivision. The division of a lot, tract or parcel of land into two (2) or more lots, tracts, parcels or other divisions of land for sale or development. The following shall not be considered a "subdivision" within the meaning of this chapter if no new streets are created: divisions of property by testamentary or intestate provisions, divisions of property upon court order and conveyances so as to combine existing lots by deed or other instrument. The terms "subdivision" shall also include the term "resubdivision."

Swimming Pool or Spa, Residential Aboveground. A pool of any shape that has a minimum water depth of thirty-six (36) inches and a maximum water depth of forty-eight (48) inches at the wall. The wall is located on the surrounding ground and is capable of being dismantled or stored and reassembled to its original integrity. Diving and the use of a water slide are prohibited.

Swimming Pool or Spa, Residential Onground or Inground. A pool package whose walls rest fully on the surrounding ground and has an excavated area below the ground level. Diving and the use of a water slide are prohibited.

Terrace. A raised, level and unroofed platform of earth or concrete, supported by one (1) or more faces of masonry or wood support. "Terraces" may not occupy any required yard areas.

Townhouse. An attached, privately owned single-family dwelling unit, which is part of, and adjacent to other similarly owned single-family dwelling units that are connected to but separated from one another by a common party wall having no doors, windows, or other provisions for human passage or visibility.

Vacant Site. Unoccupied parcel of land having a runoff coefficient between 0.15 and 0.30.

Walkway. A passage or path designed for use by pedestrians.

Watercourse. Any area of land either naturally formed or artificially designed for the storage, passage, retention or flow of water, including but not limited to a lake, pond, stream, ditch, swale, canal, lagoon, bay or ocean.

Water Retention Structure. A structure intended for use in providing stormwater management control of rainwater to allow for partial storage and release of stormwater.

25-Year Storm. A storm having a four (4%) percent chance of occurring in any given year.

100-Year Storm. A storm having a one (1%) percent chance of occurring in any given year.
(Ord. No. 603-2008 § 26-4)

26-5 SITE PLAN EXEMPTIONS.

Site plan review and approval shall not be required for:

a. Applications involving only single-family and duplex buildings.

b. Accessory uses and structures when in conjunction with single-family and duplex buildings. These structures include but are not limited to fences, walls, garages, sheds, gazebos, cabanas, pergolas, above ground and in ground swimming pools, decks, patios, terraces, driveways, walkways and block pavers, and flag poles.

c. Any sign which conforms to all applicable zoning requirements or has been approved in connection with a site plan application before the Board.

d. The alteration or repair of an existing building or use when the Zoning Official determines that said alteration or repair:

1. Will not result in additional lot coverage.

2. Will conform to the minimum and maximum standards of the Avalon Borough Code, Chapter 27, Zoning.

3. Will not increase the number of required off-street parking spaces.

4. Is not proposed in connection with a use requiring conditional use approval in accordance with the Avalon Borough Code, Chapter 27, Zoning.

e. Applications for certificates of nonconformity in accordance with N.J.S.A. 40:55D-68.

f. Applications for pool drainage permits.

g. Applications for curb cut permits.

h. Applications for outdoor dining permits not requiring any variances.

(Ord. No. 603-2008 § 25-5)

26-6 APPLICATION REQUIREMENTS.

26-6.1 Requirements.

a. All development applications to be presented to the Board shall comply with the requirements of this section.

(50) feet, measured along the right-of-way line, shall separate the closer edges of any two (2) such driveways.

3. Width.

(a) All driveways and drive aisles accessing commercial developments shall provide a minimum width of twenty-four (24) feet. The maximum curb opening at the street shall be fifty (50) feet.

(b) All driveways accessing a single residential lot shall be a minimum of ten (10) feet wide.

(c) On corner lots a maximum two (2) curb cuts (driveways), each curb cut (driveway) on a different street. One (1) curb cut (driveway) with a maximum width of twenty (20) feet and a minimum width of twelve (12) feet and one (1) curb cut (driveway) with a width of twelve (12) feet.

(Ord. No. 603-2008 § 26-7.3)

26-7.4 Dunes.

Refer to the Avalon Borough Code Chapter 23, Beach and Dune Protection. (Ord. No. 603-2008 § 26-7.4)

26-7.5 Energy Conservation.

a. All subdivisions, site plans and development applications presented to the Board should be developed after consideration of the Borough's goals of energy conservation. All development plans should follow energy efficient design principals and make maximum use of renewable energy sources. The development plan should strive to have the lowest reasonable impact on natural features, topography and resources and to maximize recycling efforts.

b. Any proposed development should take advantage of existing topographical features to minimize disturbance of existing vegetation and other natural features. All development should be made with an attempt to adopt the concept of "green" building which is the practice of increasing efficiency with which buildings use resources (energy, water and materials) while reducing building impacts on human health and the environment through better siting, design, construction, operation and maintenance throughout the entire building life cycle. Development should attempt to reduce operating costs by increasing productivity and using less energy and water, improving public and occupant health through improved indoor air quality and reducing environmental impacts of the development.

c. Consideration should be given to the types of building materials to be used on the project including the use of recycled building materials, the use of building materials extracted or manufactured locally to minimize energy use in their transportation and the reuse of portions of a conforming structure in the event of partial or whole demolition. All development should include the installation of energy efficient equipment in its heating and cooling features and other electrical utilities incorporated into the structure. Energy efficient and reduced water toilets, dishwashers and washing machines should be used in the interior of structures and soaker and/or drip irrigation systems are required. (Ord. No. 603-2008 § 26-7.5)

26-7.6 Environmental Concerns.

a. All lands subject to flooding shall be developed to adequately alleviate the flooding.

b. All development shall coordinate its design with the Soil Conservation District in the interest of avoiding any unnecessary water or airborne soil erosion.

c. All development shall be designed to retain existing noninvasive and non-nuisance vegetation on-site to the maximum extent possible.

d. Nuisance/invasive vegetation shall be removed to preserve the landscape in its natural state insofar as possible. Landscaping of the existing site shall be improved according to high standards of conservation and environmental protection in keeping with the surrounding natural setting. The development plans shall demonstrate the avoidance of unnecessary alteration of existing topography or the removal of vegetation and shall propose development that will otherwise respect the established natural conditions of the site and its surroundings.

e. Bulkhead construction shall conform to applicable standards and specifications contained in the Avalon Borough Code Chapter 20, Section 20-9, Bulkheads, and shall be subject to review in conjunction with the DEP

permit by the Construction Department and the Board Engineer.

f. Required seeding, sodding, water retention structures, rip-rapping or other measures necessary to carry out a soil erosion and sedimentation control plans approved by the Soil Conservation District shall be made subject to the provisions of adequate performance and maintenance guarantees.

g. All development shall be designed to properly address all other environmental agency and permit requirements, including Coastal Area Facilities Review Act (CAFRA), Waterfront Development, Freshwater Wetlands, Coastal Wetlands, Dunes, etc.
(Ord. No. 603-2008 § 26-7.6)

26-7.7 Fences.

a. Fences shall be constructed of material highly resistant to weather and decay.

b. Fences may be erected upon a lot in a residential zone where said lot abuts a public or commercial zone, provided that:

1. Such fence or wall may be erected along the boundary, and such fences or walls need not comply with side or rear yard setbacks.

2. New material shall be wood, decorative finished masonry, vinyl, plastic or metal. The use of barbed, strand or chicken wire is specifically prohibited. Woven mesh of the type known as "chain link" is permitted, provided it is vinyl coated.

3. Fences or walls may be solid but may not exceed six (6) feet in height.

c. Fences shall be no higher than four (4) feet within the front yard and along the lot frontage.

d. The general design, form and materials of fences shall relate to the overall design and materials utilized for other structures on the site and be aesthetically pleasing from all sides.
(Ord. No. 603-2008 § 26-7.7)

26-7.8 Fire Protection.

a. All development within the Borough must be done in accordance with all applicable construction regulations including Uniform Construction Code and completed to the satisfaction of the Construction Officer and fully compliant with all applicable fire safety regulations.

b. In addition, all applications to be submitted to the Board for review shall also be submitted by the applicant to the Borough Fire Subcode Official and Borough Fire Chief prior to the scheduled hearing to afford for a fire safety review of the development project by an experienced professional. This review should include whether the development provides for appropriate access to firefighting and emergency vehicles and equipment, whether fire lanes or no parking areas are required and whether the property is sufficiently serviced by fire hydrants and/or fire suppression systems.

c. Failure of the Fire Subcode Official and Borough Fire Chief to submit a review letter or report to the Board shall not be cause for delay or disapproval of the application.
(Ord. No. 603-2008 § 26-7.8)

26-7.9 Grading.

a. All development shall be designed and graded to utilize existing topographic features to minimize disturbance of existing vegetation and other natural features.

1. All development shall be graded to direct stormwater away from adjacent properties and towards on-site stormwater facilities or towards the street.

2. All grading for single-family homes or duplexes shall be a minimum of one-half (0.5%) percent and a maximum of one (1%) percent measured from the rear lot line to the top of the curb or sidewalk whichever is highest.

3. All grading for any other development shall have a minimum grading of one-half (0.5%) percent.
4. All topographic information shall be based on NAVD 88 vertical datum.
(Ord. No. 603-2008 § 26-7.9; Ord. No. 675-2013 § 4)

26-7.10 Landscaping.

Editor's Note: The Acceptable Plant Material List can be found at the end of Chapter 26.

a. All land subdivision and development, shall comply with the minimum landscape architectural standards set forth herein, or provide a more appropriate design relative to the specific aspects of a particular site or development proposal with the approval of the Board or the Zoning Officer. Applications for zoning permits shall comply with the requirements specified in Chapter 27, Zoning, subsection 27-7.3t., Landscaping. For major site plans and subdivisions, the Board may require additional landscape development as per the standards set forth herein are required. All landscape development should be designed to enhance the visual quality of the site and adjacent properties; provide safe vehicular and pedestrian circulation; protect against potential natural and manmade hazards; and enhance the microclimate of areas for human activity; in a manner which will promote the public health, safety and general welfare.

b. Required plant materials should conform to the Borough of Avalon Acceptable Plant Material List, as maintained by the Avalon Environmental Commission. Alternate species may be utilized where the applicant can demonstrate suitability of the plant material to the Board or Zoning Officer. Furthermore, nothing herein is to be interpreted as precluding any applicant from planting additional trees, shrubs, grasses, or flowers.

c. *Streetscape.* Landscape architectural development of the streetscape shall be provided in conjunction with all development, on all existing and proposed streets upon which the site has or creates frontage.

Improvements consistent with one (1) of the following streetscape concepts, or an alternative concept of more appropriate design, shall be provided.

1. **Formal Tree-Lined Avenue.** This type of street tree planting is appropriate for the majority of streets within the Borough with the exception of properties governed by the Business Districts Streetscape requirements provided herein. The following standards shall apply:

(a) Shade trees shall be provided along all street frontages within the shade tree planting area provided between the sidewalk and the curb, at a distance between trees of thirty (30) feet. Where less than three (3) exists between the curb and sidewalk, the trees shall be planted on the house side of the sidewalk, two (2) feet from the edge of sidewalk, and shall not interfere with utilities, roadways, sidewalks, street lights, sight distances and driveway aprons. Whenever possible, street trees shall be located within the street right-of-way.

(b) The number of street trees shall be calculated assuming that the first tree shall be located within ten (10) feet of the property line.

(c) No tree shall be planted closer than ten (10) feet from an existing tree on an adjacent lot.

(d) All required street trees shall have a minimum caliper size of three (3) inches, measured three (3) feet above the ground, and shall have a single stem with no branches lower than six and one-half (6.5) feet above grade.

(e) Subsequent or replacement trees shall conform to the type of existing tree in a given area, provided that, if any deviation is anticipated, it must be done only with the written permission from the Zoning Officer or by the Board.

(f) Only one (1) species of street tree may be used on a given project, unless otherwise approved by the Board or Zoning Officer. Street trees for infill or single lot development shall, to the greatest extent feasible, provide similar species of trees as may exist on adjacent or nearby lots to create a visually unified streetscape.

2. **Business Districts Streetscape.** This type of streetscape development is required along street frontages for projects located within the B-1, B-2, R-M (Hotel-Motel) and M-B Zoning Districts, or as otherwise deemed

appropriate by the Board. The objective shall be to provide street trees, paving, benches, lighting and other amenities to create an ample, well-defined, unified and distinct pedestrian corridor along the streetscape. The following standards shall apply:

(a) Street trees shall be provided within the right-of-way in planting areas of at least twenty four (24) square feet in surface area. An acceptable ground cover or low shrub mass planting shall be provided in all planting areas.

(b) Street trees shall be Aristocrat or Cleveland Select Pears, *Pyrus calleryana* "Cleveland Select," "Chanticleer" or "Aristocrat," spaced at thirty (30) feet on center, or other species or spacing as determined appropriate by the Board or Zoning Officer in consideration of the locations of any existing driveways, utility poles or existing street trees on adjacent lots.

(c) All required trees shall have a minimum caliper size of three (3) inches, measured three (3) feet above the ground and shall have a single stem with no branches lower than six and one-half (6.5) feet above grade.

(d) For lots fronting on Dune Drive, a walkway shall be provided within the right-of-way with a minimum clear width of six (6) feet. The Dune Drive Business District Streetscape Improvements are those improvements located on Dune Drive between 19th Street and 33rd Street, and includes sidewalks, crosswalks, street trees, benches, etc. In areas where site furnishings are required or provided, the walk width shall be widened to accommodate these amenities.

(e) For lots fronting on Dune Drive, the sidewalks shall be continued across all ingress and egress drives as a crosswalk, creating a well-defined continuous pedestrian walkway. The pavement thickness shall be increased in these areas to accommodate the vehicular traffic, and shall be subject for approval by the Board.

(f) For lots fronting on Dune Drive, site furnishings such as benches, decorative pedestrian scale lighting, kiosks, clocks, trash and recycle receptacles, bicycle racks, ash urns, planters and flagpoles shall be provided where appropriate, as required by the Board.

d. *Open Space.* As a landscape feature and asset, open space is encouraged in all major site plan and subdivision development, even when not specifically required. The objectives of the landscape treatment of open space is to provide the opportunity and space for active and passive recreation in all areas of human activity and residence, to protect and enhance the Borough's natural amenities such as the bay and ocean, dunes, and mature vegetation areas, and to retain or create a visually pleasing image of the Borough of Avalon. The following standards shall apply:

1. *Preservation Open Space.* This type of open space is appropriate in areas adjacent to and inclusive of natural amenities to be preserved, such as wooded areas, the bay or ocean, dunes, wetlands, etc. This type of open space shall be either deed restricted from future development by conservation easements or dedicated to the Borough or another public or quasi-public agency or organization. The following standards shall apply:

(a) During the site planning process significant or unique natural amenities should be preserved where practical.

(b) All trash, debris and undesirable materials should be removed from the upland open space areas, including noxious invasive plant species such as multi-flora rose, phragmites and poison ivy.

(c) The Board may require the provision of improvements such as pedestrian paths, picnic areas and planting when appropriate to create a visually pleasing and beneficial environment.

(d) These areas shall be planted in accordance with the green space planting requirements of this chapter which may be found in subsection 26-7.10g.

2. *Recreational Open Space.* The landscape architectural design of these areas shall address safety, visual interest, microclimate and use. The following standards shall apply:

(a) Site amenities and walkways shall be provided as required by the Board. Improvements for

residential open space may include tennis courts, picnic areas and/or pavilions, children's play equipment, public access docks, seating and open lawn for play. Outdoor sitting and eating areas/plazas are appropriate for commercial, office and mixed-use developments.

(b) These areas shall be planted in accordance with the green space planting requirements of this chapter which may be found in subsection 26-7.10g.

(c) If a recreation area fronts on a street, a fence or other protective measures shall be integrated to provide physical separation and protection of pedestrians.

e. *Landscape Buffers.* Landscape buffers are plantings, landform, fences, or walls, or a combination thereof, provided within a required buffer area as designated in this Chapter 26 or Chapter 27, Zoning, or as necessary to visually soften, screen, or enhance views, and minimize or separate any adverse impacts or nuisances on a site from adjacent properties or roads. The applicant's design professional(s) and the Board should consider the dimension of the landscape buffer area, existing vegetation, structures and topography along with the intensity and type of land use involved relative to these standards to determine the appropriate landscape buffer. The Board may require a more or less intensive landscape buffer planting if appropriate. The following standards are provided for particular types of buffer areas:

1. Nuisance Buffer. This type of landscape buffer is appropriate in buffer areas provided between residential and nonresidential zones or uses, or between multifamily residential zones or uses and single-family zones or uses, where a continuous visual screen is appropriate. The following standards shall apply:

(a) All existing trees and understory vegetation should be preserved where feasible, and the plans must specify appropriate grading and tree protection details to assure the preservation of the vegetation. The plans must clearly indicate all vegetation to be preserved and removed. If the Board deems it appropriate, supplemental planting shall be provided to provide a complete visual screen. Quantities and types of supplemental plantings must respond to the deficiencies of existing vegetation and complement the existing vegetation and the overall design, and must be indicated on the landscape plan. All supplemental plantings shall comply with the size requirements of paragraph (c) below.

(b) Areas lacking sufficient vegetation shall receive landscape architectural treatment including planting, berming, fences or walls as appropriate. Berms, fences or walls shall be provided at a height of four (4) feet to six (6) feet, or as necessary to provide a visual screen, with the approval of the Board. The general design, form and materials of fences, walls and berms should relate to the overall design and the materials utilized for other structures on the site and be aesthetically pleasing from all sides.

(c) Planting shall be provided in conjunction with berms, fences or walls or may be provided solely to create a complete visual screen and visually interesting and pleasing area, in accordance with the quantities and minimum sizes below. If berms, fencing or walls are provided, a decreased quantity of planting may be provided at the discretion of the Board. For every one hundred (100) linear feet of buffer area, measured at the longest line, the following shall be provided:

<i>Type</i>	<i>Quantity</i>	<i>Minimum Size</i>
Evergreen trees (Large Scale pyramidal)	12	8' height
Shade trees	3	3" caliper
Ornamental trees	As required	6' height
Shrubs	As required	2' height

Where narrow, upright evergreen trees are utilized such as red cedar or arborvitae, the evergreen tree quantity shall be increased to twenty-four (24) per one hundred (100) linear feet of buffer area.

2. Filtered Buffer. This type of landscape buffer is appropriate in buffer areas or green space which is provided to soften the impact of a land use yet still allow views beyond the buffer area. In particular, this type of buffer shall be provided around the perimeter of all parking areas, internal site access roads or lanes and the perimeter of a site which abuts a street or road, or an adjacent similar use site and a complete visual screen is not appropriate. The buffer shall be provided to screen unsafe distractions such as glare from car headlights and light standards; to provide a visually pleasing environment; and to provide spatial definition to avoid confusion. The

following standards shall apply:

(a) All existing trees and under story vegetation should be preserved where feasible, and the plans must specify appropriate grading and tree protection details to assure the preservation of the vegetation. The plans must clearly indicate all vegetation to be preserved and removed. If the Board deems it appropriate, supplemental planting should be provided to provide a filtered visual screen. Quantities and types of supplemental plantings must respond to the deficiencies of existing vegetation and complement the existing vegetation and the overall design and must be indicated on the landscape plan. All supplemental plantings shall comply with the size requirements of paragraph (c) below.

(b) Areas lacking sufficient vegetation shall receive landscape architectural treatment, including plantings, berming, fences or walls as appropriate. Berms, fences or walls should be provided at a height of two (2) to four (4) feet as necessary to provide an appropriate buffer. The general design, form and materials of fences, walls and berms should relate to the overall design and the materials utilized for other structures on the site and be aesthetically pleasing from all sides.

(c) Planting shall be provided in conjunction with berming, fencing or walls or may be provided solely to create an appropriate screen and a visually interesting and pleasing area emphasizing appropriate views. Parked vehicles shall be buffered as viewed from all areas outside of the parking area. If berms, fencing or walls are provided, a decreased quantity of planting may be provided at the discretion of the Board. For every one hundred (100) linear feet of buffer area, measured at the longest line, the following shall be provided:

<i>Type</i>	<i>Quantity</i>	<i>Minimum Size</i>
Evergreen trees	As required	6' height
Shade trees	4	3" caliper
Ornamental trees	As required	6' height
Shrubs	55	2' height

3. Windbreak/Heavy Screening Buffer. This type of buffer is appropriate in buffer areas where a windbreak is necessary to stop wind borne debris from leaving a site, or around objectionable facilities or utility structures where a dense complete visual screen is appropriate. This would include buffer areas around outdoor storage facilities, loading areas or solid waste disposal facilities (dumpsters) or when an undersized buffer area is provided and the standards specified for a nuisance landscape buffer, are not sufficient at the discretion of the Board of jurisdiction. The following standards shall apply:

(a) Provide a fence, wall, berm or planting which will create a dense complete visual screen. The height of the fence, wall or planting should be designed relative to the facility being screened and shall be subject to the approval of the Planning/Zoning Board. The general design, form and materials of fences or walls should relate to the overall design and the materials utilized for other structures on the site or the neighborhood and be aesthetically pleasing from all sides. Planting shall be included in conjunction with any fence or wall.

(b) If planting alone is provided, then a double staggered row of dense evergreen plants shall be specified. The spacing between individual plants shall be as necessary to provide a continuous hedge with plants touching at the time of installation. The installed and mature height of the plants must respond to the height of the area or facility being screened and the views from adjacent areas and shall be subject to the approval of the Planning/Zoning Board.

(c) The plan submission must include an illustrative section drawing demonstrating the effectiveness of the buffer.

f. *Parking Areas.* The landscape architectural treatment of all parking areas shall be designed to promote safe and convenient circulation; to avoid vehicular/pedestrian conflicts; to limit paved areas; to provide shade and reduce heat island effects; and to soften the overall visual impact of parking areas. The design of all parking areas shall comply with the requirements of this Chapter 26 and Chapter 27, Zoning, off-street parking and loading areas, with landscape architectural treatment as follows:

1. Shade trees within the parking area shall be provided at a minimum rate of two (2) trees for every ten (10) parking spaces. The preservation or relocation of existing trees greater than four (4) inches diameter at breast height (dbh) or four and one-half (4.5) feet is encouraged to meet this requirement. Landscape buffer or street tree plantings are not to be considered to satisfy this requirement. In the islands provided at the end of individual rows of parking spaces between access roads or aisles, planting shall be provided to buffer the view of parked cars, provide shade and cover the ground plane. The use of excessive quantities of unplanted stone or bark mulch shall be avoided.

Shade trees shall have a minimum caliper size of three (3) inches, measured three (3) feet above the ground and shall have a single stem with no branches lower than six (6) feet above grade. Shrubs shall be two (2) to two and five-tenths (2.5) feet in height.

The spacing of shrubs provided as a buffer shall be as necessary to provide a continuous hedge or mass with plants touching at the time of installation; species shall include, but not be limited to: euonymus alatus compactus; myrica pensylvanica; ilex glabra compacta; or any other species approved by the Board.

2. Pedestrian/vehicular conflicts shall be minimized through design, yet, when necessary, clearly defined by a change of vehicular and pedestrian paving and plant materials. Where possible, integrated landscape islands with walks shall be provided in front of building entrances.

3. Parking lot lighting should be sited within landscape islands, and should be cut-off fixtures that direct light downward, and shall be aimed so as to project their output straight down, unless otherwise approved. Trees shall not hinder safe lighting coverage. Tree varieties and light photometrics and locations shall be considered. A mix of shade trees and evergreens should be used to reduce glare during all seasons to adjacent properties, buildings and roadways.

4. Parking decks or structures shall receive landscape treatment that softens the bulk and scale of the structure and screens the ground level cars from public roads, on-site residences and uses, and from adjacent uses. Raised deck level planting shall be treated similarly to a parking lot on grade.

g. *Green Space.* All development shall address the planting of green space in accordance with the standards set forth herein or another appropriate manner. The provision and planting of green space shall be provided on fifteen (15%) percent of the cleared portion of any residential or commercial property and shall be planted with trees, grasses, shrubs, and vegetative groundcover.

In the site planning process, the provision and landscaping of green space or planting areas for multifamily, commercial or mixed-use development should be considered to enhance the visual quality of a site and provide spatial or directional definition as follows:

1. A planted area shall be provided around all buildings as appropriate relative to the architecture, anticipated use and to limit pavement to that necessary for access and appropriate use.

2. To provide immediate buffering, visual relief, and scale for large buildings, (buildings of ten thousand (10,000) square feet or more), large trees shall be provided near the building perimeter. The quantity of trees shall be equal to one (1) tree for every forty (40) feet of general building perimeter, and trees shall be planted within thirty-five (35) feet of the building.

(a) The tree size shall be based upon the height of the building as follows:

<i>Building Size (stories)</i>	<i>Minimum Tree Size</i>
1 to 2	3" caliper
3	3.5" caliper
4 or more (where permitted by zoning)	4" caliper

(b) The trees shall be located in a manner consistent with the building architecture and site design, and shall provide maximum visual impact. Preserved or relocated existing vegetation may be utilized to meet this requirement.

3. Trees shall be planted throughout a site in accordance with the following:

(a) Deciduous trees with a minimum size of three (3) inches caliper and/or evergreen trees at six (6) to eight (8) feet in height.

(b) Existing vegetation areas which are adequately protected and preserved during and subsequent to construction, may be deducted from the quantity of required trees.

(c) Only mature upland forest containing a predominance of trees three (3) inches in diameter at breast height (dbh), which are located on the property being developed, shall be considered for credit of this requirement.

(d) An accurate limit of existing woodland areas, clearing limits and proposed planting locations shall be indicated on the landscape plan, individual plot plan or site plan, and must be submitted to the Board or Zoning Officer prior to approval.

(e) In residential and nonresidential developments, all areas of the site not occupied by buildings and required improvements shall be appropriately landscaped with grasses or other ground cover, shrubs and trees as part of the landscape plan approved by the Planning/Zoning Board. Planting of trees along streets and in front yard areas shall be provided as required by ordinance and as necessary to create a harmonious, pleasant view from all roads. The use of extensive unplanted stone or bark mulch beds shall be avoided. Planting sizes shall be in accordance with the provisions of the green space requirements of this paragraph g.

h. *Maintenance.* Maintenance of landscape areas is a crucial part of any land development and must be addressed for all common areas of residential development and all commercial development. Specifications for the perpetual maintenance of all outdoor areas on a site to assure a safe and attractive environment and to promote healthy growth of all plant materials shall be provided.

i. *Irrigation.* The irrigation type must be shown under normal circumstances not to discharge water onto the sidewalk or into the street. Where irrigation is provided, rain sensors or soil moisture sensors are required to conserve water by reducing the unnecessary over-watering of plantings.

j. *Selective Clearing and Protection of Vegetation.* The preservation of existing vegetation is a crucial component in accomplishing the goals of this chapter. In order to maximize the opportunity to incorporate significant areas of existing vegetation into the design of the development, and to minimize damage to said areas during and subsequent to construction, the following standards shall apply:

1. A permit shall be required before a property can be cleared of forty (40%) percent or more of any vegetation. An exception will be for the removal of dead vegetation or nuisance plants such as, but not limited to, poison ivy, poison oak, poison sumac and phragmites.

2. An owner or developer shall remove only such trees, vegetation and underbrush as is necessary to construct and install the structure and improvements authorized by the Board or Zoning Officer in the case of a single- or two-family residential unit. All sites shall be developed, to the greatest extent possible, in a manner that will result in the least amount of disturbance to the natural state.

3. A developer is permitted to perform selective clearing to remove trees, underbrush and undesirable vegetation, within six (6) feet from the outside of the exterior wall of the proposed structure and where determined by the Planning Board or Zoning Officer in the case of a single- or two-family residential unit, as practical for the location of utilities, parking areas, and other structures. Dead, damaged trees, underbrush, and undesirable vegetation may be removed from other areas of the property. The areas and extent of selective clearing must be clearly indicated on the plan of the development and/or the grading and landscape plan. All selective clearing must be approved prior to the commencement of any clearing. The site boundaries and limits of proposed improvements must be accurately staked out on the site for this review and approval.

4. There shall be minimal disturbance to the root zones of all existing vegetation that is proposed to remain. Existing vegetation shall be protected by the construction of a four (4) foot high wood snow fence at the drip line of the trees proposed to remain, or at the limit of disturbance.

5. All selective clearing operations shall be performed in strict accordance with all applicable State, Federal and local regulations. All cleared material, including but not limited to refuse and other deleterious

matter, shall be removed from the site and disposed of in a sanitary landfill licensed by the State of New Jersey to accept such waste. Vegetative materials consisting of trees, branches, stumps, and brush which are removed may be recycled for use as mulch or wood chips at an appropriate facility licensed by the State of New Jersey. (Ord. No. 603-2008 § 26-7.10; Ord. No. 695-2013 § 3; Ord. No. 703-2014 § 2)

26-7.11 Lighting.

a. All new development shall provide adequate lighting for site safety and security. All site plan applications shall include plans for proposed exterior lighting. These plans shall include the location, type of light, radius of light and intensity in footcandles.

b. All area lighting shall provide translucent fixtures with shields around the light source. The light intensity provided at ground level shall have a minimum of five-tenths (.5) footcandle over all parking and pedestrian walkway areas. Light intensity at residential property lines shall not exceed one-tenth (0.1) footcandle. All lights shall be properly shielded to prevent glare or illumination on adjacent land uses.

c. All other outdoor lighting shall be shown on the site plan in sufficient detail to allow determination of the effects at the property line and on nearby streets, driveways and residences. No lighting shall shine directly on nor reflect neither into vehicle windows nor onto streets and driveways in such a manner as to interfere with driver vision. No lighting shall be of a yellow, red, green or blue beam, nor be of a rotating, pulsating, beam or other intermittent frequency. The intensity of such light source, light shielding, the direction and reflection of the lighting and similar characteristics shall be subject to site plan approval by the Board. The objective of these specifications is to minimize undesirable off-site effects.

d. The style of lighting fixtures and their standards shall be consistent with the architectural style of the principal building. The height of lighting shall be in scale with the height of the principal building and shall not exceed twenty-five (25) feet.

e. Lighting shall be located along streets, parking areas and at all intersections. In addition, all building entrances and exits shall be lighted, and all sidewalks, pedestrian ways and bicycle paths shall have low type structures. Freestanding lights shall be located and designed so as not to be easily damaged by vehicles or to be a roadside safety hazard.

(Ord. No. 603-2008 § 26-7.11)

26-7.12 Loading/Unloading Zone.

a. Off-street loading/unloading zones of such size and number in compliance with any prevailing requirements or supplementary regulations contained in Chapter 27, Zoning, shall be required in connection with and convenient to uses projected for the site development.

b. All required off-street loading zones shall be furnished with necessary vehicular maneuvering area and driveways providing efficient access either directly or indirectly to a public street. Access to the loading/unloading zone shall be a minimum of sixteen (16) feet in width.

1. Entrances and exits for all required loading zones shall be located not less than thirty (30) feet from an intersection involving a public street. No off-street loading zone shall be so located that a vehicle would be required to back into a street.

c. All loading areas shall be provided with adequate setbacks, fencing or natural barriers to effectively prevent any noise, glare or other nuisance emanating therefrom to unduly interfere with the peaceful use and enjoyment of adjoining residential public or private institutional uses in accordance with the landscaping section of this chapter.

d. All required off-street loading zones shall be surfaced with a compacted course of material, thickness and grade specified by the Board Engineer. The thickness of the base course shall be determined on the basis of expected use. All off-street loading zones shall be surfaced with asphalt or Portland cement concrete and to thicknesses specified by the Board Engineer.

e. Any loading space shall be properly striped and be not less than twelve (12) feet wide, forty (40) feet long and fifteen (15) feet of clear height.

c. The provisions, regulations and standards set forth in this chapter are considered minimum requirements for the protection of the public health, safety and welfare of the citizens of the Borough of Avalon. Any action taken by the Board or Administrative Officials of the Borough of Avalon under the terms and conditions of this chapter shall be in primary consideration to the policies, proposals and limitations contained in the Master Plan and to the objectives, standards and requirements of this chapter and to the welfare of the entire community.
(Ord. No. 603-2008 § 26-10)

ACCEPTABLE PLANT MATERIAL LIST

(Subsection 26-7.10)

The survival of most types of plant life is difficult on a barrier island community such as Avalon. Vegetation has to contend with nutrient poor, sandy soils, frequent northeast storms, strong west winds and salt-laden air. These conditions make it difficult for most vegetation to develop and mature. Vegetation of all types, especially trees and shrubs, enhance absorption of run-off back into the soil, reduce air pollution, and aid transpiration. Trees and shrubs reduce the perception of noise and act as a windbreak. Accordingly, conservation of these natural resources is in the public interest, satisfies the purposes of zoning, and benefits those who dwell on the island.

Acceptable Plant Materials

The following plant materials may be used on projects which are the subject of an application for zoning permit or approval of a site plan or subdivision by the Board, and may be used in any residential project:

Shade Trees (Species underlined are permitted for use as street trees.)

- Aristocrat or Cleveland Select Pear (*pyrus calleryana* 'Aristocrat' or 'Cleveland Select')
- Bald Cypress (*taxodium distichum*)
- Blackgum (*nyssa sylvatica*)
- N Downy Serviceberry (*amelanchier arborea*)
- Green Vase Japanese Zelkova (*zelkova serrata* "Green Vase")
- N Hackberry (*Celtis occidentalis*)
- Lavalle Hawthorne (*crateagus X lavellei*)
- **N Pin Oak (*quercus palustris*)
- Regent Japanese Scholar Tree (*sophora japonica* "Regent")
- Shadblow Serviceberry treeform (*amelanchier canadensis*)
- N Sweetgum (*liquid amber rotundifolia*)
- **N Tulip Tree (*liriodendron tulipifera*)
- **N Willow Oak (*quercus phellos*)

Evergreen Trees

- American Arborvitae (*thuja occidentalis*)
- American Holly (*ilex opaca*)
- Atlantic White Cedar (*chamaecyparis thyoides*)
- N Eastern Red Cedar (*juniperus virginiana*)
- Japanese Black Pine (*pinus thunbergiana*)
- Juniper – Upright (*juniperis chinensis* spp. Or *Robusta Green*)
- Leyland Cypress (*cupressocyparis leylandii*)
- Pitch pine (*pinus rigida*)
- Swiss Stone Pine (*pinus cembra*)
- White Fir (*abies concolor*)

Shrubs

- N Arrowwood (*viburnum dentatum*)
- N Bayberry (*myrica pennsylvanica*)

- N Beach Plum (*prunus maritima*)
- Blackhaw (*viburnum prunifolium*)
- Butterfly Bush (*buddleia davidii*)
- Carolina Rose (*rosa carolina*)
- Chinese Juniper (*juniperus chinensis & cultivars*)
- Common Lilac (*syringa vulgaris*)
- Common Waxmyrtle (*myrica cerifera*)
- ** Crepe Myrtle (*lagerstroemia indica*)
- N Groundsel (*baccharis halimifolia*)
- Hydrangea (*hydrangea macrophylla & cultivars*)
- Inkberry (*ilex glabra & cultivars*)
- Privet (*ligustrum ovalifolium*)
- N Red Chokeberry (*aronia arbutifolia*)
- Rugosa Rose (*rosa rugosa*)
- Shore Juniper (*juniperus conferta & cultivars*)
- N Summersweet (*clethra alnifolia & cultivars*)
- N Winterberry Holly (*ilex verticillata*)

**Moderate salt tolerance, use in protected areas only.

N – Native plant

Plant specifications:

1. Plants shall be typical of their species and variety, have normal growth habits, well developed branches and vigorous root systems, and be densely foliated, and shall be free from defects, injuries, diseases and infestation.
2. Quality, branching and size of plants, including root size, shall be in accordance with "American Standards for Nursery Stock" ANSI Z60 (Most Recent Edition) as published by the American Association of Nurserymen.
3. Street and parking lot trees shall be pruned of any branches that interfere with pedestrians, vehicles or signs. Street trees must be single trunk, full and uniform specimens.
4. Street trees shall have a single stem with no branches lower than the height specified in the chapter.
5. Street tree and shade tree caliper sizes shall be measured six (6) inches above the ground for specimens up to, and including 4" caliper, and measured twelve (12) inches above the ground for specimens greater than 4" caliper, in accordance with the latest edition of the American Standard for Nursery Stock (ANSI Z60.1)

Invasive and nuisance plants:

The following is a partial list of plants that have been designated as invasive, i.e., they tend to spread rapidly, or nuisance plants. It is not recommended that they be used in any proposed planting program:

- Asian Bittersweet (*celastius orbiculatus*)
- Danes Rocket (*hesperis matronalis*)
- English Ivy (*hedera helix*)
- Japanese Barberry (*berberis thunbergio*)
- Mimosa (*albizia julibrissin*)
- Norway Maple (*acer platanoides*)
- Purple Loosetrife (*lythrum salicaria*)
- Russian Olive (*eleagnus angustifolia*)
- Wisteria (*wisteria frutescens*)

Because of the ability of the following plants to spread at an extremely fast rate they are not to be used in any garden locations:

- Bamboo (*dendrocalamus*)

Bamboo, hardy (*arundinaria, bambusa*)
Japanese Sedge (*carex kolomugi*)
Kudzu-vine (*pueraria montana*)
Mile a Minute Vine (*polygonum perfoliatum*)
Phragmites (*phragmites australis*)

Administration and Applicability:

All development shall comply with the provisions of this Chapter.

For one and two-family residential developments, a landscaping and vegetation plan for the parcel in question must be submitted, reviewed, and approved by the Zoning Officer or designated official, prior to the issuance of a zoning permit for any of the following development:

1. Additions to an existing structure and/or site improvements which increases the impervious coverage of the lot by more than 250 square feet.
2. The construction of a new dwelling unit or any swimming pool or spa.
3. The removal of more than 40% of the vegetation covering the lot.

Routine maintenance, including pruning and planting of plant material is permitted, provided it is on private property. No pruning, clearing or alteration of vegetation is permitted on any public property, or on any dune, as defined by ordinance, whether privately or publicly owned.

For all development, the following information shall be provided:

1. An accurate limit of existing woodland areas, clearing limits and proposed planting locations shall be indicated on the landscape plan, individual plot plan or site plan.
2. The reason for removal or destruction of vegetation shall be apparent on the plan or explained in writing.
3. The quantity, caliper and species and condition of existing trees with a caliper of 3" measured 3' above the ground to be removed. Existing shrub masses such as bayberry shall also be shown on the plans.
4. Projected dates for the beginning and ending of the tree or shrub removal project and of the construction itself.
5. The name, address, and telephone number of the person supervising the removal of trees and shrubs.
6. A plan for the replacement and addition of trees, shrubs and groundcover as required by the ordinance with applicable planting details.
7. Any additional information requested by the Board or Zoning Officer in the case of a single or two-family residential unit, or other designated official to demonstrate substantial compliance with this section.

For all development, any new vegetation required by the landscaping and vegetation plan shall be installed prior to the issuance of a certificate of occupancy.

CHAPTER 27 ZONING

27-1 TITLE.

This chapter shall be known and may be cited as the Zoning Regulations of the Borough of Avalon, Cape May County, New Jersey, 2002. (Ord. No. 607-2009 § 27-1)

27-2 AUTHORITY AND PURPOSE.

Pursuant to N.J.S.A. 40:55D-1 et seq. this Zoning Ordinance is enacted for the following specific purposes:

To guide and regulate the orderly growth and development of the Borough of Avalon in accordance with a duly enacted comprehensive Master Plan;

To protect the established character and social and economic well being of the community, to secure safety from fire, and other dangers;

To maintain community character and visual environment;

To lessen congestion;

To facilitate adequate provision for transportation, schools, parks and other facilities and services;

To invigorate the business environment;

To promote the establishment of appropriate population densities and concentrations that will contribute to the well being of persons, neighborhoods, and the community;

To promote the conservation of open space and valuable natural resources;

To preserve and enhance important characteristics of the natural environment; and

To these ends, to regulate heights, design, appearance, number of stories and size of buildings and other structures as well as their placement on the land.

(Ord. No. 607-2009 § 27-2)

27-3 LANGUAGE INTERPRETATIONS AND DEFINITIONS.

a. *Word Usage.* For the purposes of this chapter, certain words shall have the meaning assigned to them as follows. The following definitions are intended to interpret and clarify word usage in the Borough of Avalon Zoning Ordinance and not necessarily intended to be used to interpret or clarify word usage in other portions of the Code of the Borough of Avalon.

1. Words in the present tense include the future. The singular form of a word includes the plural form and the plural form of a word includes the singular form.

2. The word "building" includes "structure" and any part thereof.

3. The phrase "used for" includes "arranged for," "designed for," "intended for," "maintained for," "constructed for," "altered for," "converted for," "rented for," "leased for," or "occupied for."

4. The word "person" includes an individual, corporation, partnership, incorporated association, or any similar legal entity.

5. The words "includes" or "including" shall not limit the term to the specified examples, but is intended to extend their meaning to all other instances of like kind and character.

6. The words "shall" and "will" are mandatory and not discretionary, and the word "may" is permissive.

7. The feminine gender includes the masculine gender and vice versa.

b. *Statutory Definitions.* Whenever an undefined term is used in this chapter which is defined in N.J.S.A. 40:55D-3 through D-7, such term is intended to have the meaning set forth in the definition of that found in said statute, unless a contrary intention is clearly expressed in context.

c. *Definitions.* The following words and phrases shall have the meaning given in this section when applied to the entire chapter.

Access. A way or means of approach to provide physical entrance to a property.

Accessibility Structure. Any structure constructed with the purpose of providing ingress or egress to a building or to facilitate movement within a building by disabled persons as defined under the Americans with Disabilities Act.

Accessory Building or Structure. A building or structure which is detached from a principal building or structure on the same lot and which is customarily incidental and subordinate to the principal building or structure. Any accessory building attached to the principal building by a roofed structure shall be considered part of the principal building. Accessory buildings include detached garages, tool and storage sheds, greenhouses, gazebos, cabanas and pergolas. Accessory structures include swimming pools, fences and detached patios.

Accessory Use. A use of land or a building or portion thereof customarily incidental and subordinate to the principal use of the land or building, located on the same lot with the principal use.

Addition. An extension or increase in floor area or height of a building or structure.

Administrative Officer. The Secretary of the Board in the case of matters involving the Board; the Municipal Clerk in the case of matters involving the Governing Body; and the Zoning Officer in the case of matters involving the issuance of zoning permits, zoning certificates of occupancy when authorized by ordinance and Zoning Ordinance enforcement.

Apartment. A suite of two (2) or more rooms, including bath and kitchen, intended or designed for use as a residence by a single person, or persons living as a family independent of other occupants of the same building.

Automobile Service Station. Any building, land area, or other premises or portion thereof, used or intended to be used for the retail dispensing or sale of vehicular fuels; and including as an accessory use the sale and installation of lubricants, tires, batteries, and similar accessories. In addition, an automobile service station may engage in the retail exchange, or sale of gasoline, oil, kerosene, and propane for home use.

Automobile Wash. Any building or premises or portions thereof used for washing automobiles. Automobile washes are only accessory to garages and automobile service stations.

Barrier Sand Dune. Those dunes immediately west of the beach area; which should remain undisturbed in order to provide protection during high tides.

Base Flood. A flood having a 1% chance of being equaled or exceeded in any given year. The base flood is the national regulatory standard used by the National Flood Insurance Program (NFIP) and all Federal agencies for the purposes of requiring the purchase of flood insurance and regulating new development. Base Flood Elevations (BFEs) are typically shown on Flood Insurance Rate Maps (FIRMs).

Base Flood Elevation. Refer to definition contained in Borough of Avalon General Ordinances Chapter 19, Section 19-2.

Basement (also Cellar). That portion of a building which is partly below and partly above grade and having at least one-half (1/2) its height above grade.

Bay Lots. Those lots adjacent to the watercourse, inlet, bay, or lagoon.

Bay Window. A window which protrudes no more than two (2) feet from a wall and does not extend from the floor to ceiling on either the interior or exterior of the building and does not include any floor space.

Bedroom. Any room within a dwelling unit, finished or unfinished, which may reasonably be expected to serve as a bedroom or dormitory planned and intended for sleeping.

Board. The Avalon Planning/Zoning Board of Adjustment.

Boardinghouse. A dwelling providing not more than nine (9) rental rooms or twenty (20) dining accommodations for paying guests.

Buildable Area. The area of a lot or parcel that may be used for permitted building or buildings, including all remaining portions of the lot after required yard areas have been subtracted. In the case of a section of a building, which is cantilevered, the exterior surface of the most projected area must fall within the "buildable area." First floor entrance steps and normal roof overhangs of not more than two and one-half (2 1/2) feet on any two (2) facades of the building may project beyond the buildable area (See subsection 27-7.3c).

Building. Exclusive of a public school facility, a structure enclosed with exterior walls or fire walls, built, erected and framed of component structural parts, designed for the housing, shelter, enclosure and support of individuals, animals or property of any kind. When used herein, "building" and "structure" shall be interchangeable, except where the context clearly indicates otherwise.

Building Coverage. The horizontal area measured along the outside perimeter of all the exterior walls on all stories or floors, for all principal and accessory buildings on a lot, divided by the entire area of the lot, but excluding chimneys.

Building Height. The vertical dimension of a building measured from the freeboard elevation (base flood elevation, as set forth by National Flood Insurance Program (N.F.I.P.)), plus one (1) foot to the highest point of the roof. False work, cornices, cupolas, finials and other decorative features shall not exceed the permissible building height.

The building height for dune lots shall be measured from the finished grade elevation located five (5) feet from the building's easterly facade. Dune lots are those lots regulated under the Beach Protection Ordinance.

A maximum two (2) foot allowance is permitted for a crawl space if the finished grade elevation (measured at the rear yard setback) or in the case of dune lots as measured above would preclude a two (2) foot crawl space. The finished grade elevation shall be in accordance with the applicable provisions in the Avalon Code.

Building Height, Commercial. The vertical elevation of a commercial structure measured from the freeboard elevation. False work, cornices, cupolas, finials, parapets and other decorative features shall not exceed the permissible building height.

Building Height, Residential. The vertical elevation of a building measured from the freeboard elevation to the highest peak of the roof. False work cornices, cupolas, finials, parapets and other decorative features shall not exceed the permissible building height. The building heights in the R-1AA Zone shall be measured from the finished grade located five (5) feet from the building's easterly façade at the center point of the lot. All lots in the R-1AA Zone are regulated under Chapter 23, Beach and Dune Protection.

A maximum two (2) feet allowance is permitted for a crawl space if the finished grade (measured at the center point of the rear yard setback), or in case of dune lots as measured above, would preclude a two (2) feet crawl space. The finished grade elevation shall be in accordance with the applicable provisions of the Avalon Ordinances.

Building Setback Line. A line drawn parallel to the street line or lot line and drawn through the point of a building nearest to the street line or lot line. The term "required setback" means a line that is established a horizontal distance from the street line or lot line and beyond which a building or part of a building is not permitted to extend toward the street line or lot line. In the case of interior or flag beachfront lots, the front setback line shall be the property line parallel to the beach. In the case of interior or flag bay-front lots the front setback line shall be the property line closest to and parallel to the street line.

Bulkhead. An upland structure with the purpose of limiting encroachment of water to upland areas which is within the limit of the mean high water line.

Bulkhead Line. The line at which an established bulkhead used to maintain an upland area, constructed of fiberglass, stone, concrete, brick, wood, simulated wood, concrete pavers, asphalt, or any other construction material is located. For zoning purposes only on waterfront properties, where no official "bulkhead line" has been established, the mean high water line shall be considered the established bulkhead line. However, in no event shall this be construed to permit construction beyond an existing bulkhead.

Cabana. A building containing facilities for changing associated with a pool, beach, or watercourse. No toilet or cooking facilities are permitted in a cabana structure.

Cantilever. A projecting beam or member supported at only one (1) end.

Carport. A roof projecting from the side of a building, having no more than one (1) wall, used for a shelter for an automobile.

Change of Use. Any use which is not substantially the same as the previous use of a building or land.

Clearing of Landscaping. When forty (40%) percent or more of existing vegetation is removed from a residential lot to permit dwelling expansion or construction.

Club. A group of people organized for a common purpose to pursue common goals, interests, or activities and usually characterized by certain membership qualifications, payment of fees and dues, regular meetings, and a constitution and bylaws.

Commercial. Activity involving the sale of goods and services carried out for profit.

Conditional Use. A use permitted in a particular zoning district only upon a showing that such use in a specified location will comply with all the conditions and standards for the location or operation of such use as contained in this chapter, and upon the issuance of an authorization therefor by the Board.

Construction PODS. Steel framed and portable moving and storage units for the temporary storage of tools, materials or supplies, with the exception of hazardous and explosive materials, by contractors and craftsman used in conjunction with residential or commercial constructions and located at construction sites.

Convenience Stores and Supermarkets. A retail establishment primarily selling food as well as other convenience and household goods.

Coverage, Building. See **Building Coverage** definition.

Coverage, Impervious. The area of all portions of the lot, which are covered by impervious surfaces, divided by the entire area of the lot.

Curb Area. That portion of a street right-of-way lying between the curbline and the street right-of-way line, or property line, in which sidewalks may be constructed.

Curb Cut. The making of an opening in or through any existing curb or the leaving of a void or depression in a newly constructed curb to facilitate vehicular passage.

Curb Level. The legally established level of the curb at the midpoint of a front line of a lot or other parcel of land as determined and regulated under Chapters 15, Streets and Sidewalks.

Deck, Attached. A raised exterior floor attached to the principal structure, with a minimum height of eight (8) inches measured from grade. Attached decks may not occupy yard areas.

Deck, Detached. A raised exterior floor, detached from the principal structure, with a maximum height of eight (8) inches measured from grade. Detached decks may occupy yard areas.

Drip Irrigation System. Micro irrigation system (low pressure and low volume) wherein water is applied to the soil surface or small streams through emitters.

Drugstore. A store where the primary business is the filling of medical prescriptions and the sale of drugs, medical devices and supplies, and nonprescription medicines but where nonmedical products may be sold as well.

Dune Line. That certain line established by the Borough of Avalon, which encompasses, outlines and delineates all beach dune areas. Since dunes are dynamic and changing, the "dune line" must be updated every five (5) years or after a major storm to redefine potential and existing beach dune areas.

Dwelling. A structure, or an entirely self-contained portion thereof, which is designed for and occupied principally as a place of residence for one (1) housekeeping unit. A dwelling must be suitable for year-round occupancy and must contain facilities for cooking, sleeping, bathing, and human sanitation, which are for the exclusive use of the occupants of the dwelling.

Dwelling, Multiple. A building arranged for occupancy by three (3) or more dwelling units.

Dwelling, Single-Family. A building containing not more than one (1) dwelling unit.

Dwelling, Townhouse. A dwelling which is designed for, and occupied exclusively as, the residence of one (1) housekeeping unit; and which is totally separated from the other by an unpierced rated wall extending from the ground to the roof, or an unpierced ceiling and floor extending from exterior wall to exterior wall.

Dwelling, Two-Family or Duplex. A building containing not more than two (2) dwelling units.

Dwelling Unit. A single unit providing complete, independent living facilities for one (1) or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.

Easement. A grant of one (1) or more of the property rights by the property owner to and for the use of the public, a corporation or another person or entity.

Eave. The projecting lower edges of a roof overhanging the wall of a building.

Elevation. A vertical distance above or below a fixed reference level.

Entrance Platform. An area of deck or concrete used as the transition from the entry stairs to the home's exterior entry door.

Essential Service. The erection, construction, alteration or maintenance by public utilities or municipal departments or commissions of underground or overhead gas, electrical, steam or water transmission or distribution systems and collection, communication, supply or disposal systems, including poles, wires, mains, cables, hydrants, necessary substations (when designed to conform to surrounding uses) and other similar equipment or accessories in connection therewith (not including service buildings or yards) reasonably necessary for the furnishing of adequate service by such public utility or municipal department or commission for the public health, safety and/or general welfare.

Existing Use. The use of a lot or structure at the time of the enactment of the zoning ordinance.

Family. One (1) or more individuals occupying a dwelling unit and living as a single housekeeping unit.

Fast Food Restaurant. A restaurant specializing in the rapid preparation and service of food, not waitress served, and which provides service, in whole or in part, on a drive through basis. Any restaurant with drive through service shall be deemed a fast food restaurant.

Fence. Artificially constructed with a manmade material or combination of manmade materials installed to demarcate a property boundary.

Fence, Living. Artificially constructed linear feature comprised of any living plants, trees, or shrubbery installed to demarcate a property boundary.

Flood Proofing. Refer to definition contained in Borough of Avalon General Ordinances Chapter 19, Section 19-2.

Floor Area. The sum of the habitable area of all floors of a building, structure or unit.

Floor Area Ratio (FAR). The sum of the area of all the floors of buildings or structures compared to the total area of the site, excluding decks, porches, gazebos and pergolas. Attached and detached garages, sheds, cabanas, and similar enclosed buildings shall be considered in the calculation of FAR.

Freeboard. Refer to definition contained in Borough of Avalon General Ordinances Chapter 19, Section 19-2.

Freeboard Elevations. Refer to definition contained in Borough of Avalon General Ordinances Chapter 19, Section 19-2.

Garage, Private. Any building or part thereof accessory to a principal building, providing for the storage of automobile(s) owned by the occupants of the main building to which the garage is accessory, including one (1) commercial vehicle with a capacity not greater than one (1) ton.

Geo-Thermal Energy System. A self-contained mechanical heat and air conditioning system (heat pump) and hot water heating system which utilizes the constant temperature of the earth as the heat exchanger. A geo-thermal heat pump system consists of indoor heat pump equipment, a ground loop, a heat distribution sub-system and a flow center to connect the indoor and outdoor equipment.

Geo-Thermal Closed Loop System. A geo-thermal energy system which uses a water and/or antifreeze solution, circulated in a ground loop of pipe to extract heat from the earth.

Geo-Thermal Open Loop System. A geo-thermal energy system which draws water from a suitable source for use as the heat source, and after use, discharges the water into a suitable drainage filed, well or other return area.

Green Space. Any area of a site or parcel not covered by buildings, impervious surfaces, pervious pavements, or other improvements, such as areas including lawn, groundcover, and other vegetative materials. Decorative stone is not considered green space.

Habitable Area. The space in a building for living, sleeping, eating or cooking. For the purposes of zoning, bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas are considered habitable areas.

Home Occupation or Home Profession. An occupation or profession which is customarily carried on in a dwelling unit or in an accessory building, which is operated by a member of the family residing on the premises and which is clearly incidental and secondary to the use of a main building for residential purposes.

Hotel or Motel. Any building, including but not limited to any related structure, accessory building, and land appurtenant thereto, and any part thereof, which contains 10 or more units of dwelling space or has sleeping facilities for 25 or more persons and is kept, used, maintained, advertised as, or held out to be, a place where sleeping or dwelling accommodations are available to transient or permanent guests.

This definition shall also mean and include any hotel, motor hotel, motel, or established guesthouse, which is commonly regarded as a hotel, motor hotel, motel, or established guesthouse, as the case may be, in the community in which it is located; provided, that this definition shall not be construed to include any building or structure defined as a multiple dwelling in this act, registered as a multiple dwelling with the Commissioner of Community Affairs as hereinafter provided, and occupied or intended to be occupied as such nor shall this definition be construed to include a rooming house or a boarding house as defined in the "Rooming and Boarding House Act of 1979," P.L. 1979, c. 496 (C. 55:13B-1 et al.) or, except as otherwise set forth in P.L. 1987, c. 270 (C. 55:13A-7.5, 55:13A-7.6, 55:13A-12.1, 55:13A-13.2), any retreat lodging facility, as defined in this section.

Impervious Coverage. See **Coverage, Impervious** definition.

Impervious Surface. Any structure which reduces the absorption of storm water into the land. These structures include, but are not limited to, buildings, open porches, patios, driveways, sidewalks, swimming pools, tennis courts, and basketball courts; whether constructed of fiberglass, stone, concrete, brick, wood, simulated wood, concrete pavers, asphalt, or any other construction material.

Irrigation Zone. Area of a lawn or planting irrigated by a single valve.

Junkyard. Any lot or portion thereof, used for storage, keeping or abandonment of junk, including scrap metals or other scrap materials, or for the dismantling, demolition or abandonment of structures, automobiles or other vehicles, and machinery or parts thereof.

Kennel. Any building or land parcel used for the keeping of four (4) or more adult dogs and/or other household pets.

Lot. A parcel of land above or below water, occupied by or which may be occupied by a building and its accessory buildings, and including yards and other open spaces required by this chapter.

Lot Area. The total area within the property lines of a lot, exclusive of any area within a street right-of-way.

Lot, Corner. A lot lying contiguous to, and at the junction of two (2) or more, intersecting streets, or upon two (2) parts of the same street, forming an interior angle of less than one hundred thirty-five (135) degrees. Each corner lot shall have two (2) front yards, one (1) side yard and one (1) rear yard.

Lot Depth. The mean horizontal distance between the front and rear lot lines, measured in the general direction of the side lot line.

Lot Frontage. The horizontal distance across the lot measured along the front lot line. In the case of a lot with multiple street frontages, including a corner lot, the front lot line with the least dimensions fronting on a street shall constitute the lot frontage. In no event may more than one (1) front line be used to calculate lot frontage. Lot frontage on an unimproved street shall not satisfy the minimum lot frontage requirements unless said unimproved street is to be improved as part of the application for development.

Lot Interior. A lot other than a corner lot.

Lot Line, Front. The street line on which the lot fronts or abuts; for interior or flag beachfront lots, the property line parallel and adjacent to the beach. In no case shall any structure be closer than ten (10) feet to the dune line. The property line parallel and closest to the street line for interior or flag bay front lots.

Lot Line, Rear. The lot line opposite and most distant from the front lot line. The lot line other than a street line which is the furthest lot line from the street. For zoning purposes only on waterfront properties, the bulkhead line or mean high water line shall be considered the rear lot line. However, in no event shall this be construed to permit construction beyond an existing bulkhead.

Lot Line, Side. Any lot line other than a front or rear lot line.

Lot Width. The distance between side lot lines measured parallel with the right-of-way for lots located on tangents and measured radially for lots located on curves.

Marina. Facilities for the sale, repair, building, launching and storage of boats. Operations are completed both on land and in a water course.

Mean High Water. (MHW) is a tidal datum that is the arithmetic mean of the high water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For the New Jersey shore, the two (2) high waters of each tidal day are included in the mean. This datum is available from the New Jersey Department of Environmental Protection, Bureau of Tidelands.

Mean High Water Line. (MHWL) is the intersection of the land with the water surface at the elevation of mean high water. The elevation of mean high water varies along the oceanfront and the tidal bays and streams in the coastal zone. For purposes of this chapter the surveyed mean high water line elevation will be utilized.

NAVD 88. North American Vertical Datum of 1988. The vertical control datum established for vertical control surveying in the United States of America based upon the General Adjustment of the North American Datum of 1988. It replaces the National Geodetic Vertical Datum of 1929. All New Jersey and New York Advisory flood hazard elevations are referenced to NAVD 88.

NGVD 1929. National Geodetic Vertical Datum of 1929. National standard reference datum for elevations, formerly referred to as Mean Sea Level (MSL) of 1929. NGVD 1929 may be used as the reference datum on some Flood Insurance Rate Maps (FIRMs).

National Irrigation Association (IA). A nonprofit organization formed to promote the development, proper use and acceptance of irrigation equipment for all possible applications.

Nonconforming Building or Structure. A building or structure the size, dimensions or location of which was lawful prior to the adoption, revision or amendment to this chapter, but which fails by reason of such adoption, revision or amendment, to conform to the present requirements of the chapter.

Nonconforming Lot. A lot, the area, dimensions or location of which was lawful prior to the adoption, revision or amendment of this chapter, but which fails to conform to the present requirements of this chapter by reason of such adoption, revision or amendment.

Nonconforming Sign. Any sign which was lawful prior to the adoption, revision, or amendment of this chapter, but which fails to conform to the present requirements of this chapter by reason of such adoption, revision, or amendment.

Nonconforming Use. A use or activity which was lawful prior to the adoption, revision or amendment to this chapter, but which fails by reason of such adoption, revision or amendment, to conform to the present requirements of this chapter.

Office. A room or group of rooms used for conducting the affairs of a business, profession, service, industry or government.

Open Porch. A roofed open area, on the first or second story, which is an exterior part of a building including a breezeway outside of and extending beyond the exterior walls of the building. Each exterior wall of the porch, which is not an exterior wall of the building, shall be completely and permanently open above the top of the railing or guards not more than six (6) inches above the Building Code required height for railings or guards (as applicable). An open porch may be screened.

Parking, Semi-Enclosed. A parking space or spaces, enclosed on three (3) sides by walls, located on the ground floor of a structure.

Parking Space, Off-Street. A temporary storage area for a motor vehicle that is directly accessible to an access aisle, and which is not located on a dedicated street right-of-way. An area either within a structure or in the open exclusive of driveways, access drives and fire lanes, except that nothing shall prohibit private driveways for dwelling units from being considered off-street areas, provided that no portion of such public driveway within the right-of-way line of the street intersected by such driveway shall be considered an off-street parking space. A parking space shall be surfaced with stone, broken stone, concrete, asphalt, or unit pavers.

Patio. A paved, unenclosed, roofless area at ground level. "Patios" may occupy portions of required side or rear yard areas.

Pergola. A structure with a defined support system for an open roof, either attached to a building or freestanding. The roof must maintain a maximum opacity of seventy (70%) percent.

Permitted Use. Any use allowed in a zoning district and subject to the restrictions applicable to that zoning district.

Personal On-Demand Storage Units (PODS). Steel framed and portable moving and storage units for the temporary storage of personal belongings and household items, with the exception of hazardous and explosive materials.

Pervious Surface. Green space, landscape area, and stone areas not used for parking or driving that permit passage of storm water through the material.

Pool. A water-filled enclosure, permanently constructed or portable, maintained for swimming or bathing.

Pool, Aboveground. A pool of any shape constructed entirely above the final property grade. Aboveground pools are capable of being easily disassembled and reassembled to their original configuration.

Pool, Commercial. Any pool used in connection with any commercial or multi-family use.

Pool, Coping. The cap, made of any material, on the wall that provides a finishing edge around the pool or spa. It may be used as part of the system that secures the vinyl liner to the top of the pool wall and as a means of preventing water run-off from entering the pool.

Pool Deck. Those areas immediately adjacent to the pool or spa specifically constructed or installed for standing or walking. These decks may be made of concrete, wood, composite materials or masonry.

Pool, Hot Tub. A portable, warm water reservoir with self-contained pump, filter, control and heating components as an integral part of the product.

Pool, Inground. A pool of any shape constructed entirely below the final property grade. Inground pools are of permanent construction.

Pool, Onground. A pool of any shape constructed partially above the final grade and has an excavated area partially below the final grade level. Onground pools are of permanent construction.

Pool, Residential. Any pool used in connection with a single-family or two-family private residence.

Pool, Spa. A permanently fixed, warm water reservoir with separate, detached pump, filter, controls and heating components. Spas may be attached or separate from onground and inground pools.

Precipitation Rate. Rate at which a sprinkler system applies water to a given area.

Pressure Compensating Emitter. Device which maintains constant downstream operating pressure (immediately downstream of the device) which is lower than the upstream pressure.

Principal Building. A building in which is conducted the principal use of the lot on which it is located.

Principal Use. The primary or predominant use of any lot.

Property Line. The boundary line to define a plot or lot in a particular block.

Rain Sensor. An electronic device which measures naturally occurring moisture.

Repair Garage. Any building, premises, and land in which or upon which a business, service, or industry involving the maintenance, servicing, and repair of vehicles is conducted or rendered.

Resort House. A residentially styled structure that is used, maintained, marketed, promoted and/or advertised as a destination location available for rent, lease or sub-lease for a gathering of invited guests for functions and special events, including, but not limited to: weddings, retreats, family reunions, parties and meetings. A resort house is a commercial use appropriate only in areas zoned for hotel/motel use and never has been permitted as a legal use under existing ordinance standards. A resort house is a commercial use and is not a traditional single-family residence and requires more off-street parking in order to accommodate the number of guests. Traditional seasonal rentals as defined in Chapter 22 or bed and breakfast establishments, licensed by the Borough and intended to accommodate not more than eighteen (18) persons shall not be considered to be resort houses.

Retaining Wall. A structure designed and constructed to resist lateral pressure of soil when there is a desired change in ground elevation that exceeds the angle of repose (the slope) of the soil.

Roof. The outside top covering of a building, deck, porch or patio intended to shelter the underlying structure.

Rotator or Spray Irrigation. Method of irrigation in which the water is sprayed, or sprinkled, through the air to the ground surface.

Sign. Any device (fixed or movable, permanent or temporary) for visual communication that is used for bringing the subject thereof to the attention of the public, (including banners) but not including any flag, badge or insignia of any government or government agency or any civic, charitable, religious, patriotic, fraternal or similar organization (or art work not advertising a specific product or business).

Single and Separate Lot Ownership. The ownership of a lot by one (1) or more persons as an individual, partnership or corporation separately and distinctly from an adjoining lot.

Smart Controller. An electric timing device that operates each (irrigation) zone for a predetermined time and frequency and incorporates one or more sensors to prevent excessive watering.

Soaker Hose Irrigation System. An irrigation system which utilizes semi-permeable hoses to wick or weep water either below the root level or at the ground level of the area.

Soil Moisture Sensor. An electronic device which measures field capacity and the actual soil moisture in the root zone soil at any given time.

Solar Energy System. A complete design or assembly consisting of a solar energy collector, an energy storage facility (where utilized) and components for the distribution of transformed energy.

Sprinkler. Hydraulically operated mechanical device which discharges water through a nozzle or nozzles.

Street Line. The boundary line of a street that forms the division between the street right-of-way, and abutting lots, or other land parcels.

Structure. A combination of materials to form a construction for use, occupancy, or ornamentation whether installed on, above, or below the surface of land or water.

Substantial Damage. Refer to definition contained in Borough of Avalon General Ordinances Chapter 19, Section 19-2.

Substantial Improvement. Refer to definition contained in Borough of Avalon General Ordinances Chapter 19, Section 19-2.

SWAT Certification. "Smart Water Application Technologies" process by which products are tested for adherence to NIA minimum standards.

Terrace. A raised, level and unroofed platform of earth or concrete, supported by one (1) or more faces of masonry or wood support. Terraces may not occupy any required yard areas.

Trelliswork. A frame of latticework used as a support for climbing plants. Trelliswork includes arbors and decorative gates. It is generally intended that trelliswork be high enough for humans to walk through or under.

Upland. Land above the high water line and not within the wetlands.

Use. The purpose or activity for which land or buildings are designed, arranged, or intended, or for which land or buildings are occupied or maintained.

Wall. (1) The vertical exterior surface of a building; or (2) the vertical interior surfaces which divide a building's space into rooms.

Watercourse. Any natural or artificial stream, river, creek, ditch, channel, canal, conduit, culvert, drain, waterway, gully, ravine or wash in which water flows in a definite direction or course, either continuously or intermittently, and has a definite channel, bed and banks.

Wholesale. The sale of commodities in quantity for resale, typically not to the general public.

Wind Turbine. A complete system, along with ancillary equipment, whose primary purpose is to convert wind energy into electrical power and provide for the collection, storage and distribution of same.

Yard. An open space on the same lot with a principal building, unobstructed by buildings or structures from the ground to the sky, except as otherwise provided in this chapter.

Yard, Front. The yard extending across the entire width of the lot lying between the front lot line or street line and the nearest wall or part of the building, but not including the usual uncovered steps. The depth of the "front yard" shall be measured at right angles to the adjoining street line. In the case of interior beachfront lots, the depth of the "front yard" shall be measured at right angles to the lot line parallel to the beach. In the case of corner lots "front yards" shall be provided along both street frontages.

Yard, Rear. A yard extending across the full width of the lot and lying between the rear lot line and the nearest wall or part of the building. The depth of a "rear yard" shall be measured at right angles to the rear lot line. In the case of through lots fronting on two (2) parallel streets, there will be no "rear yard," and front yard requirements will be increased by five (5) feet on each street. In the case of bay front lots the rear yard is measured from the front property line where the yard is one hundred ten (110) feet or less.

Yard, Side. A yard located between the sideline of the lot and the nearest wall or part of the building and extending from the front yard to the rear yard. The width of the "side yard" shall be measured at right angles to the side lot line. In the case of corner lots, there shall be only one (1) "side yard" adjacent to the interior lot line.

(Ord. No. 607-2009 § 27-3; Ord. No. 626-2010 § 1; Ord. No. 635-2010 § 1; Ord. No. 654-2012 § 1; Ord. No.

(3) The rear yard setback shall be twenty-five (25) feet.

(d) Maximum Building Height: The maximum building height for any principal structure shall be thirty (30) feet unless specifically permitted differently elsewhere in this chapter.

(e) Maximum Building Coverage: The total maximum building coverage shall be a maximum of twenty-five (25%) percent of the lot area.

1. *P-C District.* In the P-C (Public Conservation) District, no building or structure shall be erected, constructed, altered, or used; nor shall any parcel of land be used for any purpose other than the following:

1. Principal Uses:

(a) Swimming, sunbathing and associated ocean beach uses.

(b) Plant and wildlife observation and educational activities.

(c) Nature walks and rest areas.

(d) Permitted fishing activities.

(e) Other recreational and nature-oriented activities, which in the opinion of the Board are of the same general character as those listed as permitted uses and which in the opinion of the Board will not be detrimental to fragile ecosystems or nearby permitted uses.

2. Conditional Uses:

None.

3. Accessory Uses: Accessory Uses normally incidental to any of the above listed principal uses only after review and approval by the Board provided that any such accessory use shall be found by the Board to be of the same general character as those listed as principal uses and which in the opinion of the Board will not be detrimental to fragile ecosystems or nearby permitted uses.

4. Bulk Requirements:

(Note: This includes principal and accessory structures.)

(a) Minimum Lot Area: The minimum lot area shall be ten thousand (10,000) sq. ft.

(b) Minimum Lot Frontage: The minimum lot frontage shall be one hundred (100) feet.

(c) Minimum Yard Setbacks:

(1) The minimum front yard setback shall be twenty-five (25) feet.

(2) The total side yard setback shall be twenty (20) feet and the minimum side yard shall be ten (10) feet.

(3) The rear yard setback shall be twenty-five (25) feet.

(d) Maximum Building Height: The maximum building height for any principal structure shall be thirty (30) feet unless specifically permitted differently elsewhere in this chapter.

(e) Maximum Building Coverage: The total maximum building coverage shall be two (2%) percent of the lot area.

(Ord. No. 607-2009 § 27-6.2; Ord. No. 642-2011 § 1; Ord. No. 695-2014 §§ 3,5,6)

27-7 ADDITIONAL REGULATIONS.

27-7.1 Conditional Uses.

a. *Applicability.*

r. *Oversized Lot Yard Requirements.* In order to preserve light and air, where a parcel in any residential zone exceeds the minimum lot frontage requirements of the zone, by twenty-five (25%) percent or more, the minimum and total side yard areas shall be increased proportionally with the lot frontage.

Where a lot frontage exceeds the minimum requirement by twenty-five (25%) percent and the lot is rectilinear in shape, the lot width at the front and rear lot building setback lines must exceed the minimum lot frontage of the district by twenty-five (25%) percent or more in order for this requirement to apply; or

Where a lot frontage exceeds the minimum requirement by twenty-five (25%) percent and the lot is irregular in shape the average of the lot width at the front building setback line and the rear building setback line must exceed the minimum lot frontage requirements of the zone by twenty-five (25%) percent or more.

The equation shall read as follows:

$$Y = (X) (Z)$$

Where X = Minimum Total and Minimum Required Side Yard

And Y = The Additional Total and Minimum Required Side Yard Setback for Property

And Z = Percentage that Lot Exceeds Minimum Frontage Requirements of the Zone

s. *Lots Contiguous to the Bulkhead Line or Mean High Water Line.* The purpose of this paragraph is to create rear yard setbacks that protect and enhance the natural environment while, creating a consistent appearance along the watercourse and protecting views from the parcels.

1. Where the mean high water line is between the bulkhead line and the upland, the mean high water line shall prevail.

2. All constructed bulkheads shall be measured from the edge closest to the water to determine the lot depth and when bulkheads are replaced the measurement from the new bulkhead shall prevail.

3. The rear yard setback shall be as follows:

(a) For lots where the distance from the street line to bulkhead line or mean high water line is one hundred ten (110) feet or less, the rear setback line shall be measured eighty-five (85) feet from the front property line provided the following:

(1) A minimum of nine (9) feet is maintained from the bulkhead line or mean high water line to the habitable building and/or architectural details;

(2) A minimum of five (5) feet is maintained from the bulkhead line or mean high water line for any structure more than eighteen (18) inches high, (except where other restrictions apply); and

(3) The rear yard setback can be zero (to the bulkhead line or mean high water line) for any structure less than eighteen (18) inches in height.

Or

(b) For lots where the distance from the street line to the bulkhead line or mean high water line is greater than one hundred ten (110) feet, the rear setback shall be twenty-five (25) feet measured at the closest point between the bulkhead line or mean high water line and the street line.

(1) The rear yard setback can be zero to the bulkhead line or mean high water line for any structure less than eighteen (18) inches in height.

t. *Landscaping.* The survival of most types of plant life is difficult on a barrier island such as where Avalon is located. Vegetation has to contend with nutrient poor, sandy soils, frequent northeast storms, strong west winds, and salt-laden air. These conditions make it difficult for most vegetation to develop and mature. Vegetation of all types, especially trees and shrubs, enhance absorption of run-off back into the soil, reduce air pollution, and aid transpiration. Trees and shrubs reduce the perception of noise and act as a windbreak. Accordingly, conservation of these natural resources is in the public interest, satisfies the purposes of zoning, and benefits those who dwell on the island.

All existing trees and under-story vegetation should be preserved where feasible, and the plans must specify appropriate grading and tree protection details to assure the preservation of the vegetation. The plans must clearly indicate all vegetation to be preserved and removed. If the Board deems it appropriate, supplemental planting shall be provided. Quantities and types of supplemental plantings must be indicated on the landscape plan.

1. Green Space. All new one- and two-family developments shall address the planting of green space in accordance with the standards set forth herein, or in another appropriate manner. The provision and planting of green space shall be provided on fifteen (15%) percent of the cleared portion of any residential property and shall be planted with trees, grasses, shrubs and vegetative ground cover. Recommended vegetation is listed in the Acceptable Plant Materials List at the end of this chapter. Decorative stone is not considered green space. The requirements of Chapter 26 shall be followed.

2. Irrigation.

(a) Watering Restrictions. See restrictions in Borough Code Section 14-15.

(b) Watering Systems. All newly installed or retrofitted watering systems shall meet the following minimum standards:

(1) Drip and/or soaker technology may be utilized provided the system has pressure compensating emitters as per published manufacturers specifications.

(2) Rotators and spray irrigation heads may be utilized only if they have a maximum precipitation rate not to exceed 1.25 inches per hour (1.25 ins./hr.) as per published manufacturer's specifications.

(3) Systems shall be designed and positioned as to prevent overspray onto sidewalks, streets, adjacent properties or any natural body of water and shall follow industry design standards.

(c) Control Systems:

(1) All newly installed or retrofitted irrigation control systems shall utilize "smart" technology controllers approved by the National Irrigation Associations SWAT Certification (<http://www.irrigation.org/SWAT/>).

(2) Each system shall utilize a rain sensor and/or at least one other weather or soil moisture sensor.

(3) Effective use of these control systems is enhanced by following manufacturer design and installation specifications.

(d) Contractor Certification:

(1) All contractors installing and/or maintaining irrigation systems shall hold a valid Landscape Irrigation Contractor's license issued by the NJ DEP in order to construct, repair, maintain, improve or alter a landscape irrigation system in accordance with P.L. 1991, c.27 (C.45:5AA-3).

(e) Exemptions from the above watering restrictions include:

(1) Manual, self-contained watering devices such as watering cans, buckets or rain barrels and hand watering utilizing a hose with an auto-shut off nozzle.

(2) Portable sprayers and sprinklers attached to a hose.

(3) Newly installed lawn and landscape bed sprinklers for the first forty-five (45) days.

(4) All newly installed or retrofitted systems utilizing both a smart controller and the above drip or spray technology as per paragraph (c) above.

3. Selective Clearing and Protection of Vegetation. The preservation of existing vegetation is a crucial component in accomplishing the goals of this chapter. In order to maximize the opportunity to incorporate significant areas of existing vegetation into the design of the development, and to minimize damage to said areas during and subsequent to construction, the following standards shall apply:

(a) A permit shall be required before a property can be cleared of forty (40%) percent or more of any vegetation. An exception will be for the removal of dead vegetation, or nuisance plants such as, but not limited to, poison ivy, poison oak, poison sumac and phragmites.

(b) An owner or developer is permitted to perform selective clearing to remove trees, underbrush and undesirable vegetation within six (6) feet from the outside of the exterior wall of the proposed or existing structure and where determined by the Planning Board or Zoning Officer as practical for the location of utilities, parking areas, and other structures. Dead, damaged trees, underbrush and undesirable vegetation may be removed from other areas of the property. The areas and extent of the selective clearing must be clearly indicated on the plan of development and/or the grading and landscape plan. All selective clearing must be approved prior to the commencement of any clearing. The site boundaries and limits of proposed improvement must be accurately staked out on the site for this review and approval. Only nuisance plants, as defined, may be removed from the vicinity of the property lines unless the presence of other trees or shrubs will interfere with access to the rear/side yard garages. All sites shall be developed, to the greatest extent possible, in a manner that will result in the least amount of disturbance to the natural site.

(c) There shall be minimal disturbance to the root zones of all existing vegetation that is proposed to remain. Existing vegetation shall be protected by the construction of a temporary four (4) feet high snow fence at the drip line of the trees proposed to remain, or at the limit of disturbance.

(d) All selective clearing operations shall be performed in strict accordance with all applicable State, Federal and local regulations. All cleared material, including but not limited to refuse and other deleterious matter, shall be removed from the site and disposed of in a sanitary landfill licensed by the State of New Jersey to accept such waste. Vegetative materials consisting of trees, branches, stumps, and brush which are removed may be recycled for use as mulch or wood chips at an appropriate facility licensed by the State of New Jersey.

4. Administration and Applicability. All development shall comply with the provisions of this chapter.

For all residential development, a landscaping and vegetation plan for the parcel in question must be submitted, reviewed, and approved by the Zoning Officer or designated official, prior to the issuance of a Zoning Permit for any of the following development:

(a) Additions to an existing structure and/or site improvements which increases the impervious coverage of the lot by more than two hundred fifty (250) square feet.

(b) The construction of a new dwelling unit or any swimming pool or spa.

(c) The removal of more than forty (40%) percent of the vegetation covering the lot.

(d) Routine maintenance, including pruning and planting of materials is permitted, provided it is on private property. Pruning, clearing or alteration of vegetation is permitted on public property, or any dune, as defined by ordinance, whether publicly or privately owned, provided such operations are approved by and carried out only under the direct supervision of the appropriate Borough Department or Borough operation and pursuant to an approved Dune Vegetation Management Plan.

All landscape development should be designed to maintain existing vegetation to the greatest extent possible within the confines of this chapter and ensure the survival of existing and supplemental vegetation.

5. For all development, the following information shall be provided:

(a) An accurate limit of existing woodland areas, clearing limits and proposed planting locations shall be indicated on the landscape plan, individual plot plan or site plan.

(b) The reason for removal or destruction of vegetation shall be apparent on the plan or explained in writing.

(c) The quantity, caliper and species and condition of existing trees with a caliper of three (3) inches measured three (3) feet above the ground to be removed. Existing shrub masses such as bayberry

shall also be shown on the plans.

(d) Projected dates for the beginning and ending of the tree or shrub removal project and of the construction itself.

(e) The name, address, and telephone number of the person supervising the removal of trees and shrubs.

(f) A plan for the replacement and addition of trees, shrubs and ground cover as required by the ordinance with applicable planting details.

(g) Any additional information requested by the Board or Zoning Officer in the case of a single- or two-family residential unit, or other designated official to demonstrate substantial compliance with this section.

For all development, any new vegetation required by the landscaping and vegetation plan shall be installed prior to the issuance of a certificate of occupancy.

For one- and two-family residential developments, the plan and application for permit shall comply with certain sections of Chapter 26, Subdivision and Site Plan Review:

Acceptable Plant Materials
Streetscape
Formal Tree-Lined Avenue

For all other development, the landscape plan submitted to the Board shall comply with Chapter 26, Subdivision and Site Plan Review, subsection 26-7.10, Landscaping.

6. Standards.

(a) Living Fences. All living fences shall be developed pursuant to the following standards:

(1) All living fences shall be developed with plants, trees and shrubs approved in accordance with the acceptable plant material list for living fences adopted and maintained by the Avalon Environmental Commission.

(2) All plants, trees and shrubbery shall be planted and maintained so that they do not exceed 8 feet in height along the side or rear property lines.

(3) All said plants, trees and shrubbery shall be planted and maintained to less than two (2) feet from the property line to ensure it does not encroach across property lines and not more than ten (10) feet from the property line.

(4) No living fence shall be developed within fifteen (15) feet of the front property line.

(5) All living fences shall be properly maintained to comply with the height limitations of this section and to ensure it does not encroach across property lines.

(6) This section is also intended to regulate the development of living fences on vacant lots.

(b) Existing Nonconforming Living Fences. Any nonconforming living fence which existed immediately prior to the effective date of this section (paragraph 6. was adopted by Ord. No. 681-2013 on June 12, 2013), may be continued and shall enjoy the same protections afforded non-conforming structures pursuant to subsection 27-7.3b.

u. *Storm Water Management.* For one- and two-family residential developments, a storm water management plan for the lot(s) in question must be submitted, reviewed, and approved by the Zoning Officer or designated official, prior to the issuance of a zoning permit for any of the following:

1. Additions to an existing structure and/or site improvements which increase the impervious coverage by more than two hundred fifty (250) square feet or

2. The construction of a new principal structure or

Nothing contained herein shall be construed so as to preclude an applicant for a zoning permit to file an application for a variance directly with the Board, nor shall anything contained herein be construed as preventing an applicant who has been denied a zoning permit by the Zoning Officer pursuant to this section from filing an appeal directly with the Board. In addition, any interested party may appeal the decision of the Zoning Officer to the Board pursuant to law. (Ord. No. 607-2009 § 27-9)

27-10 SETTLEMENT AGREEMENTS.

Where a Settlement Agreement, consented to by the Borough, has been entered into with respect to a specific property prior to the adoption of this Ordinance No. 695-2014, adopted on March 12, 2014, setting standards and conditions applicable to that specific property for the rental and use of that property, the conditions established in the Settlement Agreement shall continue to apply in addition to the provisions of this Ordinance No. 695-2014. Violation of the terms and conditions of the Settlement Agreement or the expiration, revocation, invalidation or repeal of the Settlement Agreement shall continue to subject the property to the terms of this Ordinance No. 695-2014. (Ord. No. 695-2014 § 8)

Acceptable Plant Material List

(Subsection 27-7.3t)

The survival of most types of plant life is difficult on a barrier island community such as Avalon. Vegetation has to contend with nutrient poor, sandy soils, frequent northeast storms, strong west winds and salt-laden air. These conditions make it difficult for most vegetation to develop and mature. Vegetation of all types, especially trees and shrubs, enhance absorption of run-off back into the soil, reduce air pollution, and aid transpiration. Trees and shrubs reduce the perception of noise and act as a windbreak. Accordingly, conservation of these natural resources is in the public interest, satisfies the purposes of zoning, and benefits those who dwell on the island.

Acceptable Plant Materials

The following plant materials may be used on projects which are the subject of an application for zoning permit or approval of a site plan or subdivision by the Board, and may be used in any residential project:

Shade Trees (Species underlined are permitted for use as street trees.)

- Aristocrat or Cleveland Select Pear (*pyrus calleryana* 'Aristocrat' or 'Cleveland Select')
- Bald Cypress (*taxodium distichum*)
- Blackgum (*nyssa sylvatica*)
- N Downy Serviceberry (*amelanchier arborea*)
- Green Vase Japanese Zelkova (*zelkova serrata* "Green Vase")
- N Hackberry (*Celtis occidentalis*)
- Lavalle Hawthorne (*crateagus X lavellei*)
- **N Pin Oak (*quercus palustris*)
- Regent Japanese Scholar Tree (*sophora japonica* "Regent")
- Shadblow Serviceberry treeform (*amelanchier canadensis*)
- N Sweetgum (*liquid amber rotundifolia*)
- **N Tulip Tree (*liriodendron tulipifera*)
- **N Willow Oak (*quercus phellos*)

Evergreen Trees

- American Arborvitae (*thuja occidentalis*)
- American Holly (*ilex opaca*)
- Atlantic White Cedar (*chamaecyparis thyoides*)
- N Eastern Red Cedar (*juniperus virginiana*)
- Japanese Black Pine (*pinus thunbergiana*)
- Juniper – Upright (*juniperis chinensis* spp. Or *Robusta Green*)
- Leyland Cypress (*cupressocyparis leylandii*)

Pitch pine (*pinus rigida*)
Swiss Stone Pine (*pinus cembra*)
White Fir (*abies concolor*)

Shrubs

- N Arrowwood (*viburnum dentatum*)
- N Bayberry (*myrica pennsylvanica*)
- N Beach Plum (*prunus maritima*)
- Blackhaw (*viburnum prunifolium*)
- Butterfly Bush (*buddleia davidii*)
- Carolina Rose (*rosa carolina*)
- Chinese Juniper (*juniperus chinensis & cultivars*)
- Common Lilac (*syringa vulgaris*)
- Common Waxmyrtle (*myrica cerifera*)
- ** Crepe Myrtle (*lagerstroemia indica*)
- N Groundsel (*baccharis halimifolia*)
- Hydrangea (*hydrangea macrophylla & cultivars*)
- Inkberry (*ilex glabra & cultivars*)
- Privet (*ligustrum ovalifolium*)
- N Red Chokeberry (*aronia arbutifolia*)
- Rugosa Rose (*rosa rugosa*)
- Shore Juniper (*juniperus conferta & cultivars*)
- N Summersweet (*clethra alnifolia & cultivars*)
- N Winterberry Holly (*ilex verticillata*)

**Moderate salt tolerance, use in protected areas only.

N – Native plant

Plant specifications:

1. Plants shall be typical of their species and variety, have normal growth habits, well developed branches and vigorous root systems, and be densely foliated, and shall be free from defects, injuries, diseases and infestation.
2. Quality, branching and size of plants, including root size, shall be in accordance with "American Standards for Nursery Stock" ANSI Z60 (Most Recent Edition) as published by the American Association of Nurserymen.
3. Street and parking lot trees shall be pruned of any branches that interfere with pedestrians, vehicles or signs. Street trees must be single trunk, full and uniform specimens.
4. Street trees shall have a single stem with no branches lower than the height specified in the chapter.
5. Street tree and shade tree caliper sizes shall be measured six (6) inches above the ground for specimens up to, and including 4" caliper, and measured twelve (12) inches above the ground for specimens greater than 4" caliper, in accordance with the latest edition of the American Standard for Nursery Stock (ANSI Z60.1)

Invasive and nuisance plants:

The following is a partial list of plants that have been designated as invasive, i.e., they tend to spread rapidly, or nuisance plants. It is not recommended that they be used in any proposed planting program:

Asian Bittersweet (*celastius orbiculatus*)
Danes Rocket (*hesperis matronalis*)
English Ivy (*hedera helix*)
Japanese Barberry (*berberis thunbergio*)
Mimosa (*albizia julibrissin*)
Norway Maple (*acer platanoides*)
Purple Loosetrife (*lythrum salicaria*)

Russian Olive (*eleagnus angustifolia*)

Wisteria (*wisteria frutescens*)

Because of the ability of the following plants to spread at an extremely fast rate they are not to be used in any garden locations:

Bamboo (*dendrocalamus*)

Bamboo, hardy (*arundinaria, bambusa*)

Japanese Sedge (*carex kolomugi*)

Kudzu-vine (*pueraria montana*)

Mile a Minute Vine (*polygonum perfoliatum*)

Phragmites (*phragmites australis*)

Administration and Applicability:

All development shall comply with the provisions of this Chapter.

For one and two-family residential developments, a landscaping and vegetation plan for the parcel in question must be submitted, reviewed, and approved by the Zoning Officer or designated official, prior to the issuance of a zoning permit for any of the following development:

1. Additions to an existing structure and/or site improvements which increases the impervious coverage of the lot by more than 250 square feet.
2. The construction of a new dwelling unit or any swimming pool or spa.
3. The removal of more than 40% of the vegetation covering the lot.

Routine maintenance, including pruning and planting of plant material is permitted, provided it is on private property. No pruning, clearing or alteration of vegetation is permitted on any public property, or on any dune, as defined by ordinance, whether privately or publicly owned.

For all development, the following information shall be provided:

1. An accurate limit of existing woodland areas, clearing limits and proposed planting locations shall be indicated on the landscape plan, individual plot plan or site plan.
2. The reason for removal or destruction of vegetation shall be apparent on the plan or explained in writing.
3. The quantity, caliper and species and condition of existing trees with a caliper of 3" measured 3' above the ground to be removed. Existing shrub masses such as bayberry shall also be shown on the plans.
4. Projected dates for the beginning and ending of the tree or shrub removal project and of the construction itself.
5. The name, address, and telephone number of the person supervising the removal of trees and shrubs.
6. A plan for the replacement and addition of trees, shrubs and groundcover as required by the ordinance with applicable planting details.
7. Any additional information requested by the Board or Zoning Officer in the case of a single or two-family residential unit, or other designated official to demonstrate substantial compliance with this section.

For all development, any new vegetation required by the landscaping and vegetation plan shall be installed prior to the issuance of a certificate of occupancy.


APPENDIX D

Community Forestry Management Plan Base Maps with Tree Distribution Assessment




Legend

- Well Developed Tree Coverage
- Moderate Tree Coverage
- Sparse Tree Coverage
- Naturally Forested Areas
- Public Parks
- Municipal Boundary
- Japanese Black Pine (Dune Drive Islands)



the LOMAX Consulting group



DATE: 11-5-15

DRAWN BY: ACB

1 inch = 1,628 feet

KEY MAP

KEY MAP: COMMUNITY FORESTRY MANAGEMENT PLAN - TREE INVENTORY ASSESSMENT
AS SHOWN ON NJDEP 2012 ORTHOPHOTO AERIAL PHOTOGRAPH

SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njdn.jti.gov/> &
THE CAPE MAY COUNTY PLANNING DEPARTMENT

Project/Active/09-650/Part 003/2015 Tree Inventory Mapping/Key Map - 2015 CFMP Assessment



Legend

- Well Developed Trees and Shrubs
- Moderate Tree and Shrub Coverage
- Sparse Tree and Shrub Coverage
- Naturally Forested Areas
- Public Parks
- Municipal Boundary
- Japanese Black Pine (Dune Drive Islands)



DATE: 11-5-15
DRAWN BY: ACB
1 inch = 500 feet

SHEET 1 OF 6

← SHEET 2

← SHEET 3

SHEET 1: COMMUNITY FORESTRY MANAGEMENT PLAN - TREE INVENTORY ASSESSMENT
AS SHOWN ON 2012 OR TOPHO PHOTO AERIAL PHOTOGRAPH
SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgin.nj.gov/> &
THE CAPE MAY COUNTY PLANNING DEPARTMENT
Project: 09-650 Part 003: 2015 Tree Inventory Mapping/Sheet 1 - 2015 CFMP Assessment



the **LOMAX** Consulting group

DATE: 11-6-15
DRAWN BY: ACB
1 inch = 500 feet

SHEET 2 OF 6

SHEET 2: COMMUNITY FORESTRY MANAGEMENT PLAN - TREE INVENTORY ASSESSMENT
AS SHOWN ON NJDEP 2012 ORTHOPHOTO AERIAL PHOTOGRAPH
SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgisl.nj.gov/> &
THE CAPE MAY COUNTY PLANNING DEPARTMENT

Project: 09-550-Part 03-2015 Tree Inventory Mapping Sheet 2 - 2015 CFMP Assessment



Legend

- Well Developed Tree Coverage
- Moderate Tree Coverage
- Sparse Tree Coverage
- Naturally Forested Areas
- Public Parks
- Municipal Boundary
- Japanese Black Pine (Dune Drive Islands)

SHEET 3: COMMUNITY FORESTRY MANAGEMENT PLAN - TREE INVENTORY ASSESSMENT
AS SHOWN ON NJDEP 2012 ORTHOPHO AERIAL PHOTOGRAPH
SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgin.nj.gov/> &
THE CAPE MAY COUNTY PLANNING DEPARTMENT

DATE: 11-6-15
DRAWN BY: ACB
1 inch = 500 feet

the **LOMAX** Consulting group

SHEET 3 OF 6

Project: Active 09-550 Part 003/2015 Tree Inventory Mapping Sheet 3 - 2015 CFMP Assessment



DATE: 11-6-15
DRAWN BY: ACB
1 inch = 500 feet

SHEET 4 OF 6

SHEET 4: COMMUNITY FORESTRY MANAGEMENT PLAN - TREE INVENTORY ASSESSMENT
AS SHOWN ON NJDEP 2012 ORTHOPHO AERIAL PHOTOGRAPH
SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njghn.nj.gov/> &
THE CAPE MAY COUNTY PLANNING DEPARTMENT
Project Id: 09-650 Part 003-2015 Tree Inventory Mapping Sheet 4 - 2015 CFMP Assessment



Legend

- Well Developed Tree Coverage
- Moderate Tree Coverage
- Sparse Tree Coverage
- Naturally Forested Areas
- Public Parks
- Municipal Boundary
- Japanese Black Pine (Dune Drive Islands)

↑ SHEET 3

↓ SHEET 6



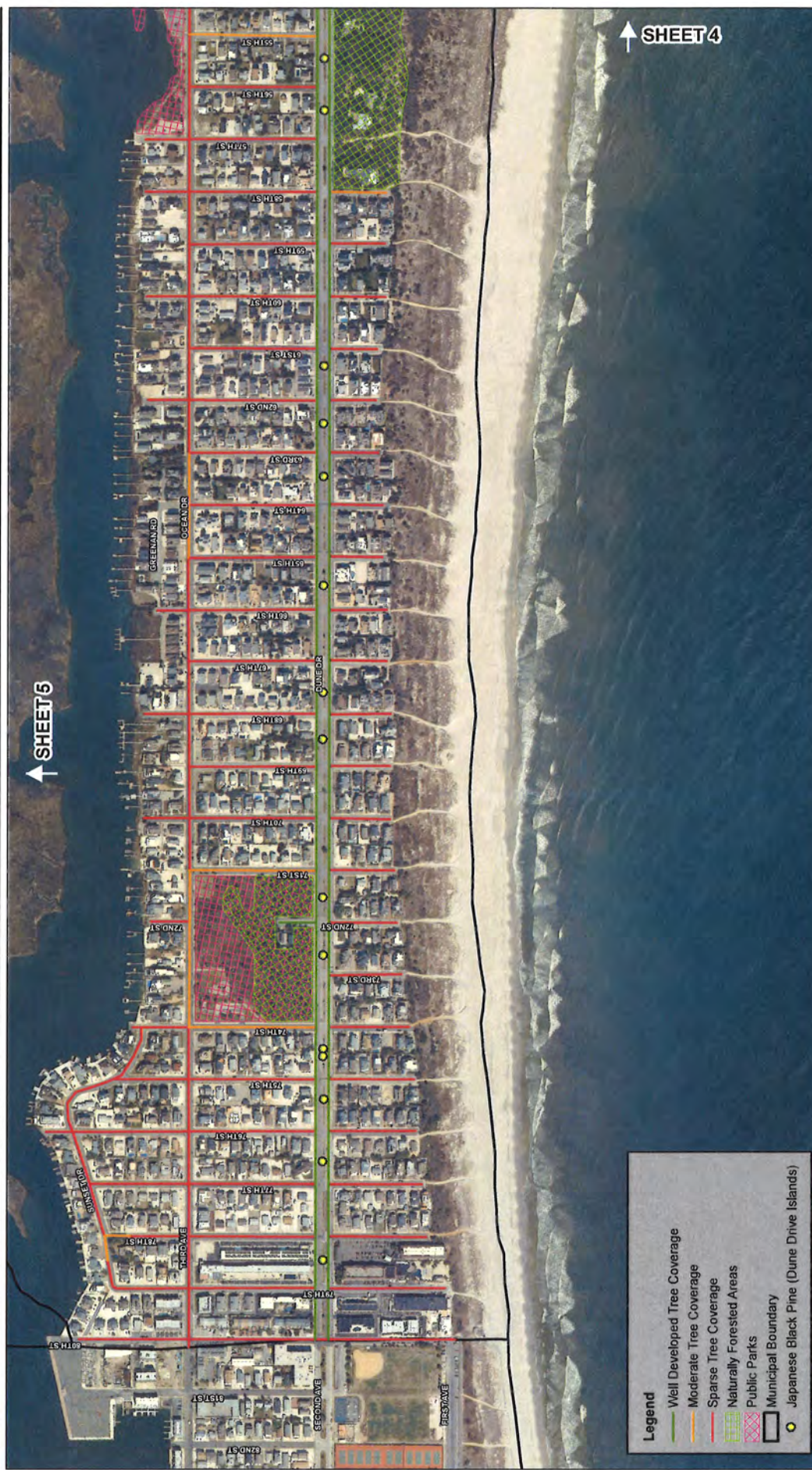
DATE: 11-6-15
DRAWN BY: ACB
1 inch = 500 feet

SHEET 5 OF 6

SHEET 5: COMMUNITY FORESTRY MANAGEMENT PLAN - TREE INVENTORY ASSESSMENT
AS SHOWN ON NJDEP 2012 ORTHOPHOTO AERIAL PHOTOGRAPH
SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgin.nj.gov/> &
THE CAPE MAY COUNTY PLANNING DEPARTMENT


Project: 09-550 Part 003 2015 Tree Inventory Mapping Sheet 5 - 2015 CRMP Assessment

THE LOMAX CONSULTING GROUP
ENVIRONMENTAL CONSULTING EXCELLENCE SINCE 1975



← SHEET 5

↑ SHEET 4




SHEET 6 OF 6

DATE:
11-6-15

DRAWN BY:
ACB

1 inch = 500 feet



SHEET 6: COMMUNITY FORESTRY MANAGEMENT PLAN - TREE INVENTORY ASSESSMENT
AS SHOWN ON NJDEP 2012 ORTHOPHOTO AERIAL PHOTOGRAPH
SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgim.nj.gov/> &
THE CAPE MAY COUNTY PLANNING DEPARTMENT

Project: Avulon 09-650 Part 03b 2015 Tree Inventory Mapping Sheet 6 - 2015 CFMP Assessment

THE LOMAX CONSULTING GROUP
ENVIRONMENTAL CONSULTING EXCELLENCE SINCE 1975

APPENDIX E

Dune Vegetation Management Plan (Approved December 16, 2009)



**DUNE VEGETATION MANAGEMENT PLAN
BOROUGH OF AVALON, CAPE MAY COUNTY, NJ
DECEMBER 16, 2009**



PREPARED FOR: **The Borough of Avalon
3100 Dune Drive
Avalon, NJ 08202**

PREPARED BY: **THE LOMAX CONSULTING GROUP, LLC
PO Box 9, 1435 Route 9 North
Cape May Court House, NJ 08210**

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APPENDIX E.	Proposed List of Dune Vegetation Comments from Chris Miller, USDA, Plant Material Center (November 4, 2009)
APPENDIX F.	Dune Restoration Plan Strategy Prepared by The Lomax Consulting Group and Illustrated by the Taylor Design Group
APPENDIX G.	Dune Vegetation Management Plan Base Map prepared by The Lomax Consulting Group
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DUNE VEGETATION MANAGEMENT PLAN

SECTION 1. INTRODUCTION

The dune system of the Borough of Avalon is a critical asset of the community. This dune system:

- (a) Serves the Borough as a protective buffer dissipating coastal storm energy,
- (b) Contains a bank of sand to replenish the beach system,
- (c) Supports a diversity of habitats for adapted plants and wildlife and
- (d) Creates unique aesthetic appeal of the community (**PHOTO 1, 2 AND 3 - APPENDIX A**).

While the dune system is naturally occurring in the Borough, it has required management for more than forty years to retain its integrity and to preserve its unique maritime forest (**PHOTO 4 AND 5 - APPENDIX A**).

Well-meaning dune protection efforts of earlier times have resulted in the introduction of a species that has had unintended consequences, i.e., it has become a dominant feature in the back dune area, displacing native species and demonstrating its invasive nature. The Japanese black pine (*Pinus thunbergiana*) has become so well established in the back dunes adjacent to residences that it has resulted in stands of this pine that have produced associated cone needle-drop. This combustible tinder creates a potential for wildfires in close proximity to the residences (**PHOTO 6 AND 7 - APPENDIX A**). In addition, these stands have created a visual barrier impacting the value of the oceanfront properties (**PHOTO 8 – APPENDIX A**). Finally, these stands of Japanese Black Pine are displacing the diverse native species, thereby creating ecological instability in the dunes. The emerging Japanese black pine monoculture has created a potential vegetative instability because of susceptibility to pests and pathogens. Dead and dying Japanese black pines are readily observable within the stands on the Island, as well as on the mainland. As such, it has become necessary to evaluate the extent of this problem and to establish a strategy to reduce or eliminate the adverse impact of this species while protecting the integrity of the Borough's dune system.

During the summer of 2008, The Lomax Consulting Group evaluated the distribution of the Japanese black pine and reported the survey findings to the Mayor, Environmental Commission and the interested public on August 19, 2008 (Appendix B - Preliminary Survey of the Borough). A Dune Vegetation Management Plan (DVMP or Plan) concept outline was presented and

discussed during the Environmental Committee Meeting on September 16, 2008. Pursuant to guidance from the Environmental Commission, a draft outline was presented for review and direction. During a subsequent meeting with the Borough, the outline was approved and the development of the plan was authorized.

SECTION 2. BACKGROUND

2.1 Statement of Values of Dunes and Dune Vegetation

The Borough of Avalon dune system is a critically important and integral natural resource of the community that provides: (a) a protective buffer dissipating coastal storm energy; (b) a bank of sand to replenish the beach system during coastal storm events; (c) an extensive and diverse habitat for local plants and wildlife adapted to the dune ecosystems and (d) contains and protects the unique maritime forest. Accordingly, the stewardship of the Avalon dunes is, not only recognized as a model for community protection and coastal dune enhancement, but also is critical to the protection of the Borough.

2.2 Statement of Issues Resulting from the Establishment of Non-native Species

Invasive vegetation, such as the Japanese black pine, has spread throughout the back dunes adjacent to residences at such an alarming rate that it has: (a) resulted in hazardous conditions associated with combustible tinder base subject to wildfire in close proximity to residences and the extensive dune system, (b) evolved into monocultures resulting in degraded and unsuitable habitat for wildlife adapted to the native vegetation, (c) subjected portions of the dune system to destabilization through the die back of this species and (d) created an unacceptable barrier impacting the value of the oceanfront properties. Therefore, it has become essential to examine this problem and to establish a strategy to reduce or eliminate the adverse impact of this species, while protecting the integrity of the Borough's dune system.

SECTION 3. DUNE VEGETATION MANAGEMENT PLAN

3.1 Goals of the Plan

- 3.1.1 Maintain a healthy, diverse dune system comprised primarily of native species;
- 3.1.2 Establish a science-based approach to evaluating and managing dune vegetation, in a manner to achieve the goals of the Borough.

3.2 Objectives of the Plan

- 3.2.1 To identify problems associated with invasive plant species in the dune system and to define the nature and extent of the related issues;
- 3.2.2 To develop a Dune Vegetation Management Plan that addresses control of invasive plant species;
- 3.2.3 To provide management standards and techniques that allow for the improvement of the vegetative component of the dune ecosystem; and
- 3.2.4 To identify and protect dune vegetation die back areas.

3.3 Roles and Responsibilities

- 3.3.1 While the Borough maintains the overall health and integrity of the dune system; appropriate stewardship of the adjoining property owners and visitors is integral to the protection of this community asset. The Borough accomplishes this task by providing the public with proper education and signage that is pertinent to protection of dune features. The Borough has delineated its dune system; those areas defined as dunes are available through the Office of the Construction Official. The Borough has laid out the framework for protecting its ocean-front assets by establishing and implementation of protective ordinances and the enforcement of these rules through its police powers. It should be noted that the Borough went through the process of obtaining a jurisdictional determination from The New Jersey Department of Environmental Protection (NJDEP) to make certain that management techniques set forth herein were in accordance with NJDEP regulations and policies. Please refer to Appendix C for a copy of the jurisdictional request and response documentation. In addition, the Borough supports dune vegetation improvement programs through its Public Works Department and through volunteer beachgrass planting initiatives.

Once the Plan is approved, the Borough Administrator will develop a Schedule of Maintenance with the Department of Public Works. The Schedule will:

- a. Establish priority locations for dune vegetation management;
- b. Schedule dead tree removal;
- c. Obtain approval for dune vegetation maintenance;
- d. Obtain pre-maintenance documentation, including photographs;

- e. Conduct maintenance activities;
- f. Obtain post-maintenance documentation, including photographs, and report progress to the Borough Administrator for inclusion in the Dune Vegetation Management Plan Base Map.

3.3.2 Property owners, especially those living adjacent to, or having, dunes on their property play an important role in maintaining a healthy dune system. They have the unique opportunity to protect and to enhance the dune system on or adjacent to their property by planting and managing compatible native vegetation and by aiding the Borough to monitor activities that may damage the dunes. While it is understood that landscaping professionals may be contracted by property owners within the Borough, the ultimate responsibility for actions inconsistent with the Borough ordinances falls on the property owners. Accordingly, various safeguards have been incorporated into the design of the DVMP. The safeguards provide an opportunity for addressing landowner concerns while providing guidance and public notification through the Dune Vegetation Management planning and implementation process.

3.3.3 Land owners and their landscape contractors, who intend to engage in any vegetation management activities in the dune system, must comply with the requirements of Chapter 9:10 et al as last revised by Ordinance 620 – 2009 prior to taking any action. During the application process the Avalon Environmental Commission will review the prepared actions and comment to the Planning / Zoning Board of the Borough. If the proposed action is approved, the landscape contractor will be required to provide notification to the Construction Official of their intention to carry out trimming, thinning or removal of dune vegetation. They will also be required to provide photo documentation of the site conditions before and at the conclusion of the vegetation management process. Monitoring schedules shall be adhered to in order to ensure the success and survival of the plantings installed in the dunes. Proof of adequate training, certifications and insurance will also be a requirement for landscape contractors prior to the commencement of work, as specified by the Borough.

3.3.4 While the Borough of Avalon assumes the role of facilitating the appropriate grants and aid for the Dune Vegetation Management Planning process; financial responsibilities and obligations will be allocated in accordance with the Memorandum of Understanding (MOU) between private property owners and the Borough of Avalon for the vegetation

removal and replacement (**APPENDIX D**).

3.4 Management Standards

- 3.4.1 The establishment of Priority Dune Vegetation Management Areas is essential to the overall success of the program. A prioritization system will allow the Borough to determine key areas where vegetation management is necessary on a priority basis to secure the integrity of the dune system and to ultimately protect the citizens of the Borough from damage associated with coastal storms or from the occurrence of dead or dying trees.
- 3.4.2 In areas where the implementation of the Plan includes both private and public property, a MOU will be executed by the affected parties. This MOU will lay out the proposed vegetation management and the allocation of resources. Prior to the commencement of work on private property, adequate site documents are necessary such as surveys (if available) and tax map of the site.
- 3.4.3 Once the site maps have been secured, site investigations will be conducted. Site investigations must be consistent with the Dune Vegetation Management protocols to determine areas where tree management is necessary. Trees that require management will be located and identified by species, size (dbh) and condition; i.e. living or dead, native or invasive species. This information will be plotted on a site plan. Trees that require management consistent with the Dune Vegetation Management Plan will be identified and physically marked in the field.
- 3.4.4 Management action will be separated into the following three categories:
- (a) The immediate removal of the aerial portion of dead trees (rationale: dead trees are not vegetation and must be removed in the interest of public safety);
 - (b) The removal of seedling and sapling Japanese Black Pine (rationale: clipping the aerial portion of seedling and sapling prevents the maturation and production of offspring while preventing crowding and displacement of native vegetation);
 - (c) The selective removal or trimming of trees in accordance with the Dune Vegetation Management Plan. Any mature trees that are removed will be cut at ground level. Heavy equipment will not be used in the dunes to remove such trees (rationale: this vegetation management will result in opening areas at ground level to provide adequate space for the planting of replacement native species during the appropriate season).

- 3.4.5 The invasive vegetation replacement process shall take place with native species that are:
- (a) Drought tolerant,
 - (b) Less susceptible to disease,
 - (c) Less prone to wildfire and
 - (d) Known to provide better habitat for native wildlife. Please refer to the Proposed List of Dune Vegetation provided in (**APPENDIX E**), which lists native replacement vegetation according to salt spray tolerance and the overall location within the dune system.
- 3.4.6 The management process is initiated by installing a sand fence along the ocean-side of the area to be managed (see **APPENDIX I**). This installation shall be performed prior to the commencement of vegetation thinning, trimming or replacement in order to protect the dunes from wind erosion.
- 3.4.7 Invasive trees less than 6 feet in height will be hand sheered at ground level and the aerial portion of the seedlings / saplings will be removed.
- 3.4.8 An inventory of invasive mature trees will be conducted to determine which trees can be thinned, trimmed or removed to provide an area for their replacement by native vegetation. Invasive trees in a stand may be thinned as long as the distance between the remaining trees is no greater than fifteen feet and is at a minimum distance between trees of ten feet and are landward of the protective sand fence. The visual representation of this concept prepared by The Lomax Consulting Group and illustrated by the Taylor Design Group is located in **APPENDIX F**.
- 3.4.9 Replacement plantings are selected, hardened, installed and maintained consistent with Standards for Creating and Restoring Sand Dunes (**APPENDIX I**). The holes should be twice the size of the plant container for shrubs and three times the size of the tree container or root ball. The soil amendments of top soil and/or organic matter are used to back fill the hole to promote survivability of the plants. They are planted in a staggered row configuration. The visual representation of this concept prepared by The Lomax Consulting Group and illustrated by the Taylor Design Group is located in **APPENDIX F**.

- 3.4.10 The removal of the lower branches of the invasive trees that have been identified for eventual removal provides adequate open ground area for the establishment of the native plants and minimizes the efforts to remove them later. This process allows for the thinned and trimmed trees to remain in the dune system for the interim to maintain the integrity of the dune structure until the replacement vegetation is established.
- 3.4.11 Once the native plants are established consistent with the Plan, the remaining invasive plants will be removed and replaced by native species.
- 3.4.12 The replacement vegetation will be inspected in the spring and fall to ensure successful establishment. Plant replacement is required for dead plants.
- 3.4.13 Plants will be maintained and may be trimmed to promote their health consistent with the approved Plan.
- 3.4.14 Safeguards to assure that the overall dune system is protected, to the maximum extent practical, have been incorporated into the design of the DVMP. They include:
- (a) Live native vegetation will be retained to the maximum extent practical;
 - (b) The entire root system of the trees to be removed will be preserved without disturbance to retain the structure within the dune system;
 - (c) Cutting and removal of the invasive trees will be accomplished using trained professionals;
 - (d) The utmost care, is required and
 - (e) Prior to removal of the remaining stand of invasive trees, the replacement native plants must survive into the second growing season (see graphic – **APPENDIX F**);
 - (f) The Pilot Demonstration Project in the vicinity of 74th Street provides an integral safeguard that allows the community to explore different techniques for vegetation control and obtain first hand field data that can be applied throughout the Borough's DVMP (see section 4);
 - (g) The management process takes this overriding theme of safeguards to the next level by developing a concept that continuously preserves vegetation throughout the process;
 - (h) The installation of a sand fence along the ocean-side of any area proposed for management ensures that the planted native species will be sheltered from harsh winds from the onset of the process (additional sand fence may be employed to minimize sand

movements).

- 3.4.15 Inspections and monitoring are important elements of the DVMP by providing continued feedback concerning the successes and necessary revisions of the Program. It is proposed that the DVMP Base Map (**APPENDIX G**) be used to track priority restoration areas and facilitate monitoring success of the Dune Restoration Plan. It is important to note that this visual representation will be updated over the course of the project.
- 3.4.16 Pre-inspections and Post-inspections, including photo-documentation, of areas involved in dune management and restoration will be incorporated into the project proposal. Reports of success of replacement native plants will be submitted to the appropriate governing bodies for monitoring purposes. These reports will include an assessment of plant survival and coverage annually until the plants are established. The planting success and resulting site conditions will be documented with photographs.

SECTION 4. PILOT DEMONSTRATION PROJECT

4.1 Pilot Demonstration Project

A Pilot Demonstration Project was incorporated into the design of the Dune Vegetation Management Plan in order to test the effectiveness of the standards and techniques of the plan. It has been designed to understand and to address issues discovered by smaller scale projects that exhibit the same dune restoration aspects encountered in the proposed Plan. The area chosen for the Pilot Demonstration Project is located at the oceanside end of 74th Street. This area was chosen because it exhibited the following three elements that are representative of invasive plant conditions found in the Borough:

- (a) A dune area having a significant monoculture stand of Japanese black pine that is impacting a landowner and that is expanding into the Borough dune system south of 74th Street (**PHOTO 7, 8 and 9 – APPENDIX A**);
- (b) A dune area having a limited mixed stand of Japanese black pine north of 74th Street;
- (c) The Borough 74th Street end and associated beach path containing the invasive species (**PHOTO 10 – APPENDIX A**). This test area contains living and dead Japanese black pine occurring on adjoining Borough and private property. Prior to the inventory conducted during August of 2009, two meetings were conducted between representatives of the Borough, Joseph L. Lomax and the owners of the private property along 74th Street. The purpose of landowner meetings were to discuss the rate of growth of this invasive

species in the back dune areas and to ensure support and cooperation throughout the Dune Vegetation Management process. This small but representative Pilot Demonstration Project will evaluate techniques employed in vegetation control and replacement, in addition to monitoring the integrity of the affected dunes.

4.2 Management Techniques to be Demonstrated

The major components that will be evaluated through the Pilot Demonstration Project include:

- (a) Thinning – removal of an aerial portion of selected, invasive or problematic trees at a specific site,
- (b) Trimming – removal of the lower limbs of the trees, and candles, and
- (c) The replacement of vegetation with native species with the criteria specified in the Management Standards. Adjustments to the Plan will be made in a manner consistent with the intent of this Management Plan and in responsive to the best available practices for landscape management in the dune system.

SECTION 5. DUNE VEGETATION MANAGEMENT PLAN APPROVAL PROCESS

5.1 Review and Approval Process

The Dune Vegetation Management Plan (DVMP) promotes the use of management standards and techniques that maintain a healthy, diverse dune system comprised primarily of native species. This Plan will receive reviews by the public and agencies of the Borough in consultation with the Avalon Environmental Commission and other interested agencies of government as noted below.

- 5.1.1 The DVMP draft outline was reviewed and approved by the Borough for the purposes of discussion with the other land use agencies.
- 5.1.2 Inter-governmental coordination occurred through discussions with the NJ Department of Environmental Protection, the U.S. Fish and Wildlife Service and Natural Resources Conservation Service of the US Department of Agriculture.
- 5.1.3 The DVMP was drafted by The Lomax Consulting Group.
- 5.1.4 The Draft Plan will be reviewed by the Avalon Environmental Commission and Borough Administrator.
- 5.1.5 The revised Draft Plan will be submitted to the public and agencies for their review and

comments.

5.1.6 The Plan will be refined by The Lomax Consulting Group based on public and technical comments.

5.1.7 The Plan will be presented to the Borough for its review, comments and recommendations to Council.

5.2 Dune Vegetation Management Plan Implementation

5.2.1 After review and approval by Borough Council (incorporating their changes), the appropriate Plan elements will be prepared for adoption into the Borough Dune Ordinance.

5.2.2 The proposed changes to Borough Dune Ordinances will be submitted to NJDEP for their review and approval, as their interest appears.

5.2.3 Upon receiving all required inputs and approvals, the DVMP will then be integrated into the appropriate Borough Ordinances (**APPENDIX H**).

5.2.4 Public meeting(s) will be conducted to inform the interested public and landscapers of the purpose and provisions of the DVMP.

SECTION 6. CONCLUSION

The protection of the dune system by maximizing native dune vegetation and by the proper management of these natural resources is an important issue facing the Borough of Avalon. This issue extends beyond the scope of traditional environmental protection and natural resource conservation to a much broader array of public health and safety concerns. A well-maintained dune system provides a protective barrier from coastal storms for the community. This Dune Vegetation Management Plan creates a framework for the community to return the dune vegetation to its natural state. It identifies specific roles of individuals within the community and the management standards that safeguard the integrity of the dunes, while allowing vegetation management and dune restoration. The Dune Vegetation Management Plan not only outlines the specifics of management practices to be applied in the field, but also provides for a Pilot

Demonstration Project to ensure that best management practices are being utilized based upon experience derived from actual field operations within the Borough of Avalon. Furthermore, the Plan lays out the approval process to ensure that the goal of a healthy and diverse ecosystem is connected to the Boroughs public policy process. Accordingly, the Dune Vegetation Management Plan is an integral part of the Community Forestry Management Plan. It incorporates public and governmental reviews, and ultimately it will become included in the Borough Master Plan and appropriate Land Use Ordinances.

The Plan provides an opportunity for the Borough and the landowners to address, in a cooperative manner, dune vegetation management issues. Further, the Plan provides the basis for seeking funding support for implementation of the management program from such funding sources as the U.S. Fish and Wildlife Service and the NJDEP Community Forestry Management Program. In addition, the Plan establishes the operating standards and an agreement that the Borough and cooperating landowners can utilize to share dune vegetation management responsibilities and costs. In conclusion, the Dune Vegetation Management Plan recognizes that the dune system of the Borough of Avalon is a critical asset of the community and requires continuing management to ensure that the dune system will continue to:

- (a) Serve the Borough as a protective buffer dissipating coastal storm energy,
- (b) Maintain a bank of sand to replenish the beach system,
- (c) Support a diversity of habitats for adapted plants and wildlife and
- (d) Create unique aesthetic appeal of the community

SECTION 7.

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**APPENDIX A.
Photographs**

PROJECT PHOTOGRAPHS



Photograph 1.

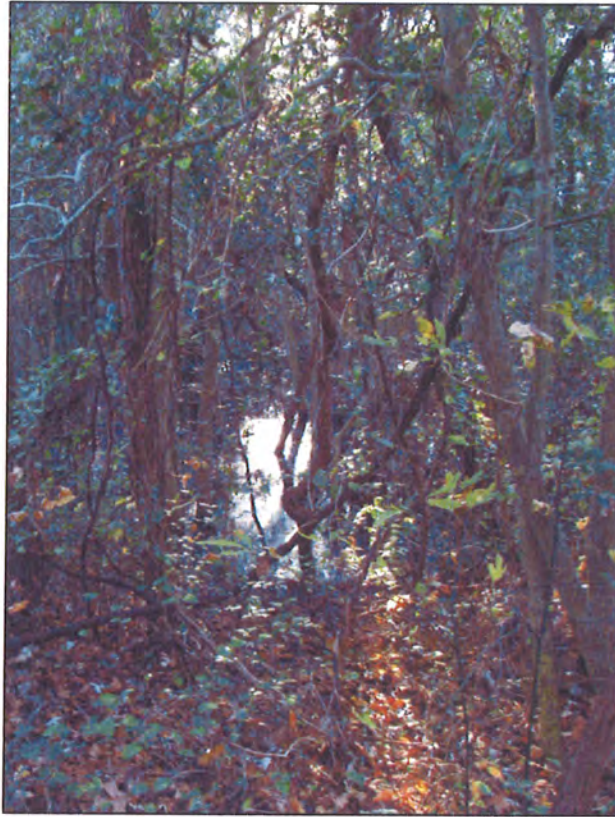
The dune system is a community asset that is comprised of diverse biotic communities adapted to surviving coastal conditions.



Photograph 2.

The back dunes have been dominated by native trees and shrubs, however, the Japanese black pine has become established in many areas of the community and has replaced native vegetation.

PROJECT PHOTOGRAPHS



Photograph 3.

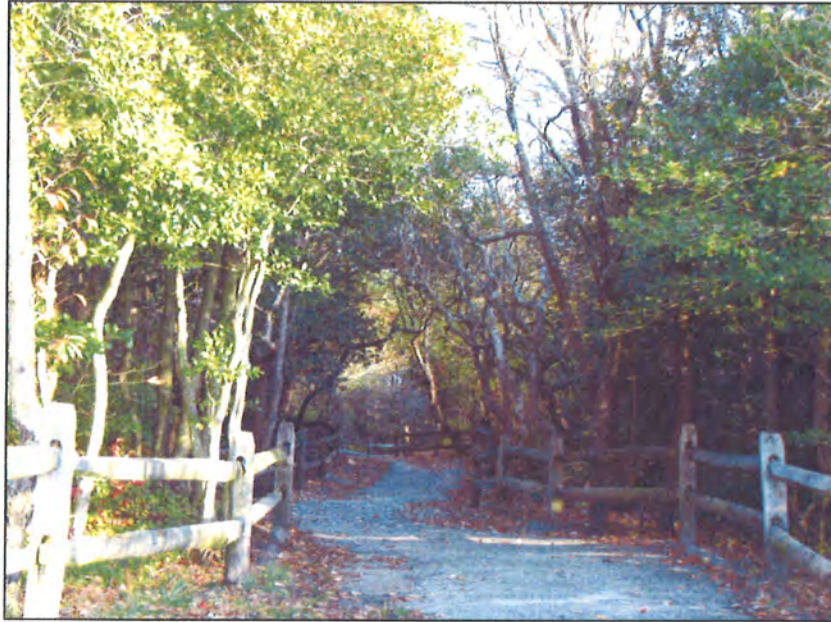
A hardwood swamp wetland has become established in the interdunal swale.



Photograph 4.

Extensive, dune areas of the Borough have benefited from the installation of sand trapping fences and the planting of dune grasses. Old sand fence supports illustrate the expansion of the dune in some areas of the Borough.

PROJECT PHOTOGRAPHS



Photograph 5.

The maritime forest supports a unique assemblage of trees and shrubs adapted to the western portion of the dune ecosystem.



Photograph 6.

The Japanese black pine was planted to stabilize the back dune system; however, its invasive nature has resulted in the displacement of native vegetation.

PROJECT PHOTOGRAPHS



Photograph 7.

The dense growth of the Japanese black pine has resulted in the displacement of native species except for poison ivy and Virginia creeper. The needle drop and pine cones create a fire-prone environment in close proximity to residences. This stand on the south side of 74th Street is indicative of the Japanese black pine monoculture condition.



Photograph 8.

Japanese black pine can attain significant height. Their rapid growth results in dense visual barriers and replacement of natural coastal ecosystems, as experienced on the south side of 74th Street.

PROJECT PHOTOGRAPHS



Photograph 9.

The Japanese black pine has invaded the natural stand of vegetation on the north side of 74th Street, not only out competing the native plants, but also establishing itself in the natural dunes oceanward of the primary dunes.



Photograph 10.

The 74th Street end and beach path is partially lined by Japanese black pine, some of which have crowded out native vegetation and some of which are dying (right side).

**APPENDIX B.
Preliminary Survey Results - 2008**

Street	Location	Tree Height	Trees
79th	North Side	>15'	8 JBP located in dunes approx. 15 ft (area 470 SF)
78th	Street End	>15'	Multiple JBP in street end approx. 20 ft (area 1350SF)
	North Side	>15'	10 ERC located in dune approx. 15 ft (area 2000 SF)
	North Side	>15'	1 JBP in center of dune 15 ft (area 64 SF)
77th	North Side	>15'	9 JBP in dunes approx. 15 ft (area 1089 SF)
	North Side	>15'	2 ERC, 1 BC approx. 15 ft (area 200 SF)
76th	South Side	>15'	3 JBP, 3 ERC 15 - 20 ft (area 1250 SF)
	North Side	>15'	20 JBP, 1 ERC in dune and street end 15 - 20 ft (area 6850 SF)
75th	South Side	>15'	7 JBP, 1 ERC 15 - 20 ft (area 7600 SF)
	North Side	>15'	10 JBP, 3 ERC, 2 BC 15 - 20 ft (area 4375 SF)
74th	South Side	>15'	>30 JBP in dune and street end 20 - 30 ft (area 10000 SF)
	North Side	>15'	17 JBP numerous ERC, BC >20 ft (area 5000 SF)
73rd	South Side	10-14'	6 JBP, 6 ERC, 1 BC 5 - 10 ft (area 5000 SF)
	North Side	>15'	6 ERC in dune approx. 15 ft (area 2500 SF)
72nd	South Side	>15'	10 JBP, 1 ERC, 1 BC approx. 20 ft (area 5000 SF)
	North Side	>15'	5 JBP in dune approx. 15 ft (area 500 SF)
71st	South Side	10-14'	11 JBP, 5 ERC, 1 BC 10 - 15 ft (area 3400 SF)

Plant Species

- JBP – Japanese black pine (*Pinus thunbergii*)
- ERC- Eastern red cedar (*Juniperus virginiana*)
- BC – Black cherry (*Prunus serotina*)

71 st (cont.)	Street End	10-14'	Numerous ERC, BC approx. 10 ft (area 1250 SF)
	North Side	Absent or <10'	1 sapling in primary dune (area 4 SF)
70th	South Side	>15'	18 ERC, 1 JBP approx. 15 ft (area 3750 SF)
	Street End	10-14'	1 JBP, 1 BC approx. 10 - 15 ft (area 200 SF)
	North Side	10-14'	3 JBP, numerous BC, 3 ERC 10-15 ft (area 3000 SF)
69th	South Side	10-14'	6 ERC, numerous BC approx. 10 ft (area 5000 SF)
	North Side	10-14'	2 JPB approx 10 - 15 ft (area 130 SF)
68th	Street End	Absent or <10'	1 ERC approx. 8 ft
	South Side	>15'	7 JBP, numerous ERC, BC 20 ft (area 2000 SF)
	North Side	10-14'	1 JBP in dune approx 12 ft (area 64 SF)
67th	South Side	>15'	2 JBP, 7 ERC approx 20 ft (area 5000 SF)
	Street End	>15'	7 ERC approx 15 ft (area 2400 SF)
	North Side	10-14'	15 JBP, abundant ERC, BC 10 ft (area 4000 SF)
66th	South Side	Absent or <10'	1 JBP in dune approx. 4 ft (area 9 SF)
65th	South Side	>15'	13 JBP, 5 ERC approx. 25 ft (area 3000 SF)
	Street End	>15'	1 JBP, 5 ERC approx. 20 ft (area 1500 SF)
	North Side	>15'	2 JBP in dune approx 15 - 20 ft (area 100 SF)
64th	South Side	>15'	7 JBP, 2 ERC approx. 15 - 20 ft (area 3000 SF)
	North Side	>15'	JBP abundant approx 20 - 25 ft (area 5000 SF)

63rd	South Side	10-14'	4 JBP in dunes dispersed approx 10 ft (area 64 SF)
	North Side	>15'	numerous JBP, 5 ERC 15-20ft (area 5000SF)
	Street End	>15'	5 ERC, 1 JBP approx. 15-18ft (area 2100 SF)
62nd	South Side	>15'	5 JBP, 1 ERC approx. 15-18ft (area 1000 SF)
	Street End	>15'	1 JBP, 1 ERC single trees approx. 15ft (area 225 SF)
	North Side	>15'	15 JBP, 4 ERC approx. 20-30ft (area 5000 SF)
61st	South Side	10-14'	3 ERC, located in dune approx 10ft (area 36 SF)
	Street End	10-14'	10 JBP, 4 ERC in street end approx. 12ft (area 1200 SF)
	North Side	>15'	Abundant JBP (25) approx. 20-25ft (area 5000 SF)
60th	South Side	>15'	9 JBP, 1 ERC in dune approx. 20 - 25ft (area 3000 SF)
	Street End	>15'	3 JBP, 2 ERC approx. 18 - 22ft (area 2100 SF)
	North Side	>15'	12 JBP, 5 ERC in dune approx. 18 22ft (area 5000 SF)
59th	South Side	Absent or <10'	4 JBP scattering in dunes approx. 5ft (area 500 SF)
	Street End	>15'	8 JBP , 3 ERC approx. 20ft (area 900 SF)
	North Side	>15'	6 JBP, 1 ERC in dune approx. 15 - 18ft (area 1200 SF)
58th	South Side	>15'	14 JBP, 1 ERC in dunes 15ft (area 5000 SF)
	Street End	>15'	15 JBP, numerous BC approx. 20ft (area 1500 SF)
	North Side	>15'	30 JBP, 1 ERC in dune approx. 25 - 30ft (area 6000 SF)
57th	North Side	>15'	Abundant JBP located in dune approx. 30ft (area 10000 SF)

44th	North Side	>15'	Abundant JBP and BC approx. 30ft (area 3000 SF)
	North Side	>15'	1 JBP, 1 ERC in dune approx. 15ft (area 200 SF)
	North Side	>15'	15 JBP, BC scattered in dune approx. 20-28ft (area 5000 SF)
40th	North Side	>15'	Abundant JBP, ERC in dunes approx. 25-30ft (area 10000 SF)
	South Side	>15'	28 JBP Few BC approx. 30-35ft (area 4000 SF)
	Street End	>15'	Abundant JBP and ERC approx 15-20ft (area 1500 SF)
39th	Street End	>15'	Abundant ERC, BC approx. 15-20ft (area 2500 SF)
	North Side	>15'	9 JBP, 3 ERC in dunes approx. 15-20ft (area 700 SF)
38th	South Side	10-14'	4 JBP scattered in dune approx. 10ft (area 64 SF)
	South Side	>15'	15 JBP, abundant ERC approx 18-22ft (area 4000 SF)
	North Side	>15'	Abundant ERC, BC approx. 15ft (area 3200)
37th	South Side	>15'	Abundant JBP approx. 20-25ft (area 1400 SF)
	Street End	10-14'	5 JBP, ERC approx. 10ft (area 750 SF)
	North Side	10-14'	Abundant ERC, BC approx 12-15ft (area 1200 SF)
32-31st	West of BW	10-14'	Abundant JBP on private property trimmed by owners
	East of BW	10-14'	2 JBP in dune approx 10 - 15ft (area 50 SF)
30th	South Side	>15'	1 JBP in dune east of Boardwalk approx. 15ft (area 16 SF)
28th	Street End	>15'	1 JBP in dune east of Boardwalk approx. 15ft (area 16 SF)
	North Side	Absent or <10'	JBP located on private property and trimmed

27-26th	West of BW East of BW	Absent or <10'	Abundant JBP on private property trimmed by owners
		>15'	1 JBP East of Board Walk in dune approx. 15ft (area 25 SF)
26-25th	West of BW	Absent or <10'	Abundant JBP on private property trimmed by owners
25-24th	West of BW East of BW	Absent or <10'	JBP located on private property and trimmed
		10-14'	2 JBP east of boardwalk in dune approx. 10ft (area 50 SF)
24th	North Side	10-14'	2 JBP east of Board Walk in dune approx. 10ft (area 50 SF)
23-22nd	East of BW	10-14'	4 JBP, 5 ERC east of Board Walk approx. 10ft (area 350 SF)
22-21st	West of BW West of BW	>15'	15 JBP may be on private property approx. 25ft (area 2250 SF)
		10-14'	34 JBP (some saplings) trimmed on private property? approx. 10ft
21-20th	Dune	10-14'	12 JBP scattered in dunes few saplings approx. 12ft (area 1600SF)
21st	North Side	>15'	8 JBP located on private property? approx. 18ft (area 750 SF)
20th	North Side	10-14'	8 ERC, 1 JBP bayberry die back approx. 10ft (area 600 SF)
19th	South Side North Side	Absent or <10'	JBP located on private property and trimmed
		Absent or <10'	JBP located on private property and trimmed
18th	South Side North Side	>15'	15 JBP few saplings in dune approx. 15-20 ft (area 2000 SF)
		>15'	3 JBP in dune approx. 15-20ft (area 900 SF)
17th	South Side Street End North Side	Absent or <10'	5 JBP scattered in dune some trimmed approx. 8 ft
		10-14'	5 JBP, 1 Persimmons approx. 10ft (area 750 SF)
		>15'	8 JBP some on private property approx. 15-20ft (area 600 SF)

16th	South Side	Absent or <10'	JBP on private property and trimmed
	North Side	>15'	4 JBP some on yard some in dune approx. 20ft (area 400 SF)
15th	South Side	>15'	5 JBP on private property not trimmed approx. 20ft (area 400 SF)
	North Side	>15'	Abundant BC approx. 15ft (area 2000 SF)
14th	South Side	>15'	5 JBP scattered in dune approx. 15-18ft (area 125 SF)
13th	North Side	>15'	6 JBP, 1 ERC in dune approx. 20-25ft (area 1650 SF)
11th	Street End	>15'	5 JBP along fenced area in dune approx. 15ft (area 200 SF)
	North Side	>15'	15 JBP located on private property and trimmed approx. 18ft
10th	North Side	10-14'	5 JBP located on private property <i>P. serotina</i> . 10ft
9th	North Side	Absent or <10'	5 JBP recently planted (landscaping) approx. 4ft

* based upon shrubs planted on 5 foot centers (19.6 square feet)




Legend
 Tree Count Data Point

FIGURE 1: GPS MAPPING OF AVALON DUNE VEGETATION STUDY (8TH - 17TH)

SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgim.nj.gov/> & THE CAPE MAY COUNTY PLANNING DEPARTMENT

DATE	DRAWN BY
08-19-08	PGS
1 inch = 200 feet	





Legend
 Tree Count Data Point

FIGURE 2. GPS MAPPING OF AVALON DUNE VEGETATION STUDY (14TH - 24TH)

SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgim.nj.gov/> & THE CAPE MAY COUNTY PLANNING DEPARTMENT

DATE: 08-19-08	DRAWN BY: PGS
1 inch = 200 feet	





FIGURE 3: GPS MAPPING OF AVALON DUNE VEGETATION STUDY (24TH - 34TH)

SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgin.nj.gov/> &
THE CAPE MAY COUNTY PLANNING DEPARTMENT



DATE: 08-19-08	DRAWN BY: PGS
1 inch = 200 feet	



DATE: 08-18-08
DRAWN BY: PGS
1 inch = 200 feet

FIGURE 4. GPS MAPPING OF AVALON DUNE VEGETATION STUDY (34TH - 44TH)

SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgdn.nj.gov/> &
THE CAPE MAY COUNTY PLANNING DEPARTMENT



FIGURE 5. GPS MAPPING OF AVALON DUNE VEGETATION STUDY (44TH - 54TH)

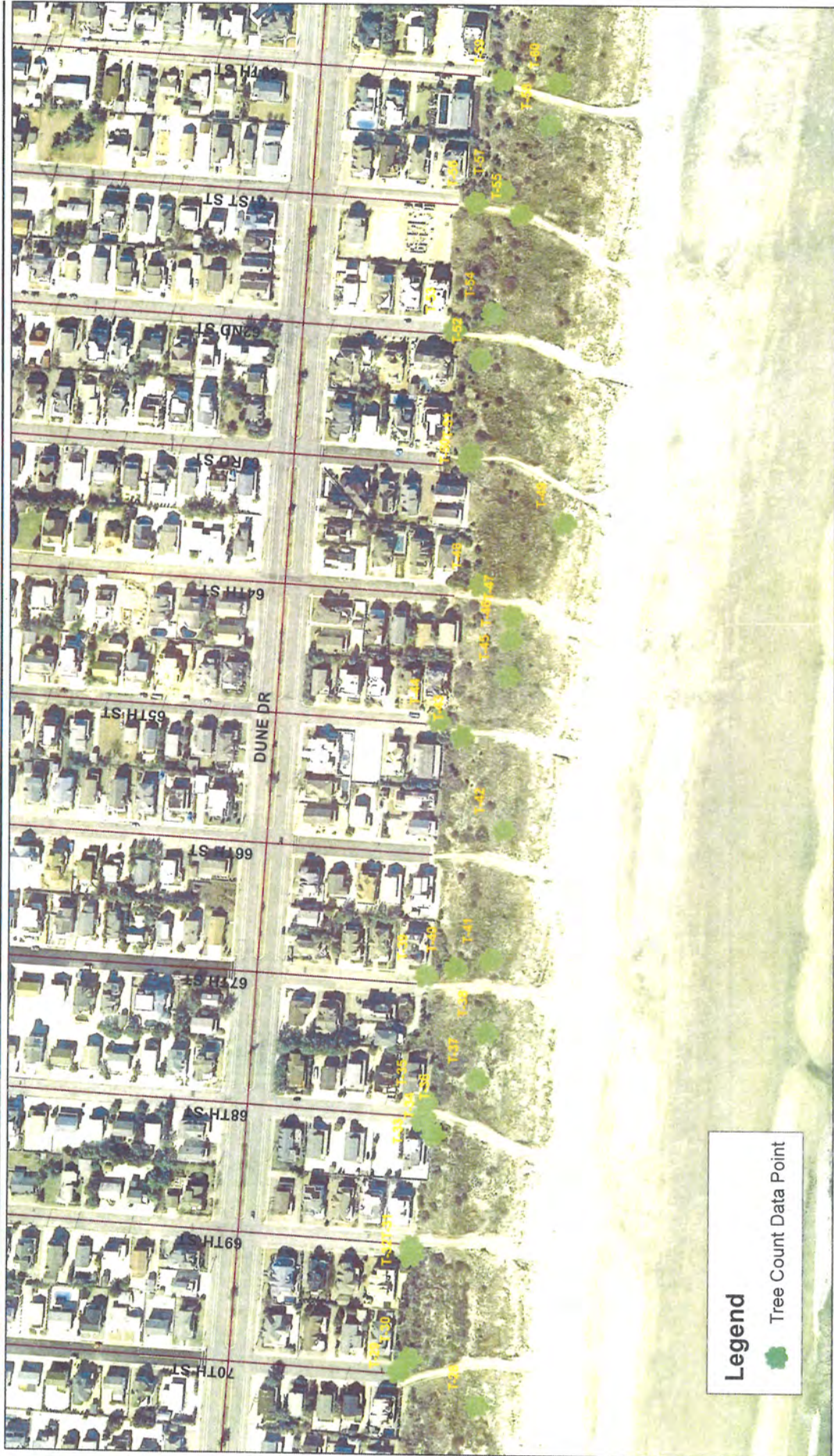
SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgis.nj.gov/> & THE CAPE MAY COUNTY PLANNING DEPARTMENT

DATE: 08-19-08

DRAWN BY: PGS

1 inch = 200 feet





Legend
● Tree Count Data Point

FIGURE 7: GPS MAPPING OF AVALON DUNE VEGETATION STUDY (60TH - 70TH)

SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njpin.nj.gov/> & THE CAPE MAY COUNTY PLANNING DEPARTMENT

DATE: 08-19-08
 DRAWN BY: PGS
 1 inch = 200 feet



**APPENDIX C:
Communications with NJDEP**

- **Request for Jurisdictional Determination to NJDEP on August 3, 2009**
- **Approved Jurisdictional Determination from Andrew Gale of NJDEP on October 1, 2009**



2008-08-03 10:00 AM
1111 South 9th Street, Suite 200
Trenton, NJ 08625, USA

609-465-9857
609-465-9857
www.lomaxconsulting.com

Joseph L. Lomax, President
(609) 465-9857
jlomax@lomaxconsulting.com

August 3, 2009
UPS Delivery

New Jersey Department of Environmental Protection
Division of Land Use Regulation
501 E. State Street, P.O. Box 439
Trenton, NJ 08625-0439
ATTN: Application Support

RE: Coastal Jurisdictional Determination- Avalon Dune Vegetation Management
Borough of Avalon, Cape May County, New Jersey
TLCG File No: 08-563.1

Dear Application Support Agent

In accordance with N.J.A.C. 7:7-1.5 please find the following materials enclosed so that the Department may conduct a Coastal Jurisdictional Determination to determine the applicability of the Coastal Area Facility Review Act (CAFRA, N.J.A.S.A. 13:19-1 et seq.) for the above referenced Dune Vegetation Management Plan in the Borough of Avalon, Cape May County, New Jersey:

1. One (1) completed copy of the Coastal Jurisdictional Determination Checklist.
2. A complete written description of the project and all proposed activities (below).
3. A copy of correspondence from our office dated June 5, 2009 to Colleen Keller of NJDEP confirming a telephone conversation that took place June 3, 2009.
4. One (1) set of color photographs of the existing property is provided (Figures 1 – 8). The base aerial photograph is the 2007 NJDEP Ortho Photo.
5. One (1) copy of a USGS Quad Map outlining the site location (Figure 9).

**DESCRIPTION OF THE PROJECT SITE
AND ALL PROPOSED ACTIVITIES**

BACKGROUND INFORMATION The Borough of Avalon is a barrier island community located in Cape May County, NJ. As a result of the geographic location of the Borough, a high priority has been placed on the role of the dunes within the community for both protective and biotic purposes. Accordingly, the Borough of Avalon has undergone a vegetative natural resource inventory in the summer of 2008 to



ATTN: Application Support
August 3, 2009
Page 2

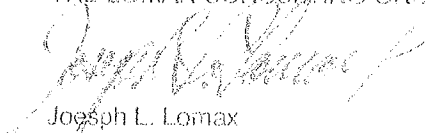
analyze the dune vegetation of the community. The results of this inventory revealed that an invasive species, the Japanese Black Pine (*Pinus thumbergii*), has replaced a substantial portion of the native species within the dune system. This species has spread throughout a significant area of the secondary dune and is spreading throughout the vegetative community at an alarming rate. It has established a mono-culture in some areas of the dune system. If left untreated it is anticipated that this non-native species will lead to a further decline of native vegetation stands within the community, which local wildlife relies on for survival.

PROJECT DESCRIPTION The Borough of Avalon has retained the Lomax Consulting Group in order to prepare a Dune Vegetation Management Plan, which focuses on maintaining and enhancing the extensive and environmentally sensitive dune system. The Management Plan will provide standards and techniques that improve the vegetative component of the dune ecosystem through the control of invasive plant species and methodically replacing invasive plants with native vegetation plantings. As such, the Lomax Consulting Group is requesting confirmation from the Department that the Borough does not need a permit for the maintenance of the dune system through the replacement of invasive species with native species.

The Lomax Consulting Group had a telephone consultation with the Department on June 5, 2009. Based on that telephone consultation (summary attached for your review), it is our understanding that: (1) the Department does not regulate, but encourages the planting and re-vegetation of the dune system with principally native species; (2) maintenance entailing trimming, thinning and replacement of non-native, invasive trees (e.g. Japanese Black Pine) within the dune system is not regulated under CAFRA; so long as the aerial portion of the trees are removed by hand and the root systems of the trees remain intact and in place. Further, it is our understanding that no mechanized equipment (trucks) may be used to remove the aerial portion of the trees and no excavation of dune sand in conjunction with the dune vegetation management is permissible without a permit, except as required to plant the native species.

We are respectfully requesting written confirmation that these findings are correct and accurate as described above. If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,
THE LOMAX CONSULTING GROUP, LLC



Joseph L. Lomax
President

cc: Mr. Andrew Bednarek, Borough of Avalon Business Administrator
Mr. Martin L. Pagliughi, Borough of Avalon Mayor
Dr. Brian Reynolds, Chair, Avalon Environmental Commission



State of New Jersey
Department of Environmental Protection



COASTAL JURISDICTIONAL DETERMINATION CHECKLIST

Revised: December 23, 2008

Website: www.nj.gov/dep/landuse

CALL NJDEP AT (609) 777-0454 IF YOU HAVE ANY QUESTIONS

****USE THIS FORM ONLY FOR CAFRA, WATERFRONT DEVELOPMENT, AND/OR COASTAL WETLANDS DETERMINATIONS****

To apply for a coastal area applicability determination, complete this checklist and send the material required below to the following address (please do not submit more copies than required):

Postal Mailing Address:
NJDEP Division of Land Use Regulation
P.O. Box 439
Trenton, NJ 08625

Street Address (For courier service and hand deliveries only):
NJDEP Division of Land Use Regulation
501 East State Street, Station Plaza Five, 2nd Floor
Trenton, NJ 08609

CHECK ALL BOXES BELOW OR MARK N/A

1. One completed copy of this checklist.

2. Complete the following information:

Applicant Name: BOROUGH OF AVALON
Address: 3100 DUNE DRIVE
City: AVALON State: NJ Zip: 08202

Agent: JOSEPH L. LOMAX - THE LOMAX CONSULTING GROUP
Address: PO BOX 9
City: CAPE MAY COURT HOUSE State: NJ Zip: 08210

Daytime Telephone Number: (609) 465-9857

PROJECT LOCATION:

Block(s): MULTIPLE Lot(s): MULTIPLE

Municipality: BOROUGH OF AVALON County: CAPE MAY COUNTY

Site Location (OR nearest crossroads): BOROUGH OF AVALON

3. Submit the following information:

- a. A complete written description of the project and all proposed activities.
- b. One copy of a location map (USGS quad map preferable) outlining the site location.
- c. One set of site plans for the proposed project.
- d. One copy of each previous approval received from NJDEP concerning the site, if such approvals exist.
- e. One set of color photographs of the existing property.

**OFFICIAL USE ONLY
NJEMS Pre-Review Form**

Program Interest #: _____ Class Code: _____ Activity #: _____



P. O. BOX 9 (MAILING)
1435 ROUTE 9 NORTH (DELIVERY)
CAPE MAY COURT HOUSE, NJ 08210, USA

609-465-9857 (F)
609-465-2449 (F)
WWW.LOMAXCONSULTING.COM

Joseph L. Lomax, President
(609) 465-9857
jlomax@lomaxconsulting.com

June 5, 2009
UPS Delivery

New Jersey Department of Environmental Protection
Division of Land Use Regulation
501 E. State Street, P.O. Box 439
Trenton, NJ 08625-0439
ATTN: Ms. Colleen Keller

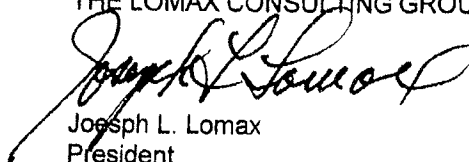
RE: CAFRA Jurisdiction – Avalon Dune Vegetation Management
Borough of Avalon, Cape May County, New Jersey
TLCG File No: 08-563.1

Dear Ms. Keller:

Thank you for taking time out of your schedule on Wednesday June 3, 2009 to discuss the Departments extent of jurisdiction over planting and vegetation maintenance in the dune system, in the Borough of Avalon. Based upon our telephone consultation, it is our understanding that: (1) the Department does not regulate, but encourages the planting and re-vegetation of the dune system with principally native species; (2) maintenance entailing trimming, thinning and replacement of non-native, invasive trees (e.g. Japanese Black Pine) within the dune system is not regulated under CAFRA; so long as the aerial portion of the trees are removed by hand and the root systems of the trees remain intact and in place. Further, it is our understanding that no mechanized equipment (trucks) may be used to remove the aerial portion of the trees and no excavation of dune sand in conjunction with the dune vegetation management is permissible without a permit, except as required to plant the native species.

As discussed, we will continue to keep you updated on the progress of our Dune Vegetation Management Plan. When you are in the Borough or vicinity, please feel free to contact us and we would like to take the opportunity to discuss the project and show you examples of key areas of the Dune Vegetation Management Plan. If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,
THE LOMAX CONSULTING GROUP, LLC



Joseph L. Lomax
President

cc: Mr. Andrew Bednarek, Borough of Avalon Business Administrator
Mr. Martin L. Pagliughi, Borough of Avalon Mayor
Dr. Brian Reynolds, Chair, Avalon Environmental Commission

08-563.1'Draft CAFRA Jurisdiction Ltr.ait

Over 30 years of environmental excellence.

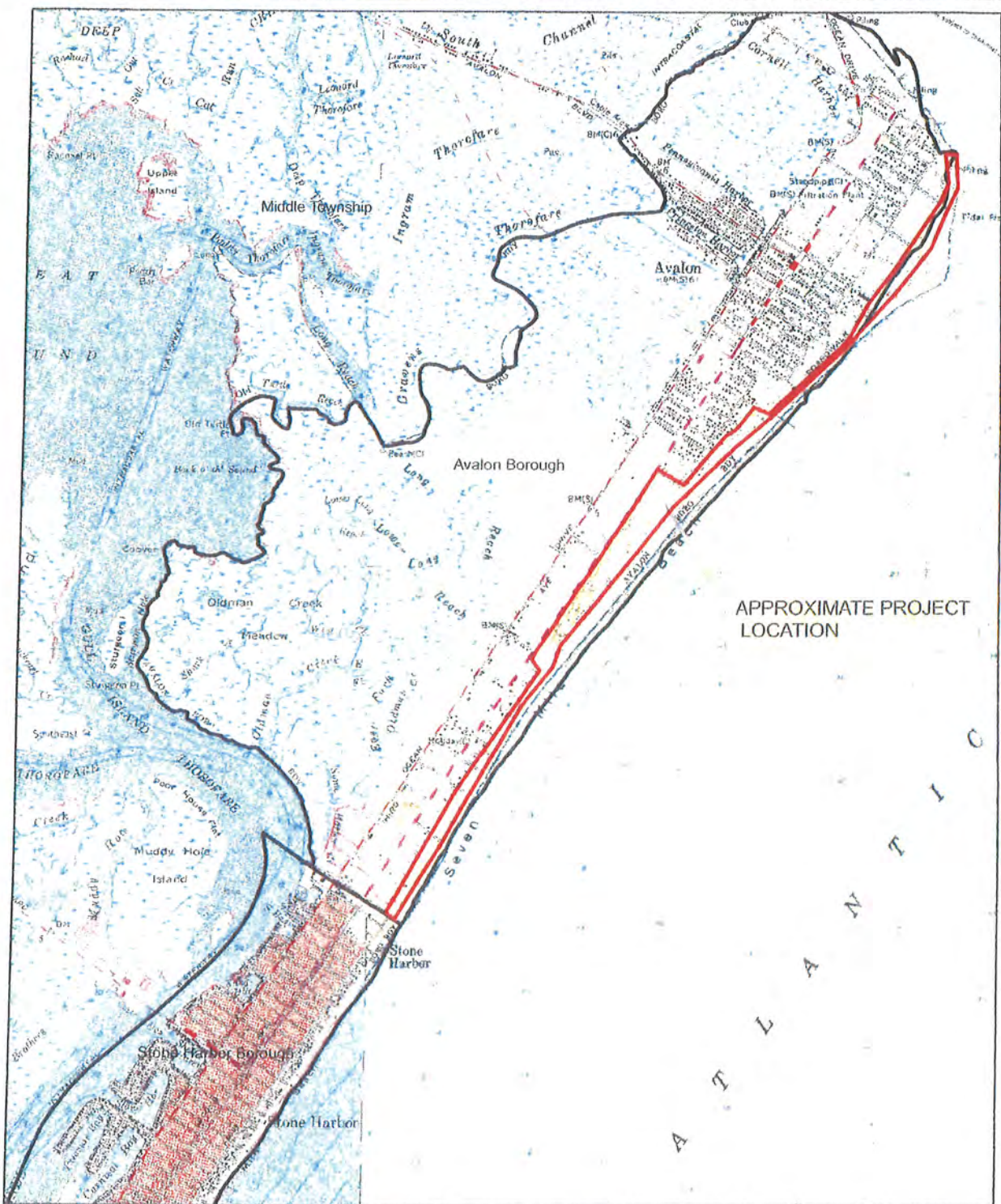


FIGURE 9: Site location on USGS Quad Maps No. 175 Stone Harbor & 176 Avalon

SOURCE: GIS DATA PROVIDED BY THE NJDEP AT <http://njgin.nj.gov/> & THE CAPE MAY COUNTY PLANNING DEPARTMENT

the LOMAX Consulting group

DATE: 7-9-09

DRAWN BY: TWR

1 inch = 3,000 feet



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Land Use Regulation
P.O. Box 439, Trenton, NJ 08625-0439
Fax # (609) 292-8115
www.state.nj.us/dep/landuse

JON S. CORZINE
Governor

MARK N. MAURIELLO
Acting Commissioner

OCT 01 2009

Joseph L. Lomax
The Lomax Consulting Group
PO Box 9
Cape May Courthouse, New Jersey 08210

Re: DLUR File No.: 0501-05-0012.1 APD 090001
Name: Borough of Avalon
Block: Multiple Lot(s): Multiple
Address: Borough of Avalon
Borough of Avalon, Cape May County

Dear Mr. Lomax:

This letter is in response to your request for a jurisdictional determination as referenced above. Based on a review of the information submitted including, and a review of information as maintained on the Department's Geographic Information System the following statutes will apply:

(X) A Waterfront Development permit is **not required**.

Based on a review of the Coastal Wetlands Maps, the following determination is made:

(X) There are no Coastal Wetlands on this site, therefore no permit is required.

Based on a review of the submitted documentation, the Coastal Area Facility Review Act, **CAFRA, is not applicable** as per the Coastal Permit Program Rules for the control of invasive plant species and the replacement of native vegetation within the dune system. All proposed activities should comply with Subchapter 3A of the Coastal Zone Management Rules. No machinery is permitted for the use of removing the invasive plant species, all removal should be conducted by hand. Please note excavation of the dunes is prohibited.

This letter does not constitute a jurisdictional determination for the Freshwater Wetlands Protection Act Rules at N.J.A.C. 7:7A and the Flood Hazard Area Control Act Rules at N.J.A.C. 7:13-1.1 et seq. Assistance with the applicability of these statutes is available from this offices' Cape May County Region group which may be contacted at the above address.

This letter does constitute a jurisdictional determination for the Waterfront Development Act (N.J.S.A. 12:5-3 et. seq.), Wetlands Act of 1970 (N.J.S.A. 13:9A-1 et. seq.) and the Coastal Area Facility Review Act, CAFRA, (N.J.S.A. 13:9-1 et. seq.).

This letter does not relieve the applicant of the responsibility of obtaining any other required State, Federal or local permits or approvals as required by law and is based on the information submitted in accordance with existing regulation. This determination shall be considered null and void if the submitted information is incorrect, site conditions or regulations change.

Should you have any questions regarding this determination, please contact Georgeann Sobotka at: Georgeann.Sobotka@dep.state.nj.us. Requests for assistance must include the file number as found on each page of this determination.

Sincerely,



Andrew Gale, Supervisor
General Permit & Jurisdictional Determination Units
Division of Land Use Regulation

c: Bureau of Coastal and Land Use Compliance and Enforcement, Toms River
Borough of Avalon Construction Official

APPENDIX D.
Memorandum of Agreement
Between the Borough and Property Owners
Regarding Vegetation Management in the Avalon Dune System

MEMORANDUM OF AGREEMENT

WHEREAS, the **BOROUGH OF AVALON**, doing business at 3100 Dune Drive, Avalon, New Jersey (hereinafter referred to as “Borough”) is the owner of certain lands and premises adjacent to the Atlantic Ocean upon which exists a beach and dunes with significant vegetation (the “Dune System”); and

WHEREAS, _____, (hereinafter referred to as “Property Owner”) is the owner of certain lands and premises known as 84 East 11th Street, Avalon, New Jersey (the “Owner’s Property”), which property is adjacent to the Dune System; and

WHEREAS, Property Owner desires to install, at Property Owner’s expense, landscaping designed to hide some fencing near a Borough pump station within the Dune System, and

WHEREAS, the Borough and the Property Owner believe that the landscaping that Property Owner intends to install will be beneficial to the Borough and enhance the aesthetics of the Borough, and

WHEREAS, the Borough has obtained a jurisdictional determination the New Jersey Department of Environmental Protection (DLUR File No. 0501-05-0012.1 APD 090001) dated October 1, 2009 confirming that the proposed removal and replacement of existing, non-native dune vegetation and the installation of indigenous vegetation in accordance with criteria specified in the Borough of Avalon Dune Vegetation Management Plan (December 2009) (the “Dune Management Plan”) does not require CAFRA approval; and

WHEREAS, as a result of the Beach Protection Ordinance adopted by the Borough of Avalon, as required under the State Aid Agreement of 1994, it is unlawful to disturb, remove or redistribute sand or vegetation within any dune area without application to the Borough of Avalon Planning/Zoning Board or Zoning Officer. The application process, pursuant to Ordinance 9:10-4 et seq., also includes the preparation of an application and submission of

necessary documentation, the review of that application and documentation by the Borough of Avalon Environmental Commission and a review by the Borough of Avalon Planning/Zoning Board or Zoning Officer, and

WHEREAS, the application process and preparation of supporting documentation, which will include professional expenses, can be time-consuming and result in significant monetary expenditures, and

WHEREAS, as a result of the factors set forth above, the Borough and Property Owner agree that a single application submitted by the Borough with the consent and cooperation of the Property Owner, and potentially other adjacent property owners, is the most efficient and effective manner to obtain approvals necessary to complete the installation of landscaping as proposed by Property Owner; and

WHEREAS, the Property Owner has agreed to pay all costs associated with the planting of the vegetation, which shall be in strict compliance with the approval granted by the Avalon Environmental Commission.

NOW, THEREFORE, by way of execution of this Memorandum of Agreement, the Borough and Property Owner do hereby agree as follows:

1. Borough shall submit an application under the Avalon Beach Protection Ordinance to the Avalon Environmental Commission and the Borough Zoning Officer for approval to install landscaping in the Dune System adjacent to the fence enclosing the pump station. The Work shall specifically include the installation of landscaping and plantings around the pump station located in the Dune System in that area of the Dune System located at the end of 11th Street where the pump station is located, as specifically approved by the Avalon Environmental Commission and consistent with applicable law and the Dune Vegetation Management Plan. A copy of the plan approved by the Avalon Environmental Commission is attached hereto as Exhibit A.

2. The parties shall execute any and all documentation necessary to accomplish the purposes of this Memorandum of Agreement and to permit access to the subject properties by the parties' agents, as permitted by law, for purposes of creating the necessary supporting documentation to be submitted along with the application.
3. All professionals necessary to complete the application and supporting documentation, and to make necessary appearances, shall be retained by the Borough at their sole discretion.
4. Upon the receipt of all necessary approvals, Property Owner shall arrange for completion of all aspects of the Work in accordance with the proposal approved by the Avalon Environmental Commission. All work shall be completed by a licensed landscaper approved by the Borough, subject to prior review and approval, as well as ongoing supervision, by Lomax Consulting Group.
5. Borough and Property Owner acknowledge that the application and plan for the Work has been reviewed and approved by the Borough of Avalon Environmental Commission. Planning/Zoning Board or Zoning Officer approval remains pending. In the event necessary approvals are not obtained, either party may terminate this Agreement. The Borough represents that the approvals obtained or to be obtained authorize all portions of the Work to be completed on the Owner's Property.
6. Consideration for this Memorandum of Agreement is based upon the mutual duties, obligations and responsibilities of the parties, each of whom has relied upon the promises and representations of the other in the execution of this agreement.
7. Execution of this agreement shall constitute a binding obligation on both parties to fully proceed with the entire project process which shall include the preparation

of the application, preparation of all necessary supporting documentation, payment of all application fees and escrow expenses, payment of all professional fees, attendance at any required hearings and completion of approved remedial work, if applicable, and the payment of all monetary expenditures as agreed upon between the parties.

Borough Council of Avalon

Witness: _____

By: _____

Property Owner

Witness: _____

By: _____

Witness: _____

By: _____

**APPENDIX E:
Proposed List of Dune Vegetation
Comments from
Chris Miller, USDA, Plant Material Center (November 4, 2009)**



P. O. Box 9 (MAILING)
1435 ROUTE 9 NORTH (DELIVERY)
CAPE MAY COURT HOUSE, NJ 08210, USA

609-465-9857 (P)
609-465-2449 (F)
WWW.LOMAXCONSULTING.COM

PROPOSED LIST OF DUNE VEGETATION

Adapted vegetation is an integral part of the overall dune system that is vital to the protection to the Borough from coastal storms. This vegetation not only aids sand deposition and accumulation but also serves to retain the sand in the dune system. Accordingly, the selection of plants that will survive and flourish in the harsh environment of the dune system is critical. The Avalon dune system is an expansive and diverse ecosystem exposed to wind and salt spray. The dune soils are sandy; and as such are droughty. In recognition of these conditions, the following vegetation list has been divided into three main categories based upon exposure and soil moisture conditions: (A) Salt Spray Tolerant Vegetation, (B) Sheltered Upland Dune Vegetation and (C) Sheltered Wetland Dune Vegetation based on the species tolerance of conditions and location in the dune system. The criteria for selection of the following plants for dune revegetation with native species include (1) their adaptation to survival in the dune environment; (2) resistance to disease and pests; (3) they do not require watering after they are established; (4) they may be pruned to control shape and height, if trimming is begun early in the tree/shrub development, and (5) they are available from nurseries.

The following information has been provided through literature review, direct dune observations in Avalon and Island Beach State Park, in addition to personal experience and communications with other qualified professionals in the field. One asterisk (*) indicates that this species is used by wildlife for food (including pollinators) and cover. Two asterisks (**) indicates that the plant has high wildlife value. (E) indicates that the plant is evergreen.

A. Salt Spray Tolerant Vegetation

1. **Trees:**

<u>Common Name</u>	<u>Scientific Name</u>
Eastern Red Cedar *(E)	<i>Juniperus virginiana</i>
Black Cherry **	<i>Prunus serotina</i>
Winged Sumac **	<i>Rhus copallina</i>
Fragrant Sumac **	<i>R. aromatica</i>

2. **Shrubs:**

<u>Common Name</u>	<u>Scientific Name</u>
Northern Bayberry **(E)	<i>Morella pensylvanica</i>
Wax Myrtle *	<i>M. cerifera</i>
Beach Plum *	<i>Prunus maritima</i>
Groundsel *	<i>Baccharis halimifolia</i>
Bearberry (E)	<i>Arctostaphylos uva-ursi</i>
Beach-heather (E)	<i>Hudsonia tomentosa</i>

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Salt Spray Tolerant Vegetation (continued)

3. Vines:	
<u>Common Name</u>	<u>Scientific Name</u>
Virginia Creeper **	<i>Parthenocissus quinquefolia</i>

B. Sheltered Upland Dune Vegetation

1. Trees:	
<u>Common Name</u>	<u>Scientific Name</u>
Pitch Pine **(E)	<i>Pinus rigida</i>
Eastern Red Cedar *(E)	<i>Juniperus virginiana</i>
Sassafras **	<i>Sassafras albidum</i>
Hackberry **	<i>Celtis occidentalis</i>
American Holly *(E)	<i>Ilex opaca</i>
Wild Persimmon **	<i>Diospyros virginiana</i>
Scarlet Oak **	<i>Quercus coccinea</i>
Black Oak **	<i>Q. valutina</i>
Blackjack Oak **	<i>Q. marilandica</i>
Scrub Oak **	<i>Q. ilicifolia</i>
Pignut Hickory *	<i>Carya glabra</i>
Mockernut Hickory *	<i>C. tomentosa</i>
Hop-hornbeam *	<i>Ostrya virginiana</i>
2. Shrubs:	
<u>Common Name</u>	<u>Scientific Name</u>
Northern Bayberry **(E)	<i>Morella pensylvanica</i>
Wax Myrtle *	<i>M. cerifera</i>
Beach Plum *	<i>Prunus maritime</i>
Groundsel *	<i>Baccharis halimifolia</i>
Inkberry Holly **(E)	<i>Ilex glabra</i>
Low Rose **	<i>Rosa carolina</i>
Sweet Fern *	<i>Comptonia peregrina</i>
Toughleaf Dogwood	<i>Cornus asperifolia</i>
3. Vines:	
<u>Common Name</u>	<u>Scientific Name</u>
Climbing Bittersweet *	<i>Celastrus scandens</i>
Trumpet Vine *	<i>Campsis radicans</i>



C. Sheltered Wetland Dune Vegetation (Interdunal Swales)

1. Trees:

<u>Common Name</u>	<u>Scientific Name</u>
Red Maple *	<i>Acer rubrum</i>
Serviceberry *	<i>Amelanchier arborea</i>
Shadbush *	<i>A. canadensis</i>
Southern Red Oak *	<i>Quercus falcata</i>
Willow Oak *	<i>Q. phellos</i>
Black Gum *	<i>Nyssa sylvatica</i>
Sweetbay *(E)	<i>Magnolia virginiana</i>
Atlantic White Cedar (E)	<i>Chamaecyparis thyoides</i>

2. Shrubs:

<u>Common Name</u>	<u>Scientific Name</u>
Maleberry *	<i>Lyonia ligustrina</i>
Black chokeberry *	<i>Photinia melanocarpa</i>
Red chokeberry *	<i>P. pyrifolia</i>
Inkberry **(E)	<i>Ilex glabra</i>
Southern Arrowwood **	<i>Virburnum dentatum</i>
Sweet Pepperbush *	<i>Clethra alnifolia</i>
Black Huckleberry **	<i>Gaylussacia baccata</i>
Winterberry **	<i>Ilex verticillata</i>
Highbush Blueberry **	<i>Vaccinium corymbosum</i>

Raker, Timothy

From: Miller, Chris - Cape May, NJ [Chris.Miller@nj.usda.gov]
Sent: Wednesday, November 04, 2009 8:15 AM
To: Raker, Timothy
Subject: RE: Avalon Plant Materials List

Tim,

I looked over the list. It looks fine to me. I don't have any additional species to recommend. I think you got them all!

Chris

From: Raker, Timothy [mailto:traker@lomaxconsulting.com]
Sent: Monday, November 02, 2009 3:22 PM
To: Miller, Chris - Cape May, NJ
Subject: Avalon Plant Materials List

Dear Chris,

Joe and I have made some slight modifications to the Proposed List of Dune Vegetation that we discussed for the Borough of Avalon (enclosed for your review). Please note that four shrubs were taken from the Salt Spray Tolerant Vegetation – Shrub list (A2) and added to the Sheltered Upland Dune Vegetation – Shrub list (B2).

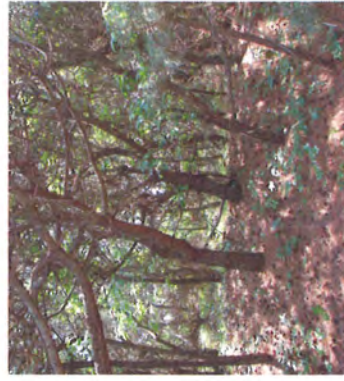
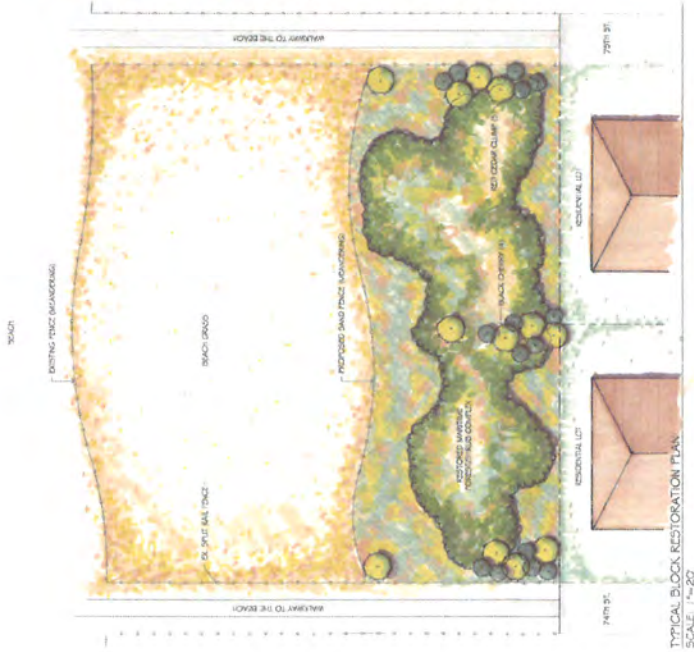
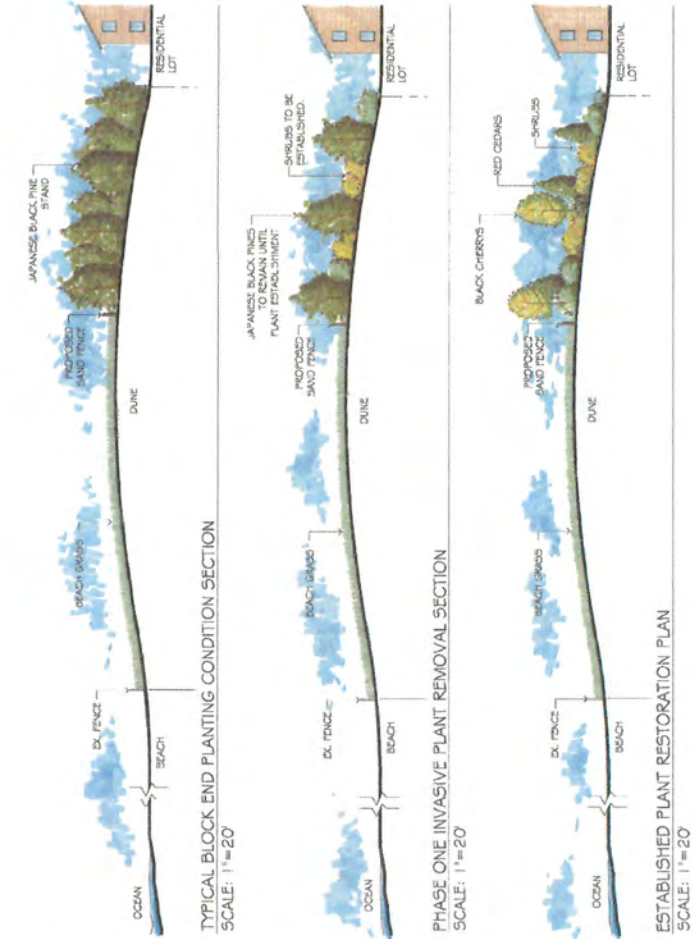
We understand that you have a busy schedule. However, any comments that you may have regarding the enclosed plant list would be greatly appreciated.

Thank you,

Timothy W. Raker
Environmental Consultant (IT)

*The Lomax Consulting Group, LLC
P.O. Box 9
Cape May Court House, NJ 08210
(609) 465-9857 (P)
(609) 465-2449 (F)*

APPENDIX F.
Dune Restoration Plan Strategy
Prepared by
The Lomax Consulting Group
Illustrated by the Taylor Design Group



Dune Restoration Plan

Avalon's
...a cooler by a mile

the **LOMAX** Consulting group
Over 30 years of environmental excellence.

BOROUGH OF AVALON
CAPE MAY COUNTY, NEW JERSEY

Taylor D. Taylor, ACE, LIA, PE LEED AP
DATE: AUGUST 4, 2009
SCALE: NOT TO SCALE

TAYLOR DESIGN GROUP

APPENDIX G.
Dune Vegetation Management Plan Base Map
Prepared by
The Lomax Consulting Group

NOTE:
 1 ALL LOT/LOTS SHOWN ON THE DRAWINGS ARE NOTED UPON THIS MAP UNLESS OTHERWISE NOTED
 2 BASE MAPS AND TOPOGRAPHY FROM WHICH AERIAL SURVEY CONDUCTED IN MARCH 2005
 3 ALL COVE INFORMATION OBTAINED FROM FEMA FLOOD ZONE MAPS AND FEMA FLOOD ZONE MAPS, COUNTY-WIDE MAP NUMBER 102-10020, AS OF FEBRUARY 2, 1983
 4 FLOOD ZONE V11 LOCATION

LEGEND
 CONTOUR LINE
 FENCE
 SEWER LATERAL
 PHASES
 BLOCK UNIT LINE
 PLANTING BOUNDARY LINE

FIGURE 2. DUNE VEGETATION RESTORATION - 2010
 (SHEET 2 OF 7)



Legend

- Priority T1
- Priority T2
- Priority T3
- Private Property
- Recommended Evaluation 2012

DUNE VEGETATION MANAGEMENT PLAN



NOTES
 1 THE LOMAX CONSULTING GROUP RECOMMENDS EVALUATION OF AREAS NOT INCLUDED IN PRIORITIES T1, T2 OR T3 IN 2012.
 2 PRIVATE PROPERTY CONTAINING DENSE STANDS OF JAPANESE BLACK PINE ADJACENT TO THE DUNE SYSTEM ARE NOTED IN ORANGE



- NOTE:**
1. ALL VEGETATION DATA ON THIS DRAWING ARE BASED UPON THE 1984 AERIAL PHOTOGRAPHIC INTERPRETATION (APRI) AND THE 1984 AERIAL PHOTOGRAPHIC INTERPRETATION (APRI) AND THE 1984 AERIAL PHOTOGRAPHIC INTERPRETATION (APRI).
 2. AERIAL PHOTOGRAPHIC INTERPRETATION (APRI) WAS CONDUCTED IN MARCH 2005.
 3. ALL DATA WERE OBTAINED FROM THE 1984 AERIAL PHOTOGRAPHIC INTERPRETATION (APRI) AND THE 1984 AERIAL PHOTOGRAPHIC INTERPRETATION (APRI).
 4. THIS DRAWING IS A GENERAL REPRESENTATION OF THE DUNE VEGETATION RESTORATION PLAN AND SHOULD NOT BE USED FOR ANY OTHER PURPOSES.
 5. ALL DISTANCES ARE IN FEET.
 6. ALL DISTANCES ARE IN FEET.

**FIGURE 3. DUNE VEGETATION RESTORATION - 2010
(SHEET 3 OF 7)**

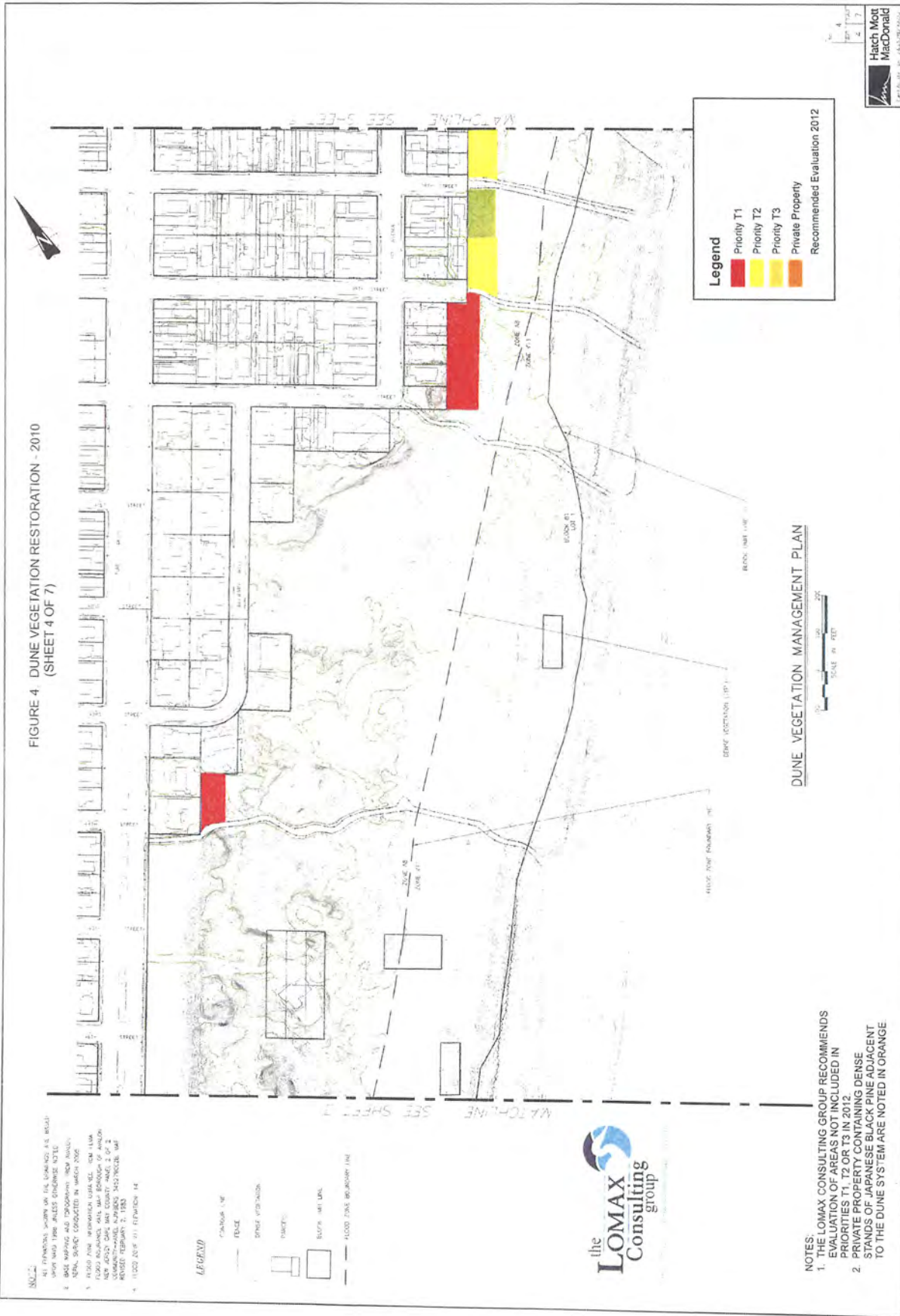


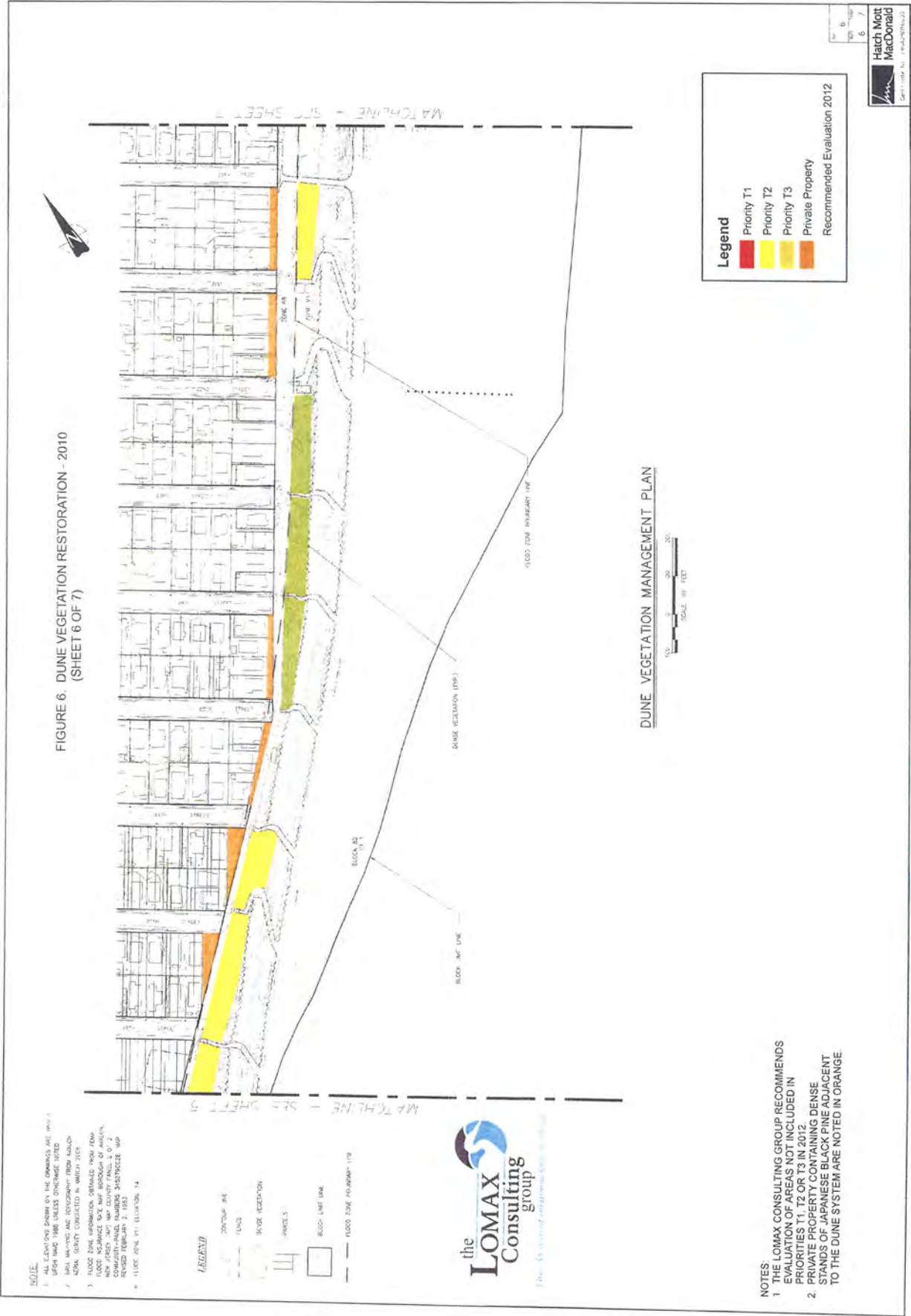
DUNE VEGETATION MANAGEMENT PLAN

- NOTES:**
1. THE LOMAX CONSULTING GROUP RECOMMENDS EVALUATION OF AREAS NOT INCLUDED IN PRIORITIES T1, T2 OR T3 IN 2012.
 2. PRIVATE PROPERTY CONTAINING DENSE STANDS OF JAPANESE BLACK PINE ADJACENT TO THE DUNE SYSTEM ARE NOTED IN ORANGE.



FIGURE 4 DUNE VEGETATION RESTORATION - 2010
(SHEET 4 OF 7)





NOTE
 1. ALL EXISTING PERMITS ON THE PROPERTY ARE VALID.
 2. UPON RMD 1988 SUCCESS ORIGINALLY NOTED.
 3. ALL MATINGS ARE TO BE COMPLETED FROM RMD.
 4. AREA SURVEY CONDUCTED IN MARCH 2010.
 5. FLOOD ZONE INFORMATION DERIVED FROM FEMA
 FLOOD INSURANCE RATE MAP BROWARD COUNTY, FLORIDA,
 COMPLETION DATE: 11/11/09. MAP NUMBER: 1700001A
 6. REVISIONS: 1. 11/11/09. 2. 11/11/09. 3. 11/11/09.
 7. FLOOD ZONE (NO-WAVE - 1%) ELEVATION: 14.

LEGEND
 ZONING LINE
 FENCE
 DUNE VEGETATION
 PARCELS
 BLOCK LIMIT LINE
 FLOOD ZONE (NO-WAVE - 1%)

the **LOMAX** Consulting group
 1100 S. ...

NOTES:
 1. THE LOMAX CONSULTING GROUP RECOMMENDS
 EVALUATION OF AREAS NOT INCLUDED IN
 PRIORITIES T1, T2 OR T3 IN 2012.
 2. PRIVATE PROPERTY CONTAINING DENSE
 STANDS OF JAPANESE BLACK PINE ADJACENT
 TO THE DUNE SYSTEM ARE NOTED IN ORANGE.

Hatch Mott MacDonald
 675 ...

APPENDIX H:
Borough of Avalon Dune Ordinance
Ordinance No. 620-2009
AN Ordinance Amending Chapter 9 (Municipal Recreational Facilities)
RE: Beach Protection of the Code of Revised General Ordinances,
2000
and
Borough of Avalon Dune Ordinance No. 620-2009 and
Recommendation of Amendments to Borough's Municipal
Recreational Facilities Ordinance (Chapter 9) and Zoning Ordinance
(Chapter 27) – Resolution PZ # 09-G and Exhibit A

BOROUGH OF AVALON
CAPE MAY COUNTY
NEW JERSEY

ORDINANCE NO. 620-2009

AN ORDINANCE AMENDING CHAPTER 9 (MUNICIPAL RECREATION FACILITIES) RE: BEACH PROTECTION OF THE CODE OF REVISED GENERAL ORDINANCES, 2000

WHEREAS, the Planning/Zoning Board of the Borough of Avalon ("The Board") has previously adopted amendments to Chapter 9 (Beach Protection) of the Code of Revised General Ordinances, 2000 under Ordinance No. 577-2006 and Ordinance No. 606-2009; and

WHEREAS, recent decisions of the Appellate Division of the Superior Court of New Jersey and the Law Division of the Superior Court of New Jersey have determined that the Borough's Beach Protection Ordinance is a valid ordinance that is not preempted by the Coastal Area Facilities Review Act, N.J.S.A. 13:19-1 et seq.; and

WHEREAS, the Appellate Division and the Law Division of the Superior Court of New Jersey have determined that the Borough has the discretion to grant relief from the prohibition against swimming pools in the R-1AA zoning district notwithstanding the provisions of a July 13, 1994 State Aid Agreement between the Borough of Avalon and the State of New Jersey Department of Environmental Protection; and

WHEREAS, the Borough Council of the Borough of Avalon has determined it to be in the best interests of the Borough of Avalon to amend the Beach Protection Ordinance to eliminate the blanket prohibition against swimming pools, tennis courts, and similar structures in the R-1AA zoning district provided all applicable requirements and conditions set forth in the Beach Protection Ordinance are satisfied.

BE IT ORDAINED by the Borough Council, in the Borough of Avalon, County of Cape May and State of New Jersey, as follows:

SECTION 1. Chapter 9, Section 9:10-3.3, of the Borough of Avalon Beach Protection Ordinance, of the Code of the Borough of Avalon is hereby amended to read as follows:

9:10-3.3 In accordance with the State Aid Agreement, no approval shall be granted pursuant to paragraph 9:10-3.2 to permit construction of swimming pools, tennis courts or similar structures as referenced in paragraph 1(b) of the State Aid Agreement unless the following conditions are satisfied:

- (a) The property owner has obtained a CAFRA permit or equivalent from the New Jersey Department of Environmental Protection approving construction of swimming pools, tennis courts or similar structures as proposed to the Borough; and

- (b) The New Jersey Department of Environmental Protection has either amended the State Aid Agreement to eliminate the prohibition against swimming pools, tennis courts or similar structures as referenced in paragraph (b) of the State Aid Agreement or the New Jersey Department of Environmental Protection has issued a letter to the Borough of Avalon waiving its right to enforce the default provisions of the State Aid Agreement if the Borough approves the construction of a swimming pool, tennis court or similar structure, as applicable to the particular application or the New Jersey Department of Environmental Protection otherwise authorizes the Borough to approve a swimming pool, tennis court or similar structure without penalty against the Borough; and
- (c) The applicant submits an application for approval in accordance with the provisions of Section 9:10-4, obtains approval from Borough Council as provided herein, and complies with all other applicable provisions of this ordinance.

SECTION 2. Chapter 9, Section 9:10-4, entitled "Contents of Application", of the Borough of Avalon Beach Protection Ordinance, of the Code of the Borough of Avalon is hereby amended to read as follows:

9:10-4 CONTENTS OF APPLICATION

Any person who requires approval for any of those activities described in paragraph 9:10-3.2(b) or (c), or paragraph 9:10-3.3, shall file with the Secretary of the Planning/Zoning Board an original and sixteen (16) typewritten copies of an application on forms supplied by the Secretary of the Planning/Zoning Board along with seventeen (17) copies of all plans and other documents. The application shall contain the following information:

- (a) Applicant's name and address.
- (b) Lot and block number of the property on which the improvement is proposed.
- (c) A concise statement of the construction activity for which approval is sought.
- (d) The reasons for such construction.
- (e) A plan containing all of the design elements which would be required for site plan review if such construction activity were subject to site plan approval pursuant to Chapter 26 of the Revised General Ordinances (the "Site Plan Ordinance").

- (f) A plan showing the location, description and amount of sand and/or vegetation to be disturbed, removed or redistributed.
- (g) A plan showing the location, description and amount of sand and/or vegetation to be replaced and the type and location of any temporary or permanent fencing to be provided.
- (h) A plan demonstrating compliance with the Borough Stormwater Management Ordinance, the Borough's Beach Management Plan for the protection of federally and state listed species, April 2009, as amended, and which identifies any path or other means of access to the Beach in conformance with state and federal laws.
- (i) A plan showing the existing topographical cross-section of the property and the Beach and Dunes both on the property and oceanward extended from the northward and southward boundaries of the property to the mean low water line and a topographical cross-section of such areas after construction of the proposed improvement. Such plan shall be evaluated for compliance with the requirements of Paragraph 9:10-3 with reference to the U.S. Army Corps of Engineers S-Beach Program, or other acceptable methodologies to determine Beach Dune Area stability both before and after completion of the improvements.

SECTION 3. Chapter 9, Section 9:10-7, of the Borough of Avalon Beach Protection Ordinance, of the Code of the Borough of Avalon, entitled "Conduct of Public Hearing", shall be amended to read as follows:

9:10-7 CONDUCT OF PUBLIC HEARING

The Planning/Zoning Board shall commence a hearing on an application for approval pursuant to paragraph 9:10-3.2(b) or (c), or paragraph 9:10-3.3, within forty-five (45) days after the earlier to occur of the expiration of the time within which the Environmental Commission shall act with reference to the application pursuant to paragraph 9:10-5 or the issuance of a report or recommendation by the Environmental Commission. The applicant shall provide proof of notice of such hearing to the Planning/Zoning Board Secretary at least three (3) days before the scheduled date of such hearing. Such notice shall be in the same manner as provided for land use applications under Chapters 26 and 27 and shall conform to the requirements of N.J.S.A. 40:55D-12.

At that time, the Planning/Zoning Board shall hear and consider testimony from the applicant's representatives and from any interested party. The applicant shall have the burden of producing competent evidence to demonstrate its right to relief pursuant to paragraph 9:10-3.2(b) or (c), or paragraph 9:10-3.3, with or without reasonable conditions which may be imposed by the Avalon Borough Council in order to accomplish the purposes of this Ordinance. In reviewing the application, the Planning/Zoning Board shall consider, at a minimum, the following factors:

- (a) The size of the property.
- (b) The size and type of the improvement sought.
- (c) The location of the proposed improvement on the property.
- (d) The elevation of the lot and the improvement.
- (e) The size, elevation, and configuration of the sand and/or vegetation located on the property.
- (f) The shore protection afforded by the Dunes in the unaltered state compared to the shore protection afforded by the proposed improvement.
- (g) The location, amount and type of sand and/or vegetation to be altered.
- (h) The location, amount and type of any new sand and/or vegetation resulting from the proposed improvement.
- (i) The danger to life and property from flooding or erosion damage likely to occur as a result of the proposed improvement.
- (j) The susceptibility of the property and proposed improvement to flood damage.
- (k) The relationship of the proposed improvement to the comprehensive plan and flood plain management program for that area.
- (l) The expected height, velocity, duration and rate of rise and sediment transport of the flood waters and the effect of wave action expected at the property.

After reviewing the application and considering the evidence presented at the hearing as well as the factors identified above, the Planning/Zoning Board shall make findings of fact and submit those findings, together with all materials received during the application process and its recommendation concerning the merits of the application, to the Avalon Borough Council for a final determination. The Borough Council shall, within forty-five (45) days after receipt of the findings of fact and recommendations of the Planning/Zoning Board, make a final decision on the application at a public hearing scheduled by the Borough Council on twenty (20) days notice to the applicant. The applicant shall provide notice of the hearing as would be required under N.J.S.A. 40:55D-12 for land use applications. The applicant

shall provide proof of notice of such hearing to the Borough Clerk at least three (3) days before the scheduled date of such hearing. Such notice shall be in the same manner as provided for land use applications under Chapters 26 and 27 and shall conform to the requirements of N.J.S.A. 40:55D-12. At such hearing, the applicant shall not be permitted to present additional information, materials, or evidence, but shall be permitted to comment on the findings and recommendations of the Planning/Zoning Board and to argue the merits of its application to the Borough Council. At the conclusion of the hearing, or within 30 days thereafter if the Borough Council requires additional time to consider the application, the Borough Council shall issue its decision by a vote of a majority of members in attendance at the meeting.

SECTION 4. Chapter 9, Section 9:10-10, of the Borough of Avalon Beach Protection Ordinance, of the Code of the Borough of Avalon, entitled "Application Fees and Professional Fees", shall be amended to read as follows:

9:10-10 APPLICATION FEES AND PROFESSIONAL FEES

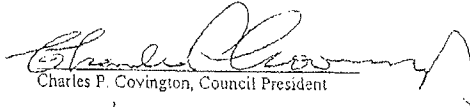
Each applicant for approval pursuant to paragraph 9:10-3.2(b) or (c) or paragraph 9:10-3.3 shall submit with its application an application fee in the amount of one thousand dollars (\$1,000.00). In addition, each applicant seeking approval pursuant to paragraph 9:10-3.2(b) or (c) or 9:10-3.3 shall also place in escrow with the Secretary of the Planning/Zoning Board a payment in the amount of two thousand five hundred dollars (\$2,500.00) to be applied toward payment of the professional fees of the Planning/Zoning Board in the review and consideration of that application. The same conditions as applicable to the disposition of escrow payment for professional fees for applications for land use approval under Chapters 26 and 27 of the revised General Ordinances shall apply to the escrow payment required herein. Such application fees and professional fees shall be applicable to consideration of the application by both the Planning/Zoning Board and Environmental Commission. In the event the applicant is seeking approval pursuant to paragraph 9:10-3.2(b) or (c) and paragraph 9:10-3.3 in the same application the applicant shall only pay one application fee and one escrow payment.

SECTION 5: REPEALER: All Ordinances or parts of Ordinances which are in conflict or inconsistent herewith are hereby repealed to the extent of such inconsistency or conflict only.

SECTION 6. SEVERABILITY: If any section, paragraph, subdivision, subsection, clause or provision of this Ordinance shall be adjudged invalid, such adjudication shall apply only to the section, paragraph, subdivision, subsection, clause or provision declared invalid and the remainder of this Ordinance shall remain in full force and effect and shall be enforceable.

SECTION 7. EFFECTIVE DATE: This Ordinance shall take effect after final adoption and publication and in the manner prescribed by law and upon approval by the New Jersey Department of Environmental Protection.

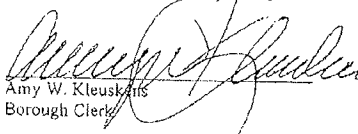
Motion: Councilwoman Hudanich


Charles P. Covington, Council President

Seconded: Councilman Tipping

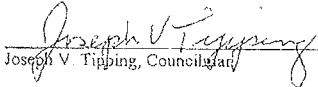

Richard E. Dean, Council Vice President

Dated: October 14, 2009


Amy W. Kleuskens
Borough Clerk


David B. Ellenberg, Councilman


Nancy M. Hudanich, Councilwoman


Joseph V. Tipping, Councilman

ROLL CALL VOTE:

AYES----- Dean, Ellenberg, Hudanich, Tipping, Covington
NAYES----- None
ABSTAINING----- None
ABSENT----- None

NOTICE OF PENDING ORDINANCE

The Ordinance published herewith was introduced and passed on first reading of the Municipal Council of the Borough of Avalon on September 23, 2009. It will be further considered for final passage after public hearing thereon, at a meeting of said Municipal Council to be held in the Municipal Building in said Borough on October 14, 2009 at 7:15 o'clock P.M., and during the week prior to and up to and including the date of such meeting, copies of said Ordinance will be made available at the Clerk's Office in said Municipal Building to the members of the general public who shall request the same.


AMY W. KLEUSKENS
Borough Clerk


=====

ORDINANCE NO. 620-2009

Passed by Council of the Borough of Avalon, New Jersey

October 14, 2009

Attest:  Borough Clerk

Attest:  President of Council

Presented by me to the Mayor of the Borough of Avalon,

New Jersey October 14, 2009

 Borough Clerk

Approved and signed by me October 15, 2009

 Acting Mayor

=====

AVALON PLANNING/ZONING BOARD
AVALON, NEW JERSEY
RECOMMENDATION OF AMENDMENTS TO BOROUGH'S
MUNICIPAL RECREATIONAL FACILITIES ORDINANCE
(CHAPTER 9) AND ZONING ORDINANCE (CHAPTER 27)
RESOLUTION PZ # 09-G

WHEREAS, pursuant to the New Jersey Municipal Land Use Law, specifically NJSA 40:55D-25 and NJSA 40:55D-28, the Planning Board is given exclusive authority to adopt or amend the Master Plan, or a component part thereof; and

WHEREAS, pursuant to the New Jersey Municipal Land Use Law, specifically NJSA 40:55D-64, the Planning Board is given the responsibility and authority to hold public hearings regarding amendments to a municipality's Zoning Ordinance or development regulations and report its findings and recommendations to the governing body of the municipality; and

WHEREAS, at a duly noticed public meeting to address amendments to development regulations in the Municipal Recreational Facilities Ordinance and Zoning Ordinance occurring on December 1, 2009, the Avalon Planning/Zoning Board considered amendments to the Borough's Municipal Recreational Facilities Ordinance and Zoning Ordinance in order to facilitate the adoption of a Dune Vegetation Management Plan; and

WHEREAS, the Avalon Planning/Zoning Board scheduled and duly advertised said public hearing regarding proposed amendments to the Borough Beach Protection Ordinance and said notice was provided as required under N.J.S.A. 40:55D-13 and N.J.S.A. 40:55D-62.1; and

WHEREAS, the Planning Board has reviewed and considered the proposed amendments to the Municipal Recreational Facilities Ordinance and Zoning Ordinance, accepted public comment regarding same, and has found that the proposed amendments are satisfactory to the Planning/Zoning Board and are substantially consistent with the Avalon Master Plan.

- A. NOW, THEREFORE, BE IT RESOLVED, by the Planning/Zoning Board of the Borough of Avalon that the proposed amendments to the Borough's Municipal Recreational Facilities Ordinance and Zoning Ordinance attached to this Resolution as Exhibit "A", is hereby satisfactory to the Planning/Zoning Board, substantially consistent with the Avalon Master Plan and as such the Avalon Planning/Zoning Board does hereby recommend that the Avalon Borough

Council approve and adopt said amendments into law after appropriate public hearings.

- B. BE IT FURTHER RESOLVED, that a copy of this Resolution shall be filed in the Office of the Clerk of the Borough of Avalon.

Moved: Collins
Seconded: Juzaitis

MEMBER	YEA	NAY	ABSENT	ABSTAIN	EXCUSED
Beddia	X				
Collins	X				
Ellenberg	X				
Hensel	X				
Jones	X				
Juzaitis	X				
Ohntrup	X				
Petrucci	X				
Reynolds	X				
Rhoads	X				
Tipping	X				

Borough of Avalon Planning/Zoning Board

Dated: December 1st 2009

By:

Neil Hensel, Chairman

Paul E. Short, Sr., Secretary

“EXHIBIT A”

Proposed Amendments to Municipal Recreational Facilities Ordinance (Chapter 9) and Zoning Ordinance (Chapter 27)

Chapter 9:2-1 shall be revised to include a newly adopted section to be known as 9:2-1.1 to read "This section shall not apply to the pruning, clearing, trimming or alteration of vegetation, including replacement of vegetation with native species, completed pursuant to an approved Dune Vegetation Management Plan under these General Ordinances."

Chapter 27-7.3(T), Section three shall be revised as follows: "Selective Clearing and Protection of Vegetation.

The preservation of existing vegetation is a crucial component in accomplishing the goals of this ordinance. In order to maximize the opportunity to incorporate significant areas of existing vegetation into the design of the development, and to minimize damage to said areas during and subsequent to construction, the following standards shall apply:

- a. Unchanged.
- b. An Owner or developer is permitted to perform selective clearing to remove trees, underbrush and undesirable vegetation within six (6) feet from the outside of the exterior wall of the proposed or existing (added) structure and where determined by the Planning Board or Zoning Officer in the case of single or two-family residential units (deleted) as practical for the location of utilities, parking areas, and other structures. Dead, damaged trees, underbrush and undesirable vegetation may be removed from other areas of the property. The areas and extent of the selective clearing must be clearly indicated on the plan of development and/or the grading and landscape plan. All selective clearing must be approved prior to the commencement of any clearing. The site boundaries and limits of proposed improvements must be accurately staked out on the site for this review and approval. Only nuisance plants, as defined, may be removed from the vicinity of the property lines unless the presence of other trees or shrubs will interfere with access to the rear/side yard garages. All sites shall be developed, to the greatest extent possible, in a manner that will result in the least amount of disturbance to the natural site.
- c. Unchanged.
- d. Unchanged.

Chapter 27-7.3(T) section entitled "Administration and Applicability" shall be designated as Chapter 27-7.3(T)(4) and amended as follows:

All development shall comply with the Provisions of this Chapter.

~~For one and two-family residential developments,~~ (added) For all residential development, (added) a landscaping and vegetation plan for the parcel in question must be submitted, reviewed, and approved by the Zoning Officer or designated official, prior to the issuance of a zoning permit for any of the following development:

1. Unchanged
2. Unchanged
3. Unchanged
4. Routine maintenance, including pruning and planting of materials is permitted, provided it is on private property. Pruning, clearing or alteration of vegetation is permitted on public property, or any dune, as defined by ordinance, whether publicly or privately owned, provided such operations are approved by and carried out only under the direct supervision of the appropriate Borough Department or Borough operation and pursuant to an approved Dune Vegetation Management Plan. (added)

The remaining portion of this section shall continue unchanged.

APPENDIX I
Standard for Creating and Restoring Sand Dunes
From Massachusetts to North Carolina

STANDARD
for
CREATING and RESTORING SAND DUNES
From Massachusetts to North Carolina

Written by: Mike Fournier, Former PMC Manager

Edited by:
Christopher Miller, Regional Plant Specialist, USDA-NRCS
William Skaradek, Manager, Cape May Plant Materials Center

DEFINITION: Effective establishment and maintenance of physical (living or inert) barriers which manage the surface movement of shifting coastal beach sands.

PURPOSE: To develop a system of coastal sand dunes to protect human lives, personal property, and community infrastructures. A secondary benefit of such developments is the creation and protection of critical habitat of threatened and endangered bird species.

WHERE APPLICABLE: Along ocean and bay shorelines; where blowing sands and storm waters may cause damage to human and wildlife resources.

METHODS and MATERIALS: Sand dunes naturally form on barrier islands, shorelines exposed directly to the ocean, and inland sand deposits. The source of this wind born sand is the ocean or its bays. These parallel ridges of sand form perpendicular to prevailing winds and grow toward its source of sand. Periodic storm events and human activity continually alter their development and original configuration. Once developed the sand dunes provide adequate protection from moderate storms and tides. The existence and maintenance of vegetation on dunes provides a network of root and foliage which holds unconsolidated sand in place. American beachgrass is the dominant, naturally occurring, vegetation of the frontal dunes of the northern Mid-Atlantic and New England coasts. From Virginia beach southward through the Carolinas, sea oats becomes the dominant foredune plant. When beachgrass or sea oats are established with structural resources and other dune species, a formidable well-anchored storm barrier is established, capable of saving major public and private assets. Establishing curvilinear foot paths or wooden crosswalks through or over the sand dunes, bordered by sand fencing, is necessary where foot or vehicular traffic is expected.

1. VEGETATION

- A. **Plant Materials:** The foliage of most sand dune species filters sand from the wind. The reduction of wind velocity near the dune's surface by vegetation allows sand to be deposited. The root mass of these plant species adapted to the sand dune environment are typically deep and extensive, anchoring the dunes to their foundation. When possible only certified cultivars, which have been tested on similar sites, should be utilized for protecting valuable coastal resources.

1.) Cultivar Releases recommended for stabilizing sand dunes; all cultivars listed were released by the USDA- Natural Resources Conservation Service's Plant Materials Program:

- a.) 'Cape' american beachgrass (*Ammophila breviligulata*)
- b.) 'Atlantic' coastal panicgrass (*Panicum amarum* var. *amarulum*)
- c.) 'Northpa' bitter panicgrass (*Panicum amarum*)
- d.) 'Avalon' saltmeadow cordgrass (*Spartina patens*)
- e.) 'Monarch' seaside goldenrod (*Solidago sempervirens*)
- f.) 'Wildwood' bayberry (*Myrica pensylvanica*)
- g.) 'Ocean View' beach plum (*Prunus maritima*)
- h.) 'Sandy' rugosa rose (*Rosa rugosa*)
- i.) 'Emerald Sea' shore juniper (*Juniperus conferta*)

2.) Non-Cultivar Releases suitable for adding plant diversity on sand dunes:

- a.) seashore little bluestem (*Schizachyrium scoparium* var. *littoralis*)
- b.) sea oats (*Uniola paniculata*)
- c.) switchgrass (*Panicum virgatum*)
- d.) partridge pea (*Chamaecrista fasciculata*)
- e.) beach pea (*Lathyrus maritimus*)
- f.) eastern red cedar (*Juniperus virginiana*)
- g.) groundsel tree (*Baccharis halimifolia*)

NOTE: The cultivars listed were developed specifically for sand dune stabilization and should be specified and used when available. By using cultivars developed for such a harsh environment, the risk of plant failure is reduced.

In addition, when developing a planting plan for a dune system, it is imperative to plant species in their zone of adaptation.

The species best adapted to the frontal dune face are american beachgrass, bitter panicgrass, and sea oats (Delmarva Peninsula and south). As you move onto the back of the frontal dune or into the secondary dune system, the additional species listed above may be incorporated into the planting as available. By brooding the plant diversity, the risk of plant failure is further minimized. See (Diagram 1) for plant zonation guidelines.

B. Plant Establishment

- 1.) **(Cape) american beachgrass (*Ammophila breveligulata*)-**
Beachgrass is successionaly classified as a pioneering type species; it is about the only species capable of surviving the harsh environmental conditions of the frontal dunes. For initially stabilizing a dune system, this species is the most reliable and commercially available option. Once established it rapidly spreads by a rhizomatous root system, developing a soil binding network of inter-woven roots.

Date = November 1 to April 1; under non-frozen soil conditions

Planting Unit = a minimum of two stems (culms) per hole

Method = hand placement, or use of a vegetable or tree planter

Size = 16 to 18 inch long stems, $\geq \frac{1}{4}$ inch in diameter

Depth = culms placed approximately 8-10 inches deep

Spacing: severe sites = 12" X 12"

normal sites = 18" X 18"

stable sites = 24" X 24"

Notes:

- Plant ≥ 100 feet of horizontal distance from the mean high tide water line to ensure success
- Plant a minimum of 10 parallel rows; stagger (off-set) rows to maximize protection
- Firm soil around plants to eliminate air pockets
- If utilizing dredged fill allow salts to leach out before planting and rains to compact sands

2.) **(Northpa) bitter panicgrass** (*Panicum amarum*)– This perennial, warm-season grass with a prostrate growth habit spreads slowly from short, strong rhizomes initially forming open clumps. Over time these clumps can fuse to form a dense mat of vegetation. Since this grass produces little viable seed it must be planted vegetatively.

Date: potted plants = April 1 to May 1
bare root = November 1 to April 15
stem cuttings = April 1 to May 15

Planting Unit = single bare-root or containerized seedling or stem division; 12 - 18 inches tall

Depth: potted/bareroot = 2 inches deeper than the nursery depth
Stem cuttings= place on a 45 degree angle in a 8-10 inch hole or slit leaving the top 6-10" of stem exposed.

Method: plants = hand placed, or using a vegetable transplanter

Spacing: Potted/bareroot = 2 feet apart in 2-3 foot staggered rows.
Stem cuttings= minimum of three stems/hole, spaced 2 feet apart in staggered 2-3 foot rows

3.) **(Atlantic) coastal panicgrass** (*Panicum amarum var. amarulum*)- This warm season bunch-like grass is a post stabilization species thriving from the crest of the frontal dune to inland sites. It is the only dune stabilization species which has been directly seeded on to the sand dunes successfully. Potted plants and stem divisions can also be successfully established on these severe sites. The annual foliage emerges from a deep fibrous perennial root system with short lateral rhizomes. This species can be successfully planted with or over seeded into stands of American beachgrass. The closely related switchgrass is not as well adapted to sand dune conditions due to its lower seedling vigor. However, it is a good alternative, especially north of Long Island where coastal panicgrass is not native.

Date: Seeding: over seeding = April 1 to May 1
Dormant seeding = November 1 to April 15
Planting = April 1 to May 15

Planting Unit = single bare-root or containerized seedling or division; 12 - 18 inches tall

Seeding rate = 8 to 12 Lbs. of Pure Live Seed (PLS) per acre

Depth: plants = 2 inches deeper than the nursery depth
seed = drilled 1½ to 2½ inches deep

Method: seed = hand broadcast/incorporated, garden seeder (single row, push) or mechanically operated drill or drop seeder

plants = hand placed, or use a vegetable or tree
transplanter

Spacing: plants = place 2-4 feet apart within a row with rows
spaced 6-8 feet apart

seed = 3' to 10' row spacing

- 4.) **Sea oats (*Uniola paniculata*)- Adapted only south of the Delaware Bay (Delmarva Peninsula & south).** Within its range, sea oats is the most important plant in the pioneer (frontal dune) zone. Like beachgrass, it flourishes best where sand is drifting and accumulating. However, unlike beachgrass, it persists as a perennial cover after the sand has been stilled but dies back to the ground over the winter. For initial stabilization of a sand dune, it is best to interplant both species.

Date = March 1 to April 15

Planting Unit = one bare-root or potted plant

Depth = 2 inches below the nursery grown depth

Method = hand placed, or vegetable planter

Size = \geq 24-36 inch stem

Spacing = 18 to 36 inch row spacing with plants placed 18 inches apart within a row. May be interplanted with american beachgrass by alternating rows of each species.

- 5.) **(Avalon) saltmeadow cordgrass (*Spartina patens*)-** Although typically associated with tidal salt marshes, saltmeadow cordgrass also naturally occurs in the secondary and back dune areas. Predominantly inhabiting inter-dune troughs and low blow-out areas. It is dominant in these micro-sites since most other sand dune species can not tolerate wet to saturated soil conditions. The trailing rhizomes of saltmeadow cordgrass are slender, but form dense mats near the surface. It is vegetatively established on normal sites using freshly harvested stems (culms) or containerized plants on severe locations.

Date = May 1 to June 15

Planting Unit = 3 to 5 live stems placed bare-root or containerized

Depth = 2 inches below the nursery grown depth

Method = hand placed, or vegetable planter

Size = \geq 12 inches

Spacing = 18 to 36 inches depending on the severity of the planting site

Notes: Utilize this species in low elevation sites of sand dunes which are frequently moist or inundated.

- 6.) **Switchgrass** (*Panicum virgatum*)– This warm-season, bunchgrass commonly grows in back dune swales and upper margins of tidal marshes. Seedling vigor is lower than in the closely related coastal panicgrass and therefore is not as well adapted for seeding on actively shifting sand dunes. However, switchgrass is a good alternative to coastal panicgrass north of Long Island, which is beyond the native range of coastal panicgrass.

Date: Seeding: over seeding = April 1 to May 1
dormant seeding = November 1 to April 15
planting = April 1 to May 15

Planting Unit = single bare-root or containerized seedling or division; 12 - 18 inches tall

Seeding rate = 8 to 12 Lbs. of Pure Live Seed (PLS) per acre

Depth: plants = 2 inches deeper than the nursery depth
seed = drilled 1½ to 2½ inches deep

Method: seed = hand broadcast/incorporated, single row garden seeder, or mechanically operated drill or drop seeder

plants = hand placed, or use a vegetable or tree planter

Spacing: plants = 4' X 4'
seed = 3' to 10' row spacing

- 7.) **Seacoast bluestem** (*Schizachyrium littorale*)– This native, warm-season grass is a coastal variation of the inland little bluestem. It differs visually with a more prostrate growth habit. Found in scattered open clumps in the back dunes, it rarely forms a solid stand, but is found mixed with other species such as beach heather, seaside goldenrod, beachgrass, bayberry, beach plum.

Date = March 1 to April 15

Planting Unit = one bare-root or potted plant

Depth = 2 inches below the nursery grown depth

Method = hand placed or vegetable planter

Size = ≥ 12-24 inch stem

Spacing = 24 to 36 inch row spacing with plants placed 24 inches apart within a row. Plant in the backdunes where sand is stable. May be interplanted with switchgrass, coastal panicgrass, saltmeadow cordgrass, seaside goldenrod, and beach or partridge pea.

- 8.) **(Monarch germplasm) seaside goldenrod** (*Solidago sempervirens*) – This perennial forb adds color and variety to a dune planting. It is a major food source on the fall migration of the Monarch butterfly. From its inconspicuous green basal leaves in winter into early summer arises a brilliant yellow flower cluster in early fall. Although often blamed for causing allergies, it is actually an insect pollinated plant. (Ragweed is the real culprit).

Date = March 1 to May 15

Planting Unit = one bare-root or potted plant

Depth = 2 inches below the nursery grown depth

Method = hand placed or vegetable planter

Size = \geq 12-18 inch stem

Spacing = 24 to 36 inch row spacing with plants placed 24 inches apart within a row. Plant in the backdunes where sand is stable. May be interplanted with switchgrass, coastal panicgrass, saltmeadow cordgrass, and beach or partridge pea.

- 9.) **Beach pea and partridge pea** (*Lathyrus maritimus/Chamaecrista fasciculata*) Beach pea is adapted from New Jersey- north and partridge pea, an annual reseeding legume, from Massachusetts to the Carolinas. These native legumes have good wildlife value as edible seed for both upland game and shore birds.

Partridge pea (seed only)

Date: Seeding: over seeding = April 1 to May 15
dormant seeding = November 1 to April 15

Seeding rate = 2-4 pounds of Pure Live Seed (PLS) per acre.

Depth: = seed drilled 1½ to 2½ inches deep in stilled sand

Method: seed = hand broadcast/incorporated, single row garden seeder, or mechanically operated drill or drop seeder

Beach pea (plants only)

Planting Unit = single bare-root or containerized seedling or division; 12 - 18 inches tall
planting = April 1 to May 15

Depth: plants = 2 inches deeper than the nursery depth

Method: plants = hand placed, or use a vegetable or tree planter

Spacing: plants = 4' X 4'
seed = 3' to 10' row spacing

10.) Shrubs and Trees (bayberry, beachplum, rugosa rose, groundsel)- Medium sized shrubs and small trees naturally dominate the back dune zone of New Jersey's barrier islands. The shrubs begin to co-inhabit the mid secondary dunes. Once extensive stands of bayberry, beach plum, pitch pine and other woody species covered these islands where houses now stand. The shrub species which are well adapted to the dune ecosystem are capable of either layering or root suckering. The trees and shrubs of the sand dunes have deep tap root systems for supplying adequate moisture and nutrients. Each species utilized for back dune stabilization has its own unique attributes. Beach plum has a colorful bloom in spring which yields a tasty succulent cherry like fruit. Bayberry roots have nodules which enable it to fix atmospheric nitrogen similar to legumes; it also produces aromatic fruit and leaves. The thorny stems of rugosa rose are useful in directing pedestrian traffic along established access trails. This rose species also blooms from late spring to early fall, then gives rise to a bright red fruit. The pines and junipers which are adapted to sand dunes provide the visual appeal of evergreens in the back dunes. The major function of tree and shrub vegetation on sand dunes is still the permanent solid structural stabilization. All of trees and shrubs of the sand dunes produce viable seed, but intentional establishment occurs using bare-rooted or potted seedlings.

Date = March 15 to April 15; unless soil is frozen

Planting Unit = 1/0 or 2/0 bare-root seedlings or containerized transplants

Depth = 2 inches below the nursery grown depth

Method = hand placement or using a tree planter

Size = \geq 12 inches tall

Spacing = 4 to 6 feet apart; off-set (stagger) rows for maximum protection

Notes: to ensure establishment (first 2 years) all competing vegetation must be removed from within 2 feet of each plant; it

is important not fertilize the surrounding vegetation which will potentially out-compete the tree or shrub

C. Maintenance

1.) Fertilizer

Date = May through July; no sooner than 30 days after planting

Rate = \leq 50 lbs. of nitrogen (N) per acre, \leq 25 lbs. of phosphorus (P) and potassium (K) per acre

Frequency :

- Apply N for the first two years after planting, then as needed to maintain stem density and plant health.
- Single or split applications are acceptable if not applied before May 1 or after July 30. Split applications must be at least 30 days apart.
- It is only necessary to apply P and K bi-annually

Recommended Formulations:

- 10-10-10, 20-10-10, 15-10-10, etc. are acceptable as long as the maximum rates per nutrient are not exceeded
- Time release fertilizers are encouraged that will provide the target amounts of the primary nutrients per acre.

Notes:

- Only apply fertilizer to within the drip line of shrubs and trees. Not following this rule will result in excessive herbaceous growth, which will out compete newly established trees and shrubs.
- Apply using broadcasting machinery

2.) Replant:

- Like a chain, a dune system is no stronger than its weakest link. Uniform, unbroken dune lines are essential to the protection a system can provide.
- Uncontrollable events (i.e. storms, construction, etc.) may damage sand dunes. If such damage occurs between October and April replant within a month. If the damage is experienced from May to September, utilize the outlined sand fencing or excavation procedures listed below, then plant during the recommended establishment period .

2. **SAND FENCING:** A quick and effective way to build temporary sand dunes is with the use of sand fencing (standard snow fence). Utilizing lines of

fencing and wooden posts, orientated parallel to the beach. A source of sand is necessary for this technique to be effective, but it is not limited by time of establishment.

A. Materials

1) Fencing:

- Standard 4 ft. slatted wood snow fencing; wood must be decay free
- Four wire ties (≥ 12 ga.) must be used to secure fencing to each post.

2) Posts:

- Wooden posts must be $\geq 6\frac{1}{2}$ ft. long, with a minimum diameter of 3 inches; typical length ranges from 7 to 8 ft.
- The posts should be made from black locust, eastern red cedar, Atlantic white cedar, or other species of similar durability and strength.
- Space posts 10 ft. apart, and set them ≥ 3 feet deep

B. Technique

- 1) Position - orientate fence lines parallel to waterline of the beach, at least 140 feet from mean high tide (see figure 2)
- 2) Height - with adequate sand sources, dune elevations can be increased annually by at least four foot increments. (approximately the maximum height of the fencing, this can be increased with vegetation); The maximum dune height which is attainable will range from 12 to 15 feet, but is greatly influenced by prevailing wind velocities and sand grain size
- 3) Installation - weave fencing in front of and behind alternating posts to attain maximum strength
- 4) Number of Rows - 2 parallel rows spaced 30 to 40 feet apart, are ideal; but single rows with 30 ft. perpendicular spurs, spaced 40 ft. apart are also acceptable if space is a major limiting factor
- 5) Replacement - sand will typically fill fencing to $\frac{3}{4}$ of its total height at a maximum; upon reaching maximum fence capacity, additional lines of fence can be added until maximum planned dune height is reached; replace damaged fencing and posts within one month of storm damage to maintain a contiguous dune line

C. Comments

- This method is more expensive per linear foot than building dunes with vegetation alone, but less expensive than using earth moving machinery to construct dunes.
- Although dune height can be increased faster, it is limited by the fence height and ability to continually add more lines of fencing.
- Planting parallel rows of vegetation on either side of fences is usually more effective than either vegetation or fencing techniques alone.
- When complementing fencing with vegetation, do not plant closer than ten feet and no further than 15 feet from the fence lines. Vegetative strips should be about 20 ft. wide

3. MECHANICAL EXCAVATION

- With the use of various earth moving machines temporary, excavated sand dunes are quickly created.
- Since time is required for settling and cohesion to occur, such dunes are often short lived and only provide minimal protection to the public and private resources behind them.
- This method is often useful in the repair of storm damaged sand dunes during the fall and winter months. Any blow-out areas can be quickly filled.
- Front-end loaders of all sizes can be used. Various grading machines are also useful.
- Pumped sand from off shore dredging can be shaped and positioned with machinery

APPENDIX F

Training Documentation in the Community Forestry Status Report 2010 - 2014

It is noteworthy that as of November 2015, 12 additional CEUs have been obtained by volunteers for the Borough

Municipality	CourseParticipant	CourseTitle	CourseNumber	CourseDate	CourseYear	CEUCredits
Avalon Borough	Brian Reynolds	1-5 B 2009 Federation Meeting	09-13-15	10/24/2009	2009	5
Avalon Borough	Joseph Lomax	1-5 A 2009 Federation Meeting Shade Tree Federation	09-13-14	10/23/2009	2009	5
Avalon Borough	Joseph Lomax	Meeting 1-5 A	10-15-33	10/22/2010	2010	5
Avalon Borough	Joseph Lomax	Hazardous Tree ID	10-06-04	12/10/2010	2010	5
Avalon Borough	Wayne Whildin Jr.	Hazardous Tree ID	10-06-04	12/10/2010	2010	5
Avalon Borough	William Macomber	Hazardous Tree ID Shade Tree Federation	10-06-04	12/10/2010	2010	5
Avalon Borough	Brian Reynolds	Meeting Day 2 Shade Tree Federation	11-15-19	10/22/2011	2011	5.5
Avalon Borough	Joseph Lomax	Meeting Day 1	11-15-18	10/21/2011	2011	5.5
Avalon Borough	Joseph Lomax	Municipal Shade Tree Management Shade Tree Federation	11-15-10	2/25/2011	2011	5
Avalon Borough	Brian Reynolds	Meeting Day 2 Shade Tree Federation	12-15-17	10/27/2012	2012	5.5
Avalon Borough	William Macomber	Meeting Day 1 Shade Tree Federation	12-15-16	10/26/2012	2012	5.5
Avalon Borough	Joseph Lomax	Meeting Day 1	12-15-16	10/26/2012	2012	5.5

Avalon Borough	Bill Macomber	NJSTF day 1	13-15-20	10/25/2013	2013	5.5
Avalon Borough	Brian Reynolds	NJSTF day 2	13-15-21	10/26/2013	2013	5.5
Avalon Borough	Joseph L. Lomax	NJSTF day 2	13-15-21	10/26/2013	2013	5.5
Avalon Borough	William Macomber	NJSTF day 2	13-15-21	10/26/2013	2013	5.5
Avalon Borough	Donna Rothman	ANJEC Effective Commissions EHT	14-15-07	3/15/2014	2014	1.5
Avalon Borough	Brian Reynolds	ANJEC Effective Commissions EHT	14-15-07	3/15/2014	2014	1.5
Avalon Borough	Joseph Lomax	NJFA Annual Meeting	14-07-01	3/1/2014	2014	4
Avalon Borough	William Macomber	NJSTF Day 2	14-15-19	10/25/2014	2014	5
Avalon Borough	Brian E. Reynolds	NJSTF Day 2	14-15-19	10/25/2014	2014	5
Avalon Borough	William Macomber	NJSTF Day 1	14-15-18	10/24/2014	2014	5